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## TECHNOLOGY IN HUMAN RESOURCE FUNCTION LEADING TO BUSINESS SUSTAINABILITY



**Editor**

**Dr. Santosh Vishnu Bhawe**

(Fellow Member - NIPM)

Director - HR & IR,

Bharat Forge Limited, Pune (India), Pincode - 411036

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# **TECHNOLOGY IN HUMAN RESOURCE FUNCTION LEADING TO BUSINESS SUSTAINABILITY**

**Editor**

**Dr. Santosh Vishnu Bhawe**

(Fellow Member- NIPM)

Director – HR & IR,

Bharat Forge Limited, Pune (India), Pincode -411036



**National Institute of Personnel Management**

Southend Conclave, Tower Block (3rd Floor)

1582, Rajdanga Main Road, Kolkata – 700 107

Ph : 033-2441 7255

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Leading To Business Sustainability.

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**FORWARDING NOTE**

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**C. P. Gurnani**  
MD & CEO  
Tech Mahindra

A study on Technology in Human Resource Function leading to Business Sustainability couldn't have come at a more opportune time. My congratulations to the National Institute of Personnel Management (NIPM) on leading the research and creating this compendium. I'm particularly happy to see that while the contributors have shared diverse experiences and ideas on navigating through 2021 and restoring the world to its former glory, they are largely united about the potential of people and technology making that possible.

The Human Resource functions in most companies evolved faster in the past six months than they would have in six years. From virtual onboarding to induction, training to project allocation, internal collaboration to communications, policies to practices, performance management to reviews - the entire employee lifecycle underwent an accelerated transformation this year. We saw the birth of a whole new HR practice that was led by people and powered by technology. IoT, AI/ML and other new technologies came to the fore in a manner like never before. The focus moved from physical engagement to delivering exceptional human-centric experiences for employees and customers alike thus ensuring business sustainability.

One of the most divisive questions of the year has been: Has the new world order (pandemic > lockdown > work from home or anywhere) driven people away from each other or brought them closer? I haven't met friends staying in the same city in the last nine months, while I'm connected daily on video with my teams (who I'd otherwise see only twice in a year). The use of technology in the past few years has grown considerably and it will continue to play a pivotal role in enabling organizations and employees to stay distant yet connected.

I once again compliment the NIPM team, the contributors and the entire HR fraternity across industries for an outstanding research.

Wishing a happy and healthy new year for all.

Stay safe.

C. P. Gurnani

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**FOREWORD**

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**Mr. Vishwesh Kulkarni**  
National President, NIPM  
Chairman, Yashaswi Group

Dear Readers,

After successful publication of first Research Compendium on “COVID -19 IMPACT ON HUMAN RESOURCE DEVELOPMENT & ITS ALLIANCE WITH BUSINESS SUSTAINABILITY”, NIPM has decided to continue its Research publication initiative for Human Resource/Business Professionals and accordingly, I am happy to present 2nd Research Compendium on important and apt theme TECHNOLOGY IN HUMAN RESOURCE FUNCTION LEADING TO BUSINESS SUSTAINABILITY. As we all Professionals are experiencing importance of Technology in HR activities right from initial process of Talent Acquisition leading to Performance Management, Appraisals till exit. These days each process is technology driven. Considering this, HR professionals need to understand, how technology in HR function can lead to business sustainability in the present volatile situation enabling business to bring speed in decision making. It is also important to understand that though, involvement of Technology in Human resource function is taking bigger space, we cannot forget the importance of personal touch which cannot be replaced by technology.

I am confident that, after going through the articles published in this Compendium, readers will surely be benefited and will prepare themselves to use technology in HR function, which will be supporting toward business sustainability.

NIPM has decided to publish two more Research Compendiums on appropriate theme in due course of time. I wish to thank all NC members of NIPM for supporting this initiative, to be carried out for the benefit of all the HR professionals of present and future era.

My special thanks to Dr. S V. Bhawe, Director HR & IR, Bharat Forge and Editor Research Compendium for his immense contribution. NIPM is also grateful to Dr. Shivaji Mundhe, Director IIMS – Pune, and faculty members, IIMS – Pune, for their passionate contribution in ensuring successful publication of this Research Compendium.

My Sincere Best Wishes!!

Thanks & regards,

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**EDITORIAL DESK**

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**Dr. Santosh Vishnu Bhave**  
(Fellow Member-NIPM)  
Director- HR & IR,  
Bharat Forge Limited, Pune (India).  
Email ID: Santoshbhave@bharatforge.com  
Mobile No: 9881155754

After great success of earlier research compendium published in September 2020. National Institute of Personnel Management (NIPM) –Personnel Today, had invited for research papers on the theme “TECHNOLOGY IN HUMAN RESOURCE FUNCTION LEADING TO BUSINESS SUSTAINABILITY”. We were happy to receive abstracts from 70 (Seventy) researchers in response to our appeal. Selected research papers are included in this research compendium. This is indication that HR professionals are keen in initiating the research process and are interested in reproducing it by the way of research articles. Congratulation to everyone who directly or indirectly contributed in this journey.

The theme of this compendium has intended to focus impact of digital technology in HR function and its direct relationship with Business Sustainability. During last decade data analytics, artificial intelligence and machine learning, high usage of robotics etc. has surely made inroads into human resource function. We have experienced a paradigm shift in requirement of competence in the wake of requirement of Industry 4.0. Function of Human Resource Professionals has transformed from Manual to Automation. The researchers those who have authored articles in this compendium have echoed their thoughts on intervention of technology in HR and its relationship with Business Sustainability. As a editor of this compendium, I wish to complement all those research writers for their stupendous efforts.

This time NIPM had made special efforts in guiding and mentoring all research writer with the special write-up on “HOW TO WRITE QUALITY RESEARCH ARTICLE”. This was mailed in advance to all researchers and write-up on this subject is also included in this issue. Grateful to Dr. Shivaji Mundhe for his excellent determinations.

NIPM was fortunate to receive forwarding note for earlier compendium from Mr. Babasaheb Kalyani (CMD, Bharat Forge Limited, Pune, India) for this issue we have received forwarding note from Mr. C.P. Gurnani (MD & CEO, Tech Mahindra). Thank you very much Mr. Gurnani for your words of encouragement towards NIPM.

We have reached to this stage with solid support from a team involving Dr. Shivaji Mundhe, Dr. Vandana Mohanty, Ms. Lorraine Coelho, Mr. Sushilkumar Warkar, Mr. Parth Jadhav, Mr. Yogesh Ranganekar, Mr. Pawan Sharma, Ms. Amala Karandikar and Mr. Shyam Vaychal. Untiring support of this team needs high level of appreciation.

Special thanks to Mr. Vishwesh Kulkarni, National President -NIPM for his continuous support and motivation. Mr. Vishwesh Kulkarni has sponsored the entire printing expenses for the first and second issue of Research Compendium. He was also kind enough to allow help of faculty members and staff from International Institute of Management Science, Pune for completion of this project. His support has helped me to ensure timely and quality publication of Research Compendiums. I wish to place on record sincere appreciation to all National Council Members for their support. I am sure that NIPM will continue its journey in publishing more and more research compendiums in future. Each article covered in this compendium was meticulously reviewed by senior Reviewers drawn from all India basis. Reviewers gave their personal time to review the articles and submitted their report well in time. I am personally grateful to all Reviewers for their excellent support.

I extend greetings to all readers.



**Dr. Shivaji Mundhe**

Director,

International Institute of Management Science, Chinchwad Pune

“Research is the highest form of adoration” — Pierre Teilhard de Chardin

A research paper is a piece of academic writing that provides analysis, interpretation, and argument based on in-depth independent research. A good research paper addresses a specific research question. The research question/study is the central organizing principle of the paper. Whatever relates to the research question belongs in the paper. This is perhaps obvious when the paper reports on a well-planned research project. Once the research question is clearly defined, writing the paper becomes considerably easier. The paper will ask the question, then answer it. The key to successful scientific writing is getting the structure of the paper right.

All journals have their specific instruction, which every author should follow. In general, however, all manuscripts contain the following sections-

- Title: Title should reveal that, the theme of the research article. The purpose of the title is to capture the reader’s attention and provide concise information about the content of the text. Titles should not be too large or too small.
- Abstract: Abstract should contain a brief summary of the paper so the reader can decide in advance if they are interested in reading the full text.
- Keywords: around five keywords are usually expected, which help to identify the subject, the context, the methodology and the key theoretical concepts of the research.
- Introduction – this is an important part of any research which provides necessary context like the literature review and theoretical framework that helps introduce readers into the subject by presenting the current state of investigation, an important concept or definition, etc. In addition, this part also presents the research subject/problem, the relevance and scope of the subject, the position of the researcher within the context being studied, the author’s personal justification for conducting the research, etc.

- Objectives and Hypothesis- The Objectives are the aim of the work, i.e. the overall purpose of the study, should be clearly and concisely defined. The objectives are proved by empirical study. A research hypothesis is a specific, clear, and testable proposition or predictive statement about the possible outcome of the research study. It is a tentative statement about the relationship between two or more variables and a tentative solution of problem. The research hypothesis are proved by statistical tools and techniques.
- Methodology – The methodology section should contain enough information to allow readers to understand the way in which the research was performed; to evaluate the findings, and to compare the study results with other published studies. The section should describe both experimental and statistical methods. The level of detail should be sufficient to enable others to reproduce the work described. Detailed descriptions of already published methods may be referenced. When preparing the manuscript it may be convenient to write the methods section after the results section to ensure that all relevant methods are included.
- Results section – this section lists in detail evidence obtained from all experiments with some primary data analysis, conclusions, observations, and primary interpretations being made. It is typically the largest section of any analysis paper, hence, it has to be concisely rewritten, which implies understanding which content is worth omitting and which is worth leaving.
- Discussion – this is where results are being discussed in context of current knowledge among experts. This section contains interpretations of results, theoretical models explaining the observed results, study strengths and especially limitations, complementary future exploration to be undertaken, conclusions, etc. All these are important elements that need to be conveyed in a summary.
- Conclusion – in the original article, this section could be absent or merged with “Discussion”. Specific research summary instructions might require this to be a standalone section. In a conclusion, hypotheses are revisited and validated or denied, based on how convincing the evidence is the key lines of evidence could be highlighted.
- References – this section is for mentioning those works that were cited directly in your summary – obviously, one has to provide appropriate citations at least for the original article (this often suffices). Mentioning other works might be relevant when your critical opinion is also required (supported with new unrelated evidence).

Having the structure of the paper in place is a good start. However, there are many details that have to be attended to while writing. An obvious recommendation is to read, and follow, the instructions to authors published by the journal. A paper usually goes through several drafts before it is submitted. When revising a paper, it is useful to keep an eye out for the most common mistakes. It is very tempting to “borrow” or quote entire phrases from article, provided how well-written these are, but you need to summarize your paper without plagiarizing at all (forget entirely about copy-paste – it is only allowed to paraphrase and even this should be done carefully). The best way to stay safe is by formulating your own thoughts from scratch.

Wishing you success in everything you do. Good luck!!!

## Technology In Human Resource Function Leading To Business Sustainability



**Shahvir Irani**

Vice President - Talent Supply Chain,  
Accenture - India

For years businesses have had a singular north star – Financial Growth. However, changing societal values, environmental threats and economic instability have led to erstwhile capitalism being questioned. There is an ask now on businesses to ensure financial growth whilst being fair, equitable & sustainable.

Business Sustainability, in today's world, is anchored in 3 pillars:

1. Organizational Performance - aka short-terms earnings, profitability
2. Continuous Innovation - to unlock new value for long term growth
3. Stakeholder Trust – gained by ensuring ‘People’ & ‘Planet’ feature side-by-side with ‘Profits’

This form of business sustainability needs a (new) model of “Responsible Leadership” across all levels of the organization. Being the custodians of Talent, the Human Resource function has the responsibility & obligation of bringing this to life.

And herein lies the opportunity for Technology to play a role in enabling the HR function to achieve this, by:

1. Simulating a WoW Employee Experience, so that productivity stays at the forefront
  - Employees that are engaged are more productive, with lower levels of turnover & absenteeism (Gallup Research, 2013). More so, there is a link between how engaged an employee feels & their commitment towards any discretionary effort at work.
  - Engagement in turn stems from how an employee experiences the organization – right from being recruited till when they exit the organization firm (& often, thereafter).
  - Technology use cases in HR across the Employee life cycle (ERPs, AI-powered Chatbots, etc.) help companies Attract, Manage & Grow people, at scale and in a personalized, engaged & human manner. And all this whilst giving leaders an oversight into productivity, costs & in turn – Performance.
2. Creating a diverse workforce with a sense of belonging, to ensure creativity & innovation.
  - Research tells us that organizations which foster diversity - varied backgrounds and experiences of people leading to greater diversity of thought and more creative solutions – are more innovative.

- However, diversity alone won't suffice. People need to 'feel' that they are equals. The more included employees feel, the more innovative & engaged they are in team citizenship behaviors and willing to go above and beyond the 'call of duty' to meet workgroup objectives.

- Technology use cases - like retention analytics, headcount planning simulations, collaboration tools or AI that checks for bias - not only helps build a diverse workforce but also helps create an inclusive culture.

### 3. Instilling trust through Transparency in processes & Privacy of data

- When employees get access to their data (payroll, benefits, performance outcomes, leaves, etc.) real-time, on-demand & transparently, they worry less and trust the organization more.

- Additionally, in today's digital world - where people are sensitive to what personal data is being captured, where it is stored & how it is being used – organizations need to move from employee files managed in local emails & folders to secure & robust people systems.

- Creating this sense of security & trust for the employee, also transcends to other stakeholders outside, in the organization's ecosystem.

In closing, Technology in the Human Resource function provides an opportunity to think beyond just transactions. It helps give leaders insights to tackle pressing problems & help make talent decisions based on analysis rather than speculation. And most importantly, it enables the HR-Business relationship to become Strategic & Consultative.

### References:

- Seeking New Leadership Study - Responsible leadership for a sustainable and equitable world - Accenture, Forum of Young Global Leaders and Global Shapers Community.
- How Technology can help HR improve Productivity – Human Capital Management Report.
- Why HR Technology matters now more than ever – Josh Bersin.



## Technology In Human Resource Function Leading To Business Sustainability

Mr. Vinod Bidwaik

Vice President - HR & CHRO  
(India, Middle East & Africa)  
Alfa Laval - India

### Abstract:

We all know that disruptive technology has destroyed old business models. It has forced people to change and businesses to reinvent. This also has the impact of employees, customers, and processes. Human Resource function role has become crucial in this process. The question is what HR is doing to make this change sustainable.

I am going to discuss two factors.

- A) The digitalization and technology in Human Resource Function,
- B) HR role in digitalization and technological transformation.

**Keywords:** HRBP, Digitalization in HR, HR role in transformation, HR technology, change management, culture change, organizational redesign.

### Introduction:

Traditionally HR being the human relations function, technology adoption in the Human Resource function was not considered important by organizations. Business had priorities to implement ERPs and CRM. However over the past few years, human resource is also adopting the technology in the function. One of the elements is also ROI on such investments. Small and medium organizations don't have the business case for the big investment. However, there are a lot of cost-effective solutions available nowadays in HR technology.

I personally believe that technology adoption in HR should have a positive impact on the organization and employee experience. Another factor while working on this agenda is HR's role in digital or technology transformation. Here HR plays

the crucial roles to facilitate the change agenda during technology transformation.

A} The digitalization and technology in Human Resource Function,

### Elements of technology in HR

While deciding on a technology programme in HR, we should consider following dimensions.

**Purpose:** Business should get the answer, why are we doing this. What is the purpose of the whole? Is it the peer pressure? Or is it for facilitating some change within the organization? The technology in HR can have the following reasons.

- Risk management, Compliance and corporate governance: In most of the organizations, especially in big organizations, headcount, FTE tracking is very difficult. When empowerment is given at local unit level, there is a possibility of malpractices which may have a negative impact on the cost and business. Hence for better governance technology in HR is very important. Further in European countries, information and personal information security is very vital. GDPR compliances are very strict. Employees can challenge organizations if their personal data is leaked. To comply this organizations are looking for sophisticated HR information management systems.

- Employer Branding: In the era of digital natives, it is important to attract the right young talent in the organization. Millennials and Z- generations are digital savvy, fast in adoption. You need the right employee value proposition (EVP) to attract them and one of the imperatives of

EVP is the way of working and how the organization is adapting to the digital transformation journey.

- **Employee Experience:** One of the purposes of technology transformation in HR is employee experience and reducing the administrative tasks which are non-value added. Employees need to focus on business and their core activities. Technology facilitates fast processing of the data that managers and employees need, it delivers fast HR services, from onboarding to separation, to employees and the information they need is at the tip of the finger. This helps them to focus on their core activities.

**Today's fiction is tomorrow's reality, the future has already arrived.**

Customers are expecting 24X7X365 services which are fast, accurate and cost effective. Business models are changing. Technology and digitalization make this possible. Artificial intelligence, machine learning, sensor technology, 3-D printing, virtual reality etc is playing a major role in better customer experience, also in employee experience. Technology enables digitization and digitalization enables data management. Few of the examples of technology/digitalization are:

- Tracking employee productivity,
- Employee happiness index and engagement score,
- Employee's potential and his aspirations, his learning ability,
- Visibility of the talent to top management,
- Predictive analysis of employee attrition,
- Screening of suitable candidates through video interview,
- Identifying the potential within the organization and many more.

The question is, are HR professionals ready to handle these disruptions? Another challenge to keep the human factor in such

HR processes. In every process, it is very important to keep the customer in center and work on the technology and not otherwise. The HR role is important to see these aspects and put the design mindset in the practice.

**B} HR role in digitalization and technological transformation.**

As organizations are forced to change by the digital and technological disruptions, HR roles become vital while implementing those changes in the organization. Implementation of technology in the organization may be the business decision and there may be a strong business case in implanting it, however the failure is inevitable when the programme is not implemented professionally. Here HR has to play a major role along with the business leaders. HR can make an impact by following:

1) **Change Management:** HR has to facilitate the Change management Process in the organization during such programmes. It is also creating urgency, identifying talent and building talent capability for such programmes and projects, communicating the change and supporting business leaders, coach managers while implementing the change.

2) **Behaviours:** Identifying behaviours for new normal and future and creating that culture is very important when you want the change to be successful. Digital and technological behaviours have to be identified and creating a development plan for the talent is crucial to sustain the technological transformation.

3) **Organization redesign:** When such transformations happen, there is an impact on the current manpower. Sometimes we need a right and relevant organization structure. Technology and digital transformation are for the customer and

most of the time for cost optimization. In this process you need to clean the organization. HR has to play the role of challenger to the business leaders on purpose. There are possibilities of redundancies, new capabilities required. HR has to work closely to make such plans and implement them in the organization sensibly. We have seen some examples of dissatisfaction of employees because of the way they were treated during such restructuring.

4) **Capability building:** It may be any technology and any trends from Industry 4.0 to digital disruptions, you need talent who manages such technology. HR has to learn on such first and create the example. However, they also need to make the right talent management and talent acquisition strategy to build the relevant talent in the organization.

Whenever I see any success and failures in any transformations, I see a common thread and that is the role of human resource, The human resource in the organization and Human Resource function. Unfortunately, while making any business case this is always ignored. It is good to see that nowadays organizations are putting HR in such business cases.

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## Techno – HR Functions For Organizational Efficacy In National Cadet Corps

**Brig Jeewan Singh Rajpurohit,**  
Ph.D., AMT (AIMA)

**Col. Jyotirmaya Satpathy,**  
PhD (Triplicate), DLitt (Quintuplet),  
AMT (AIMA) BEG Regt Centre, Khadki, Pune

### Abstract

National Cadet Corps (NCC) of India is World's largest volunteer organisation constituted through the National Cadet Corps Act of 1948. The organisation trains Cadets to transform into good citizens of India through three years of rigorous training and development on design of Indian Armed Forces. NCC has been employing traditional tools of training, based on advanced technical models, for its Human Resource Management (HRM) and all training modules, effective execution and feedback mechanisms are evaluated on techno – managerial HR – oriented prototypes. Ab initio, right from enrollment, training needs and training identification, HR administration and attainment of optimal exertions in transforming the potential of Cadets has remained a fine blend of innovative based HR technology and 'out of the box' efforts by all stakeholders. Rapidity of inclusion of HR oriented technology has been comparatively on the upswing since March 2020 towards speedy transition to technology - based HRM. The scene has changed considerably since Covid-19 intrusion with Covid-19 being a 'turning point'. HR – oriented technology work stations and efforts to digitize data, prepare techno-training modules and other HR functions are assigned topmost priority. Modules and speed of inclusion of technology-based administration, training and development has picked up pace and NCC Headquarters, units and cadets have switched over to digital systems. The paper presents an empirical research with analysis of human resource functions and use of technology in NCC in the Covid milieu experienced by NCC organisation

in India.

**Key Words: HR – Oriented Technology Training Needs and Training Identification and Technical Models, National Cadet Corps, NCC training in Covid-19 scenario.**

### Introduction

Any nation whose youth is channelized in most effective and constructive purposes rises to be a great nation. National Cadet Corps (NCC) is one such organisation that trains youth in becoming a patriotic citizen of India. It was raised as University Corps by the British government in 1917; a second line of defence to support the World War. Post-independence it became effective organisation and the cadets successfully operated and supported 1971 Indo- Pakistan War. Human Resource practices of NCC were also based on British military pattern intermingled with the Indian culture. Like any other Indian government belted and uniformed organisation, NCC also drew its methods of administration and operations from them. Physical methods of data recording and maintenance was adopted and gradually excelled in the dominion specialization. Best practices of the times of independence on recruitment, training, administration were followed and cadets were launched into the Indian democratic environment. It became very popular among the boys and girls for identifying their passions and careers alike. The HR practices, however remained primarily traditional; all activities were planned and recorded in the files and information was floated through word of mouth and activities conducted on ground by all the

stakeholders.

NCC as an organisation grew with the growth story of India and adapted to the changing nature of management of the organisation and changing technology impacted HR Strategies and HR technology became part of the system. However, the rate of change before the Covid-19 pandemic stuck the mankind was far slow and different from the one now in vogue. HR technology changed the way recruitment, selection, training, performance management and administration of NCC in major way.

National Cadet Corps (NCC) of India is World's largest volunteer organisation constituted through the National Cadet Corps Act of 1948. The organisation trains Cadets to over two to three years to transform them into good citizens of India. Training is conducted on the same pattern as Indian Armed forces. The British rulers realized that they needed youth to support their war efforts and young boys and girls were most adaptable and suitable their cause. They had NCC has been employing traditional tools of training, based on advanced technical models, for its Human Resource Management (HRM) and all training modules, effective execution and feedback mechanisms are evaluated on techno – managerial HR – oriented prototypes. Ab initio, right from enrollment, training needs and training identification, HR administration and attainment of optimal exertions in transforming the potential of Cadets has remained a fine blend of innovative based HR technology and 'out of the box' efforts by all stakeholders. Rapidity of inclusion of HR – oriented technology has been comparatively on the upswing since March 2020 towards speedy transition to technology - based HRM. The scene has changed considerably since Covid-19 intrusion with Covid-19 being a 'turning point'. HR – oriented technology work stations and efforts to digitize data, prepare techno-training modules and other HR

functions are assigned topmost priority. Modules and speed of inclusion of technology-based administration, training and development has picked up pace and NCC Headquarters, units and cadets have switched over to digital systems.

#### Historical Perspective

NCC was raised by the British government by Indian Defence act 1917 to recoup the shortfall of officers in Indian army supporting the British rulers in World War 1 and 2. Great Britain was short of officers in her reserve of officers in the army, the militia and volunteer force and hence they started an Officers Training Corps in United Kingdom with senior and junior divisions in 1908 (Defence, n.d.). By August 1914 over 30,000 officers and soldiers were recruited to support war efforts. By second world war, the organisation matured in its operations and HR practices; women were inducted, role expanded, more units were added and it covered larger geographical area. Present day organisation in UK is organised by British Act of Parliament and follows training pattern similar to Royal Military Academy, Sandhurst that trains officers in their army.

While British established a war supporting organisation in UK, they also started similar organisation in India that also matured by the time India gained independence. The HR practice to recruit cadets was a big leap in times to come and what was a tool to cover the shortfall of officers and soldiers in the Indian Army gradually has become a major organisation that trains Indian youth towards nation building. The growth curve started with the inclusion of NCC girls wing in 1948, Airforce Wing in 1950 and Naval wings of NCC coming in force in 1952. It is like a corporate company that starts as a start up to meet a need of the stakeholders and environment and gradually enlarges in scope to extend its verticals in other dimensions and geographical divisions to come up that demand of the environment.

## Existing Structure and Functions

NCC is by far one of the largest organised youth organisation in India. There are others like NSS and Nehru Yuva Sangathan are other organisations that are engaged in empowering youth. NCC is organised with its apex headquarter at New Delhi with a three-star Lieutenant General heading the organisation. It is a tri-service organisation that is organised into various directorates, group headquarters and units spread across the country. The cadets can join it on volunteers with no liability to necessarily join defence services. Each state has an NCC directorate that is responsible for NCC within the state and each state has number of NCC units from Indian army, Indian Air force and Indian navy. Basic small arms training is imparted along with socially useful activities. Strength of each unit is approximately 1000-1200 cadets and is commanded by a colonel or equivalent from the serving defence officer. Majority of NCC units have both boys and girls but there are some girls' battalions as well. Each unit has two wings; junior and senior wings for both boys and girl NCC cadets (DGNCC, n.d.). There are 17 NCC directorates as the scale of one per state located in the state capital with number of group headquarters depending on the size of the state. There are about 96 Group Headquarters in country. Each group has 7-10 NCC units depending on the size of each group. There are 684 Army wing units (including technical and girls' unit), 69 Naval wing units, 61 Air Squadrons and Two training establishments across the nation. Nationwide training is organised round the year and funds are allotted by both centre and state governments with a ratio of 75:25 respectively.

Vision of NCC was meant to provide raw recruits into the Indian Army now includes strengthening of social fabric of India in addition of training youth to become

outstanding citizens. Tasks and accomplishment of tasks flows out from undermentioned vision and mission of NCC:-

- Vision. Empower volunteer youth to become potential leaders and responsible citizens of the country
- Mission. To develop leadership and character qualities, mould discipline and nurture social integration and cohesion through multi-faceted programs conducted in a military environment.
- Objectives of NCC-
  - Reach out to the maximum youth through various institutions.
  - Make NCC as an important part of the society.
  - Teach positive thinking and attitude to the youth.
  - Become the main source of national integration by making NCC as one of the best cohesive force of our nation irrespective of any caste, creed, religion or region.
  - Mould the youth of the entire country into a united, secular and disciplined citizens of the nation.
  - Reach out to the youth of friendly foreign countries through Youth Exchange Programmes (YEP).
  - Provide an ideal platform for the youth to showcase their potential in nation building.
  - Instil spirit of secularism and united India by organising national integration camps all over the country.

### Techno-HR Perspective (Pre – Covid)

During Pre and during Covid-19 scenario, NCC identified some terms of references that were different from corporate culture. The NCC cadets and the staff cannot be laid off and same strength of personnel has to continue. Output in terms of training of the cadets had to continue, though it was suspended for some time during May-September 2020 but picked up pace,

courtesy the technology. Closure of offices for short duration impacted the organisation but no sooner than protective measures were out in the open, work commenced. Typically, there are no revenues to be generated and balance sheet tallied; but the training of cadets had to be conducted, syllabi had to be completed and social work had to be accomplished. All aspects of HR functions are organised from apex of the organisation down to each unit and cadet. Digitisation of NCC is an ongoing project and would have taken its own course but for the Covid pandemic. Unlike corporates, NCC was not dependent on profit and revenue models and reduction in manpower and salary; it was based on service to the nation model. Econo Stor reported loss of 20 million jobs in April 2020 (Olivier Coibion, 2020). KPMG reported in their survey that 48 % organisations are supporting their employees. 75 % companies have gone online for communication with the employees and 22% organisations are likely to suspend incentive to the workers (KPMG, 2020). The pace has picked up to ensure that this special youth wing of defence ministry runs smoothly and delivers despite the pandemic.

### **Techno-HR Challenges**

When corona virus hit India and lock down was declared on 24 March 2020, NCC too was closed down. All training activities were stopped and everyone stayed home. System was geared to work in offices through physical and technical means combined came to a grinding halt. Like every other organisation and army, it got a temporary shot in the arm. However, vaccine for Covid-19 in 2021 is likely to bring relief and take companies and their HR functions to normal routine (Matt Craven, 2020). Some of the immediate impacted ongoing issues are discussed in succeeding paras.

### **Conduct of B & C Certificate Exams.**

The syllabi of NCC runs parallel and in conjunction with schools and colleges and since they were closed down, NCC exams and social activities too were postponed. These exams were to be conducted in March/April 2020 but had to be postponed indefinitely. The same were later organised in October 2020 whose results are likely to be out soon in December 2020/January 2021.

**Fresh Recruitment.** Every year the freshers are selected from May to October based on an entrance exam, physical test and a medical test. The same has been delayed and were conducted in November 2020.

### **Maintenance of Data and administrative Control.**

Majority of data were already being recorded and stored in data bases in units and NCC Directorate and NCC HQ at New Delhi. However, all admissions, selection, training and administration was carried out by physically. The system was jolted and every office appeared defunct as nothing but Corona seemed to be moving, infecting and killing stakeholders. Soon, leadership revived the organisation, took control of activities and digital connect started the work.

### **Annual Training Camps.**

Every year a cadet has to attend one camp to be eligible to appear in the B or C certificate exams. These camps are conducted round the year and each NCC battalion organises minimum two camps per year. Training camp normally is attended by 300 to 600 cadets. This in one activity that converts young boys and girls into mature adults. They learn all about Indian army/navy or air force and are groomed to become good military soldiers and leaders. They carryout drill parade with and without weapon, fire with rifles and undertake social activities. The year 2020 was a

special one when no camp could be conducted. NCC Naval units could not take cadets for sailing, rafting and other naval activities. Airforce NCC units could not conduct flying and flying related real time and very serious activities for cadets. It was a major challenge for NCC.

### **Sustainability of Techno-HR Functions**

The challenges started impacting the youth as they were locked in their homes, no schools opened and no training and social activities could be organised. As a result, one could visualize paralysis hitting the system. This is when the technology came to rescue the system and support in conduct of HR functions. NCC was getting into technical and digital mode of functioning but at its own pace alongside the Indian defence forces. Covid-19 only enhanced the process. The nation was battling the pandemic and so was NCC. One could not remain defunct for long. All ranks started working from home and groups were organised to carry out functions from their respective locations. All state directorates reported active participation of units in activities of the society (India G. O., n.d.).

The scene has changed drastically since the time Covid-19 spread wings among the masses. Realization soon dawned with the fact that Covid-19 is here to stay. Work stations and efforts to digitize data, preparing techno-training modules and other HR functions now became priority. Modules and speed of inclusion of technology-based administration, training and development picked up pace and NCC Headquarters, units and cadets switched over to digital systems almost instantly.

### **Exercise NCC Yogdan**

The first of the tasks undertaken by NCC was to start social works to support the society fight the pandemic effectively. NCC units across the nation joined hands with police and medical departments to

help in managing administration and helping in maintenance of law and order. More than 47,000 volunteer NCC cadets joined the fight against corona (India P. T., 2020).

Data Recording and Communication commenced with the existing internet with the leaders and ensuing that the all stakeholders follow the same. Training was organised by involving cadets in making their own small videos of different activities like small arms training, drill and non-military subjects. Instructors and Associated NCC officers were instructed to make online sessions and impart them to the cadets. Online e tendering and procurement of logistics also commenced by mid-June 2020.

### **Conclusion**

NCC is one such part of defence ministry that engages in empowerment of youth through three wings of Indian Armed Forces. The organisation has produced best of civil and military personalities Neta I Subhas Chandra Bose (UTC), like Indian Prime Minister Narendra Modi, Former PM, Morar ji Desai, Defence minister Rajnath Singh and Former Foreign Minister Late Sushma Swaraj, Kiran Bedi, Jay Bachchan, Shekhar Datt, Gen TN Raina former Chief of Army staff and many more. Pandemic did cause consternation in the system and its HR Functions but urgent steps taken and use of technology has helped NCC restart its core HR activities by October 2020. NCC cadets have participated as Covid fighters across the country and has made outstanding contribution to the nations. All this has been feasible by effectiveness employment of techno-HR functionalities in the system and have sustained efficacy of the organisation.

Cadets are trained by armed forces officers and these cadets grow to become officers in the Indian Armed Forces, Central Armed Police Forces. Large number of



them join other government and balance follow other passions of their choice. Even those who are join any other job that they did not opt for, are highly motivated and crave to join belt forces Common factor among all of them is the strong patriotism and feelings for the nation. In schools and colleges one can see appreciable changes in HR functions prior to the pandemic and post September-October 2020 when data recording, admissions, training, and other socio-economic and welfare-oriented activities have been performed with outstanding results. NCC cadets appear highly energetic and motivated as they move from one task to another.

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## Technology Disruption and its Impact on the Business and Society

**Mr. Ramendra Malthiyar**

General Manager - H. R.

CLP Power India Pvt Ltd

### **PURPOSE:**

To analyze the impact of the advent of AI and Automation in Industries and their people along with overall implication on Socio Economic System . It will also talk about whether this will be boon or bane for the Organization and its people.

### **METHODOLOGY:**

The paper will be a researched document considering inputs from relevant books, HR journals, articles, social sites and surveys . Over and above my own analysis in this space.

### **FINDINGS:**

The paper will reveal how is the advent of AI & Automation impacting organization and the employees in general. How crucial and critical will be the role of HR especially in the space of Learning and Development? Is this going to impact employment negatively? What could be the thinking of the people to welcome the change? Also, what should they be doing to remain relevant in the system and contribute positively at the same time. How will Industries / Organizations look at these changes? What will be the return of Investment for the Organizations? How can AI bring values with the help of Human Intervention? What will be the overall scenario and impact on the market? Can AI and Human interface bring positive changes in the overall business context.

The findings will have all the detailed study on the subject and shall reveal the benefit and positive consequences. Changes are the way of life; the earlier people understand the better it is. Ignorance has no role to play in this dynamic world. Accept, Embrace, learn

and move on while thinking to be a “New Normal” always. Nothing is impossible or difficult once you accept it and put it into practice. Be practical and believe on the God gifted organ called “Brain” which only human being has and there is no substitute to it. The only permanent thing in life is “CHANGE” which can be of any form but believe me it will keep coming hence embrace it and move on and do not look for alternative as there is “NONE”

### **TECHNOLOGY DISRUPTION IS BOON OR BANE**

Industry 5.0 (yet to come)

Industrial Revolution is a Global phenomenon which is well known to everyone. Let me try and give my perspective of the same. In a layman’s terminology it is transformation from Industrial revolution to digital transformation. How have the manufacturing process changed or transformed over a period and how have the people & business adapted the change and move on in their life with better and further sound human resources. Let us touch base on the Industrial revolution / evolution eras in the past and how have the development of the changes taken place so far.

Industry 1.0- Way back in 1760-70 - First Industrial revolution which was the transition to new manufacturing process with the use of steam and coal for manufacturing.

large number of goods. The output increased because of the fast production.

Industry 2.0 - Second revolution or “Technological Revolution” started in western world, with the introduction of electrical technology for machines to operate.

Industry 3.0 – This is the advent of “Computer era”. The work started becoming quick and accurate. Hence around 1970s automation in manufacturing set up stepped in aggressively and many jobs around this was created. Colleges started changing their syllabus to suit to the requirement.

Industry 4 .0 - This is an era of transformation which is digitalization/AI/ Network / cloud computing technology Era. The cognitive mind comes into play. Computer based algorithm started getting importance. Data and Data Analytics are on the foray. Industries are required to cope up with the latest technology transformation, hence changes for betterment was seen in the cut throat competition.

Industry 5.0 (yet to come)

Visionaries are forecasting the advent of industry 5.0. This is the return of Human hands and minds into Industrial framework. People will start working on real time data. The production will be qualitative and quantitative with Man and Machine working together.

Hence with the advent of technological innovation the forthcoming changes will be much rapid. In the past, Industrial revolutions have taken decades to bring changes which now will be in quick succession. People must be on toes to catch them and be the **“change with the change”**. This will be an **architectural change**. The interface of Robots, Computers and Human will become meaningful and productive going forward. Industrialisation 4.0 brings automation, machine to machine communication.

Digitalization, AI / Network and cloud computing. There will be lots of work for data analytics Industries are coping up with the latest technology transformations, hence changes for betterment can be witnessed in the cut throat competition.

Let us understand what AI and automation bring on the table in this ever-changing industry scenario. A developed country will have / automation / Digitalization / Networking etc. where accuracy and efficiency play major role helping them to be relevant in the competitive market and suitably play in the open market and Industrialization. There are lots of murmur in the market like what will happen with the advent of these technologies. They will have less or reduced interface with the human leading to more productivity with accuracy. All the work will be done in scheduled time and everything can be estimated with minimum or rather no error. Here the worry that people have is about their job which can be replaced by Artificial intelligence or Robot or by automation and they will be left unemployed.

AI will no doubt bring more efficiency and accuracy in work. Industries can easily predict the production forecasting and estimate the income leading to profitability of the company if all other variables remain constant. As I said lots of data can be generated for M.I.S report and for taking further action to take place basis the data. The work will become fast unlike yester years. People may need to cope up with to bridge the pace and be with the changing environment. Rigid people may get impacted but people who are willing to change will face no problem coping up with the welcomed change. In fact, they will appreciate the change and work for betterment, considering this to be part and partial of their life. Accepting the fact that this is way of life is the best solution to the so-called problem.

Let us not undermine the potential and capability of Human beings. In other words what human can do, machine cannot. Human beings have emotions, sense of understanding and interpreting data and brain to analyse data and interpret their consequences. They will take advantage of the automation to perform better and be in the eyes of management. So, no one should think AI or automation to be hurdle for anyone's progress, in fact they add value to your work. Consider these new intrusions as your well-wisher and then see how your outlook towards this change will be will be flexible to adapt/adopt change.

If you could recollect during Industrialization 3.0 when computerization came into existence. Employees resisted the change because of insecurity of losing job. Look at the scenario now, there are more jobs created, people were trained in computers and drastic change is seen that everyone in comfortable, now in fact living without computers cannot be imagined. No one lost the job in fact many jobs have been created. Now everyone is happy though there has been resistance earlier. Similar situation has arisen now. Take lesson from earlier scenario and take the life forward.

Let me draw your attention toward Human Resource department especially L&D function which will go a drastic change. Following things will undergo changes for positive creativity, emotional intelligence & story telling.

1. AI is reshaping the world and redefining how business operate. They perform human like task. Significant pressure will be at Junior level where people do repetitive work, the A.I or digitalization will do the same. Hence the work of reskilling increases.
2. HR rethink workforce skills and talent management.
3. HR shall be aggressively using software like Robotic Process Automation for their repetitive work and machine learning for their HR function.

4. It is about up-skilling the human and realizing full potential of human and machine in the workplace. Organization are building data – driven culture.

Skill mapping for sustainable business is another area of HR which make the talent pose of employees and they may not be based on qualification and degrees the person has taken but his skills and project that they have worked before. This can open the door of concept of “gig” economy which will be the future for jobs going forward even in organization sector.

The organisation and employees should look at these digital /AI/ Robotics and Internet world to be blessings for business and employment. The organization will have standing in the International market leading to economic growth of the country. Employees shall get exposed positively for growth . Hackneyed nature of work is taken over by AI. This is VUCA world, so unexpected and uncertainties are part of life.

Look at the advantage of technology in the year 2020 which all of us have closely witnessed in this Pandemic situation when people had to work from home. What has helped us? It is internet connection through which all communication has been possible and work did not stop. Work went on as normal. Therefore, the new nomenclature which came up in the Industrial parlance is “New Normal”. This means it is normal business but different way to do it. Imagine had this network/internet been not there! Many companies especially software have allowed 75% of the people to work from home in all times to come in future. Could you see the changes for future growth? You will be happy that you are with your family while working at the same time. During lock down shops etc. were closed. Online shopping became important mode for us to buy things and run the house.

Many shopkeepers whose shops were closed started online business. We used to get things at our doorstep because of technology. We did not have to bother about or wrack our brain to get these daily stuffs. You could also see the importance of “Google pay or Phone Pe” to do the transactions. Since the disease is contagious, hence these modes of payment helped us in keeping the physical distance. Overall, the business went on to a reasonably good space. Imagine in this pandemic if these technological driven were not available!

Having all said no machine can replace human brain. Creative thinking, analysing data and predicting future, emotional intelligence story telling etc. can never be replaced come what may!! Hence consider all these a positive change in the business which is helpful to all the organization and people. You will see lots of changes coming in this VUCA world, just keep your eyes and ears open and adopt, adapt, learn & relearn and move on for better tomorrow. Be on toes is the new normal.

Remember this is also one of the Industrial Revolution like what we have seen in the past

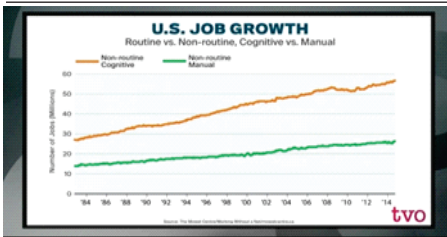
Today Networking, cloud technology and digital technology where exchange of information between human and machine is like connecting technology to human life. It is people, data, computers, products and processes are completely networked giving rise to new challenges to companies. They must leverage with new technologies for their business and keep pace with the changing consumer behaviour, constant changes in consumer tastes and preferences, can only be possible because of the technology. People must be flexible in thinking because of the constant change and action. This is an opportunity to the business which can quickly change to the mode and mood of the market and become successful. Real

time data, predictive maintenance basis data will take front seat. Mobile phone, tablet and related devices have become part of your life which is beginning of 4.0.

With AI / Robots coming in there will impact on the jobs which are repetitive in nature. I agree Robots will take heavy manual work, they can work 24X365 days and will not take any leave, then also they will be highly effective and economical. This is the place where they take edge over human being. As I mentioned earlier, the work with cognitive in nature will be done by human/people and no technology will replace it. In other words, technology creates job, some heavy manual work is taken over by AI which is fine from Business point of view for entrepreneur and health point of view for employees.

Let me talk about the farm sector. Earlier 40% of the farmers used to produce crops for the whole population, Now only 2% of the farmers are producing crops for increased population where more food is consumed. This can only happen because of the advent of the technology. Now look how economy is growing, 38% of the farmers who used to farmland have moved to cities and started earning. Hence, they start contributing more to the family and helping the prosperity of society.

Technology change gives heads up to business plan. Organizations are aware of technology changes but fail to give inputs in time to their people so that they can gel well with the new technology and start contributing without getting trapped into insecurity phobia. Here organization should train and retrain their people to upskill them in time, and not making people a scapegoat. People keep saying AI/Automation are disruption to the economy but mind you , life is all about disruptions only and AI could be one of them. Plan to cope up and embrace the new technology as this will



bring happiness to the economy and uplift the standard of living of everyone. Don't get bogged down by the mere complex word called "Artificial Intelligence" and call it a game changer. It is people like you behind the scene are the game changer. My advice is to get rid of routine job and do some work which is cognitive in nature and at the end of the day you enjoy the day worked.

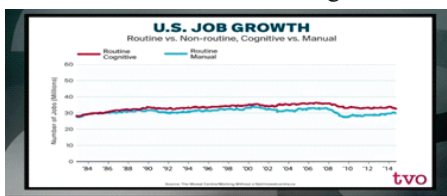
Non Routine cognitive Jobs are like Architect , S/W Engineers where cognitive mind are used .

Non-Routine Manual line Home care where hand and body are used

In the above graph it very clearly depicts that non routine cognitive jobs are increasing, and graphs shows an upward trend whereas Non routine Manual jobs are almost stagnant. Very slight increasing trend.

Routine Cognitive Jobs like typist, telephone Operator

Routine Manual Jobs like lifting



tools and tackles have stagnated and going down In this graph both routine cognitive and Routine manual Jobs donot show any remarkable trend , though the cognitive jobs have some requirement in the market though not very encouraging while manual jobs have almost no market . Here is the role of AI which is replacing manual nature of Jobs .

Refer to the Industrial Revolution 5 where

Human and machine together will work. AI revolution which has already started, yet to catch up will show its colour very soon . It will change, rather started changing the socio-economic situation of mankind. Here human will have more leisure time to think on the business and future. Every company exists without technology but not without manpower. No matter how advance is the technology it will never totally replace human. If we look at Industrial revolution and the changes that it had brought to socio-economic condition of the people is tremendously changed for good.

Being human at work means practicing the innately human skills that technology cannot do like empathy, creativity, collaboration, self-awareness, innovation, coaching and mentoring etc. We should practice what makes us human and build real human connection with our colleague and customer. Technology keep growing and then market will need people who are good human being believe in empathy treating people well. Organisation will need human to create values in the organisation.

There are always 2 sides of the coin for any type of Industrialisation. On one hand it brings efficiency and effectiveness in work while giving a platform for global presence in the world market. Your product and services are will be in the International market while there could be some impact on the jobs , but when people are ready to change then they should not fear about redundancy. They should take this as an opportunity. With these digitalization and automation give rise to lots of jobs opening. The college change their course studies suiting to the latest market requirement. Skills are developed from the college time only to enable students or job seekers to take advantage of the job opportunities since they are reasonably equipped to grab the opportunities. Overall it is a very positive sign in the socio-economic environment. Hence, we should

expect more disruption because of technology but we are now equipped enough and alert to embrace the new technology and move forward in a positive way.

Overall technology driven countries stand tall in the International market and can easily sustain in any type of dynamic market situation in this volatile world where changes are taking place faster than you think.

### **Conclusion**

Finally I would like to sum up by saying that in this disruptive world or say VUCA world which is ever changing at a very fast pace , just be alert and embrace change of any forms that you encounter which could technology also , which is very volatile and dynamic . We are required to embrace for good of everyone man and machine ( Human and business ) . There will be minimum job disruption and maximum gain in the economy and overall health of the business. Hence, we should look at technology as boon to business and the society at large and not otherwise.

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My reading from attending webinar & workshops organized from known personalities , various articles and HR Journals like People Matters , Human Capitals & HBR , expert talk from CEO and CHRO, & my research from search engines like Google.



## Technology In Human Resource Function Leading To Business Sustainability.

**Mr. Ranajit Sarkar,**

Research Scholar

Maulana Abul Kalam University of Technology

### ABSTRACT

#### (A) Purpose of the Study –

HR Management has undergone a sea change since generations. Let us discuss the effect of Digitization In HR Management.

As per the old Economic Theories there were four factors of Production i.e., Land, Labour, Capital and Organization. But in modern day one more factor have been added to these Four factors of Production which is

Management i.e., the Managerial expertise, Managerial Far sight and application, embracing of New Technology particularly the Digital Technology and retention of the Technologically trained and experienced manpower can only add to the Growth and sustainability of the Industries.

#### (B) Design/Methodology/Approach --

HR Management has changed itself with the passage of time since time immemorial. To discuss the topic we have to deliberate on the following points-

(i) Historical evolution of HR Management

(ii) What is HR Management and role of HR Management in long term sustainability.

(iii) What are the major technological applications and challenges in HR Management

(iv) What is digitization?

(v) Role of computer in digitization.

(vi) Towards a paperless office in HR Departments.

(vii) Application of Robotics and AI in HR Management and Sustainability

(xiii) Positive and negative sides of digitization in HR ( data mining, data privacy, data leakage, piracy, hacking).

#### (C) Findings/ Conclusion -----

Role of digital technology in Industrial Relations and Workers Education.

#### (D) Originality —

The above paper/research work is the original work of the Author and has not been published anywhere else.

#### (A) Introduction --- Historical Evolution Of HR Management

HR Management has undergone a sea change since generations.

HR management is as old as the history of mankind. HR Management is the oldest form of Management.

During the pre-medieval system and / or the primitive civilization period man as a social being have started cropping system where a lot of people were involved in cultivation. Even to harvest a cultivated land there is a huge requirement of manpower. These jobs are very systematic and require planning. A leader and follower relationship develops between the group of cultivators during cropping and harvesting.

The early mankind has survived through accessions and wars between different Kings and their Kingdoms. Here the Kings and the Rulers can be imagined as the CEOs of their Kingdoms which were mainly ruled by effective Management, Strategy of wars and mainly muscle powers. The use of primitive technology in the form of stone made arms, bows and



arrows and in due course Iron made arms were witnessed. Here also we shall find the role of Good and effective leadership in winning the wars and accession to other territories.

In due course of time with the advent of Technology and advances in Science and Technology people came to know that direct war will kill a large number of people hence the rulers and the Kingdoms came to a truce and mutual settlement. With the advent of Bombs, Missiles, Sophisticated armaments, automatic guns etc. the entire mankind realized the peaceful means of resolution of disputes.

After the Industrial Revolution in England in 1857 the modern factory system of Production has started. With the advent of modern factory system of Production under one roof and the rapid development of science and technology in England and Europe the Europeans started conquering the whole world through their developed Technology and the main aim was a rapid industrialization and the British and other European colonies of World were the suppliers of Raw materials for the flourishing businesses in Europe.

During this time period the Russian system of Zars as a class of oppressors in Russian system of agricultural have resulted into Russian Revolution and in 1917 which gave birth to the establishment of International Labor Organization (ILO) in Geneva.

The establishment of ILO and the two World Wars (I & II) have given acceleration to the framing of different Laws and Resolutions in favor of the Workers and Management for the purpose of better Management of Industries in a peaceful manner.

### **What Is HR Management And Role Of HR Management In Long Term**

### **Sustainability.**

The development of Modern Human Resource Management started with the advent of Digitization particularly the role and impact of Computer is very deep rooted. The Welfare concept of modern HR Management for the purpose of long term sustainability and application of modern technologies is the only way to survive in a cut throat competitive era.

In this modern age of Cut throat competition among the Industries which are spread globally it is experienced through different studies of the biggest Management Gurus that in an average the survival of the Industries are spanned maximum up to 30 years. Whereas the present day manpower which are employed in these industries are mostly educated who completes their studies by late 20s or by the age of 30 years and remains active to work for almost up to 75 years i.e., the workable age of these qualified population has grown up to 75 years who enters the job market at the age of beginning of 30 years or early 30s. Hence, the active age of these educated work force is more than the existence of an Industry. Here comes the question of sustainability.

As per the old Economic Theories there were four factors of Production i.e., Land, Labour, capital and Organization. But in modern day one more factor have been added to these Four factors of Production which is Management i.e., the Managerial expertise, Managerial Far sight and application and embracing of New Technology particularly the Digital Technology can only add to the Growth and sustainability of the Industries.

### **(B) Methodologies For Study —**

### **(I) Comparative Studies, Case Analysis And Impact Analysis On ---**

## Major Technological Applications And Challenges In HR Management.

HR Management have to cope up with the following Technological changes and challenges.

- (a) Manpower calculation, projection, corporate Planning and restructuring, its budgeting and costing and related Financial, mathematical and statistical calculations through application of sophisticated technological means.
- (b) Manpower hiring and retention and its related calculation of costing and budgeting.
- (c) Manpower training needs – its related costing and budgeting.
- (d) Welfare measures for employees – its related costing and budgeting.
- (e) Corporate Social Responsibility – its related costing and budgeting.
- (f) Court cases in Labour and service matters – its related costing and budgeting.
- (g) Calculation of Cost to Company and other expenditures related to HR Management through application of different tools and technologies of sophisticated mathematical and Statistical Calculations.
- (h) Other miscellaneous calculations and future projections which have considerable financial impacts on the Companies and organizations.

### (II) What Is Digitization?

After the advent of modern computer in 1980s and its extensive use in business throughout the World the Global business scenario have witness a sea change in the concept of business. Many Companies and Organizations the in World have failed to embrace the application of Computers and modern day advanced Techniques and as a result they have collapsed.

The Global Digitization wave has led many industries to flourish also. As a natural consequence the HR Management have also made a paradigm shift to Digital Platform.

We have witnessed extensive use of MS-Office and use of Internet in almost all the offices across the globe be it a very small business or a big business house. All the documentation works in HR Management starting from framing of policies, drafting of Notices, Circulars, Charge Sheets, Show causes etc are all digitally typed and stored. All the Power Point Presentations in any Seminars or Symposiums, Trainings and other Presentations are fantastically presented to the target groups / audiences.

Every day the there are new inventions and R & D in the field of Digitization in HR practices. The more we are flexible in adopting the new Technological advances the more is the possibility of longer Sustainability.

The day an organization fails to adopt the new changes and challenges in Technological advancement particularly digital Technologies they will start rolling back towards extinction and in the opposite the more an Organization is Tech savvy or Digitalized the more it will sustain in the long run by countering the Rivals and Competitors in the same business.

### (III) Role Of Computer In Digitization.

Before the advent of Computers and its applications in modern day business we have witnesses the application of Calculators and other electronic devices.

But once the Computer have come up it has made the business more easy and comfortable. All the manual Office jobs have been computerized with less effort and very minimum cost. It resulted in Human replacement and much cost cutting in manpower retention. The role of Computers has resulted into a very high speed in the discharge of Administrative functions. The day to day General Administration and HR Management have acquired unprecedented speed in

the discharge of Administrative functions. The day to day General Administration and HR Management have acquired unprecedented speed in discharging its duties. The organizational and inter personal communication system have made a quantum jump and transformation. Due to internet and e-mailings we can communicate with thousands of people within minutes.

Let us cite some examples of Digital Transformation of business –

(a) The banking Sector which were run in a particular fashion till 2000 have undergone a sea change in its business strategies after the introduction of ATM machines. The role of Credit card and Debit card has transformed the entire banking system which has now resulted into the merger of the entire Nationalized banks in India due to cut throat competition among the Nationalized and Private Banks. A consequently during the mergers and acquisitions the HR system have also undergone a major overhauling due to the takeover of the entire manpower and determining of the Pay Structures and also related activities related to HR.

(b) Similarly, the OLA, UBER, RAPIDO etc. cabs are all running through more and more digital applications. The attendance systems, the payrolls, the compensations, recruitments etc of the entire organization is being monitored through digital systems.

(c) The application of CCTVS in the Security systems of all the major organizations including the smaller shops are the burning examples of role of Digitization in Security and HR Administration.

(d) Even during the ncovid19 pandemic situation the role of Thermal guns / Digital Thermo meter is outstanding which have

served the role of Security and HR in Manpower Management as a whole during and after the lock down.

(e) The virtual Platforms for organizing meetings through ZOOM app, Microsoft app, GOTO meeting app etc. have created a history in organizing HR trainings and different meetings. These have reduced the organizational cost and time in these fields to a considerable extent.

(f) The music maker apps e.g; STARMAKER, SMULE etc has changed the life of many upcoming artists who have really rediscovered their hidden talents through these digital platforms. The opportunity of recording songs through these apps and then uploading in facebook, Youtube, Twitter, Instagram and again simultaneously circulating these recorded songs through Whatsapp, Telegram, Tik Tok etc have enabled these rising artists to reach to thousands of music lovers who can rate them, appreciate them and motivate them. Many of these artists have got their high flying careers through these apps.

(g) Same is the case for HR Trainers, Faculties, Soft Skill Training Freelancers and providers of HR Training and Development Courses. These faculties and experts are preparing and providing very high end training modules which are available through different Social Networking Sites and even the beautiful motivational quotes of the achievers are being forwarded to the friends, colleagues and relatives through Whatsapp, Telegram, Tik Tok etc apps by wishing Good Morning in the early morning or by forwarding these motivational quotes and videos any time during day and night etc.

### **(C) Results —**

Since, Human Resource Management encompasses Soft Skill Trainings, Communication Skills Development, and

Security, Sports and Cultural Development and overall administration in any Organization. Hence, the role of HR Management is Omni Present, be it in the field of Production, Manufacturing, banking and other service sectors, Educational Sectors, Financial sectors, I.Tes , Marketing Services etc and everywhere we can see the wave of Digitization. More the digitization more is cost cutting , more is the speed and accuracy of business, more is the standardization and more discipline and timeliness.

Hence, the coming days are the days of Digitization which is gradually tending towards building and dependency on Artificial Intelligence.

The more the entrepreneurs have foresight the more they will be successful in their organizational building and its longer sustainability. If any organization is delaying in Strategic decision making and adopting digitization they will lose its long run sustainability.

Hence, to be sustainable in the long run any organization needs to adopt the latest technology of Digital World be it in the field of HR, Marketing, Finance, Production and Manufacturing etc.

The role of Computer Hardware, Networking and different soft wares (e.g., MS Office, SAP, Oracle, Tally), Internet, Role of Social Networking sites in Employee hiring, recruitment etc are the talk of the day. The role of mobile phones and more and more applications of Whatsapp, Telegram etc are the real examples of Digitization in HR Management and sustainability.

The entire banking Industry have entered into the mobile phones of the individuals. All the Monetary transactions have entered into digital platforms through the

apps e.g; Paytm, Banking apps of individual banks, Google pay. Etc. Particularly during the n-covid pandemic it was a wide spread Govt. Notification to enter into app based monetary transactions.

Even to avoid Corruption the Government and Private Sectors also have been instructed by the Central Government to depend upon and more and more use of Digital platform in day to day Financial Transactions.

The Tendering process has now become E-Tendering processes. The Recruitment applications have now become online application through the internet and websites of individual organizations.

The HR Management in Indian Judiciary also have adopted much more digital Technology to give a better access of Judiciary to the Citizens of India. The E-filing of cases. The online case status through E-courts Portal. The payment of Judicial and Administrative fees through the Portals have tremendously contributed to the speedy justice delivery system. Even the Learned Supreme Court of India is thinking of open Court hearing through digital Platforms which can be accessed through any citizen of India from any part of the World.

### **Towards A Paperless Office In HR Departments.**

Now-a-days it is being witnessed that a revolution has taken place in the matter of Office Administration everywhere. Gone are the days of RED TAPISM. Where it took days to pass a file from one table to another in the Government Offices.

The approval to get a starting of one Factory or organization took years together from one department to another. Many departmental clearances and file movements were required to get a final nod

to set up a Factory. e.g; Labour Department, Factory Inspectorate, Banks, Pollution Control Board, Registrar of Companies, Income Tax Department etc. But now with a click of a mouse we can apply to all the departments simultaneously for a clearance and NOC to operate a Factory and pursue the same in case of delay with an evidence of date and time of application to all concerned.

Even in the matter of internal Office Administration the speed of file clearance has improved a lot. We can move a file online marking it to all the hierarchies at the same time and since the date and time of initiation is all marked by all concerned it becomes a time bound job to clear the file in a most transparent way.

### **APPLICATION OF ROBOTICS AND AI In HR Management And Sustainability**

We can experience the use of Artificial Intelligence in the matter of brain mapping, manufacture of cars, computers, Laptops, High end 4G enables Mobile handsets etc. where a huge human replacement is taking place. The blue collar jobs are being substituted by White collar jobs.

### **(D)Positive And Negative Sides Of Digitization In HR ( Data Mining, Data Privacy, Data Leakage, Piracy, Hacking).**

It is very true that Digitization have played a transformation and revolutionary role in the business scenario where HR Has to play a big role in its sustainability because whatever Technology is being adopted and implemented it is the Human who will be responsible to run these technologies in its day to day application. Though Robotics and Artificial Intelligence is making its dent very slowly and progressively into every arena but still the robots will also

dependent in its day to day functions and maintenance works on the Human Brains. What we can see in the Motor Car Industries which are very much dependent on Robotics and AI on its manufacturing system but still the Human Mind and Brain can never be superseded and hence the all-encompassing importance of Human Resource Management in any business for maintaining sustainability in the long run.

Behind the rosy picture of Digitization in HR management we have also faced and come acrossed the grey areas of hacking, data leaking by compromising the Privacy of the Individuals even from the much acclaimed platforms like Facebook e.g; The US Government, India Government etc have many times criticized the Facebook for data leakage and biasness during the Election and/or for and against Government campaigning's.

The large scale data piracy leading to large scale bank account hackings, banking frauds, frauds online digital accounts and Cyber Crimes have rocked the entire world with much worry and surprise. The darker side of the Digital Technology is also a matter of large concern. The Digital frauds and Cyber Crimes are the largest Crimes now a day which remains outside the reach of the even most efficient Police forces in any Metropolitan Cities. The Cyber Crimes are being operated cutting across the International boundaries and thus eating away the fruits of the much acclaimed Digital Technology and the Virtual World.

The Virtual World and the Digital Technology should be applied with much care and caution and should be outside in a very calculative way from the reach of the children otherwise it may create havoc. Many a times we have come across the news that a child of tender years have posted some unwanted materials on his / her father's or mother's facebook account

and landed in trouble. Many a times the innocent semi computer/ Tech literate have been the pray of the ATM fraudsters by divulging the secrets of their passwords and ids to these cunning hackers who are high-tech Savvy.

**(E) Conclusion ----- Role Of Digital Technology In Industrial Relations And Workers Education-**

The Industrial Relations Scenario have improved a lot by the application of Digital Technology. It is being applied in P.F deduction and payment to the PF accounts through online portals of EPFO, ESI deduction and payment through the portals of ESIC, Minimum Wage Payments through ECS mode have resulted into very less exploitation of the workers. The transparency in the Financial transaction and Wage and Salary Administration have improved considerably.

As an Ex-Education Officer of Central Board of Workers Education (presently renamed as Dattapanth Thengade National Board For Workers Education and Development) under the Ministry of Labour and Employment , Govt. of India I have felt the need to generate awareness among the workers of all classes about the uses and abuses of Digital Technology in our everyday life. The Quality of Life of the Workers and their families now-a-days are very much dependent upon the wise use of Digital Technology.

Even at present while working as a Manager HR and Legal in a reputed Kolkata based CPSU Under Ministry of Defence, Government of India I have seen and realized that the workers from all classes be it a permanent workers, a contract worker, a clerk , Manager, Supervisor or an Officer everyone needs trainings on more and more usage of Digital Technology . Because the rapid ever-changing use of Digital Technology

Driven Industry can only survive by faster adaptation of the Technology by all segment of Workers for the purpose of its sustainability.

We can conclude the above study by deciding to use apply and more and more Digital Technology in the day to day business for the purpose of Long term growth and sustainability of the business but with a note of caution that every Technology has its uses and abuses. The darker side of the Technology i.e, the Data Security should also be taken care of while its implementation and day to day uses.

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## Business Sustainability and HR Technology – The Curve of Transformation

**Mr. Siddhesh Jadhav**  
Asst. Manager, HR-IR,  
Bharat Forge Ltd

**Mr. Nirvikar Hingane**  
HR Partner,  
Bharat Forge Ltd.

**Mr. Parth Jadhav**  
HR Partner,  
Bharat Forge Ltd.

**Abstract**— Human Resource Management has come a long way with changes in methodologies and work approach. The HR has been contributing to the business through its analytical transformation of traditional processes. The changes which have been made or occurred are always been tangible and intangible but in a measureable way. The trend and the path of the change is been very tough, challenging and complex. The HR field has been working and adapting to the current technologies such as IOT, AI and Cloud computing for better efficiency & consistency of HR function to enhance business & sustain for the future in present competitive advantage. This study will lead to analytical approach towards the use of technologies and best HR Practices in HR which can be adapted by industries for flawless and efficient operation of HR functions to achieve the end goal of business sustainability and overcoming the disruption in business by being adaptable to survive. This study will also focus on effective use of talent through various development methods, which will bring in efficiency in Performance Management system. With the intervention of technology, Collecting and analysing data with support of Artificial Intelligence, Cloud Computing will support managerial decisions (Short and Long term) impacting efficiency of human being in positive way.

**Keywords** - Human Resources, Business sustainability, HR technologies, HRMS, Artificial intelligence, AI, IOT, Cloud Computing, PMS.

### I. INTRODUCTION

Over the time it is been observed at HR been the most vital specimen of the business to sustain in the difficult times. HR professionals and HR department as always been working on enhancing their own skill set their competencies and their task. To make business ready for future HR itself has gone through change which was very curvaceous and full of ups and downs. HR is been the most important and inseparable part in adapting the change which is technological and mythological is well. It has been observed the methods or the processes which were very hectic and tedious in nature are now being done by the optimisation of processes on digital platform. We conducted this research to understand this change of HR professionals and HR processes from the conventional HR functions to digitisation of HR functions.

### II. RESEARCH METHODOLOGY

Qualitative and Quantities research methods are used to drive this article. The Questionnaire was designed to drive analytics which were used to interpret the details. The Survey consisted of various questions to introspect details such as the industry of operation, Up Skilling, Competency Level, effectively and productivity, dependency on technology, Cross functional Reliability and Business Sustainability.

Total Responses received were 30 and the questionnaire was designed to get better understanding of technological impact on Human resource function for business sustainability. The responses then were plotted into excel sheet and graphs for better understanding and interpretation of

statics”.

### III. LITERATURE REVIEW

2020 turned out to be a much unplanned year for every professional. It challenged the HR professionals to think on new possibilities and cross the known boundaries. But to ease this challenge technology played a major role. HR professional will have to focus on some key areas which are:

**Artificial Intelligence in HR:** AI- powered HR tools will be very helpful in analytics, which will help in intelligent decisions backed up by the know data. Example: AI power recruitment tool can be programmed in such a way that it only screens the candidates according to our requirements for a particular position instead of us checking the requirements and then shortlisting the candidates. Also, it can be used to do a bias-free screening so that it screens the candidates no matter what gender, age, and location of the candidate.

**Virtual Workplaces:** Due to the pandemic situation most organisation have shifted from physical workplaces to WFH setup, and this will continue in future. HR professional with the business partners have already invested in the right tools for communication and engagement for employees. The adoption of tools is necessary for increasing the productivity and amplifying the growth. This is what contributed significantly to make the WFH concept a big success. HR professionals will have to continue focus and development on these things to foster productivity in future.

**Engagement of the Gig Employees:** Mostly organisations are a mix of full-time employees, free-lancers, fixed term employees, contractors, free-lancers to fulfil business needs. HR professionals will have to invest in right set of engagement tools, to bring these diverse types of employees on single platform.

**Redesign employee experience:** Redesigning employee experience with the new work environment will be the need of every HR practitioner. For Example: In performance management, technology can integrate real-time and continuous feedback with throwing insights into oversight performance, management behaviours and provide recommendations to coach employees and leaders in right direction.

**Training and Development:** Complete change is required for training and development module. While classroom training is been shifted to virtual training. Virtual training should always be direct and to the point to engage learners and keep their attention is new challenge.

**Nurturing culture:** While some organisation is known for their culture, but culture is also vulnerable in times of crisis. Unfortunately, culture is not possible to be automated there is no technology that can enhance organizational culture. Employee engagement, effective and constant communication by leadership are the only tools that will work. Workers will always want lip service even when they are working remotely and this will be remembered after the crisis passes away.

### IV. ANALYSIS

To understand the leaning of technology change in period of pandemic covid-19 (Pre and Post). A landmark survey was conducted by Gartner Digital 2020 survey where of the total respondent around 65% respondent concluded that the millennials are more involved into the digital workplace concepts. Technology in HR is still evolving to reach the highest peak of digital future. Pandemic has helped organisation to make the manpower work remotely from any location. Also, the entire scenario of people management, T&D and employee engagement is following the curve of change.



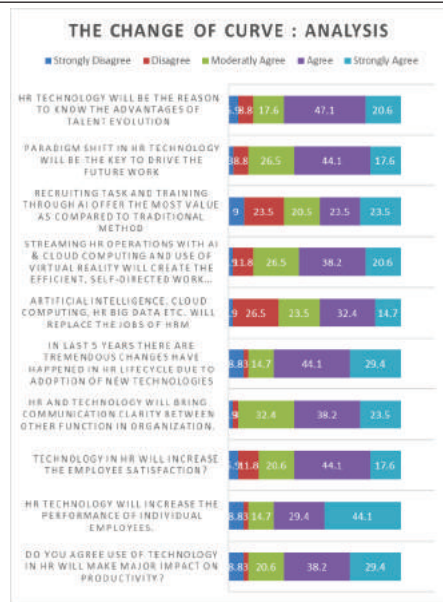
Technology	Pre Covid - 19 (more than 75% tech-enabled)	Covid-19 (more than 75% tech-enabled)	Post Covid-19 (more than 75% tech-enabled)
L&D	20%	48%	59%
EMPLOYEE ENGAGEMENT	11%	40%	40%
C&B	20%	40%	52%
R&R	13%	30%	41%
EMPLOYEE BRANDING	15%	36%	44%
COMMUNICATON & COLABRATION	21%	48%	52%
WELLNESS	16%	32%	35%

The above table shows the fact that the emphasis of HR Departments on respective technological heads and its change from Pre-Covid to Post-Covid.

It is seen that the shift on technology of HR fraternity is on a very positive side.

To understand more about the above survey and the curve of change occurred due to present and future technological advancement/ digitization and its relation with HR. We conducted a survey among HR Professionals across all type of Industries.

The survey emphasised on linear shift of HR Professional on technology being updated on regular changes. The questions were framed in a way to understand the shift of traditional practices and operations to see how gradually the HR Professionals are willing to adopting the technology enhancements in terms of talent acquisition, Training and Development, Rewards and recognition, compensation management, HR operations, employee engagement and all verticals of HR.



Based on the responses received on the survey circulated among the HR Professionals, we have come to following analysis;

1. HR professionals will have to use technology to evolve talent.
2. The change in HR professionals relating to technology will be depicted by following curve
3. Productivity and Technology will go hand in hand i.e. they will be parallelly proportional to each other.
4. HR Professionals will have to take help from technology advancements to improve clarity and transparency within the organisations.
5. The roots of HR operations which are confidentiality, availability and integrity should be strengthened by the use of technology in efficient manner.

## V. FINDINGS AND CONCLUSION

HR professionals will have to focus on some basic principles and contributions to maintain business sustainability:

a. **Increase in Personalization:** Personalization refers towards leaders treating individuals differently based on personal traits and circumstances which additional focus on emotional and empathic responses to individual needs.

b. **Redefining values:** In future, Work is going to be more defined by values than physical places. Employees who are work places will be shifted to statements like employees who create value for customers are “at work”.

c. **Harnessing uncertainty:** While everyone in organisation want certainty, the recent crises remind us that we need to learn not just to tolerate but also harness uncertainty.

d. **Delivering individual talent needs:** Employees will continue to be key ingredients of any organization. More focus on soft skills (Goal setting, engaging people, respecting difference) and attention to employee experience

e. **Reinvent organisation capability:** HR and business leaders will be charged to map the organization capability with existing circumstances. Organization capabilities have more impact on business results than individual competencies.

f. **Creating better leadership:** Leadership should be present at all level of organisation, which will create right sets of skills and value to bring customer demands for business sustainability.

g. **Build right HR Competencies:** 2021 will require HR Professional to have emerging skills in separating signal from noise, creating valid information from large sets of available data and offer anticipatory solutions.

h. **Organization guidance system:** Given the evolution of information (analytics) and technology (digital), it is now time to provide organizational guidance system to move talent, leadership, capability and HR initiatives from bring descriptive to prescriptive.

i. **Reality to Virtual Reality:** The normal routine operations of HR professionals

should be replaced by efficient HRMS software which will bring in increase of productivity of employees to focus on business sustainability.

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## Sustainable Business Driven Through Digitally Transformed Human Resource

**Mr. Mukund Sharma**  
Manager- Human Resource  
Saarloha Advanced Materials  
Pvt Ltd.Pune, India.

**Ms. Dipika Patil**  
Customer Success Manager,  
THORS India Pvt. Ltd,  
Pune, India.

**Mr. Sushilkumar Warkar**  
Asst. Manager - H. R.  
Bharat Forge Limited,  
Pune, India.

### ABSTRACT:

Since past many decades we have seen Technology transforming entire mankind. Technology has entered in every aspect of human life and hence it has also affected the way how business operates. Human Resource has always thrived on developing talent managing lifecycle of employees by nurturing it to achieve continued business growth. In today's world, where we all are constantly connected virtually or directly and the data which is being produced at a rate of 2.5 quintillion bytes each day, modern HR systems/ solutions rely more on automation, analytics and predictive capabilities. Hence, competent human resource of the organisation has become an important key to unlock the mystery of business success and Human Resource function has become a key maker to this locker. The sustainability of any business depends on the talent pool which organisation beholds. Technology has increased 10 folds in last decade and the competency level has pitched with the same rate. Talent can only sustain if they are aware and can use technology at right time and at the right place and so is the case with Business. The talent defines business and so is vice-versa.

Achieving continuous Business Sustainability in the current era would only be possible if they have technocrats besides them who are well informed about latest technologies such as Artificial Intelligence, Machine Learning, Data Mining/Analytics, Mobile Technology etc., and are also capable of applying these technologies at their workplace making decisions that drive better business and people outcomes. Evolvement and

involvement of Technology in our day to day life has helped to enhance multitasking capability of humans and has made humans multi-skilled. The geographic location is no more a barrier to source and retain a resource but actually serves as a stepping stone towards business sustainability.

Our research is based on Technology and its impact on various sectors such as Information Technology, Manufacturing, Automobile, Banking etc. keeping human resource as our prime focus. How the digital transformation has impacted Man, Machine, Method and Money. How the aspects of DT have become boon from Rookie to Veterans. To analyse the concept and proclaim business development or sustenance.

### KEYWORDS:

Artificial intelligence, Co-working places, Competency, Sustainability, Data Mining, Mobile Technology.

### INTRODUCTION:

Digital Technology (DT) has proved as a blessing to mankind since the era of Third Industrial Revolution. Now a days we are surrounded with technology preliminary from our homes, vehicles and even our workplaces. There is no place where Digital Technology has not made its mark in human life as well as in organisations.

Human Resource as a profession and Human resource employed in the organisation has also not been an exception with regard to evolvement and involvement where Digital Technology is concerned. Technology has impacted all sectors including Information Technology, Manufacturing, Oil & Natural Gas,

Defence, Aerospace, Aviation, Banking, Pharma etc. also processes in every function irrespective of industry/sector has undergone a gradual transformation with the usage of technology thereby replacing manual interventions with automated systems.

Now a days Data Processing, Data Analytics, Artificial Intelligence and Mobile Technologies have been a centre point of industrial needs. The competency framework has also changed demanding evolved model of competencies both in terms of Behavioural and Technical competencies.

Automating and digitising business processes has helped to make job easier to considerable extent but has also increased the skill level requirement of human resource employed in the organisation. There has been substantial impact on efficiency and performance level of individual.

Automated business processes have led to reduction in time, resources and efforts needed to perform a task, thus Digital Technology has provided a 3600 Degree approach for organisations to accomplish their growth and sustenance goals.

The real time impact of technology was observed during the Pandemic Situation of COVID-19. Although digital/ virtual mode was very much of usage in other sectors compared to manufacturing sector even before this pandemic.

When all of a sudden everything was shifted to digital/ virtual mode replacing physical day to day collaborations. Now with this research, we have made an attempt to study the role of digitally equipped and transformed Human Resource in achieving sustainable business growth. We have taken into consideration responses from human resource working in various Industries such as IT, manufacturing, pharmaceuticals, and Banking.

## LITERATURE REVIEW:

The incursion of digital technology has transformed human resources by making them agile and giving them freedom to make considerable impact on Organisation's culture. HR has gained in terms of reduced IT costs, scalability, improved productivity and business growth, transparency in communication and improved collaboration with the inclusion of cloud-based systems in their processes. Latest technologies such as Block chain can be used to automate the verification and validation flow of workforce employed in the organisation. (THE IMPACT IF TECHNOLOGY ON HR by Tam Recruiting dt. Aug 7,2018). Evolution in technology has given us new ways for communication, data storage and analysis making all HR processes data driven, systematic and accurate. It is a arguable point that whether Whatever is only possess by humans will now be coup by Artificial Intelligence or are there many roles which only a human being can perform. However, to have competitive edge in VUCA business environment, it is better to include and adapt to new technologies which will make employees aware about technological advancements and make them future ready. As per one of the McKinsey's forecast on machine learning by 2030, Artificial Intelligence will really have a substantial impact on the global economy of \$13 trillion. Inclusion of AI in HR processes such as Talent acquisition can help to reduce hiring time significantly, in On boarding new employees can be oriented about company by using AI integrated system, in Learning and Development AI can evaluate employees' current skill level and recommend customised learning path accordingly. In future AI-aided systems will also be observe and analyse employee behaviour. This behavioural data of employee behaviour will help the employers to take right decision and avoid disputing situation in advance.

AI integrated systems will also help team leaders to determine a customized coaching module. (“THE IMPACT OF ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCE DECISION-MAKING PROCESSES” by Khalid Durrani dt. Jan 06, 2020). Human Resource leaders need to understand the Data Generation process and stages of Machine Learning in AI Life Cycle. The integration of generated HR data with financial data and business will enable an HR to quantify its contribution to company’s profits in monetary terms. There are many tasks in HR which are manual and repetitive, with involvement of AI such tasks can be automated and HR professional will have more time to focus on value creating tasks such as strategizing, innovation, team and leadership development, conflict management and emotional intelligence. Though Artificial Intelligence I has got many benefits for HR in future, however integration of AI in HR systems have many challenges

1. Having quality organised data and integrating all this employee data into the system is a time-consuming process,
2. Data security
3. We cannot be sure that results generated by AI 100% accurate but can help to eliminate/reduce human errors and bring more objectivity to entire process.

Despite of these challenges posed by AI, many of the industries are trying to integrate a solution along with combination of AI in HR systems as the benefits these AI systems offer are numerous. (“INTEGRATION OF AI IN HR” by Ginu George, and Mary Rani Thomas dt. Dec 2019). Organizations can become better and more productivity by integrating AI systems into HR processes because these systems can diagnose, analyse and predict, and can provide substantial data for better decision making to HR teams. No. of employees currently accessing AI based systems has soared from 32% in 2018 to 50%. Almost majority of the workforce i.e. 65%

has adapted this technological change positively. They are excited and grateful relationship towards robots or AI systems they are using which has helped them perform their task more efficiently.

Advancements in Artificial Intelligence and Machine Learning are rapidly reaching every industry resulting into gigantic shift human interaction at the workplace. The relation between the machines and humans is now resulting into collaborative work efforts. These efforts are resulting into interdependent systems, which are relatively efficient and effective. There is no standard way to adapt and implement these new technologies successfully. The technologies will execute as per the expectations if the organisation make a collaborative efforts along with effective Human Resource practices. (“WAYS AI IS REINVENTING HUMAN RESOURCES” by Dom Nicastro dt. May18,2020).

#### **OBJECTIVE:**

Given below objective for the subject matter is;

1. To analyse how human resources with time have evolved digitally thereby nurturing the business for its growth and making it sustainable.
2. To analyse how digital HR use has kept the goals of Organization working as “A goal is what drives employees, and the employees drive business performance”
3. To determine how much digital transformation has impacted Man, Machine, Method and Money making impact on various functions across organisation.

#### **HYPOTHESIS:**

1. Digital transformation is a boon if used effectively.
2. Up skilling of employees is must for sustained business growth.

**RESEARCH METHODOLOGY:**

This research is a combination of qualitative and quantitative research using primary and secondary data sources.

Our primary data comprises of responses collected using convenience sampling from employees working in different functions (operations, training, design etc.) and across different industrial sectors (Manufacturing, IT, banking etc) with the help of a questionnaire.

The Questionnaire majorly focused on various aspects through which technology and human resource are interlinked in various aspects such as up skilling the employees, support of the management towards use of technology, efficiency in performance due to use of digital technology, collaborative working place and importance of technology in other business functions making it sustainable.

Secondary data for the research work was obtained from various research articles, journals, research papers and personal industrial experience over many years.

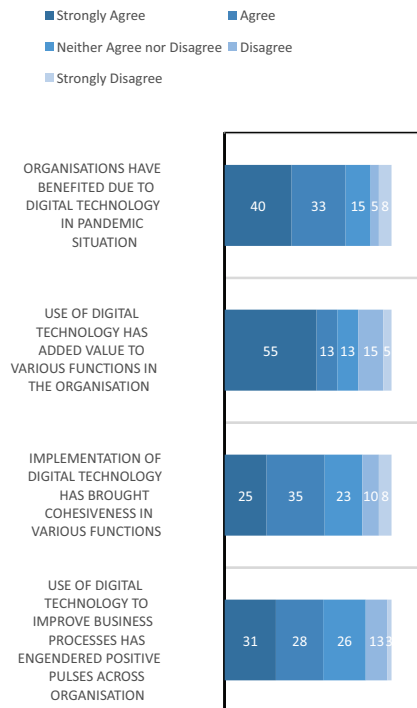
**DATA ANALYSIS AND RESULTS:**

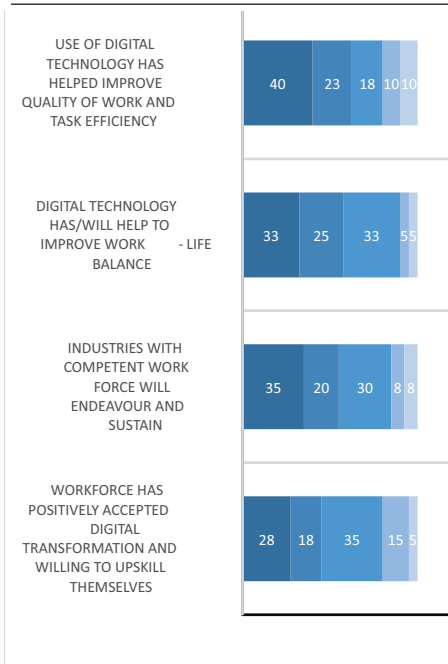
Majority of the workforce working in the industries are Gen Y or Millennials who feel Human Resources working in the organisation are highly impacted by use of technology at workplace.

Digital technology has been executed across all functions – operations (production, design, maintenance, quality etc.), support functions (HR, Legal and Sales/Marketing) and Finance/ Costing for automating manual tasks. All Human resource verticals - Talent acquisition, Learning and Development, Performance Management, Compliance, and Industrial relations have been benefited significantly by inclusion of Digital technology. 73% of industry employees agree that use of digital technology at workplace has helped organisations in the current COVID-situation in terms of timely communication and continual of workflow.68% of employees agree that digitisation of processes has added value to

various functions in the organisation and also 60% employees agree that it has brought cohesiveness amongst various functions.59% of employees are of the opinion that use of digital technologies like AI and machine learning to improve business processes have stimulated positive pulses across organisations. 53% employees agree that use of digital technology such as AI integrated systems have helped to improve quality of work and efficiency. Whereas 53% employees also feel that it has helped to improve work-life balance.55% employees have responded that industries with competent workforce will be able to achieve sustained growth. 46% agree that employees in their organisation have accepted this technological shift positively and are willing to upskill themselves.

ANALYSIS GRAPH





where most of the business functions can be traced. Utilitarian needs to make move with its skilled workforce and expand its business activities. Paramount is supreme condition where the organisation has competent workforce and also can sustain making it the strongest and most capable.

**CONCLUSIONS AND FINDINGS:**

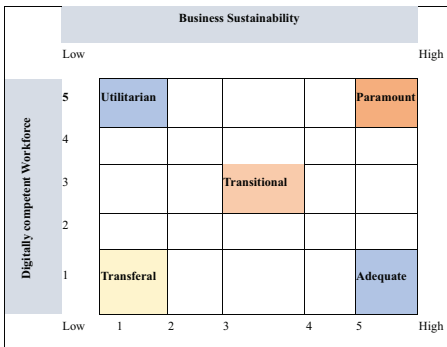
Use of digital technology has helped human resource as a whole and also organisations to do their work efficiently in routine days as well as during pandemic situation.

Employees working in various functions agree that use of digital technology has helped to automate manual processes thereby inferring the need for up skilling.

Digital technology has provided better channels/platforms for bridging communication gaps and bringing in transparency in the entire system (organisation). Basically, it is the culture of the Organization which plays an inductive role for everyone to adapt these changes positively and develop as per the time considering it as an opportunity to create better future.

**PROPOSED FRAMEWORK:**

Understanding the need of business and technological transformation it is proposed to have proficient workforce to sustain business. We are proposing a framework for sustainable business.



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The Framework has five core dimensions Transferal, Utilitarian, Adequate, Transitional and Paramount. The Transferal needs to change and up skill its workforce. The Adequate can sustain but has thin line and hence needs to work more on up skilling of employees. Transitional is

## Industry 5.0 – High Touch and High Tech HR Function for Business Sustainability

**Mr. Ramesh Srinivasan**

Asst. Director –

Graduate School of Coaching

Coaching Foundation India (P) Limited

**Abstract** - The purpose of this paper is to present the transformation of HR over a period of time and how it is geared up to don the new mantle of being High Touch as well as High Tech function without diluting its core spirit and functionality in Industry 5.0 era.

**Approach** – Starting with the overall impact of technology in business in general and how it impacted the HR function in particular, the paper goes on to talk about how HR function has evolved over a period of time in the past by embracing technology and how it is poised to take this rapid technological advancement in its stride for business sustainability in Industry 5.0 era. The author also highlights challenges associated with this and the possible areas to lookout to surge ahead smoothly. This paper is based on the secondary data available from various reliable sources. In addition, the author interviewed business leaders / HR Heads for their inputs.

**Outcome** – The author objectively concludes that HR function has always strived and thrived against all odds and continued to make business impact for good.

**Keywords** — Technology ; Business Sustainability ; HR ; Industry 5.0 ; Development

### INTRODUCTION

"Change before you have to" said Jack Welch, advocating to seek and embrace change at our will, before allowing change to embrace and overpower us.

As organizations constantly keep working

towards change and consistently question the status-quo, one challenge they often face is in terms of equipping their employees and other stakeholders to leverage the technology associated with the change, to its advantage. Constant and dynamic change in the long run, without having time for maintaining stability to reap the benefits of change, poses obvious behavioural challenges to employees.

Businesses are often caught in this paradox of keeping the “change” wheel ticking, while at the same time upkeeping the momentum and motivation of its employees to deliver superior performance.

Hence, the role of Human Resource function assumed a larger business significance – from being seen as an “administrative” function to being a “strategic” function to support the organization in enhancing its competitive advantage consistently by reskilling / upskilling their people for both technical skills and behavioural competencies.

It became imperative for Human Resource function also to constantly reskill / upskill itself – to catch up with the technological advancements impacting the businesses they are in as well as the technological advancements in HR function to enhance its own productivity.

This paper attempts to document the transformational journey of Human Resource function over a period of various industrial changes in the past and how it is poised to hold its fort in the Industry 5.0 era.



## II. EVOLUTION OF INDUSTRY

As we look back at the various phases of evolution of Industry, one would be amazed to see how the time span of evolution between each phases is shrinking dramatically. The first phase of industrialization (Industry 1.0) that happened around 1780 CE saw mechanization, steam power and water power getting deployed for industrial use for the first time. This augmented production to a great extent. Towards the start of 20th century (around 1900 CE), we saw Industry 2.0, in which electricity was used as one of the major inputs for production. Mass production and assembly line concepts were conceived and implemented during this phase. Around 1970 CE (Industry 3.0), computers were put to use and this enhanced the human productivity to a great extent. Then came Industry 4.0 (around 2000 CE), which saw IOT, Cloud Computing, AI, Virtual Reality (VR), 3D Printing, etc., used predominantly in businesses.

Whether we like it or not, whether we expected it or not, we are already in Industry 5.0 and this brings us to the era of mass personalization and cyber physical cognitive systems like Augmented Reality (AR). It involves interaction of human intelligence and cognitive computing. AI would be taken to the next level, where computers (Robots) assume human-like capabilities and the interface between man and machine is going to be intense than ever before.

The time span between the various industrial revolutions can be explained pictorially as :



One thing that was common across all the phases was that there was always a hue and cry about ‘human job losses’ and ‘safety hazards’, which were proved to be unfounded at best and exaggerated at worst.

These phases provided a golden opportunity for people to reskill / upskill and enhance productivity, rather than undermining people power. In fact, the role of human beings got more and more relevant with each phase of industrialization and those who understood this reality and reskilled / upskilled themselves emerged winners.

Human Resource function evolved with these phases and transformed itself / businesses for good.

## III. EVOLUTION OF HUMAN RESOURCE FUNCTION

Need for a separate department to handle people related matters was felt predominantly after WW I from 1920s. The requirement at the time was mostly to take care of the working conditions and safety of the employees and it was more welfare oriented. This slowly morphed into a Personnel function from 1950s, when there were legislations in place to guide the working conditions, payments and resolution of industrial disputes. Strict mechanisms were put in place to monitor the health and safety of employees, their attendance and establishment of cordial working relations. Employees were no more treated as “utility”, rather seen as an effective partner in the growth and development of the organization for mutual benefit. With the advent of Industry 3.0 from 1970s, computers were put into use to enhance the productivity and quality of the work. This advancement once again came along with a perceived “threat” of job loss. As mentioned earlier, the “threat” of job loss and safety hazard to human being was perceived in every industrial

advancement and technological progress and proved to be false. However, this “threat” perception gained more strength during Industry 3.0, as computers were seen to be a “replacement” for people. This posed a new challenge to Personnel function and brought in an additional angle of “Development” to its portfolio. Organizations started to re-look at their employees as a valuable resource and commenced investment on their development to meet the demands of the new world order called “computerisation”. In addition to recruiting and maintaining payroll / safety aspects, Personnel function got into action and equipped itself with the tools / techniques / skills to upgrade self as well as upgrade employees for survival and growth. Personnel Management function got re-christened as Human Resource Development function, representing a change in its scope to strategically focus on overall organizational effectiveness.

In India, the 2 doyens of management, Dr.T.V.Rao and Dr.Udai Pareek pioneered this initiative and gave the necessary impetus for this change.



As the Industry 4.0 dawned upon us alongwith the new millennium around

2000 CE, the scope of HRD function got further enlarged. Human talent became a focal point to sustain and enhance the competitiveness of the organization in the new era of LPG (Liberalisation, Privatisation and Globalisation), Automation, Cloud Computing, Big Data, Analytics & IOT. The corporate war was to attract and retain talent. Talent replaced Finance as the single largest factor of competitive advantage of any organization.

The role of HRD transformed into HRM to denote the importance of contribution of the function in organization's success. The scope of the function enlarged further to not only to take care of the development of people, but support organizational effectiveness in various other aspects, viz., employer branding, talent pipeline, succession planning, performance management, Total Rewards Management, Employee Value Proposition, etc.

Here again, HR function swung into action and rapidly upskilled / re-skilled itself as well as enabled the employees to rise alongwith the tide for overall organization effectiveness.

#### IV. INDUSTRY 5.0 & HR FUNCTION

Many organizations have come to terms with the changes ushered in by the Industry 4.0 and appeared to be in sync with it now, while a few are still in the process of getting accustomed to Industry 4.0. But, the next phase of industrialisation (5.0) is already thrust on all of us. Though Industry 5.0 was talked about for the past couple of years, it was expected that organizations would have time to equip and embrace the new phase.

But the Chinese Corona Virus has advanced the change abruptly atleast by couple of years. This came as a rude shock to many organizations, particularly who wished a longer gestation period for

transition to 5.0.

However, it has become a reality now. The organizations who understand this reality and conceive their strategies in line with this change would emerge winner in the long run.

For HR, this change has posed challenges in different domains including Talent Acquisition, Learning & Development, Employee Engagement, Performance Management and Total Rewards Management.

As regards Talent Acquisition, this has widened the net for fishing the talent, cutting across geographies. Organizations can flexibly hire and engage with the talent across regions / cultures / time-zones / gender. Mobility and Diversity are the 2 distinct advantages for HR in this era. Where the work gets done would no more be relevant, rather, how the work gets done would matter. The employee is also not required to get bound to a particular organization forever. Gig workforce model to get intensified. 'Capability' to replace 'Job' in the organizations.

Deloitte, in its report, "The rise of the Social Enterprise – Human Capital trends 2018" predicted the movement of the workforce model from being Traditional (organization led) to being Open (employee led), which has almost come true now.



<https://www2.deloitte.com/content/dam/Deloitte/at/Documents/human-capital/at-2018-deloitte-human-capital-trends.pdf>

One of the senior HR leaders, shared on the condition of anonymity that though this employment model has its inherent merits

of flexibility, cost benefit, productivity, etc., it has its own demerits. According to him, confidentiality will be a big question mark as things are getting done outside the physical / virtual space of the organisation. HR need to upgrade its technology to monitor and safeguard the interest of the organization and protect it from issues arising out of propriety and IPR.

In many IT industries, "Talent Aggregators" would lose their relevance in the organizations and "Talent Holders" would be desired. Here, the term "Talent Aggregators" would mean to define a senior leader, who would aggregate talent of his / her team and deliver customer requirements. Rather, organizations would like to do away with such talent aggregators and deal directly with the talent holders for agility as well as for cost benefit.

A few of the IT industry experts spoken to are of the view that the demand for "Full Stack Developers" would be on the rise. "Full Stack Developers" are the ones who would be able to handle Front-End, Back-End, Web development, application development and software development technologies at different levels. "It will help them cut through the clutter and be ahead of others from the very first step that they take in the industry" claims NIIT.

Learning & Development function can no more have the luxury of having pre-identified training needs and execute the training plan over a period of a year or so. It may still be relevant for certain generic technical and behavioural skills, however, for the skills required to meet the rapid business needs (called as "micro-credentials"), L&D need to closely align to the business to anticipate and understand the talent needs for development. The talent requirement and the time availability to address the talent gap through training programmes would

would become shorter. L&D function need to keep itself updated, both on the technological advancement in its domain as well as on the technological advancement happening in the organization's business space to anticipate and be prepared to upskill / re-skill their employees in short notice / quick turnaround time. Several High Touch Leadership development initiatives are getting done online successfully and it is important for L&D to be aware of such developments and customise those for their organization requirements.

As regards policies and procedures, HR need to be ready for mass personalization to suit the particular group of talent even within a geographical location or business vertical. The days of "One Company One Policy" may not be relevant and HR need to have the flexibility of personalising its policies and procedures to suit business needs (i.e., talent needs).

The companies who have already invested or would be investing in the Information Technology infrastructure now would be at an advantage to handle the situation better. Dr C Jayakumar, Vice President & Head – Corporate HR of L&T says, "HR need to quickly ensure that they have an integrated IT system in place to be responsive to the dynamic business needs. Process orientation and process discipline are the two important aspects, which HR need to focus to successfully sail through 5.0 era and also achieve organization objectives."

According to Shri Vasanth Kumar, Mentor & Leadership Coach (Former Managing Director of Lifestyle International Private Limited), HR always played a pivotal role in his former organization's growth trajectory, particularly considering that the organization is highly people intense and customer experience would get complemented by the service he / she receives in the showroom during the visit.

Lifestyle International has been getting recognised among one of 100 "Best Companies to Work For" by Great Place to Work® (among India's 10 Best Workplaces in Retail) for few years consistently now. People productivity was always one of the major aspects in the KRA of his HR team. "Competency building and Digital engagement are the aspects which HR need to focus on to ensure employee motivation and engagement are kept high" according to him.

The investments done in the various infrastructure like canteen, SPA, gym, etc., towards employee welfare by the organization are being re-looked now for its relevance and decisions are taken pragmatically. Total Rewards Management system is undergoing a drastic change. Employee incentives and perks are being revisited to address the current needs. For example, many companies are now considering financial support to employees to maintain and upkeep of office space / furniture / broadband internet at their residence, rather than offering financial support for purchase of vehicles.

Shri Bharathan Prahalad, AVP – HR of FSS opines, "Employer Value Proposition has enhanced due to this change and organizations get exposed to multi-cultural work environment without having to physically travel. The advent of pandemic and the resultant changes in the way work is getting done has undergone a tectonic shift and I see this as an opportunity rather than the challenge".

While some of the financially sound organizations have withstood this wave, the same is the not the case with SMEs. However, some of the SMEs with agile leadership, struck partnerships with their OEMs for investment and business continuity. Shri R Ramkumar, Co-Founder

f Business Clinique says, “As we work with many SMEs, we come across CEOs, who are optimistic and daring. They took this challenge to their stride and ensured not only their Business Sustainability, but also growth during these tough times. Emotional well-being of employees and building resilience would be the centre-stage of HR focus in the days to come, for which they need to be resilient and equip themselves with suitable behavioural competencies”.

Shri Israel Inbaraj, GM – HR of TCS feels that HR fraternity need to focus on upskilling / re-skilling themselves before attempting to develop others. He would like the curriculum of B-Schools that offer HRM / MSW specialisation to be revisited and upgraded to suit current / future business needs. “Other than a few premier institutions, many educational institutions are still grappling with the need to meet their short-term requirement of delivering the given curriculum and ensuring good footfalls by the organizations for campus recruitment”. He is of the opinion that professional bodies should think beyond the objective of ‘networking & knowledge sharing among members’ and extend support to educational institutions in upgrading their curriculum to suit industry needs. He being a National Board Member of NHRDN, says that they have taken initiative towards this and hope to have positive results in the years to come.

## V. CONCLUSION

“You cannot change your destination overnight, but you can change your direction overnight” says Jim Rohn. This has almost become an imperative for HR function in today’s “new normal”, where it is bestowed with the responsibility of not only to keep changing its own direction, but also to keep changing the organization direction. The oft-repeated “HR’s alignment to Business” has gained more significance now than ever before. It is no more “nice to have” option for HR to align with the business objectives, but has become “must have” need.

Competition is not only from the existing players, but from unexpected quarters. One would not have imagined a few months back that Asian Paints would be in Sanitizer business, but today they are in, competing with pharma / personal care companies. “Asian Paints has entered into this category to support the Government in its various measures towards Covid-19 relief and address the huge need of hand and surface sanitization in these testing times,” a statement from the company read (The Economic Times, May 1, 2020).

<https://economictimes.indiatimes.com/industry/cons-products/paints/asian-paints-to-make-hand-sanitisers/articleshow/75486849.cms?from=mdr>

In the words of Dr TV Rao, “All successful leaders are considered successful, when they build others to a level where they are not needed. Same way, HR department need to function so well that it brings itself to a level where it is not needed. That means every person takes charge of his / her own learnings and that is the time when we can say HR has become very successful and there is no need for HR department to tell people that you learn. HR professionals should work towards this great goal of self-dispensing”.

An ideal goal for all us in HR to ponder and work towards.

## VI. ACKNOWLEDGEMENTS

1. Shri Vasanth Kumar, Mentor & Leadership Coach and Former MD, Lifestyle International Private Limited
2. Shri R Ramkumar, Co-Founder, Business Clinique
3. Dr C Jayakumar, Vice President & Head – Corporate HR, L&T
4. Shri Bharathan Prahalad, AVP – HR, FSS
5. Shri Israel Inbaraj, GM – HR, TCS
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## Micros & Macros; An Economic Outlook on 2020 and the future ahead

Mr. Rishabh Patrawala,  
Graduate Mumbai University

**Abstract-** Micros & Macros; the economic outlook paper sheds light on the global economy and the plight it currently faces. Both from a Microeconomic as well as a Macroeconomic perspective. The center stage being given to the Coronavirus Pandemic and how it has maimed the world economy. Further enumerating what reforms should be in place to curb further haemorrhage. Stressing also on how we must align our present economic foundations with 21st century way of life. New modifications that should be in play and their merits. Ensuring a structural plan is in place that equips us perfectly to face the next crisis. A plan which becomes a guardian of the global economy and protects the interests of the public, helps in policy making and economic growth.

**Keywords—** Macroeconomics, Microeconomics, Artificial Intelligence, Machine Learning, Block-chain

### I. Introduction

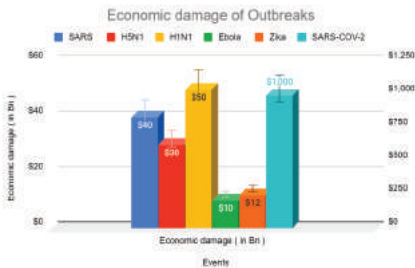
Scientific theory and public policy both have been put to the sword, left on the hangman's noose to await judgement. Being areas of widespread importance for general systems to function, they have been left rattled and battered. Scientific understanding on the intricate world of deadly organisms has been under severe scrutiny and so are public policy systems worldwide. Since every nation has been left crippled and their economy pushed back to regress, reeling from the current pandemic. The world faces a tumultuous task ahead, as the onset of the coronavirus has made nationwide systems to cease and daily life to be made stagnant. It has

brought new light on disease control and management, an area that certainly needs further improvement and rectification. A pressing issue it has made us realize is that in such an environment, the need for a well-crafted damage control plan becomes of paramount importance. Furthermore, it will become pivotal to understand what will be the micro and macro implications of this event on domestic and the international economy. Our current economic understanding stands on the crossroads of change. For global events have sparked a fire that maybe the calling for the old order to be cleansed and a new one to rise like a phoenix from its ashes. The economic structures in each country are balanced on a certain foundation on how to operate a particular element in the system. In terms of managing demand, supply and providing utility for goods/service we have followed this set path. Although there is a need to improve our understanding of the same. While this system provides order, it can create panic as well, once a disaster such as the current one is created. Hence, to understand the improvement we must make in our economic understanding, we must first understand the minute and major problems. Ones that we face at present

A comparison study below shows the current damage created on a global scale. From the Ebola virus to SARS in 2002. It gives a bird's eye view to the total damage wrecked upon domestic and global economies, because of these outbreaks. A fact to be noted is that the majority of outbreaks in this case, were not severely spread throughout the globe

TABLE I

Events	Time period	Economic damage (in Bn)
SARS	2002-2003	\$40
H5N1	2004-2009	\$30
H1N1	2006-2011	\$50
Ebola	2013-2016	\$10
Zika	2015-2016	\$12
SARS-COV-2	2019 -	\$1,000*



\*The UN's trade and development agency report estimates the Covid-19 pandemic to cost the global economy \$1000 bn. With a further rise towards the \$2,000 bn mark in a doomsday scenario.

This figure is immensely greater than the damage meted out by previous diseases. Symbolizing the stakes have become so high that if the system is jolted it will disintegrate like a pack of cards. Since flow of money and trade has reached greater heights. There is an increased risk now to face in case things are to go south. So, in order to understand how to handle such events intricately, we must understand the root causes behind them so that appropriate solutions can be implemented. Alongside a dynamic plan to be created to prepare for the future from a domestic perspective and even covering the issues being faced globally.

**II. Microeconomic Elements;**

1. Individual households; the stop on movement meant a relaxation on the muscles and the wallets as well. It resulted in incomes to saturate since work became marginalized for most or complete shutdown was seen as well. Thereby resulting in households to record a drop in their overall incomes and

inflation in their expenditures, since the income wasn't there to balance the scales. The impact was felt in a multitude of households nationwide and created a strain on their earnings.

2. Individual firms; alongside household's firms suffered the brunt of the shutdown also. Several small and medium scale businesses were left in the dust with close to no hope of sustainability. Severe cash crunch, followed by stoppage of production and distribution left them with either excess stock reducing in value or labor issues with workers leaving for home states. A sentence that dealt a bad hand to firms in general. The result made operations limited, expenses high and recovery to wipe out the damage a longer journey to overcome with each passing day.

3. Individual commodity status; the state of trade affairs has been left to a much different narrative. Trade routes and supply channels to countries such as China, Italy or US were left damaged owing to the severity of the outbreak. Yet the most damage that an individual commodity went through, was with the impact was seen on Brent crude and oil price. During this period the price of West Texas intermediate crude plunged by 300% and right into record books. A crippling blow to the once liquid gold oil industry. The pandemic being a prime cause since less supply for barrels helped play a part in it.

4. Particular industries; the industrial load also became a visual nightmare to the eye, as industries that had been carefully formed over several decades began to crumble. From a global standpoint the tourism, aviation, beer and metal industry faced widespread damage. Recently a 1.57 bn pound rescue package was announced for the UK's soft power industry. Indicating the delicate balance that we co-exist within, wherein with the fall of one domino the others shall spiral out of control. In spite of the several gray blots, the demand for medical equipment and pharmaceutical drugs helped propel growth. Yet the immense strain put on their reserves has also

shown that the current supply needs to be re-checked once again.

5. Personal Wages; an important factor that forms itself as the crux for any economy to grow and develop, yet for some this has been that area which has led to another massive problem. The simple case of no work being made available, resulted in loss of work and hence wages. Workers who depended on it as for their survival, were left in the dust. From an Indian standpoint it catapulted into another problem altogether, with thousands of migrant workers rushing to leave the city and return to their hometowns. Resulting in a massive flout in lockdown and social distancing norms along the way. This led to heated criticisms being doled out to the government on planning and executing the lockdown measures.

The above stated were 5 primary micro indicators that dented economic growth and created a scenario of prolonged barriers being formed that would hinder recovery. Identifying these as areas where work is needed, can help to formulate better reforms on a micro economic level.

A. Microeconomic Reforms; the following reforms should be prepared and be put into place;

1. Household level; the plan for households should allow certain reliefs being given in terms of rent and availability of essential goods. In terms of rent a new guideline can be laid out. Under which rent or other such related charge hike cannot be made beyond a certain limit. While turning attention to essential goods, a common trend seen was hoarding, over-pricing and the diminishing rate of supplies like milk, bread or vegetables. Creating area wise delivery vans that worked jointly with general stores to ensure goods are delivered to household societies at the start of each day. This would help in avoiding any unnecessary panic to set into the consumer's mind.

2. Firms position; from the perspective of firms, additional relief packages should be introduced on a growth projected basis.

Meaning firms which were running a strong growth rate and primarily ran operations from an offline medium can rank on a higher relief scale. This plan would create an analyzed structure to be in place that would help the correct firms, with their appropriate reliefs. Another plan to be in shape is utilizing the skill India platform to encourage rural and semi-rural firms to take up a digital medium of monetizing their position. In the event of an unlock or relaxation in restrictions they can be better prepared and well equipped.

3. Commodity status; such events can aid local indigenous products to be there in the forefront. In terms of importing countries the non-availability of outsourced parts can be a blessing disguise. The reason being that there will be forced innovation be put into effect to utilize another resource to produce a set good. This change also comes to Indian borders in the face of a "Go local" cry being issued by the government to avoid trade with China. In the exporting countries governments can aid local producers also. By ensuring maximum sourcing of their indigenous products is undertaken to prevent inventory wastage.

4. Industry interests; for the industries that have been left maimed in such a deflated period, apart from a compensation package being announced. Tax exemptions and deductions for the forthcoming financial year can help provide domestic industries with a cause of optimism to be seen. In the event of entertainment industry virtual dramas, shows and events can be held to create a digital footprint for them to utilize. In addition, industrial relief forecasts should be shared and steps taken by the government to ensure there is a smooth revival being put into place.

5. Workers; perhaps the most pressing issue that led to another crisis for countries domestically, the wages for skilled and unskilled workers. Benefits such as minimal/rent free accommodation's, ration provisions can be provided for unskilled



workers. For income volunteers can be roped in by government to help in assisting the state in various capacities. In order to avoid another migrant crisis, prior co-ordination channels should be in place with other states, to ensure a phased manner of communicating and transporting workers back to their hometowns. Communicating this plan to the migrant groups becomes critical in this, to assure them that they won't be left stranded.

### III. The Macroeconomic Elements;

Would help us to gain a more holistic perspective on the global picture, as it becomes imperative that we must see things from the bird's eye as well.

1. Net National Income and growth; cornerstones that ensure an economy to grow and progress, yet both elements have been estimated to shrink at -4.9% for growth globally. With net national income set to drop significantly in most countries and by 7.3% in India by 2020 end, according to government estimates. Major causes being slump in economic growth by the pandemic alongside a pre-existing sluggish period in world markets. Business cycles being left in a mess and even though consumption function was boosted it benefited only a select few. A steady contraction in flow of money being another cause. The Macroeconomic Elements

2. National output and production; production and output contribute as a vital flow of wealth for countries. Ones like Italy and China where major exports are made it became a nightmare to stem the blood flow. The trade markets were left in a limbo as national production figures disintegrated and outputs steadily reduced. There was uncertainty on trade commitments signed between countries and how or when can the obligations be met and fulfilled. Global trade is set to slump by 87.6 on a WTO scale wherein anything below 100 seems to be a downturn. The lack of demand and excess supply will lead to goods being sold at or below cost to whomsoever is identified as a

prospective buyer.

3. Inflation & deflation; world economies are set to be in a flux of inflation and deflation, but this cycle will vary depending on public policies and handling of a covid-19 economy. Deflation cycles have started off while lockdown measures are in play, with sellers in need of buyers and willing to sell at cut costs even. China had shown early signs of it in its industrial sector, but has started to phase out of it by June. The inflation will kick in once the unlock process starts off as recovery to past losses will see a hike in prices globally. The value of currencies will be a big bet to look into during these cycles, since they are likely to fluctuate on a global basis.

4. Investment function; investment function vests itself as a major component of net national income for any country. Especially the ones in the developing field, the onset of current events has reduced major and minor FDI's to stream into economies. Even halting domestic investments in various companies and start-ups as well. A major drawback was seen in the EV (Electronic Vehicles) industry as investors cut costs and shelved projects. Companies in the clothing or aviation business have had to face the axe as well. From Virgin Australia to Brooks Brothers or JC Penny to name a few. Thereby, creating several new problems to arise from this predicament.

5. Channels of distribution; the macro-economic channels of distributions largely revolve around rent, wages, interest and profits that constitute the national income earned by a country. The earnings being received from the 4 factors of production namely land, labor, capital and entrepreneur respectively. An integral chain in the macro level scheme of things, a major hit was witnessed in the overall growth and gain in all 4 spheres. More so the distribution that trickles down to the lower levels dried up as well. One of the foremost reasons that total global loss is estimated to rack up in billions is due to the loss being seen in these channels.

A. Macroeconomic Reforms; must be viewed by understanding the bigger picture and working to ensure that solutions created satisfy the collective global interests for the future;

1. Curbing hemorrhage of NNI and growth; the foremost issue to address is one of controlling the NNI loss, MSME's becomes the key in this. Digital mediums to run business and allowing businesses associated within the healthcare space to be listed essential services are a couple of ways to move forward with. Healthcare MSME's create additional supply of equipment being made as well as cash-flow creation for these companies. Also, for ones within other sectors a period of conveyance can be allowed wherein inventory sales and distribution can be made. These dealings would be from a digital medium and makeshift distribution centers created from where they can be shipped out. By stabilizing the NNI, growth can also be directly influenced.

2. Indigenous output and production; global halt in trade has had an adverse effect on output and production. Unwanted inventory and inflated costs to start recovering are a couple of problems that can come about. So, promoting local vendors to start producing and conducting internal trade agreements can be born. These agreements will be seeing movement of goods from area of production to one of necessity. Ex. Wheat produced in Province A would be moved from to province B or C, where it has requirement. Such trades will allow existing stock to move out quickly and in countries where materials are unavailable the closest substitute available can be utilized. This would allow output cycles to function and minimal production can be targeted also.

3. Controlling price levels; price level control is essential for it allows one to manage the inflation and deflation elements. During this period basic necessities such as medicines, vegetables and milk should be sold under a price bracket. These slabs must be made keeping in mind also that the seller

stands to make a profit from his sales as well. The general price level theory can be put to use as well, for a specific price level index created under which price of goods and services with limited supply and high demand can be identified. Also, ones with moderate to low demand, but high supply can also be found out. So, now a mapping process is created, under which new necessities are known. Allowing new price level measures to be formulated and implemented.

4. Investment avenues; the traditional investment avenues of real estate, stocks or even startups for that matter have seen major losses than gains. With liquidity being touted as they key to future investments right now. Although in this period alternative avenues should be given the boost, since they will have a greater demand even in an adverse situation. Investments into the Telecomm and robotics markets will help drive up new avenues for investments. Companies that are progressing with a new outlook and adapting quickly to changes will be the key players.

5. Distributional efficiency; Distributional efficiency can be achieved by implementing rent schemes for land, a minimal wage allowance for labor and providing loans with a minimum interest scheme. Allowing even entrepreneurs to create marginal profits or reduce losses. RBI in India recently allowed banks to assign 0% risk weight on the credit facilities extended under the emergency credit line guarantee scheme. In Singapore also support will be given to SMEs in the country with continued access to bank credit and insurance cover. To ensure interbank funding markets remain liquid and well-functioning.

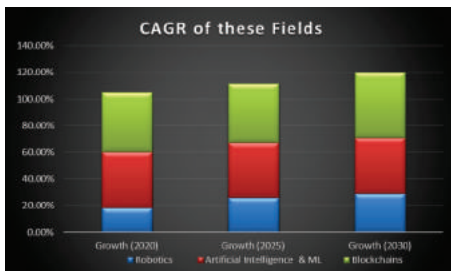
#### **IV. The New Order**

viewing the current economic structure has allowed us to realize that change is required in being a key driver for growth, so why is our system not being tweaked? By having modifications made into the economics we know and adding our 21st century touch to it, we can prepare ourselves better for the future

**TABLE II**

New Systems	CAGR (2020)	CAGR (2025)	CAGR (2030)
Robotics	18.20%	26.00%	29.00%
Artificial Intelligence & ML	42.20%	41.15%	42.27%
Block-chains	44.50%	44.70%	48.70%

The following table below gives an explanation on the future technologies that are forecasted to grow at a tremendous pace through to 2030. Primarily due to their efficient nature the likes of Robotics which utilizes data and analytics is set to progress rapidly. Followed by Artificial Intelligence & Machine Learning that allows for neural systems to be created and mechanical intelligence to cover predictive and systems handling. Followed by Block-chain technology a versatile new innovation with immense scope. Below listed is the CAGR that has been forecasted, bearing in mind the current state of affairs as well.



The chart analyses the growth patterns for each head of the technology and the 5-year rate at which it is forecasted to progress upon. There is a gradual rise noticed in all three fields that provides encouraging sign. In fact, the current situation has enabled one to test the robotics field in medical industries as well. Additionally, Singapore’s recent push for their fin-tech firms to use digital tools will promote these fields.

The gradual drivers in the form of Singapore and Japan have been constantly battling for the effective utilization of these fields. The growth rate of block-chain

technology in the graph is the real eye catcher, owing to its versatile nature and dynamic scope. It has been able to garner a much higher growth share than robotics and AI respectively. These growth indicators are forecasted to be the key elements of the future so why not integrate them to develop our economic structures further as well?

**V. The 5 Year Plan;**

The economics base we have gathered and worked upon, primarily revolves around how demand for a product leads to its prices to rise or fall, affecting supply also. Yet we must also modify our understanding to account for variable change. Change in this case being the Coronavirus pandemic. Hence by creating by-pass routes to ensure our economic biosphere is maintained we introduce our counter to the problem. The value it helps create can be found in the description mentioned below.

1. Robotics; the field of robotics is associated to contain the keys to our technological growth, advancements made can aid in all spheres of society. Yes, they do possess a downside in the event when people say it makes humans obsolete, but adaptability to our environment is a trait we are known for. The economics dictates that it could help create demand in sectors that are becoming difficult to sustain at present. So instead of implementing employees in mass, a simple team of robots can aid in expediting the process. Costs can be managed seeing the growth from the market as several companies are venturing into this market, creating new forms of revenue. So, by following rules of imperfect competition the price wars will start. In employment it can also result in additional upskilling being made and thereby creating new avenues of employment to be born from it. Our economic understanding of price rises when supply rises, stands at a crossroads

With the medical industry as the primary example, owing to medical services being of paramount importance the prices for treatment of normal services has soared up as well. But the lack of medical workers to meet that demand doesn't add up, hence a robotic influence would be a welcome benefit to match the demand with supply. Allowing the burden to be taken of the workers and not disrupting regular medical services as well.

2. Artificial Intelligence and Machine Learning; the field of AI and ML is an extremely important pillar in this new system. The work done from neural systems and computer recognition frameworks will allow users to function more efficiently. This system allows data and analytical driven intelligence to be fed allowing for a new avenue to open, one of predictive sciences. The current virus situation has made us realize how crucial it is to know when the next great adversity may hit us. The answer lies in our current systems only, how our policies are being devised to the manner in which global organizations handle issues. These issues ranging from nuclear to healthcare deals. From the chaos theory brief we are aware of the butterfly effect and how in a nonlinear context of speaking our lives have been affected due to this theory. For a single case of the virus has resulted in global economies to spiral out of control. Thereby, this data becomes extremely vital for us as we can determine our future through our past actions. This field can utilize big data systems to aid majorly in public policy creation. Implementation of disaster management systems and government measures in matters of health, commerce and industry, etc. It can prepare government's, to utilize something more than general theories to be put into action. By answering questions like what is the right plan to formulate and how it should be executed?

3. Block-chains; block-chains are touted to be the future for the next era, one wherein a digital world is formed within our own, so in essence a system within a system. Block-chains are formed of certain blocks, that hold

a unit of data and these blocks essentially form the edifice of your system. Our economic thinking should be put into sync with this system. The fields of banking, food, e-commerce and distribution channels, etc. they all can be utilized from this base, they can help streamlining the macro channels of distribution covered earlier. It can also act as a holder and distributor for the 4 heads of production, from rent collection receipts, towards wage collection holdings, or interest generated for banks. Allowing profits to also be distributed properly. Even recording the gains to trickle down in an organized way to the lower levels. Most importantly, it acts as an independent way to manage your system and decide how it operates. Rather than live in one that does not satisfy everyone's needs. It gives the freedom of systematic creation to the public.

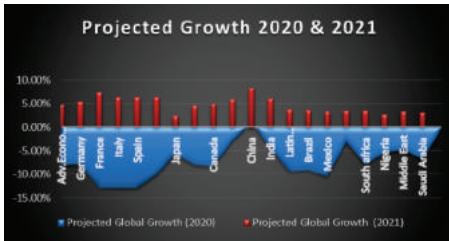
#### VI. A Global Overview;

the IMF has forecasted total global growth to be at -4.90% in 2020, with 2021 being at 5.4% in the green. But in terms of country and economy wise distribution, the following is expected to be found;

**TABLE III**

Countries	Projected Global Growth (2020)	Projected Global Growth FY (2021)
<b>Advanced Economies (Cumulative)</b>	<b>-8.00%</b>	<b>4.80%</b>
Germany	-7.80%	5.40%
France	-12.50%	7.30%
Italy	-12.80%	6.30%
Spain	-12.80%	6.30%
United Kingdom	-10.20%	6.30%
Japan	-5.80%	2.40%
United States	-8.00%	4.50%
Canada	-8.40%	4.90%
<b>Asian Emerging Economies</b>	<b>-3.00%</b>	<b>5.90%</b>
China	1.00%	8.20%
India	-4.50%	6.00%
<b>Latin American Economies</b>	<b>-9.40%</b>	<b>3.70%</b>
Brazil	-9.10%	3.60%
Mexico	-10.50%	3.30%
<b>Sub Saharan Economies</b>	<b>-3.20%</b>	<b>3.40%</b>
South Africa	-8.00%	3.50%
Nigeria	-5.40%	2.60%
<b>Middle Eastern Economy</b>	<b>-4.70%</b>	<b>3.30%</b>
Saudi Arabia	-6.80%	3.10%

Note; the above data indicates the total forecasts that have been made for a select number of countries, that span across major regions/continents.



The above chart and table show the projected growth rate of the types of economies and countries. The headline act here is of China, the country that kicked us all into this pandemic. It has been forecasted to be the only country to record a positive growth rate in 2020 and the highest growth rate for 2021. For India the damage has been moderate as compared to other countries, it is expected to record a steady growth of 6% in '21. Economies of Italy, France and Spain have taken a heavy pounding, due to the virus spread. But are forecasted to record a great turnaround in the next year. Another key highlight is the state of the US, the world superpower and economic leader is expected to be left in a crippled position along with Brazil. Leading to speculation we may see a new world leader emerge, given the situation in the States.

## VII. Conclusion;

there is a saying that goes onto say, "We humans are capable of achieving wonders beyond imagination that is our gift, one of ingenuity and the drive to push further into the horizon. But we are capable of great destruction as well. There is a third side also that being of change". Well, today we stand on the precipice of uncertainty and are on the threshold of a great change. A change that is bound to determine how we approach our future, whether it is with an emboldened spirit or a regressive mindset. For the next disaster man made or natural maybe around the corner, but it is our actions in the darkness that will drive our entry into the light.

The change in our thinking, mind-set and views on the economy have to be modified and set anew into this new world. One wherein, we can be assured that whatever the future throws at us we will be prepared. The current Micro and Macro economic problems have given us a valuable lesson on the reforms to be in order. Furthermore, the phrase "the world is your oyster" couldn't hold truer for the young generation now that we set out to define the global future. Since there is an expected increase in retirement of boomers to take place worldwide in the near future. Creating a massive supply gap in ideology and planning.

So, let this be our calling into a new dawn, one where we must face the post Covid-19 challenges head on and remain steadfast and strong.

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To be noted; the other numbers, besides ones at the start of the caption, are of the various categories that these references belong to. As per the IEEE format that was mentioned.

## Need for Technological Upgradation to Enhance Labour Productivity for Sustainable Development

**Mr. Bidhan Datta**

Faculty of Management,  
ICFAI Business School,  
Pune, India

**Ms. Banantika Datta**

Research Scholar,  
IIM Bangalore, India

**Ms. Komal Prakash**

Post-graduate Student,  
ICFAI Business School,  
Pune, India

### Abstract -

India is the fifth largest economy in the world, with the second largest population and currently enjoys a favourable demographic dividend. HR managers play a major role in implementing technological advancement which has a significant impact in sustainable business and economic development. HR functions help organisations to improve its functionalities such as flow of information, labour productivity, core competencies, employee performance that improve the business sustainability as a whole. This paper tries to understand the effectiveness of recent technological changes in an organisation and its implications on performance and labour productivity by conducting in-depth interviews with senior HR managers of various companies. Artificial intelligence, robotic, IoT, business process automation reduce human errors, bring strategic changes and radical transformation in organisation which will help to align different HR functions to achieve organisational excellence.

**Keywords** - Artificial Intelligence, Human Resource, Labour Productivity, Organisational Excellence, Robotics, Sustainability

### I. INTRODUCTION

Sustainable business has better chances of being more successful tomorrow than it already is today. The role of HR is imperative in achieving sustainability in this ever-changing era flooding with new technologies each day. The major challenge for the HR professionals is to ensure higher labour productivity but in a

sustainable manner. This paper focuses on the need for technological upgradation and integrating HR practices to increase labour productivity for business sustainability. The sustainability and hindrance of any organisation is significantly affected by the human resource strategy of the organisation. Improving technological upgradation leads to more cost to the organisation. The implication of the process and through training and development by the HR department will enhance the skills of the labour forces. The crucial processes of talent management, retention of skilled, experienced and productive employees are also driven by the human resource functions and that leads to sustainability in business environment.

This research paper focuses on the need of implementation of upgraded technology such as Artificial Intelligence (AI), robotics, internet of things (IoT) etc. in an organisation to sustain in the competitive business. Implementation of changes followed by adequate training is a major challenge and the HR functions play a vital contributions to the sustainability programs for skill development that enhance labour productivity. In the era of modernisation the AI, big data, analytics, robotics become important in an organisation for sustainability. The effectiveness of sustainability in business, depends on fast adaptability in effective change management, the creation of organization structures, and upgradation in business strategy that allow employees to perform well. Quickly adapting new technological upgradation in an organisation makes their performance, labour productivity higher.

Human resource management plays an important role for sustainable business development through different HR practices. HR strategy refers to the continuous design and implementation of technological upgradation of human capital in the organisation to achieve sustainable and competitive advantages [1]. Technological upgradation plays a strategic role for business innovation, which is enhanced by AI. In today's dynamic business environment, firms have to adopt sustainable technological changes and be flexible in order to adapt and respond to fast changing market conditions. In this process HR functions are crucial to meet the business goals of the organization. Sustainable HR practices must focus on three basic Ps – people, planet and profit [2].

Any technological upgradation has to be driven by skilled human capital. Many emerging countries lack in adequate supply of skilled workforce required to keep up with the rapid change in production process. Developing economies like Bangladesh and India could have higher growth and sustainable development, if they had invested more on education and health to create a skilled workforce [3]. The use of Information and communications technology for integration of tele- communications, computers and a unified digital platform for education can successfully improve the educational and skill levels of the youth in the developing countries. In 2001, the United Nations Development Programme (UNDP) Human Development Report had introduced the Technology Achievement Index (TAI) as composite measure of how well countries are using technology as a tool for human development and preparing their workforce for a technology-based global marketplace [4]. More interestingly, TAI better correlated with Human Development Index than with GDP of the economy [3].

Sustainable development is a much

broader concept than economic development. It allows for optimization of resources and process for meeting the current and future objectives in the best possible way. It has to be aided by politics, social development, science and technology. International bodies on scientific community, like the International Council of Scientific Unions (ICSU) have acknowledged the role of science and technology in achieving sustainable development. In Rio de Janeiro, 1992 and Johannesburg in 2002, countries committed to developing along a sustainable path at the Global Sustainability Summits and have taken significant efforts in this direction since then [3]. Sustainability index is a complex measure comprising indicators of country and corporate performance in areas of environment, technology, economy and social development [5]. The World Preview Outlook, 2024 is mostly focused on research and development (R&D) but, for creating a sustainable innovation culture, HR professionals have a pivotal role. HR departments must be innovative with creative systems to upgrade employees [6]. For example, South Korea is focusing on increasing R&D efficiency. Although, continuous digitalization and constant upgradation of HR functions is necessary to reap the full benefits of these technological innovations.

The primary objective of this paper is to determine the need for technological upgradation for Sustainable business. The implementation of new HR strategies requires changes in fundamental behaviour [7]. The HR managers should take a holistic view of their own organisation and look for integrating business drivers, processes, technology, knowledge, human capital and organizational factors [1]. HR departments should have access to modern technologies and upgrade technological skills of the organization.

## II. RESEARCH METHODOLOGY

The main data sources for this paper are collected through the primary research. In this study the research design adopted is descriptive research of cross-sectional studies. Research design involves qualitative approach through in-depth interviews. In qualitative study, all the respondents are senior professional such as Managing Directors, CEOs, HR Directors, Senior Managers of different organisations. Here, researchers tried to explore different sectors such as IT/ITES, manufacturing, BFSI, power & electricity, energy, e-commerce etc. In qualitative study, views of respondents are gathered through in-depth one-to-one interview. Interviews were carried out over 15 respondents, through which researcher has tried to understand the insights the needs for technological upgradation to enhance labour productivity in an organisation and the role of HR managers to implement those for sustainable business development. This study paid particular attention to the respondents those who have at least 20 years of corporate experiences in top level management.

### Respondent-1

He is the Managing Director of one of India's largest PVC films manufacturing firm. He advocates upgradation of machines and equipment using latest technology. However, he is cognizant of the fact that India focuses on low cost production and manufacturing and thus AI, robotics and IOT is not very suitable for India at this stage. Implementation and maintenance of robotics is costly in India. Only automobile sector relies on robotics to a certain extent for perfection and precision. India has a long way to go before it can emerge as a developed country producing high cost, high value manufacturing goods which are capital intensive and utilizes AI and robotics intensively. He also adds that use of robotics is very low in South Asian

countries, unlike the North American and European countries which use more capital and technology to lower costs of production, as labour in those countries is expensive.

He insists that all management professionals should upgrade their skills to acquaint themselves with the changing job requirements. He further acknowledges the role for the HR managers to encourage and train their employees. An entrepreneur can adopt a certain technology but the effective implementation and management of the change in the production process has to be handled by the HR managers. He also notes the benefits and scope of AI, which can use big data for various analysis and mentions the power of information in present times. However, he says that AI is just a technology that will only give results thus, there is a need for human supervision. AI will change the nature of jobs and open new areas of employment.

### Respondent-2

He is the Director HR Admin of a Pune based Indian MNC primarily involved in automotives and construction. He says that technological upgradation will help in smoothening different functions in an organization and will enhance the speed of operations. India is already geared up to adopt different modern technologies but not fully prepared to implement AI and robotics to a large extent. Technological upgradation increases efficiency of HR functionalities such as talent acquisition, performance management and industrial relations, including recruitment and selection process. By and large, organizations operate 60% on technology and 40% through human efforts.

### Respondent-3

The respondent is a Managing Director of an organization belong to BFSI sector, told "Govt. needs to generate more employment and job opportunities which



may possible to the some extent to encourage technological upgradation. Implementation of new technology will open the door for new employment. Although it takes some time to make it fully functional and also incur a huge cost but in long run we can observe a substantial growth due to increase in labour productivity". Further he added, India is a developing country, it requires high amount of government intervention for technological upgradation and focus on R&D.

#### **Respondent-4**

The respondent is an Executive Engineer of one of the largest power transmission organization stated that technological upgradation can plunge per unit cost of electricity. He told that ERP system is being integrated and is very effective in their organization. Technological upgradation will increase employee's productivity and business growth and also help to increase revenue generation and can defer losses of their distribution companies.

#### **Respondent-5**

The respondent is a Managing Director, shared "Man & machine are the two wings and these functions better with the help of technology. We are lagging far behind on implementation of latest technological upgradation and most of the cases we try to manage with the existing resources (Jugaad). When asked about the organizational effectiveness he stated, "The key to sustainability lies in understanding the pain points of the contemporary world and envisage the forthcoming ones. As long as we base our planning for an inclusive solutions for the problems of todays and tomorrow keeping in mind the needs and care of social (customers and employees), economical, ecological and environmental aspects, we can expect great returns and growth".

#### **Respondent-6**

The respondent is a Senior Director of a manufacturing company. He narrated, "In target-oriented work scenario each and every employee must be upgraded with technological upgradation and then definitely he will be more productive. The organization is to ensure about the skill development and to focus on technological upgradation". While asking about the key concept for organizational growth he said that ethical practices is one of the key factor for sustainable business. An organization needs to be ethically sound. Business ethics has gained a momentum over the years and has been closely followed by the organizations. The judgement made by the top management should be as such that it is not biased only towards the benefit of the organization, but the welfare of employees and customers should be kept into consideration which in long run will face the goodwill and sustainable growth.

#### **Respondent-7**

The respondent is a senior manager at one of the largest thermal power company. He said, "Technological upgradation is necessary in the organisation to sustain in business. In today's world culture of JIT (just in time) we have no option other than to use upgraded version of technology. ...". When asked about the uses of AI/Robotics/IoT, SAP Module and ERP and how these are going to help in an organization, he said, "SAP module and ERP both we are using in our organisation and they are as on date the backbone for making any business transactions...." He mentioned that AI and IoT is also being used in large scale. Robotics has limited use in India basically in manufacturing industry, but enhancing its use on large scale will definitely help any organization. He also narrated that, "We adopt new technologies and our organization is the first paperless organization in India, it enhances our productivity and saved lacs

of trees for environmental sustainability...”

### **Respondent-8**

A senior operations manager of a logistics firm stated, “Technological upgradation could help us manage the resources more effectively and increase the productivity which is necessary for overall organization's growth. It could help with better managing the supply-chains, logistics and provide more scope for improvements. Technological upgradation could also lead to better and more effective management of human resources, like with having better project communication and planning platforms....” While asking him about the importance of AI/ Robotics/ IoT, SAP Module/ ERP in an organization he said, “These are definitely important but the reach for such tools could vary as per organization's need. Like for us, being a IoT based Tech start-up, we have already been using AI tools for our product development and even in our recruitment and HR based processes. While the ERP based tools are essential for the supply chain and logistics needs of the organisation...”. He also told that, “for a sustainable business growth, I believe that organisations need to be up-to date with the current available resources and effectively utilize them to help in ways that they seem fit would make them competitive and better equipped.”

### **Respondent-9**

The respondent is a General Manager of one of the largest company in energy sector. While asked about the need for technology and challenges to train employees, she narrated, “For every changes in the organisation, there has to be some challenges however technological upgradation is one of the mandates to the organization to sustain in business.” She also narrated that there is always a need for technological upgradation which will generate more new employment and

increase the labour efficiency.

### **Respondent-10**

He is a senior HR manager of an e-commerce firm. He said, “Technical upgradation would always come handy as long as those are available for an individual or a group to review. With tech upgrades, loads of algorithms could actually bypass long hours spent on calculation, or sharing the most probable cause for a problem, and a solution thereof.” The reasoning would always be dependent on the group to analyse and take inference from, but at large, tech would always support and go hand in hand towards a particular shared goal.

Talking to him regarding AI/Robotics/IoT, SAP Module, ERP applications he said, “AI and robotics looks catchy, and also luring. I believe should be only restricted to share insights about a particular person, group, or an activity/project and should maintain the confidentiality. Only roadblock I feel for an AI is accountability, and hence decision making should be kept away from it. Apart from it, I believe AI could do wonders, in fact it already helping teams in MNC's in multiple facets of operations, logistics, and also partially with the HR functions as well.” He also narrated, “Technological upgradation would not only help the hand to mouth activities, but would also the modified resources would help clear the picture in the background. I believe tech upgradation would act as a catalyst to increase employees' productivity as long as the right tools with right algorithms are put in place keeping customer experience at large.”

### **Respondent-11**

The respondent is the Director Operations of a large Agrotech company. As per his statement technological upgradation does help an organization to grow as it helps an organization to keep up with the ever changing and dynamic industry and serve

its customers better that are in the organization (employees) and those out in the society. When asked to know about the implementation of AI/Robotics/IoT/ SAP or ERP module he said, “For a manufacturing company, the assistance of robotics helps in saving time for packaging as well as for production that used to take long hours if done manually, similarly implementation of SAP or any ERP assists all the office employees to save any data and procure them easily. Looking from another perspective it is user friendly as well ....” While asking the question about how upgradation of technologies are accepted in the organisation by its employee he said, “The upgradation brings many challenges to employees as often they need to prove themselves better and to undergo training activities, thus it poses some difficulties to implement for the employees and the organization as well. This comes with a con for the employees as implementing the technology takes a lot of time for them to get acquainted to and hampers the workflow and productivity during the implementation phase”.

#### **Respondent-12**

Another respondent, who is a senior manager of American multinational technology conglomerate, said that upgradation as well as introducing new technologies in an essential part of any organisation for survival. AI, IoT etc. are very powerful tools and in fact a bespoke cross platform business application, can help addressing several issues and deliver optimum results from our organization....”. He also added that a comprehensive and inclusive human-technological growth always seeks positive results, as long as both the user and technology are accommodating to each other.

#### **Respondent-13**

The respondent is senior manager of a reputed organisation known for graphic

designing and one stop interior solutions provider said, technological upgradation is essential and ongoing process of an organization for sustainable growth. About the implementation of technological upgradation he said, “I would definitely suggest IOT and AI in my organisation to implement as per the requirement of the organisation, ERP in indeed a helpful one are well accepted and very important tool.” He also added that development and implementation of customer management software for every company will ensure all information, employee performance tracking, project info, attendance, etc. made available at finger tips. This in turn will improved the whole process, it saves time/energy/documentation and increases the opportunity for the employer/managers to identify the performance and increase productivity.

#### **Respondent-14**

The respondent is the Managing Director of a German based company. He narrated, “Upgradation with the latest technology and equipments are very important in their industries to sustain in the competitive business. Quality of a product is the most fundamental requirements and demanded by customer. Upgradation of different software and proper training on that improves the efficiency of the workforces...”

#### **Respondent-15**

The respondent is the Co-Founder of one of the reputed Delhi based business service providing firm, emphasized that technological upgradation is very essential for sustainable development in an organisation as the technology helps in saving time & effort and optimizes the cost at the same time. He also stated that AI and machine learning (MI) are important concepts and it helps you to do better forecasting, improve inter-departmental processes, identification of inefficient processes, improving customer service

and a lot more. He noted that technology can increase productivity by connecting dispersed workforces, enabling collaboration tools, better work organization, knowing your pain points, exploring virtualization. He also mentioned that an organization should focus on creating a value proposition/USP (Unique Selling Proposition) for a sustainable business growth. Also, it's important to excel in a specific area so that it becomes challenging for others to compete beyond a point. Focusing more on reinvention is also very important in this highly competitive market.

### III. FINDINGS

The major outcome that comes out from the in-depth interviews and focus group discussion with the respondents is that there is always a need to implement the updated technology in the organisation. HR module blended with ERP system will enhance the efficiency of day to day operation in an organisation. This will reduce the repetitive manual work and save time. Automatic payroll through biometric logins, leave records, pay and wages, performance management, grievance handling procedure etc. are closely monitored with accuracy.

There will be a need of training to the existing employees for skill development. Although technological upgradation will be cost effective but is necessary to sustain in the business. The current high-tech companies may not withstand the growing importance and pressure of aligning to sustainable means, like stronger social and environmental concerns, AI, big data and technology intensive robotics etc. All these may hamper the profitability of the tech companies, as they have to invest more on R&D. However, these changes and short run economic loss is inevitable for growing as a sustainable business in the long run.

Government initiative is also important and needs to put more focus on R&D.

Ethical practices also one more important dimension that comes out from in-depth interview. Business ethics is also an important factor to maintain the goodwill of an organization which will also help in achieving organizational excellence. New technology will generate new job opportunities and will increase the labour efficiency which will lead to sustainable business growth.

### IV. CONCLUSIONS

Technological upgradation in an organization is essential to sustain in today's competitive world. It would lead to better team and individual efficiency and lead to better handling and completion of projects. This would help decreased instances of errors, leading to reduced physical and mental workload of the human resources.

In order to be up-to-date in the industry the organization needs to keep upgrading the technology used within the organization in order to serve better to their customers and also to ease workload on the employees and keep them technically updated. Technological upgradation is one of the most important aspects for sustainable development in business. This will update knowledge and skills of employees, which will help in sustainable business growth and in turn lead to development of the nation. Through R&D and continuous technological upgradation the organisational effectiveness and labour productivity can be increased and interns strengthened the competitive advantage in the business. Advent of structured and organised technology has always been a boon for mankind. An upgrade in technology with suitable personnel training will definitely boost the employees' productivity and increase organisational effectiveness.

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## Remote Work as Long Term Plan and Its Effect on Productivity and Retention Rates

**Ms. Deepali Agarwal**  
Dept. of Humanities and  
Social Sciences Graphic Era  
University Kotdwara, Uttarakhand

**Ms. Jayshree Bhatt**  
Dept of Humanities &  
Social Sciences Graphic Era  
University Haldwani, Uttarakhand

**Ms. Gunjan Singh**  
Visiting Faculty, AIPS,  
Amity University, Noida.

### Abstract

The pandemic accelerates the concept of remote work which is work from anywhere. This paper highlights the potential and complexities of the vision of sustaining remote work as a long term plan. Research into remote work suggests that organizations with remote work have higher employee productivity and retention. At the same time, concerns including transitioning a workforce isn't an easy task facing issues like isolation, anxiety, communication and socializing virtually. It needs to be rethink and mapped concerning technology, resources, geographical flexibility, organization culture and norms. Finally, exploring the work with a global and Indian perspective the data has been gathered from present literature available from sources such as articles, magazines and journals.

**Keywords**— Remote work, productivity, retention and psychological well-being.

### INTRODUCTION

Over the past two decades, business firms and organizations have a focus on building technical knowledge, advancements, and amenities to enhance collisionality of talent acquisition and creativity emphasizing on the work environment in an office setting. Remote work is not a new concept but it is very recent that the concept was hastened in the company policies. In March 2020, when the Pandemic hit the world and changed the dynamics of work culture raising questions about the efficiency of technologies to continue the smooth working of the organization. The concept of remote working came as a potential solution. Remote working is

working from anywhere other than where the employee is employed. Covid pandemic has lead major firms to switch to remote work laying equal emphasis on productivity, employee engagement, and various psychological domains. Prithwiraj, a professor at Harvard has been studying the effects of remote work on productivity practices from a long time (10). He argues that remote work is a far more sustainable, cost-efficient, and highly productive form of work culture. This not only helps an individual in maintaining work-life balance but also an idea to attract the future (the Millenials) for the jobs.

Git lab, the world's largest remote company with over 1,300 employees has no offices, it's remote since its starting in 2014 and it relied heavily on tools such as zoom and slack which has now gain more popularity. (20). With the rise of remote work, there has been a seeming rise in productivity and geographical flexibility. It has come with its own cost, ranging issues from communication with different time zones, protecting client data, to prevent professional isolation and much more (12) In a natural experiment, 4.4% increase has been seen in employee output, moving from work from home to work from anywhere (11) The issues of remote work have long been discussed by managerial firms, adding flexibilities in some organizations. The argument has led to circumstances where many employees have started demanding to add it as a non pecuniary benefit. The dogma is, Is there a need to restructure, or are we on the edge to look for new policies for organizations? Can remote working be a long term plan? If

yes, is the psychological safety ensured or not and how can these issues be dealt?

### I. REMOTE WORK AND PRODUCTIVITY

One of the most concerned areas of an organization is the enhancement of productivity. Productivity is the relationship of output with context to input in any organization. CEO of Facebook's Mark Zuckerberg promised that by 2030 half of Facebook's workforce will be working from home, also Jack Dorsey has announced that Twitter will allow its employees to telecommute anywhere they feel at utmost productive and creative even if the offices reopen (17). Sid Sidbrandij, CEO of Gitlab believed that the notion, 'people miss the office environment' is misguided and needs to be a rethink. There can be a scenario of hybrid companies where employees have the option to either work remotely or from the workplace (25) According to a survey (8) by Owl Labs, the reason workers sustained in remote work, is due to 91% reported better work-life balance and 79% believed they have higher productivity. Even a recent survey by Times of India has concluded that 66% of people have felt an increase in their productivity while 55% reported a better work-life balance after getting work from home. (27)

### II. REMOTE WORK AND RETENTION

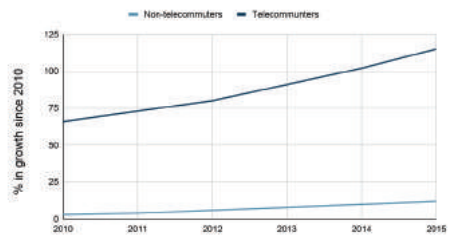
Turnover in a company is a sign of retrogression while retention is a sign of progression. For years research has been carried out to increase the retention rates in companies. A report published in the 'predictive index' has concluded that people who are allowed remote work are 13% more likely to stay in a job than onsite workers. 81% of the workers even agree to recommend such organizations to their family and friends (7). Similarly Mike the CEO of Patriot Software, mentions in a Forbes article that 'Remote work is equal to retention'. The reports also conclude that home based employees have a 13%

higher production rate (18). The report by Owl Labs, state of remote work report (2017) also gives evidence that a 25% decrease in turnover rate is seen by companies who provided their employees with the option of remote working (6) According to 2019 statistics, remote workers earn salaries 2.2x more than on-site workers (8). In 1997, Trevor and colleagues and other researchers showed that wage rates only have a remote impact on retention (19)

### A. FUTURE PERSPECTIVE

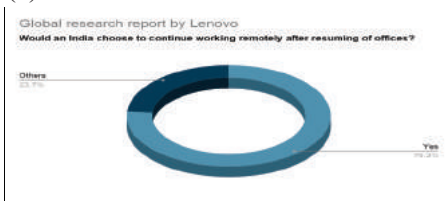
The concept of remote work was implemented in some organizations due to pandemic, before that there were companies who were practicing this approach and have found significant increase in their productivity. The survey conducted by global workplace analytics have shown clear comparison in productivity rate of telecommuters and non telecommuters from 2010-2015. Kate, the president of global work analytics estimates that 25-30% of the workforce will switch to work from home by the end of 2021. (15)

Telecommuting growth since 2010 : US survey



In a recent survey (24) in 2020, Gitlab explored the future of remote work with 3,000 professionals. Findings revealed that employees were 52% more productive. This also enabled 83% people with disability and major health concern to contribute effectively at workplace, remotely. It resulted in decrease in anxiety and stress (32%). Employee retention was increased upto 43%. This can be used as a tool to debunk and replace dogma of

remote working toward permanent remote work. RPG Group, Mumbai has also added remote working policies which came in effect on Sept 2020. Wadhwa, the CHRO of Sony Pictures said they will soon work with a hybrid model to give choices to their employees for working from anywhere.(3) The TATA groups have also come to the conclusion that by 2025, 75% of their workforce will be working remotely. To support a research by Lenovo on 20,262 workers has revealed that 74% Indians will choose working remotely if given a choice (1)

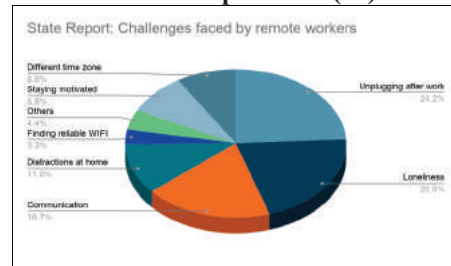


### B. CHALLENGES IN REMOTE WORKING

Remote work is not just trending but something that is going to stay with millennials, but it comes with its own challenges. Jeff Gothelf believes it is hard to create a line between home and work when you are WFH. Supporting the same Conardo Lamas (the head of marketing at Signaturit) states that if an employee is provided with a work space it is easier for him to keep his work related stress away from home (21). Isolation, depression are other sides that need to be acknowledged while working remotely. Brunda, a Bengaluru based clinical psychologist said she has witnessed an increase in irritability and anger among people who work from home. Similarly a survey revealed that 41% reported lack of separation between personal and work life, that is negatively impacting well-being and increased stress (13). These challenges even forced IBM to reverse its policy of work from home and the 40% of its employees who were working remotely were called back to the workplace in 2017 (4). The end result may be to support both onsite and remote workers, as per employee needs. For these

hybrid companies, there is a big section of remote work (26)

### State of Remote Report 2019 (26)



Having said that, big firms like Zapier, Buffer, Bentley and other companies who have been practicing remote work for a long time do acknowledge these issues and have overcome these challenges with growing technologies and adding reforms convenient for their employees. Cofounder of Popforms, Kate also suggests employees to set and stick to their priorities and keep a schedule while working from their comfort zone. Other CEO's, Managers, Co-founders also agree to the idea of setting boundaries and creating a work routine to avoid procrastination while working remotely (16). While they all agree that remote working is not easy and not meant for all the organization, they also firmly believe this is one of the most productive, environment friendly approach.

### III. METHODOLOGY

This research paper is narrative work to explore the sustainability of remote work as long term plan, its impact on productivity in the workforce, and whether it will aid in a higher retention rate or not. Due to the novelty of the practical implication of the concept, we have taken a qualitative approach analysing data gathered from survey, magazines, reports and papers examined focusing in recent years.



#### IV. RESULTS

For those who say remote working is the future of the workplace, we believe remote work is the ‘Present’ of work culture. The pandemic has not only made us realize its potential but has also worked as a pilot project for many companies in determining what is best for their employees. Research published in the American Psychological Association in the year 2019 states that a 115% increase in employees choosing remote work was seen due to the benefits realized by the employees between the years 2005-2015.(2) Telecommuting allows workers the comfort and flexibility to work and gives employers the opportunity to explore and hire diverse and talented crowds from all across the world with low-cost involvement. Whereas remote work is a privilege to many big companies it serves as a necessity to the small budgets startups. Automatic, the parent company of WordPress, Buffer, Invision, and Mozilla established its authenticity and value in the market by working with a remote work approach. (9)

The surveys, reports, and researches have proven various benefits of remote work to the employee and employer. The benefits of remote work are not just restricted to the workspace but it has a significant positive impact on the environment as well. An approach called ‘Future back’ can be used as a strategy to architect plan for remote work sustaining it as long term potential. This approach can help to sustain and achieve organization’s long term viability considering remote work. It should be achieved by keeping both psychological and technological stable system(17).

##### A. INDIAN PERSPECTIVE TO REMOTE WORK

India is one of the countries where the internet rates are among the cheapest (22) and has a strong focus on technology and science. Many are unaware of the fact that

India along with Indonesia and Mexico are common countries practicing remote working, a survey of 24 countries revealed. (23) Similar surveys have shown that 53% of employees work at least once a week from home and 1 among 10 employees work five days a week in a remote place. The HR of IMGC announced that after the lockdown they have realised that the culture of remote working will go for a long and run. They have started providing their employees with reimbursement for remote working. Even the advisor of Larsen and Turbo Yogi Sriram believes ‘remote working is the beginning for a better change’ but on the contrary he added it is difficult for 75% workforce to work remotely so the adaption of a hybrid model will be a more suitable approach (4) Considering the environmental perspective India ranks 5th in climate risk index as reported by the Environment Think Tank, Germanwatch. It is very vulnerable to climate change and its dire effects (5). From the past few years it has gone through massive changes due to increasing deforestation for construction of offices and buildings (14). Big firms can bring the percentage in decline if they choose to reform their company policies and add a remote working approach.

Forbes report 2020 : Benefits of remote work



##### B. Interventions For Psychological Well - Being

Where one third of the population has witnessed less work stress after working remotely, the remaining population reports higher levels of anxiety, loneliness, work-life imbalance and other psychological issues which cannot be overlooked. Even companies practicing remote work from

the beginning have faced challenges and have come up with solutions for efficient working. Keeping a schedule and a priority list has been among one of the most efficient ways to pave off the challenges. According to authors, interventions for dealing with work life stress and implementing the remote model effectively are:

There should be a fixed schedule for remote work. Employees complaints related to physical pain should be addressed by providing them proper setups at home to work with ease. Along with it, employees should be given reimbursement for their internet requirements and other necessities consumed in work. The mental exhaustion can be dealt by engaging in proactive communication to avoid discrepancy between performance expectations. Monthly face meets or casual team meets can be done to increase the emotional involvement leading to less stress. Hiring a psychologist in the organization to maintain psychological well-being by problem sharing sessions, recreational activities and most importantly for understanding the needs and requirements of employees.

## V. CONCLUSION

The paper unfolds the potential of remote work as a long term sustainable plan with examples and data of companies from worldwide with emphasis on Indian perspective as well. The wide literature suggests a significant increase in the rate of productivity and employee retention working remotely. Remote work still remains a controversial yet essential topic for managerial debates due to its possibilities and pitfalls. But with the increasing advancements and technologies, a lot of companies are switching to remote work to save cost for office facilities, travel benefits and to increase diversity and talent. Many organizations who have faced loss of human resources due to geographical

locations causing extreme illness to their employees can easily be dealt by this approach. To our surprise, many employees even chose the liberty of working from anywhere over a better salary. They want to be close to their families and have experienced a better work-life balance. The approach of remote working's biggest benefit is noticed by the millennials who love to work in an environment of their choice. They argue that remote working gives them freedom which establishes their trust on the employer and leads to better commitment to the organization. This framework requires more brainstorming before implementation to the fullest, with strong hold on technology and dealing with security concerns while switching to remote working. Along with this, the authors firmly believe that the future of organisations will be more remote in coming years as the trend suggests.

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## A study of changing techniques and methodology in imparting online behavioral training and its impact on the participants

**Ms. Leena Deshpande**  
AVP-HR  
Head CSR - Bharat Forge Ltd.

**Ms. Sapna Gadh**  
Asst Manager - HR  
Bharat Forge Ltd.

**Ms. Riddhi Munje**  
Trainee - T&D  
Bharat Forge Ltd.

### Abstract

As a result of the pandemic, many organizations had to switch to online models of training to compensate for the restrictions on doing business in person. This study suggests that virtually imparted behavioral training has proven to be as effective as in-person training.

### Purpose:

This article focuses on the pivotal role of technology in HR specifically in the area of Training & Development. The article describes the important role of Training and development in business sustainability. It highlights the changing methodology in conducting training and keeping the employees engaged while imparting behavioral and soft skills training.

### Approach:

Human resources of the organization give a competitive advantage to the organization as technology alone cannot make any miracle, the minds and brains behind the technology lead the organization towards success. Human resources of the organization have to acquire the necessary technical and behavioral skills to cope up with the new normal i.e. changed technical and socioeconomic environment due to pandemic of COVID-19. For the development of employees training function has to be continued virtually, if not possible in person. Since the pandemic has created a lot of stress for all including employees of the organization, the first training module on Stress Management was designed and imparted to 274 employees virtually. The feedback and

impact of the training was analyzed.

### Findings:

Training imparted virtually on stress management was well received by the employees. It could be kept in an interactive mode. It also helped to reduce costs. It was found out to be essential for employee engagement, boosting morale and for work life balance. It helped them to gain more information and knowledge about the subject and to understand their mind and body synchronization.

The employees are getting well-adjusted with the new methods and techniques of imparting training on virtual platform.

Key words: Digital HR, Sustainability, Employee engagement, Stress Management.

### Introduction:

The unexpected onset of the COVID-19 pandemic sparked the era of Digital HR. As companies made their transition into the virtual world, HR departments in companies were pushed to leverage the opportunities of technology and discover the true strength of digital HR. Digitization of HR helps companies to move their focus from repetitive and formal tasks and provides scope for innovation and sustainability. Today, in the area of Training and Development we have moved from traditional classroom-based training to virtual training. Hence, it was important to investigate that effectiveness was not compromised. Therefore, this article analyses the effectiveness of E-training which was imparted on Stress Management considering today's requirement using the Kirkpatrick Taxonomy and also highlights the role of

## E-training in business sustainability

**Need for Training:**

Every organization faces competition. Competition is that non-substitutable element, which exists in every industry. Since, employees are the most-valuable assets, the effectiveness of an organization partially lies in the hand of the training and development department by training its employees to develop their skills, competencies, creativity and innovative mindset. Therefore, training is needed to ensure:

**Higher Productivity:** Effective training helps to impart essential skills that workers may lack to achieve optimum productivity. This helps the organization to produce more while reducing costs at the same time.

**Quality Improvement:** In today's market, "customer is king". Hence, quite naturally quality ranks at the top most pedestal for them. To meet the needs of these quality conscious customers, training needs to be imparted to workers to communicate expectation and to keep them up to date with the latest technological advancements in the industry.

**Safety:** In many industries, workers work with heavy machinery. Training needs to be imparted to workers to make them aware about safety rules and guidelines. This eventually helps to reduce industrial accidents at work-place.

**Helps to reduce labor turnover and absenteeism:** Training helps to create a feeling of safety and confidence in the employees. It helps in boosting morale and makes employees well-equipped to perform their job efficiently. Thus, helping the organization to reduce employee turnover and absenteeism.

**SUSTAINABILITY:** Business sustainability focuses on 3 P's namely People, Planet and Profit. While sustainability in HR includes employee engagement, creating a better work environment, abiding to fair and unbiased

practices, investing in training and development, encouraging work-life balance etc. And to ensure that all these parameters are fulfilled there is a dire need for training and development of employees.

Hence, training and development is an investment that provides a greater sense of satisfaction to the employees of an organization by helping them achieve personal, career and organizational goals. All these are key factors that positively affect an organization's profitability, sustainability and provides them a competitive advantage.



Fig 1: Training & Development and Competitive advantage

**Merits and demerits of E-training:**

As we made a gradual transition into the virtual world, Training and Development-one of the prime functions of HR faced challenges. The real question here due to the pandemic was- "How to provide classroom-based and skill-based training virtually?" while other problems included lack of in-person contact, varying bandwidths of internet networks of employees, the mere absence of judgment of body-language that prevails in traditional classroom based training, and the time constraints of virtual platforms.

Despite the challenges faced, E-training offers a set of advantages- to impart training by using an effective methodology

to keep participants involved and attentive. It is a good way to clear doubts, engage in interactive learning while sharing and understanding at the same time and to connect from anywhere and at any time.

### **Stress Management E-training at Bharat Forge Limited:**

Evidence suggests that most of the human successes are created under stressful situations, however increasingly high rates of stress come hand-in-hand with numerous repercussions such as, sleep disorders, mental and physical illness, irritability, restlessness, abnormal fatigue, reduced individual's resistance, recurrent infections, poor concentration, memory impairment etc. To reduce such stress levels during the period of pandemic; self-motivation and work-life balance was essential.

Therefore, training on "Stress Management" was imparted virtually to over 274 employees after August 2020.

Contents and topics covered in this training session were:

What is stress?

Symptoms of stress

Response to stress

Happiness chemicals and ways to hack them.

Ways to deal with stress.

Setting goals

Prioritization grid

Using a to-do list

Being flexible

Ways to conquer procrastination

Rewarding yourself

Essential habits for good time management

The design of the training program comprised the following interesting homework and exercises given to ensure active engagement of the employees in the training program:

Share and listen about how you feel about

the day with at least one family member or friend. This will help to reduce the stress and possibly to come out with a solution to deal with the stress.

Exercise for at least 45 minutes a day. Help in redressing and developing positivity and energy.

Dance or sing a song to overcome stress.

Paying attention to the words you use while communicating with others.

Forming positive sentence and way of speaking to create positivity.

Forming five positive sentences to describe yourself. Thereby helping them to know their strength and weakness and enabling them to work on their weak areas to reduce the stress.

### **Evaluation of training effectiveness:**

Kirkpatrick's Training evaluation model

Level 1 & 2: Reaction & Learning

At this level, the trainer tries to understand how the participants reacted or responded to the training. This is done during and immediately after the training by asking the participants about their feelings and their views about the training session.

At the learning stage, the trainer tries to understand what the participants learned from this training. Trainers may use methods such as Test scores after the training.

Participants were asked to fill out an online training evaluation form which was shared in the form of a Google link.

Along with multiple choice questions, few descriptive questions were asked to the participants, they are as follows:

What were the important learnings from this training session?

If you expect further training based on this topic, what sort of a training would you expect?

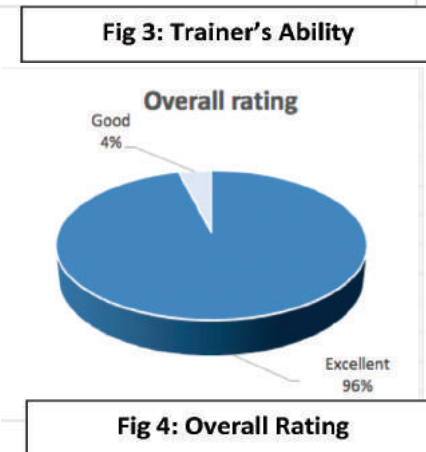
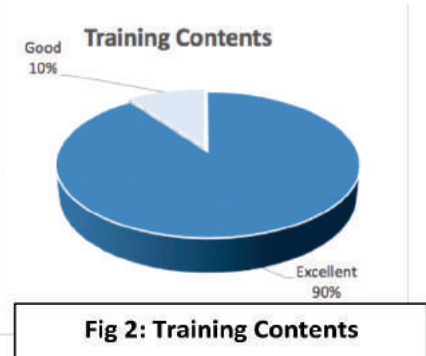
How will you implement the learnings received from this training at your workplace?

This helped the trainer to understand what the participants expected from the training and what their immediate response to the

training was. And if any necessary additions or changes were required in the training module.

The analysis of the training evaluation forms filled by nearly 274 participants is presented in the form of a pie chart below:

The analysis of the training evaluation forms filled by nearly 274 participants is presented in the form of a pie chart below:



The analysis of feedback received highlights -  
 90% of the participants rated the contents of this training session as Excellent.  
 95% of the participants rated the trainer's ability as Excellent.  
 The overall rating was 96% Excellent.

The key takeaways shared by the participants through online training evaluation forms were:

- Prioritizing work is important to reduce stress.
- Actions to reduce or manage stress.
- Change negative thought into positive in 17 seconds
- Importance of setting goals
- Prioritization matrix
- Organizing yourself and your work
- Keeping yourself physically fit by exercising regularly
- Positive thinking
- Sharing your stress with your family and friends
- Proper planning
- Proper time management and
- Work-life balance

**Level 3: Behavior**

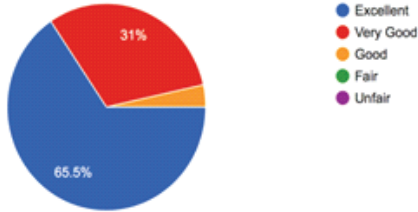
At this level, the trainer tries to understand how the training impacted the trainee's performance. The trainer may use a combination of metrics which include, self-evaluation surveys, on-the-job observation, client questionnaire etc.

At Bharat Forge, a self-evaluation forms were sent to participants to gauge if they were actually implementing the training imparted at their workplace.

Following is the analysis done on the basis of these responses.

Question: How did you find the stress management training imparted after the pandemic?

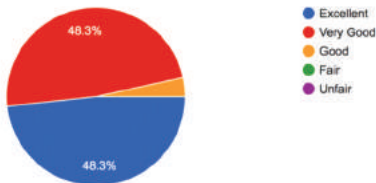




**Fig 5: Overall Rating**

Interpretation: 65.5% of the participants rated the training as excellent, 31% as very good and a mere 3.5% rated the training as good. Overall, the participants had a positive response to the training.

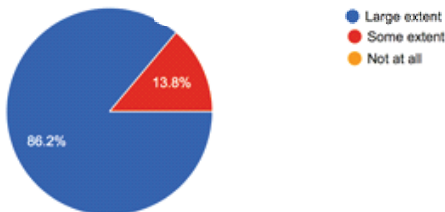
Question: Was the training methodology used appropriate?



**Fig 6: Training Methodology**

Interpretation: E-training was rated as excellent and very good by nearly 96.6% of the participants. While, only 3.4% of the participants rated the training as good. This shows that employees are slowly yet gradually getting used to virtually imparted training.

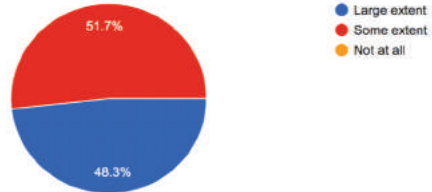
Question: Did you find the training useful? Were the content relevant to you?



**Fig 7: Usefulness of contents**

Interpretation: 86.2% of the people found the training useful to a large extent. While the rest found it useful to some extent. Overall, the training was found to be relevant by most participants.

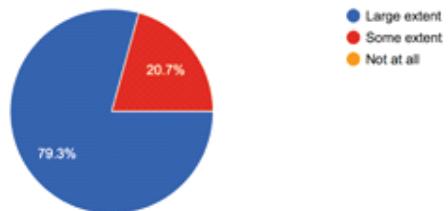
Question: Are you implementing the learnings in your day-to-day life?



**Fig 8: Training Implementation**

Interpretation: 48.3% of the participants are implementing the learnings from the training session to a large extent in their day-to-day life. And a majority of participants are implementing the learnings to at least some extent.

Question: Were the videos and exercises covered in the training session useful?



**Fig 9: Usefulness of contents**

Interpretation: A majority of 79.3% participants found the videos and exercises shared in the training session useful to a large extent. While only 20.7% found them relevant to some extent.

Question: Are you implementing the learnings from this training session in your day-to-day life? If yes, elaborate.

Implementation of these learnings was done by participants training evaluation forms were:

Prioritization of work and monitoring it on a weekly/monthly basis

I think about what best I can do based on my skills, experience, abilities, capability rather than what I cannot not do.

I say NO to colleague/supervisor/Boss for the work which is beyond my capability and which is not logical to perform.

I start my day on a positive start note. And I will list my strength and weakness and will work on my weak areas.

I maintain a TO DO LIST in one notebook w.e.f. 18th August 2020 & I track my work in accordance with the plan.

I accept the situation as it is & try not to panic if I cannot change it.

I start thinking differently, I think about how smoothly I can do the assigned task despite hurdles due to any situation/pandemic.

I recheck my Goals and ensure they are definite, defined, measurable, and achievable.

Good time management by applying the essential habits (Focus on the result/schedule time for important issues & others)

I am flexible, avoid procrastination & set Goals according to my capability only.

Time Matrix Quadrant 2 - I work to remain in Q2 (Prevention, Relationship Building planning, and recreation)

Frequent discussion with team, interacting and sharing experiences.

Every morning I start my day with five-sentence of A.P.J. Abdul Kalam sir as:

I am the best

I can do it

I am a winner

Today is my day

God is always with me.

Level 4: Results

At this level, the trainer analyzes the final

results in accordance with level 1, 2 and 3.

The training on Stress Management has positively impacted the mindsets of the employees. It has helped them to develop a positive mindset, maintain a work-life balance and achieve goals with a new-found zeal.

#### Conclusion

E-training help in employee engagement, employee retention, maintaining a positive work environment and boosting morale of employees. These together cover the “people” aspect of business sustainability.

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raining and employee progress completely is linked with managerial competitive advantage. A good chance of training motivates worker contribution and promotes capabilities. Training promotes competitive advantage in context of job satisfaction and performance, decrease non-attendance and lowe



## Does Analytics Leads to Disruption? – A Conceptual study

**Ms. Saswati Chakraborty**  
Deputy General Manager,  
Vodafone, India

**Dr Suruchi Pandey**  
Associate Professor,  
Symbiosis Institute of  
Management Studies, Khadki

**Abstract**— this review paper is focus on the organizational trends and practices across industries, where an effort was made to explain the definition of Analytics and Disruption on HR context, along with how these two are interrelated with each other. This also shares the various scenarios of Disruptions and its association with Analytics. It presents a detailed understanding of HR analytics and its importance, along with understanding new trends and how it is linked with Disruption process.

The review also strongly projects that Analytics is a first step towards of all disruption. Analytics leads to an opportunity to grab by identifying ways of transformation within organization or create an ability to handle disruptions by forecasting or predicting analytical techniques. Therefore, Analytics become very critical for any organization to provide insight about not only organizational data but also socio economic conditions, economic opportunities, demographic environment and competitors strategies. Its becomes essential for any organization to have an analytical competencies to be able to cope up with any kind of disruption.

**Keywords**— Analytics, Disruption, People Analytics, Strategic HR, Management

### I. INTRODUCTION

In this highly competitive, uncertain business environment today, creates many complex difficulties which force an organizations to take critical decisions for its survival and future growth. Moreover there is a quest between companies to gain

competitive advantage by providing value added services, innovation at work, improvised product and services, excellent customer experience, process transformation and automation which also add to the complexities for an organization which they have to deal with. In a functional level each departments are define by a standard set of key performance indicators and metrics which helps them to design, operate, monitor and transform business performance.

Whereas Disruption is now a popular phenomenon which is a result of business transformation and technology change in value networks or through business innovation. There are evidence that economic disruption are increasing now a days not just because of technology but could be result of from public policy, macroeconomic trends, geopolitical events, pandemics like “Covid 19” as biological disruption which world is going through right now. At the same time, disruption can effect or transform political framework, social agreements, regulatory rules and many more aspect of business. Therefore, the perception of disruption is now changing and no long organization are seeing this as a threat but as an opportunity for organizations. Organizations are now welcoming disruption to take advantage of the changing environment, thereby looking for opportunities to be disruptor then been disrupted by others.

This varied forms of disruptions which is happening in our business environment, creates a curiosity in our mind on, how this disruption are happening? From where this opportunities of disruptions are identified? What is the impact on business due to

disruption? Who are the people behind disruption? How does one identify means of disruption? And many more questions are floating in our minds. Thus these questions bring the focus on a very basic and important ingredient of business transformation which is “Data Insights” which is crude form of “Analytics”. Analytics is a way of bringing meaningful data insights for business growth, hence for any transformation to happen we need insights and those can only be bought through “analytics”.

Practice of analytics is not a new subject, many organizations and its functions are already taking advantages of using analytics as a key tool or sub function for forecasting like Finance, technology, supply chain, Sales and marketing etc., but the use of analytics on HR is not been practice for long. Its just recently HR senior leaderships are understanding the importance of Analytics in HR function. HR as a function was using very traditional ways of descriptive analytics or reactive in nature which lacks analytical abilities to gain appropriate employee insights, which is not sufficient for the new demanding organizational needs. Thus need to prioritize and elevate the analytical capability within HR function. During this stage of uncertainty of business stability due to disruption happening across us, If HR function is not able to elevate its analytics abilities they will not be able to cope up with changing employee and organizational needs cause through disruption.

Human resource function has wide range of data for their workforce and employees. In today's time with the help of technological enabler and advance tools which are available for predictive and prescriptive analysis, can provide HRD with immense power and potential to forecast employee prospective and strategy. People analytics can provide

impactful insights on their workforce skill, competency, demographics, developmental needs and performance and growth potentials. These not only helps to get the right candidate for right job but also identify your top performing employees who are at the risk of leaving. Therefore it's important for HR to be disruption ready along with other functions so that organization is ready both on business side and people side for any transformation and change.

Earlier in 2016 report by Deloitte's Global Human Capital Trends, 77 % of HR professionals identified the need of HR analytics within HR function. As per the survey, 44% per cent of organization are already using data to predict employee performance and behavior. While in the very recent report of Deloitte's Global Human Capital Trends in 2020 shares an important insights about the improvement on workforce analytics in last few years. The report highlights the demand of new workforce insights has reach its new heights, 97% of the respondent express additional need data and insights of their workforce. Whereas 54% of the respondents shares that's in last few years their organization had made progress in the area of people analytics. Upon that's 83% of the respondents said their organization produce information's on the state of their employees at work. Where only 11% produce information real time and 43% produce adhoc information on workforce as per requirement. Moreover from the leaders prospective, almost 53% of the respondents shared that their leader interest on workforce information has increased in past 18 months for better workforce metric spans a diverse set of needs focusing on future objectives. The decade of human capital trends across industries, this explain the growing need and evolution of HR/workforce analytics in last 10 years.

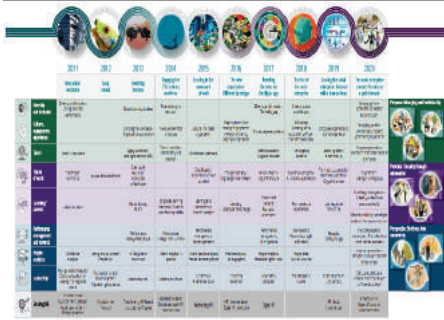


Fig 1 – HR Trends in last 10 years (Source - Deloitte's Global Human Capital Trends 2020)

Thus this report analysis show an immense need of people insight form the organization's in today's business environment. Thus organizations are now connecting their workforce data with business outcomes, so that organization is future ready.

Thus one need to focus on the organizational trends and practices across industries, where an effort to understand people prospective should also be made. Understanding the definition of Analytics and Disruption on HR context will help HR professional to be future ready and equip to deal with kind of disruption. The interrelation between analytics and disruption can be explained by various scenarios of Disruptions and its association with Analytics. Thus presenting a holistic understanding of HR analytics and the challenges faced, its types and new trends which are coming up. The review also strongly projects that Analytics is a first step towards of all disruption. Analytics leads to an opportunity to grab by identifying ways of transformation within organization or create an ability to handle disruptions by forecasting or predicting analytical techniques. Therefore, Analytics become very critical for any organization to provide insight about not only organizational data but also socio economic conditions, economic opportunities, demographic environment

and competitors strategies. Its becomes essential for any organization to have an analytical competencies to be able to cope up with any kind of disruption.

## II. CONCEPTUALIZING ANALYTICS AND DISRUPTION

### A. Understanding Analytics

Analytics is define as a science of examining raw data to make meaningful insights about that information, Data in today's world is in form of text, files, audio, video, etc., which is getting generated at an unbelievable pace and with organisations now well equipped with tool and technologies that can help them store and interpret this information, it is needless to say that it's time to harvest this plethora of information that could give the organisations immense insights into their customers, employees, business environment and product. Therefore we can say that Analytics is also define as a discovery and communication of meaningful patterns in data. Analytics depend on various application and tools of statistics, computer programming and operations research to quantify performance.

### B. What are different types of Analytics?

Analytics is divided into 3 types - descriptive, predictive and prescriptive. Descriptive – Descriptive analytics answers questions such as “What happened” and “What is happening now”. It is used in most of the organization for publishing a real-time dashboard and/or email reports etc. but this is diagnostic and reactive approach which only provides a reason for some event which has already happened or happening.

Predictive – Predictive analytics is an analysis of likely scenarios of what might happen linked to an organisations business objectives. Predictive analytics helps an organisation to predict their current ways and gaps, it also contribute to the attribute of measurement system that will maximise decision support for executives.

Prescriptive – This type of analysis reveals what actions should be taken, it describes what possible and best solution to a given organisation problem or issues. This type of analytics combines predictions and decision making and its impacts. This is the most Valuable kind of analysis and usually results in rules and recommendations from this type of analysis, [8].

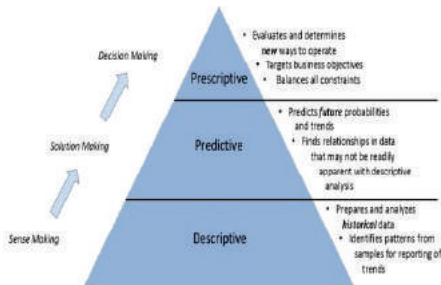


Fig 2 – Analytics Pyramid

C. Introduction to People Analytics  
HR Workforce strategies and operation has evolve in last few decades, but workforce metrics, KPI's and governance are yet not developed hence creating a gap within HRD. New metrics need to be evolve to have a futuristic outlook, which needs to understand forward looking insights and trends shaping human capital in the right direction to support organisational growth and shield uncertainties in the business. Bassi, L, define Human Resource analytics is the enabler of a methodology for improving the quality of employee related decisions, using Human Resource metrics all the way to predictive modelling for organisational performance improvement, [2].

People analytics is principle of using technology and data analytics to manage people effectively. This help to turn people management and HR functions from transactional service providers, to strategic partners playing a key role in the business outcomes. Can contribute to figuring out the most engaging policies, and reduce bias. People analytics empower line

manager and senior leaderships to gain prospective of their employees to anticipate and meet the challenges of the rapidly changing environment.

With the increasing demand of workforce insights from management, foundation of People analytics has been set to resolve various issues HRD today face, like uncertainty in the area of “People Skills”, where existing skill are becoming obsolete due to technological and economic changes, along with increasing demand of new skills, thus need to have more dynamic view about the workforce capabilities, ability to redesign workforce by integrating technology and plan developmental need for employees. Along with external uncertainty there is internal uncertainties also which organisation need to deal with like cultural issues, diversity and inclusion needs, leadership behaviour, employee behaviour, which has a potential to effect organisation brand and financial value. In last couple of years only organisation has invested lot of capital in issues related to leadership and culture, thus there is a constant need from the organisation to have a mechanism to gauge this workforce indicators to develop a predictive metrics to tackle such issues at work.

One of pioneer for using people analytics is Google. Google's market success is an example of extraordinary people management practices that result from its use of “people analytics.” They have shifted their strategy towards data-driven people practices. Google's business successfully adopted the data and analytically based modeling for gathering people insights and building strategies accordingly. Its approach has resulted in Google producing amazing workforce productivity results - on average, each employee generates nearly \$1 million in revenue and \$200,000 in profit each year, [19].

Thus, people analytics capabilities, starts with interpretation of data into meaningful

insights using various type of analytics involve human inputs, which add in to form decisions and transform into actions.

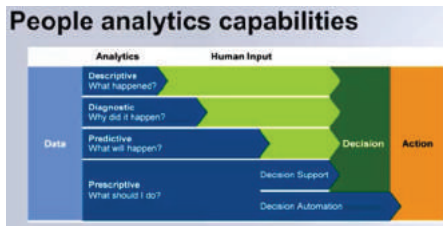


Fig 3 – People analytics capabilities flow.

#### D. Understanding Disruption?

The dictionary meaning of disruption is “disturbance or problems which interrupt an event, activity, or process”, but here we are trying to interpret the disruption as a transformation of business model in any organization which challenge the current ways of working, processes and structure and system.

The concept of “disruptive innovation” was 1st describe by Clayton Christensen in 1995. According to him, disruption is define as a change in business models and value networks by the influence of technology or business innovation. He termed this as “disruptive technologies,” as most of the disruption were seen in information technology sector. Well the spectrum disruption as increase and it’s no longer only through disruptive technologies, as disruption can come from other innovations also, such as new product or models or transforming processes. Disruption is constant process and this can make organization struggle with challenges and tremendous uncertainty to deal with. Therefore Handling disruption has become a central issue for organizations thus led to a growing awareness in last few decades to find and develop strategies to deal with disruption in future. In last few years, only few of companies have learned to deal with disruption or dare toy disrupted their own business operating models successfully. One of case study can be highlighted is of “Netflix” which changed its business

model from DVD providers to one online applications for movie/video streaming. Whereas, many firms like Waldenbooks and Zenith Electronics failed to adapt to the new changing trends on time and hence lost market share and bare losses, [10].

With the introduction of Artificial intelligence, Robotics, IoT and many other tools in the area of service sector, there has been a drastic change in the dynamic of how we perceive “Customer Service Operation” operate in most of organization. Where customer service was mostly having human handled call centres few years ago which is now getting replace by chat bots and AI tools as a result human intervention has almost reduced to minimum level and releases efficiency for other business activities. Thus disruptive new technology has created a separate new ways of working within Service Sector and complete change the dynamics.

Another recent example of disruption in telecommunication sector has been seen in India, the sector has been facing tremendous changes and stiff competition for many years. With huge customer base available in India, tariff rates are hitting their bottom line and in addition, telecom companies are broadening their spectrum acquisition and infrastructure. The situation got aggravated in year 2016 with the entry of Reliance Jio, which act as a disruptor to the complete telecom business model. Reliance Jio offered free voice and data services to its subscriber. This forced the other companies to drastically cut their tariffs rates, which create pressure on their market share and profitability. All these factors triggered a long-awaited union in the telecom sector, causing announcement of mergers within this sector for the survival of the telecom companies. Thus we can say that disruption is not just result technology but can be triggered through of demographic shifts and globalization. Few major disruption happened which has changed the dynamics industry are like Ola, Uber, and Airbnb which has disrupted



industry norms. In addition some of the disruptive technologies on our ways are, Artificial Intelligence and robotics which will not only disrupt the business models but also will have a huge impact on demography. The opinion on disruption is now shifting from a threat to an opportunity. Organizations have started to welcome disruption and takes benefit of the changing economy. A research taken place on the number of media articles mentioning “disruptive innovation” between 2010 and 2015. The search found an increase of 400 percent times during last 5 years.

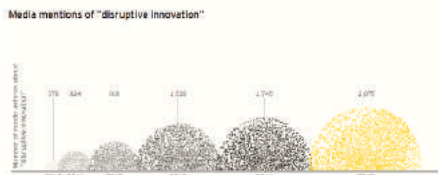


Fig 4 – Number of Articles mentioning “Disruptive Innovation” in each year, Source EYQ 2016

#### E. Primary causes of Disruption?

The previous study has highlighted that primary reason behind disruption are majorly technology, globalization and demographics.

Technology -Disruption has been related to technology most of the time, this is because with advancement in technology it has disrupted the business operating model and cause disruption from last few decades. Starting from Industrial Revolution to IT revolution waves like computers, mobiles, internet and social media have provided immense availability of data and created consumers empowerments. New technology is coming up with most sophisticated tools like Internet of Things (IoT), AI, robotics, virtual reality etc., which will have greater potential for more IT revolutionary.

Globalization - Globalization has been another core reason for disruption for centuries, stating form 15th century the

Age of Discovery and colonialization to trade liberalization and expansion of market growth. Has disrupted the existing business models by creating competition. The next waves including the emergence globalization of African and Asian countries providing cheap skilled labor and services to developed countries of the world, which are creating workforce complexity and require strong strategies for managing diverse workforce.

Demographics – Demographics cause of disruption is one of the most influencing once this include general world demographics dynamics which either create an imbalance and requires new strategies and business models or creates opportunity for business, like high birth rates in developing countries of Africa and Asia, which is creating more human capital opportunity. Similarly aging populations in west has change the business needs in health care and insurance sectors. Also with young population having fixed income, have urge to have their own home or property which has change the way real estate sector. Millennial generation influence workforces today and they have very different expectation and requirements which organization need to deal with. Also due to urbanization, new cities are developed, economic and public guidelines are changing. People migrating and immigration has strong impacts on workforces and economic development.

#### F. Difficulties in identifying disruption:

Typically companies are the prey to disruption. To understand the difficulties faced by organization, as they fail to capture and decode the initial signals of disruptions, like introduction of new technology, change in demographics or economy. Traditional organization usually fail to adapt themselves with the changing environments. However, smarter organizations encash this opportunity and

embraces customers’ disruptive requirements, which gives other market competitor’s difficult time, soon the newer capabilities exceed those of the existing product or service who have so far resisted the future and fail to adopt into the new ways of working, [13].

**G. Disruption becoming megatrends:**

The next phase of disruption will move from the primary forces of technology, globalization and demographics to newer trends evolving like diverse workforce complexities, global urbanization, Artificial intelligence, Pandemics robotics, aging populations, Health care demands, and millennial workforce’s expectations, which give rise to different range of megatrends.

The trends like climate change, pandemics force different companies to develop innovative solutions on the way they work and bound them to transform. Thus Industry need to be redefined to the empower customer, introduce product of digital disruption. Thus exploring these trending factors in depth can give companies the ability to understand the rapidly changing world and adapt accordingly.

Thus name any area or sector of business, disruption is everywhere, organization need to be prepare to know the unseen and should have the ability to forecast the future by understanding the change happening all around. In the coming era organization will be sending lots of efforts and money on understanding possible disruption coming their way and means to negate its effects or take this as an opportunity for business growth.

**III. METHODOLOGY**

**A. Research Methodology:**

The objective of this study is to create a solid context to establish relationships between ‘Analytics’ and ‘Disruption’. To achieve the goal, ‘Conceptual Review’ was conducted, which offered us an in-depth knowledge and analysis of appropriate research papers on this topic, along with an opportunity to understand theoretical concepts and gaps. Hence, by conducting a review on related literature around the subject helps us to understand the related research around the subject and list down the outcomes by using a well define procedure.

**B. Description of the review-process: Data Collection**

The database used for data source were Scopus, Web of Science, JSTOR, Directory of Open Access Journals and Google Scholar, Open internet search, All this above mentioned database and journals are known for having the rich and broadest range of research papers/ articles in the area Management. The keywords used for searching the research papers, in both separate and in combined ways using the “AND” and “OR” functions for search: The keywords used are as follows – ‘Analytics’, ‘Disruption’ ‘People/HR Analytics’.

**C. Sample Analysis**

The review incorporated for this work matches the above mention search criteria

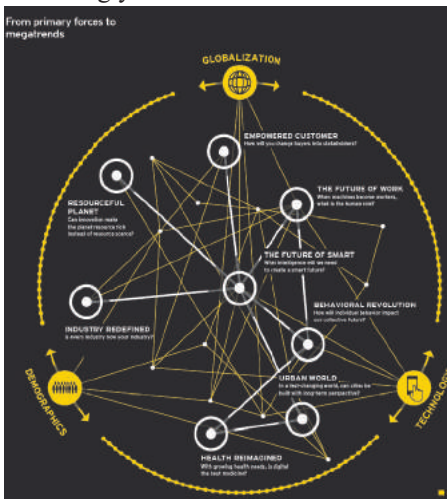


Fig 5 - From primary forces to megatrends (Source EYQ 2016)

in order to be involved as a part of this review. The published research papers/articles on the related topic were selected. Further, those research papers are chosen, which provide us with valid data and influential finding. To ensure the studies covers appropriately interpretation of 'Analytics' and 'Disruption', papers were compared with respect to following aspects: the theoretical framework(s) adopted, methodology used, the research question and objective, the discussion, method used, design and research findings. In this way, the identification of the relationship between 'Analytics' for encouraging 'Disruption' is concluded.

#### IV. DISCUSSION

Relation between Analytics and Disruption:

Analytics is the most upcoming and promising area in today's business environment as it provides an opportunity to look deep inside the organizational data to infer insight about the health of an organization or business model, which in turn helps us to take effective decision. Various analytics ways and methods like predictive analytics; diagnostic analytics etc. are used in organization to forecast future trends and to provide comprehensive diagnosis of business problems.

Whereas disruption is the most uncertain situation organization can face today, hence most of the big and medium based organizations are now strategizing on how to deal with the forces of disruptions. It is creating a situation either a company can be either disruptors or can get disrupted by other company, which can result in loss of market share and profit for an organization.

These primary cause of disruption, technology, globalization and demographics happens majorly in three different ways, internal, external and innovation. Internal disruption can happen when an organization decides depending

on economic and strategic requirement to disrupt their business practices and bring transformation for their operating model. This disruption is trending this days and many organizations are coming up to adapt new and smarter ways of working, which in turn bring more efficiency in the process. Performing this internal transformation of operating model, began with understanding their existing ways and how effective they are, this can only be done via analysing organisation operational data and also interpreting market trends or practices via analysis the future forecast. Thus Analytics form the core basic ingredient for doing internal disruption.

External disruption is where business competitors or demographic change in the socio-economic environment comes in picture, which can completely disrupt the organisation strategies and functioning. This is mostly firefighting situation where organization needs to take immediate steps. Hence now a day the utmost priority of an organisation is to forecast this kind of disruption with the help of analytics and to build strategies, plans, policies in advance to handle this situation. Again without analytics and its tool this futuristic view is nearly impossible to gauge.

The third way is "Disruptive Innovation", which can have impact in both internal and external ways. Here innovation is mostly bought by introducing smart technological solution which brings process improvement and direct cost saving to the organisation. The most talked about innovation these days is Robots and artificial intelligence, IoT, big data etc which is another critical outcome of disruption, that technically replaces human capital (employees) by robots, in turn can provide lot of profit margin to an organization. This model is based on the opportunity, that each organization has different roles and jobs, by identifying the various work types/ Jobs that exist in an

organization and sorting them based on skill and knowledge level requirement, which then will help us to identify rule base jobs or repetitive operation task, meaning those jobs where defined instruction which is followed to complete a task (instruction driven) and repetitive in nature, this kind of activities doesn't require high level of skills and knowledge to do that task. Hence analytics can help us to be identified such activities, which then can be replace by Robots or artificial intelligence methods easily.

Therefore disruption is a birth of analytic, where analytics been the mother of disruption. Organisation looks into the data to find out insight, design business strategies, to take effective decisions, understand competitor's business patterns, forecast future trends etc. to be a market leader and earn more profit margins.

Basically Analytics is one of the important tools for all the major functions in an organization which proactively provide insight about organisation, opportunities to improve, standardizing processes and functions, take strategic decision and deal with various type of Disruption or to bring transformation in business models.

Thus, by looking at the limited literature exit in the field of analytics and disruption, the aim was to establish relationship between disruption and analytics. The finding conceptual study shows a direct association between analytics and disruption. This relationship is based on providing insights, which analytics is much capable with the help of various sophisticated tools and techniques it possess, Thus provides a prospective to the organization to think on future steps and directions which help them it align business, customers and employees need and demands. To be future ready, organization need to be able to read and interpret data to its best possible ways and

means. The effort are made my top companies to establish an independent function on business analytics, which not only help organization to take better decisions but also equip them for any possible disruption coming their way. With the awareness of analytics in industries and understanding the power it contains, human resources function is also taken efforts to move hand in hand with business need and objectives. People analytics is an important ask which is very essential for the survival of organization. Ultimately any change or transformation whether bought by technology, globalization and demographics impact need to be handled by "Human Capital" only. Without employees, organization can't really do anything and thus organization need to understand the need and expectation of their employees so that they have most engaged workforce capital, which shield an organization to handle any disruption and transformation.

## V. CONCLUSIONS

Looking at the wide scope of analytics and its various advance statistical tools and methods, Analytics will be able to show immense capability to provide data insight for an organization, where not only future predictions or organizational effectiveness can be forecasted, but it will help us in understanding customer behaviour, employees preferences, competitors strategies, economical changes or demographic shifts in industries, along with opportunity assessment for organization to capture market share.

Disruption is the greatest challenge, that organization can face today and in future, which need to tackled with greater effectiveness, one need to have a proper understand of economic trends, market movements, resource utilization, right people support and customer satisfaction, to gain this Disruption is the greatest challenge, that organization can face today and in future, which need to tackled with

greater effectiveness, one need to have a proper understand of economic trends, market movements, resource utilization, right people support and customer satisfaction, to gain this organisation need to have Analytics in place, which will be capable enough to handle such situation with proper decision making. Organisation must begin to ask fundamental new questions to find relevant, actionable workforce metrics with the help of analytics that can help organisation to take bold decision around critical human capital risk and opportunities and be future ready. Thus analytics completely ties with new megatrends of Disruption and its goes hand in hand to accomplish never ending series of change in the economic environment. Preventing organisation to be a victim of Disruption rather than provide capability to act as a Disruptor for others.

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## Agile HR as Catalyst: A Regenerative Framework to Thrive in an Evolving World

Mr. Vineesh U Sathianathan

Elegantvie consults and Designs private limited  
Kozhikode, India

Mr. Anish Aravind

S. S. Consulting, Kochi

**Abstract**— Many of the so-called progressive organisations are still stuck on Frederick Winslow Taylor’s concept of systematically managing work, even though the scope have moved from physical work to knowledge work. We need a paradigm shift and to address the need, we are proposing a framework, “Agile HR as Catalyst”. Through this framework, we intent to reposition the role of HR personnel as a catalyst who embraces agility and enable the organization to be more responsive in this evolving world. Agile HR wears a new hat as a facilitator to leverage the seven dimensions of the framework that includes competence, circles, cadence, catalyst, conversations, context and clarity, to create employee experience where work becomes play. Based on the results observed from experiments done at two product based startups during the year 2020, we believe this alternate approach will help to get work done better. The observations includes an alignment to a larger purpose, increased employee engagement, accountability and a steady rise in predictability of team outcomes.

**Keywords**— Agile HR, Catalyst, Regenerative, Clarity, Competence, Circles, Cadence, Conversations, Context, Evolving.

### I. INTRODUCTION

Many organisations working on twenty-first century technologies are still stuck with twentieth century management principles. Frederick Winslow Taylor, introduces the concept of systemising work, through his book, “The Principles of Scientific Management” in 1911. He

believed that it was possible to discover the “one best method” of performing any task through scientific study and analysis. Task idea, as Taylor describes, is developed by management in advance and provided to the worker to be strictly followed[1]. This approach has since then continued for more than a century. While the approach might have helped in increasing efficiency in physical work, this is no more relevant with knowledge work[2][3][4]. In knowledge work, there is no differentiation between a ‘thinker’ and ‘doer’. Everyone is a ‘thinker’ and everyone is a ‘doer’. However, the unfortunate truth is Taylorism still prevails in the form of bureaucracy in many progressive organisations leading to inefficient use of human capital[2][3][4]. Now that work is not working[2][3], we need alternatives in this evolving world that suites the internal and external context of the organization. However, many organisations are looking for readymade how-to-templates rather than creating an approach that best suites them[6]. The biggest barrier that most of us face is our attachment to older way of working and habitual patterns of thoughts[5]. Paradigms provide us context; they determine our perspectives and shape the choices we make and the actions we take[6]. We need to change our perspectives and move out of our comfort zone to design the new way of work.

### II. CHANGING PARADIGMS AND THE ROLE OF HR

The need of the hour is to redesign the organization to be free of pathologies including but not restricted to politics, bureacracy, stress, burnout, resentment to

name a few[4]. Organisations have evolved from Infrared paradigm to Magenta to Red to Amber to Orange to Green to Teal paradigms. The three breakthroughs of Teal organisations include self-management, wholeness and evolutionary purpose[4] to leverage the best of available as well as evolving human potential.

There has always been debates about the role of HR personnel raising out of doubts about their contribution to organizational performance[9]. While the debate continues, it is clear that HR does have a very critical role to play being more agile. According to Dave Ulrich, HR delivers organisational excellence in four ways by (a) being a partner in strategy execution, (b) an expert in helping organise work and its execution, (c) a champion for employees, to escalate concerns to leaders and enabling their work contribution; and (d) an agent of continuous transformation[9]. Agile HR is gaining prominence and a Google search yielded over 1,98,000 hits and about 210 article in Google Scholar in December 2020. Agile HR refers to operational strategy applied to HR function[8], and in this study we attempt to reposition the role of HR personnel as a Catalyst[12][13]. In this new role as Catalyst, Agile HR personnel wears the hat of a facilitator in the organisation's transformation journey.

### III. REPOSITIONING THE ROLE OF HR

Our journey to explore the current gaps and identify an alternative approach to achieve organisational excellence have given us lots of new insights to leverage the full capabilities of the employees. Based on our understanding of the current deficiencies and possibilities, we propose a regenerative framework[5][6] to help organisations thrive in this evolving and volatile, uncertain, complex and ambiguous (VUCA) world, by reimagining the role of HR

personnel[8][14]. Regeneration is a process by which people, institutions, and materials evolve the capacity to fulfill their inherent potential in a world that is constantly changing around them[5]. The initial framework when developed consisted of four dimensions. As we experimented and iterated, these four dimensions evolved into seven dimensions. The seven dimensions of the framework is explained in the following subsections.

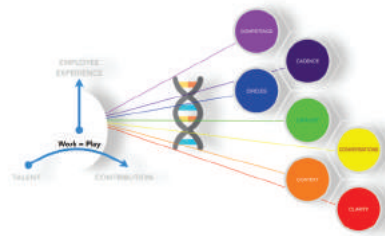


Fig. 1 Agile HR as Catalyst as framework  
A. Competence

Competence is the quality of having sufficient attitude, knowledge, skill, and intention & ability to upgrade regularly. People, not machines, are an organisation's greatest source of competitive advantage. Hence it is the people who drive business results through their contributions. Meaningful contribution requires a growth mindset[15] and the ability to learn, unlearn, update and react to the changing environment. Ability in the form of competence is what sets one apart from the other.

Competencies are not static, it evolves with the changing environment as well as requirements. Hence, early identification of factors contributing to change and mapping the competencies required to respond to change, will be key to thriving in an evolving world.

#### B. Cadence

Cadence enhances predictability of results, and certainty across circles, with clear and measurable outcomes. Stephen Bungay emphasises on the importance of creating



an operating rhythm within the organization[17].

The ceremonies agreed upon by the members are planned in a rhythmic fashion, to bring in predictability. Each of these ceremonies have a desired outcome, for example : the daily huddle has an objective to remove impediments within 24 hours, sprint demos provides a platform for the members to showcase their work to all stakeholders and request feedback, the retrospectives provides a psychologically safe[18] environment for members to express their emotions, feelings and concerns regarding what worked and what did not, and identify opportunities for learning and continuous improvement. the monthly heartbeat provides an opportunity for members to have open feedback related to their work performance. The cadence helps bring in more predictability and transparency within the organisation.

### C. Circles

Circles help remove bureaucracy. Member holds a specific role in a circle and may be part of multiple circles. Steve Denning talks about three core characteristics of an agile organization [19] :

1. The Law of the Small Team: work should be done in small autonomous cross-functional teams working in short cycles on relatively small tasks and getting continuous feedback.
2. The Law of the Customer: every member has a clear line of sight to the ultimate customer and can see how their work is adding value to that customer—or not.
3. The Law of the Network: members take initiative on their own, and interact with other members as a fluid and transparent network of players that are collaborating towards a common goal of delighting customers.

Circles are designed to align on the three core characteristic. Every circle may consist of 5-9 members and work towards

to achieve a specific goal. The objective is to generate more value with less work. It is a hierarchy of competence, not a hierarchy of authority. Any member in a circle can connect with any member in other circle, without an intermediary. Every circle has a chief, who acts as information radiators.

### D. Catalyst

Being the torchbearer of the transformation, catalyst acts as an agent that enables or speeds significant change[14]. According to Dave Ulrich[9][12], HR delivers organisational excellence in four ways by being (a) a partner in strategy execution, (b) an expert in helping organise work and its execution, (c) a champion for employees, to escalate concerns to leaders and enabling their work contribution; and finally (d) an agent of continuous transformation. Through this framework we are repositioning[12] the role of H personnel to Agile HR[8] as Catalyst. Beginning with identifying the drivers of change to support business in decision making and enabling transformation through communicating the need for change, HR acts as Catalyst to drive business results through people. As a Catalyst, offering expertise to accelerate decision making and implement change will be key to successful transformation[13].

### E. Conversations

Clear and concise communication among all stakeholders to ensure that the organisation achieves its desired outcomes[20]. Conversations are result based communications that happens among the circles with focus on clearly defined outcomes. Few examples may include addressing impediments, reducing gaps in information flow across the organization, bringing in a culture of continuous improvement. Every conversation may leverage different approaches to achieve the desired result[20][21]. It ensures clarity and create opportunities for regular learning and

information sharing[27]. Ultimately conversations act as tool to leverage contributions from talent by enhancing their ownership and pride via PULL mechanism[22].

#### F. Context

Members need to comprehend the circumstances constituting the background of an event, challenge, idea or statement to make decisions[5]. Leading and managing in a world of change and disruption requires a thorough understanding of the context (both internal and external) to drive business results[23]. Putting in place context enablers that will help explain the evolving environment will help people better connect and respond to change. Setting Context is important to be able to communicate, collaborate and commit to change.

#### G. Clarity

Every organisation exists for a reason(purpose) and the organisation thrives when every contributor is aligned to this[10]. Gaining clarity[11] of purpose is key to building an anti-fragile organization in this continuously evolving world. Unearthing clarity amidst today's chaos, gives a sense of direction as well as meaning for both organisation and it's employees. It is a habit which requires reinforcement, like any other habit, to be able to ingrain it in an organisation's culture[25]. If leveraged through a well-designed communication strategy, clarity will serve as a connecting bridge between the expected outcomes and achieved results.

#### H. Talent and Contribution

Jim Collins speaks about the three simple truths that leaders of great organisations understand[24], (a) In this ever changing VUCA world, beginning with 'who' rather than 'what' makes it easy for organisations to adapt. (b) It is important to have the right people to be part of the organization, who

are intrinsically motivated to deliver their best in creating something meaningful and impactful. (c) When the people are not the right fit for the organization, being in the right direction may not always help in creating a great organization.

Having the right talent helps the organization achieve the desired outcomes through the contributions of the members associated.

#### I. Work and Play

For members who are intrinsically motivated[26], work does not feel like work, instead they enjoy their work as in play. When work becomes play for the members, they enjoy and flourish within the organisation because for them work is its own reward[25].

#### J. Employee Experience

When various factors required to make the members deliver are taken care of, that is when their experience within the organization peaks[20][28]. An organization that focuses on employee experience gets the best out of their employees because they are capitalising on the intrinsic motivation of the members[25][26].

#### K. Culture

The culture of an organisation is what makes it unique. Just like DNA is the fundamental and distinctive characteristics or qualities of any organism, culture is the signature of an organization[18][20][29]. As the organisations continues on their purpose journey, the culture evolves and becomes inseparable to the organization which gives it a unique flavour.

### IV. DISCUSSION

The approach has been piloted at three organisations, of which two pilots were conducted during the year 2020. Table 1 provides the summary of the experiments against each of the seven dimensions.

**TABLE I**  
**SUMMARY OF SEVEN DIMENSIONS**  
**EXPERIMENTED**

S.no	Dimensions	How it helps
1	Competence	Selecting the right talent, developing competence through continuous learning and unlearning, measuring contributions and taking corrective actions wherever required.
2	Circles	Dynamic teaming for desired results and providing clear accountabilities.
3	Cadence	Daily, weekly, fortnightly, monthly and quarterly cadence of various ceremonies.
4	Catalyst	HR to play role of Catalyst and sponsored by CEO.
5	Conversations	One-to-one and group alignment at various cadence,
6	Context	Internal and external factors impacting the organization.
7	Clarity	Purpose and values to bring in alignment, OKRs (Organization, team and individual) to drive results

At organization 1 (Org1), agile way of working were followed by purpose orientation, followed by OKRs. At organization 2 (Org 2), purpose orientation was followed by agile way of working, followed by OKRs. Both Org1 and Org2 uses different sprint durations for different circles based on the internal context. The data collected during the intervention was analysed and the results showed (a) alignment to organisation's purpose, values and goals, (b) increase in employee engagement, (c) increase in individual and team accountability resulting in improved performance/ outcomes, and (d) increase in predictability of teams outcomes.

## V. CONCLUSIONS

The way work is getting done today needs to be fixed and HR personnel must play a vital role by embracing agile approaches. "Agile HR as a Catalyst" framework enables the HR personnel to wear the hat of a facilitator to bring in alignment to a larger purpose, increased employee engagement, accountability and a steady rise in predictability of team outcomes.

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## Impact of Demographic Variables on Employee's Perception of HRIS leading to Organizational Sustainability.

**Dr Vandana Mohanty**  
Assistant Professor, IIMS,  
Chinchwad,Pune

**Dr Shivaji D Mundhe**  
Director, IIMS,  
Chinchwad, Pune

### Abstract

This research examines how demographic influences the employee views of HRIS and how those perceptions affect organisational sustainability. Two distinct categories of demographic characteristics were studied: gender, age, and experience, and organisational roles and sector types. This research indicates that workers consider HRIS to be an important way to foster sociability and organisational sustainability. A variety of major interaction results were found: there were interactions between education, gender and sector, and education and sector on HRIS contributing to organisational sustainability. Based on the study effects, positive and high-level relationships between all demographic variables and HRIS were established. It was found that both perception about HRIS and HRIS satisfaction of employees exhibit discrepancy due to position attribute. This discovery may have its origins from the restricted access to HRIS features depending on the roles of employees.

**Keywords-** HRIS, Organizational Sustainability, Demographic factors, Perception.

### •INTRODUCTION

The face of modern business has changed due to globalisation, rapid technological growth, Shift towards a knowledge-based economy and number of additional factors. Eventually, all of the above mentioned factors have a significant impact on the function of Human Resources Management. But one such factor, Information technology has a huge influence on human resource management

in this global period of networking. Digital Possibilities have been questioning conventional ways of providing HRM services to business. Today, HRM organisations are becoming heavily dependent on HRIS to increase the effectiveness of organizations. The Human Resource Information System (HRIS) refers to the Human Resource Management, Information and Technology .The Department of Human Resources has administrative responsibilities and is very involved in the overall operations of the company. Each company has the functions of recruitment, appraisal and payroll. The functions of HR include tracking and managing the current employee's information like personal records, qualifications, skills, accomplishments and compensation benefits. Companies today have started to automate these functions electronically to reduce the manual burden of these administrative tasks.

In the last two decades researchers have started to show interest in the field of HRIS though they focused more on areas such as predominate of HRIS (Martinsons, 1994),conditions for successful usages (Haines & Petit, 1997), use of HRIS (Ball, 2001) and current usages patterns (Hussain, Wallace, & Cornelius, 2007), areas in HRIS implementation (Ngai & Wat, 2006; Razali & Vrontis, 2010; Tansley & Newell, 2007), and achieving competitive advantage (Browning, Edgar, Gray, & Garrett, 2009). Current studies have investigated HRIS adoption determinants in Singapore and Australia (Teo et al., 2007; Troshani et al., 2011). However, these authors agreed upon there is a paucity of research in the area and

and especially it is needed to investigate to which extent those factors affect adoption of the system. According to Troshani et al. (2011) further work is also essential in addressing HRIS adoption in private sector organization as research is currently lacking in those area.

#### • LITERATURE REVIEW

Patel (2015) in the study of Understanding Human Resource Information Systems & its importance in Organizations, the use of Human Resource Information Systems seems to play an important role in Human Resource Management (HRM) because HRIS functions improve HRM in terms of administrative purposes and analytical purposes. The use of technology is turning into less and less the domain of only IT functions and more of different departments in global organizations. It is true of HR, where the use of technology and the effect it will have on the function is of major concern to senior HR executives. HRIS is going to become an integral part of organizations and organizations will increasingly need to adapt their HRIS for most importantly compliances. HRIS can make a whole lot of data accessible to employees which help in transparency. The company can follow rules and procedures clearly and can be communicated well to employees. The crucial part of HRIS is the data which is accumulated in the organizations. That data will be a lifetime asset for the company and hence HRIS is going to remain an integral part of organizations.

Manivannan & Jayasakthivel Rajkumar (2016) in the study Benefits and Barriers of Human Resource Information System stated that the HRIS is a newly implemented system. The employees and the managements should understand and streamline the HRIS system that helps the organization develop the employees' skill and being for the organizations to get the timely information from all the departments. Moreover, some barriers

preventing the organization to carry out the HRIS successfully are a lack of funds, a lack of expertise.

Rand H. Al-Dmourl & Zu"bi M. F. Al-Zu"bi (2014) have indicated that the most frequent applications of the HRIS used in the business organizations in Jordan are "the Employee Records," followed by "the Pay Roll" and "the Recruitment/Selection."

This study has shown that the benefits of HRIS include the quicker response time, the more accurate HR information, the reduction of paperwork and the manpower, and the more efficient tracking and controlling and the barriers, the cost implications and an inadequate knowledge in implementing the system.

Sabrina Jahan (2014) has analysed the small corporate houses and the big organizations, failed to realize the benefits of HRIS, and taken hardly any initiative to carry out the system. The author of this study has further identified the lack of management commitment and the high cost of the HRIS introduction, being the major barriers to the success of the HRIS. But, the benefits of the HRIS are more than the limitations mentioned in this study. The author has strongly expressed that the organization, the employees, and the management do realise the benefits from getting the HRIS implemented.

Dr. Shine David, Surbhi Shukla, Shivangi Guptabrina Jahan (2015) said that the organization's success depends on the effective use of its valuable human resources. Nowadays, every organization treats the human resources as the strategic assets. The HR executives adopt the HRIS to make their organization competitive advantage and outperforming the rivals. The organizations are now adopting the HRIS than ever before for ensuring the effective use of their human resources. But, many challenges and issues keep the organizations deprived of enjoying the benefits of this technology. Those hurdles based on the responses of the human

resource(HR) executives, the employees, who are the frequent use of the HRIS in the organization operating in India.

According to Bhujanga Rao (2015) present day in a technical driven society companies are heavily people driven and hence companies are requiring proper management of human resources. The dynamics of human resource management and role of Information system in large scale industries are very high in comparison with small scale industries. In his study pointed out that the services provided by HR departments is mode rate more over the perception of quality of services provided to the employees and HR staff through HRIS in the organizations is showing the difference in the perception. So it is necessary in the organizations HR departments need to formulate appropriate plans, polices, programs and strategies to make HRIS function more dynamic and improve the quality of services provided by HR department.

#### • RESEARCH QUESTION

Do the demographic variables have an impact on employee's perception about Human resource information system practised in the organization?

#### • RESEARCH METHODOLOGY

##### Sample and Procedures

Executives working in the companies (IT AND BANKS) located in Pune constitutes the study population. Stratified Random sampling method is used to conduct the study. To collect data in systematic manner, a structured questionnaire was developed. To be specific, the questionnaire is based on a five-point Likert scale response format. Items of the survey were developed after an extensive survey of literature. The questionnaire was sent to the participants through email. About 207 valid responses have been received from the field level survey

#### Instrument

The questionnaire used for the survey is a structured and consisted of two major sections. The first section is intended to capture the demographic profile of the respondents; the second part contains influence of the demographic variables on HRIS. The scale used for collecting data was 'Five Point Likert Scale' ranging from 5 for 'strongly agree' down to 1 for 'strongly disagree'. Data analysis was done using SPSS software. The statistical analysis method employed is Descriptive analysis, t-test to identify the significance difference in the average employee perception towards HRIS.

#### • FINDINGS

##### Reliability Statistics

Table-1

Number of Items	Cronbach's Alpha
25	.865

Reliability statistics concept was used to check the reliability of data. Cronbach's alpha was used to test the reliability of the scale. The Cronbach's Alpha score .865 suggests that the items have relatively high internal consistency

##### Descriptive Statistics

Table-2: Categories Descriptive Statistics

Parameters	N	MEAN	SD
Perceived Ease of Use	207	4.34	.72
Operational Efficiency	207	4.21	.37
Managerial Effectiveness	207	3.89	.48
Strategic Finesse	207	4.12	.76
Improved Employee Performance	207	3.89	.34

From the table 2 it is observed that, descriptive statistical analysis of the 5 variables used in the study .The arithmetic mean for Perceived Ease of Use is computed at 4.34 (SD: 0.72) and the arithmetic mean for Operational Efficiency was computed at 4.21 (SD: 0.37). These scores show that the participants gave answers to both scales as “Strongly Agree”. According to the arithmetic mean of the dimensions of HRIS perception scale, we see that the three dimensions of the scale are evaluated close to each other and participants positively evaluate HRIS activities in the organization.

**Table3- Influence of Demographic Variables on Employees Perception of HRIS**

Demographic Variables	Categories	Mean	SD
Gender	Male	3.65	1.199
	Female	3.72	1.124
<b>t-Statistic</b>		<b>-3.68</b>	
<b>p-Value</b>		<b>.724</b>	
Age	Less than 30	3.524	.676
	31-40	3.681	1.281
	41-50	3.421	1.223
	50 and More	3.728	1.079
<b>F-Statistic</b>		<b>3.251</b>	
<b>p-Value</b>		<b>.023</b>	
Education	Graduate	3.166	1.128
	Masters	3.419	1.101
	Others	3.525	.687
<b>F-Statistic</b>		<b>3.371</b>	
<b>p-Value</b>		<b>.594</b>	
Experience	2-5 Years	2.962	1.276
	6-10 Years	3.238	1.232
	11-20 Years	3.397	1.185
	More than 20 Years	3.658	1.066
<b>F-Statistic</b>		<b>3.723</b>	
<b>p-Value</b>		<b>.012<sup>*</sup></b>	
Role in the organization	Junior/Assistant Manager/Executive	3.778	.862
	Middle Manager	3.976	1.011
	Senior Manager	3.988	1.255
<b>F-Statistic</b>		<b>5.515</b>	
<b>p-Value</b>		<b>.000<sup>*</sup></b>	
Companies	Bank	3.671	1.196
	I.T	4.079	1.158
<b>t-Statistic</b>		<b>-4.030</b>	
<b>p-Value</b>		<b>.000<sup>*</sup></b>	

Table 3 lists, for each demographic variable, the mean and standard deviations for each subgroup, and the p-value for the statistical test (t-test or F-test) for the null hypothesis that the means perception of HRIS for the subgroups were equal. A p-value of less than 0.05 indicates that the means were significantly different between the subgroups. As shown in Table 3, both the gender had positive perception about HRIS leading to organizational sustainability and the results revealed no significant differences between them regarding perception about HRIS leading to organizational sustainability.

The ANOVA results indicated that members of various age groups significantly differed in their perception of about HRIS leading to organizational sustainability (p-value=.023). Duncan's post-hoc multiple comparison test was used to establish that both the youngest (30 years or younger) and oldest (over 50 years) age groups had more positive perception of about HRIS leading to organizational sustainability than the middle age groups. The results showed that participants with various levels of education did not significantly differ in regard to perception of about HRIS leading to organizational sustainability (p-value = .594)

The results showed that participants with various years of experience significantly differed in perception of about HRIS leading to organizational sustainability (p-value = .012). To further investigate, Duncan's multiple comparison test found that participants with fewer years of experience had less positive perception of about HRIS leading to organizational sustainability compared to participants with extensive experience.

With regard to managerial position, it was found that senior managers had significantly more positive perception of about HRIS leading to organizational sustainability than did middle managers, with a p-value of less than .001. In addition,



regarding company type, it was found that I.T sector participants had more positive perception of about HRIS leading to organizational sustainability (p-value of less than .001) than participants from the Banking sector.

### Causal Relationship between Demographics and Perception of HRIS Leading to Organizational Sustainability

General Linear Model					
Dependent Variable: HRIS Leading to Organizational Sustainability					
Source	Type-3 Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	101.106 <sup>a</sup>	26	3.965	3.15	.000 <sup>*</sup>
Intercept	76.873	1	78.36	63.1	.000 <sup>*</sup>
<b>Main Effect</b>					
Position	11.024	1	11.02	9.2	.003 <sup>*</sup>
<b>Interaction effects:</b>					
Education * Gender	11.022	2	5.297	4.24	.013 <sup>*</sup>
Education * Type of Company	5.056	1	5.056	4.55	.034
Gender * Type of Company	4.374	1	4.774	3.97	.051

To explore combinations of effects and variable interactions, linear regression analysis was performed using SPSS (Version 23.0) and the results are shown in Table 4. Although one demographic variable (position) had a significant effect on about HRIS leading to business sustainability (p=.003), a number of interaction variables produced positively significant effects. Education\*gender had a positive interaction effect on the perception of HRIS with a p-value of .013. Likewise, the p-value for education\*sector was found to be .034. Regarding the interaction between gender and type of companies, p-value was found to be .051. These results are further discussed in the following section.

### • RESULT DISCUSSION & CONCLUSION

Researches have differed in their observations about the association between

demographic variables and HRIS. Hosnavi and Ramezan (2010) found overall individual variables are not reliable predictors of HRIS for organisational sustainability. In a study Madhuchanda & Tripathy, 2009 argue that certain demographic variables could be correlated with company sustainability. This research examines how demographic influences shape employee views of HRIS and how those perceptions affect organisational sustainability. Two distinct categories of demographic characteristics were studied: gender, age, and experience, and organisational roles and sector types. This research indicates that workers consider HRIS to be an important way to foster sociability and organisational sustainability. The findings of this analysis are consistent with previous research. Ferndale and Sanders (2017) claimed that there was no correlation between gender and organisational sustainability sharing quality shared by the officers in Malaysia. In Alfes et al. (2019) report, HRIS did not minimise organisational sustainability sharing actions in reaction to gender differences. Nevertheless, in terms of organisational survival, females were more likely to share HRIS leading to higher levels of insecurity within the female workers employed in groups. Browning et al., (2009) found that gender did not have an effect on the involvement in HRIS leading to organisational sustainability. They also found that male and female teachers varied in their attitudes toward HRIS leading to organisational sustainability sharing and concluded that male teachers participated more in HRIS leading to organisational sustainability sharing than did female teachers.

The study showed that age and maturity affect whether workers consider HRIS contributing to organisational sustainability to be effective. This is in accordance with early research already undertaken. Khera & Gulati (2012) asserted that older people will have much

more expertise in HRIS than younger people, making them more likely to maintain organisational longevity. They stressed that older workers viewed relational environments more positively and tended to be more comfortable in their employment, had more experience, and had less perceived organisational impediments, allowing them to participate in HRIS leading to organisational sustainability sharing more easily. Xue, Bradley, and Liang (2011) indicated that seasoned workers would be willing to support the company with HRIS because they meet more of the right people in the organisation. we agree with Mogotsi, Boon, and Fletcher (2011), that one would expect older, seasoned workers to be willing to teach their younger and less experienced colleagues about HRIS contributing to organisational sustainability. However, Khera & Gulati (2012) observed that officers with differing degrees of experience and those from various age groups did not differ in terms of offering HRIS for organisational sustainability.

The findings suggest that supervisors who hold high positions participated more in HRIS contributing to sustainability sharing activities than did others who held support positions. The explanation senior managers must “walk the talk” is that they must show optimistic attitudes and actions toward HRIS contributing to organisational sustainability.

This study also showed that managers in I.T sector organisations tend to have a more favourable view of HRIS, contributing to an overall positive outlook of organizational sustainability. This was somewhat similar to prior research. For example, officers from different departments demonstrated major variations in arrest habits. Troshani et al. (2010) found that public sector respondents rated cooperation on climate

change less favourable than those in the private sector. It could be more significant in the private sector that getting a competitive edge is important. Since HRIS is a core resource in the private sector, workers in this field prefer to exchange HRIS-based activities to gain a competitive advantage.

A variety of major interaction results were found: there were interactions between education, gender and sector, and education and sector on HRIS contributing to organisational sustainability.

Gender alone did not seem to be a consideration, but the mixing of gender with sector had a substantial influence on HRIS contributing to organisational sustainability. In addition, we found that there were gender gaps depending on education level (see Figure 3). A male would retain more HRIS, which would create organisational cohesion, but a female would keep more HRIS, which would create organisational instabilities. This discovery is interesting and needs more research to explain the explanation behind it. With an increased number of women attending college and professions, organisations must understand how gender impacts various groups of individuals, with differing degrees of education. It was decided that only education level on its own didn't appear to impact HRIS accounting for organisational sustainability. Contrary to what some have found, in this research there was no proof that HRIS contributes to sharing barriers .Because of the level of education; various fields can have different results.

HRIS is an automated framework used for gathering, preserving and processing information and data of Human resources in an organisation. The data is composed of databases, computer software, hardware and the tools needed to capture, register, archive, track, distribute, display and

and manipulate data for the role of human capital. The use of HRIS in organisations has many benefits, managers in particular in decision-making systems. In this research, the interpretation of the HRIS and the perception about HRIS contributing to organizational sustainability has been investigated. Based on the study effects, positive and high-level relationships between all demographic variables and HRIS were established. It was found that both perception about HRIS and HRIS satisfaction of employees exhibit discrepancy due to position attribute. This discovery may have its origins from the restricted access to HRIS features depending on the roles of workers. Thus future research should also understand the relationships between the access constraints to knowledge quality and features of HRIS and customer satisfaction.

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## Business Sustainability and HR Technology in Manufacturing Sector

**Dr. A. B. Shah**

Vice President: IR & Admin  
Bharat Forge Ltd, Pune,

**Dr. K. S. Dharwadkar**

Director  
S.B. Patil Institute of Management, Pune

**Abstract**— The study talks about the continuous improvement and evolution of technology which has occurred in the HR functions creating a revolutionary impact on the business for sustainable solutions. The automation in HR functions such as web-based applications, HRMS software's and AI based technologies. Understanding the technological curve for people review, career progressions and compensation review for better and gradual business sustainability. The study will also emphasis on the shift from orthodox Red Ocean strategy to collaborative Blue Ocean strategy. The technology has helped HR to improve communication, transparency and production standards in aspect of humanitarian approach. The functions such as Talent acquisition, Competency mapping, Assessment centre, development centre and Compensation & benefits are now automated and transparent to Management, employee and stakeholders as well. Post pandemic the role of technology and AI will take a tremendous leap to meet the new normal of Industry Inc. in every process segment. The manufacturing sector cannot undermine and limit the role of technology in production process but accept and implement in other areas of its function. The business sustainability is function of adaptability of new technology.

**Keywords**— Human Resources, Manufacturing Industry, Industrial relations, Business sustainability, HR technologies, HRMS, AI, Process.

### I. INTRODUCTION

The technology has entered into industries in the late eighties. As the industries have

grown from the era of industry 1.0 to industry 4.0, it's been a very drastic change in the form of technology itself. We can call it mechanical technology for industrial automation for example if you take the entire world moved from steam engine or steam energy to electrical energy.

Now in the current time the shift has taken place from electrical energy to digital technology where everything is being automatized. Where things are being made touch screen and less human intervention and where HR being important and inseparable part of the industry. Technology has taken over conventional methods so much that it is difficult to just sustain in the business with conventional HR management methods. If you see the technology in HR and industrial relations has evolved with time very swiftly an especially in manufacturing sectors. Industries following all the conventional and orthodox methodologies to carry out all the human resource Management related processes have moved from the era of automatization to globalization. Technology opened many closed-doors to HR managers so that they can access all the technological change is to improve all the functions across the HR verticals for example. The process which was only recruitment turned into global talent management.

The beginning of technology was not that advanced, HR was working on the processes like payroll which was done by hand on the muster rolls, performance management systems which were being done person to person one by one, example of training and development where handwritten material was being utilized to provide training and now if you see it has

undergone so many changes not only in the methodology but in the aspect of technology as well. Concepts like artificial intelligence recruitment, HR big data, and HR analytics are now very common in Human Resource Management.

This study will emphasis on the relationship between HR management perspectives with the HR technologies. The change is always been linear and constant over the time.

## II. RESEARCH METHODOLOGY

For understanding the relationship between Human resource management and technological advancement Qualitative and quantitative research methodology was used.

To conclude the research with understandable findings Survey was circulated amongst HR professionals working across various manufacturing industries.

### The survey was focused on following:

1. HR Interface
2. Training and Development
3. Competencies
4. Operations
5. Business sustainability
6. Talent acquisition
7. Performance efficiency

## III. LITERATURE REVIEW

### Technology

“Technology refers to all the ways people use their in- inventions and discoveries to satisfy their needs and de- sires. Ever since people appeared on the earth, they have had to work to obtain food, clothing, and shelter. They have also had to work to satisfy their desire for lei sure and comfort. Through the ages, people invented tools, machines, materials, and techniques to make work easier. They also discovered water power, electricity, and other sources of power that increased the rate at which they could work. Technology thus involves

the use of tools, machines, materials, techniques, and sources of power to make work easier and more productive. Modern communications and data processing also rely on technology, especially electronics. When people speak of technology today, they generally mean Industrial technology- the technology that helped bring about our modern society.”

“Industrial technology was introduced around 200 years ago. The technology was seen running through the changes like steam engine and power driven machines. The production is now being made on mass level affecting generations across time lines and globe.

### 1. Benefits of technology

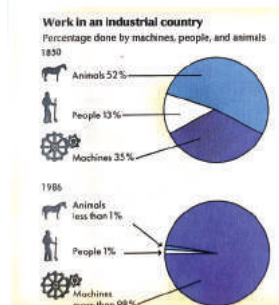
- a. Increased production
- b. Reduced labour cost
- c. Easier labour efforts
- d. Higher living standards
- e. Increase in Efficiency
- f. Quality Precision (Zero Defect)
- g. Economies of Scale

### 2. Side effects of technology

- a. Environmental pollution
- b. The depletion of natural resources
- c. Technological unemployment
- d. The creation of unsatisfying jobs

### 3. The challenge of technology

- a. Combating side effects
- b. Preventing side effects
- c. Spreading the benefits technology



In 1830, machines did only 35 per cent of farm and industrial work in the U.S.A., while people and animals performed the rest. The charts above show how the 1830 percentages compare with those of today, when machines do over 98 per cent of the work.

Fig (1) : Work In an industrial country

**Technology revolution Talent evolution:**  
 “We know one advances the other. Emerging technologies mark only the first step in creating the workforce of the future. Successful companies will also elevate innovation, creativity and customer focus by empowering their people. “

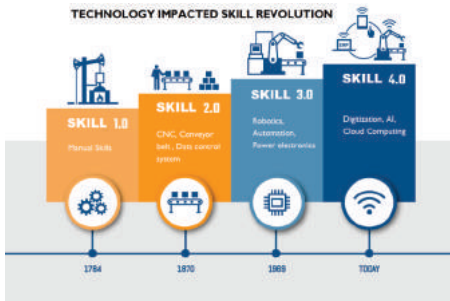


Fig (2) : Technology Impacted Skill Revolution

Technology evolution impacted on skill levels of employees. To sustain & survive for the future employee has to adapt or cope up with the new skill, Fig (2) Shows Technology impacted the skills.



**Technology** has enabled people to produce more goods and services with less labour. Many factories use mass production techniques. This has led to greater productivity, allowing factory workers to enjoy more leisure time.

Fig (3) : Impact of technology on production

**TECHNOLOGY & THE IMPACT ON WORKFORCE:**

Today’s world is driven by technology, it is filled with opportunities but also with challenges. Cars that drive themselves, machines that read X-rays, and algorithms that respond to customer service inquiries are all manifestations of powerful new forms of automation. The public has shown its concern that though it improves productivity it also reduces learning ability.

**AUTOMATION AND THE NEW WORLD OF WORK - IMPACT ON HR**

Powerful new technologies are increasing productivity, improving lives, and reshaping our world. But what happens to our jobs? Certain types of jobs that might be created under

different scenarios through 2030 and compares that to the jobs that could be lost to automation. The transitions will be very challenging or even exceeding the scale of shifts out we have seen in the past in sectors like agriculture and manufacturing.

Even if the processes are being automatized people wont lose jobs but they will have to change their skill set and perform new tasks. Because of technology humans will have to adapt management skills, especial expertise in social interactions and upskill where machines and technology lacks.

**IV. ANALYSIS**

Based on the survey conducted and responses were taken for the analysis.

Following images depict the analytical findings in pie chart for each question asked in the survey.

1. In my opinion there is great transformation from manual working to technological interface in HR department.

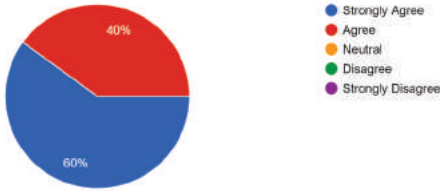


Fig (4)  
2. Professionals working in HR department are sufficiently trained deal with technological aspects.

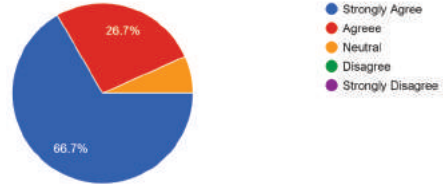


Fig (8)  
6. Business sustainability depends largely due to success of human resource with technological interface

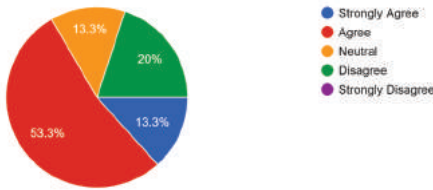


Fig (5)  
3. I could see high level of support from top management for technological interface in HR.

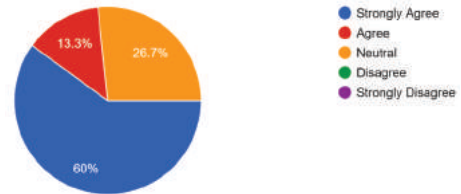


Fig (9)  
7. Talent acquisition and management could be done in easiest way with the support of inter face of technology.

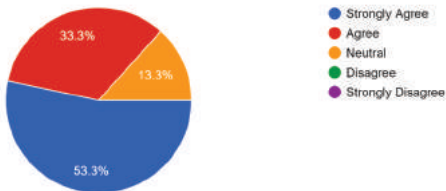


Fig (6)  
4. Professionals working in HR department are volunteering to get themselves trained in HR technology.

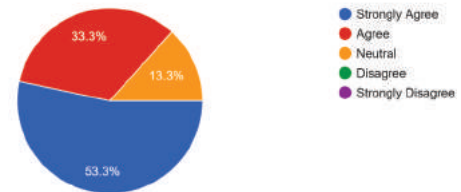
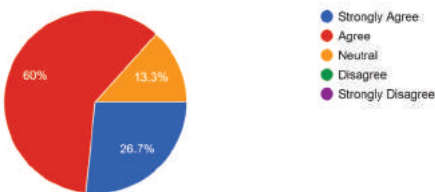


Fig (10)  
8. Baby boomers are the most difficult professionals to aquent with HR technology in comparison with millennial.



5. In my opinion intervention of technology in HR has brought great deal of ease and comfort.

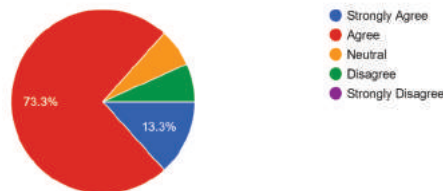


Fig (11)



9. Business sustainability and HR goes in hand in hand.

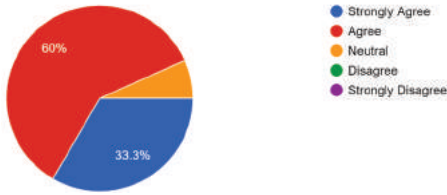


Fig (12)

10. Technological interface will affect intradepartment communication channel.

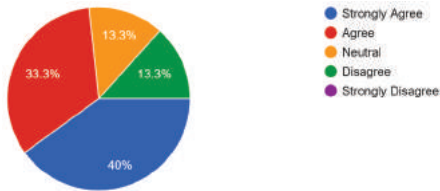


Fig (13)

11. It will be harmful for business sustainability as too much technological dependency will increase efficiency but reduce basic knowledge zeal among employees.

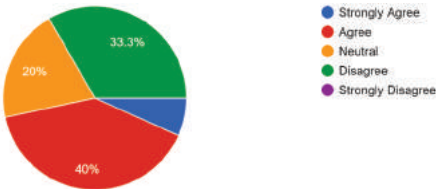


Fig (14)

**V. FINDINGS AND CONCLUSION**

The above analysis was made this research reach following findings:

1. Technological interface in HR will increase the efficiency.
2. Training and Development has helped HR professionals to cope up with the current technological advancements and also to improve their on skills set and competencies.

3. The entire hierarchy of organization is looking forward to HR for increase and enriches the organization with tech-advancement.

4. Above all aspects are supporting the business to sustain in the most difficult times through niche and right talent acquisition.

5. The HR and the technology has helped global manufacturing businesses to increase productivity and sustainability.

6. Technology has definitely increased the efficiency but has affected the zeal of learning due to excessive dependency.

**Conclusion:**

HR is the first face of the organization while introducing any technology or any new trend, HR is the first person to introduce the anything to the entire organization. With this study it can be concluded that HR and technology always have to be ahead of the entire organization so that the processes which affect the production the most can be more efficient and effective. Elaborating more the conclusion came out that it can be observed how technology has increased, enriched, enhanced and emphasized technological advancement and technological changes to make the business not only sustainable for the present situations but also for the future difficulties. The more use of AI and Technological tools in HR functions has brought a new glory to HR operation and displayed the department sustainability with higher efficiency in the sector. The critical situation HR has used the technological blend so innovatively that the manufacturing sector seen the grater transformation in its process which certainly support sustainability and reduce the obsolescence of functions.

**VI. ABBREVIATIONS**

1. HR – Human Resource
2. HRMS – Human Resource Management System
3. AI Artificial Intelligence

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## Impact of Information Technology in HR

**Mr. Himanshu Sarda**

ICFAI Business School, Pune  
Maharashtra, India.

**Dr. Shradha Gupta**

ICFAI Business School, Pune  
Maharashtra, India.

**Dr. Pallvi Vadehra**

ICFAI Business School, Pune  
Maharashtra, India.

**Abstract-** "You must treat your employees with respect and dignity because in the most automated factory in the world, you need the power of human mind. That is what brings in innovation. If you want high quality minds to work for you, then you must protect the respect and dignity. " --- Mr N.R. Narayana Murthy, Chairman Emeritus, Infosys Ltd.

The world has become a global village. In the 21st century, the world has seen substantial growth in the availability and use of technology. This has created a paradigm shift in how the businesses work. Business functions are being performed with much more accuracy and speed with the help of information technology and there has been a considerable impact on HR practices with the introduction of IT in the Human Resources profession. The purpose of this research paper is to study the impact of information technology in HR which is known as E-HRM. Study was done using secondary data. The findings suggest that IT enables HR professionals to work more efficiently for the benefit of the organization. The paper studies the use and impact of technology like AI, Analytics, Social Media, Internet etc on various HR Practices like Talent Management, HR planning, Performance Management, Decision-making Process, Streamlining Workflows etc. It is found that automation and digitalization will continue to reshape the job roles and skills required. Possible future practices in E-HRM are also discussed in the paper.

**Keywords:** Information Technology, HR, E-HRM, HR Analytics, E-Recruitment, AI in HR

### I. INTRODUCTION

The Human Resources play a vital role in any organization and with globalization and the increase in global competition their responsibility has increased manifold times. The professionals are using technology to sustain in the competitive environment. The managers are able to execute the traditional functions of planning, procurement, organizing, maintenance etc. more effectively and efficiently with the help of IT. Information Technology is also being implemented in Human Resource and is making a significant difference in the its performance. It has increased the efficiency of HR management tasks such as employee engagement and development, talent management, performance management, training and learning etc. Human Resource is defined as "that part of management which is concerned with people at work and with their relationship within an organisation. Its aim is to bring together and develop into an effective organization of the men and women who make up enterprise and having regard for the well – being of the individuals and of working groups, to enable them to make their best contribution to its success" [1]. Largely, the aim of Human Resources (HR) is to ensure that the organization is able to achieve success through its people. HR professionals' main aim is to manage the human capital of an organization and to emphasis on implementing policies and processes. [2]

HR professionals are adopting to new technologies which support the organizational culture. By use of technology HR is makes a major impact in

areas like talent management, payroll and compensation, performance management, workforce analytics, and administration of benefits. In recent years, E-HRM has developed rapidly, with larger companies worldwide embracing core E-HRM systems from enterprise solutions companies such as Oracle, SAP, and other specialized E-HRM suppliers.

## II. RESEARCH METHODOLOGY

The paper is targeted to evaluate the impact of Information Technology on HR. Secondary data has been used for the present study. To achieve the objective excerpts have been drawn by searching online various sites for existing literature in the form of research articles, journals, different published articles, interviews etc. The study has been made to observe the impact of IT and its tools in HR functions such as Planning, Communication, Recruitment, Engagement, Learning and Development etc.

## III. E- HRM

E-HRM is the application of IT to HR practices that allows staff and employers to interact easily. E-HRM has been defined as “a way of implementing HR strategies, policies and practices in organizations through a conscious and directed support of and/or with the full use of web-technology-based channels” or more recently, and more broadly, as “the planning, implementation, and application of information systems for both networking and supporting actors in their shared performing of HR activities”[3]. Thus, it stores information about employees and helps in effectively managing payroll, employee personal data, performance management, training, recruitment, and strategic orientation. [3]. There are basically three kinds of E-HRM, i.e., operational, social, and transformative E-HRM.

Operational E-HRM relates to the HR division's managerial elements, social E-HRM relates to providing representatives

with information and creating virtual relationships between them so that they can be continually linked, while transformational E-HRM centres are associated with the main introduction of HR work. To attain the goals aptly and constructively, it ties the HR work with the business IT system. It also allows data to be monitored and shared over virtual systems [4].

### A. Importance

Due to globalisation and enhanced competition all organization are using technology in their HR administrations for sustainment or to give competitive edge. They are forced to use technology in every business function for survival. Technology helps to access the data at any place and at any time. An E- HRM framework allows the organisation to analyse the data and make decisions for the employee and the organization. It helps the senior management to communicate and share information with the employees in a better way and enables them to roll down their policies for the employees for enhanced organisational performance.

### B. Scope

1. HR Planning: Current era is of BIG data. The IT helps to analyse data and to understand the changing technology, market, politics and economics trends which impact the supply-demand cycle of labour. It also helps in storing and analysing voluminous data of employees which further helps the HR manager to identify vacant positions in the organisation and if the employee is fit for the required post or not.

2. Administration: The voluminous data stored can be recovered at any point of time providing valuable details about the employees and assessing the new requirements of the company. It also helps to share the HR policies with the employees and managing day to day HR jobs.

3. Recruitment: e-HRM connects companies and job seekers. Earlier ads were given in the newspaper for vacancies which have been replaced with the help of IT. The jobs are posted on the job boards by the recruiters and applicants can view and apply to the respective job. Similarly, the software is there which have automated the screening of resume reducing the mundane HR tasks.

4. Training and Development: E-learning is quite on a voyage these days, not only from an academic point of view but industrial also. It helps to maintain the pace in the quickly evolving market.

5. Compensation and Benefits: The e-pay bundles provide easy, simple, accurate and measurable data on the compensation structure of the employees who are able to see how much benefits or perks they are receiving from the organization.

6. Talent Management: IT helps to manage a better fit. Use of Analytics to predict high performers who might leave the company so accordingly one can device retention policies.

#### C. Challenges

1. Expensive: Technology come at a high cost but once implemented correctly it reduces the operational cost of the organisation. Larger companies may introduce HR gateways/bundles, while it may be costly for small- to mid-size organizations.

2. Security: With the easiness of IT, it's a huge task of making it secure. It takes a high cost for a company to make its system secure from hackers and illegal acts.

3. Decreasing human touch: With more use of IT and automated software, the human touch is decreasing, which makes the employee feel isolated and collaboration is reduced. They collaborated with the representatives in the traditional

frameworks and feel integral to the organization.

#### IV. RECENT TRENDS OF INFORMATION TECHNOLOGY IN HR

##### A. HRMS (Human Resource Management System)

HRMS is a software for storing and organizing information, such as staff profiles, competencies, skills, attendance records, etc. HRMS is more data-driven and has modules that enable one attain payroll services, performance assessments and benefit management. It allows HR managers to look at employee performance and develop new policies that act as input for HR planning, training and development, etc.

##### B. Performance Evaluation

HR can provide managers with the IT tools to get the most out a performance review and to formulate better goals for individual employees, IT tools further helps to track their staff member's performance throughout the year by allowing saving notes and feedback thus helping both manager and employee for better evaluation.

##### C. Recruiting Software

Recruiting software streamlines the hiring process. It helps in improving hiring and enhances brand image as depicted in figure 1.

##### D. Payroll Service

It is a solution that computes and tracks pay checks, exemptions, paid time off, etc., automatically. Some software even allows one to file and pay income taxes and report to the government on new hires. Payroll software not only automates payroll calculation, but also provides holistic management of leave and attendance, HR services and self-service portal for employees.

## Invest in AI to improve hiring



**6 times**  
as many outperformers  
(versus all others) are  
leveraging AI across the talent  
acquisition domain today.

## Build a strong employment brand to secure the best talent

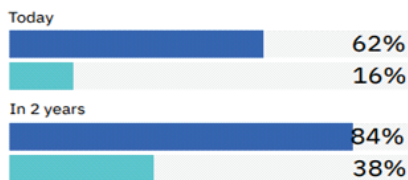


Figure 1: AI helping in Recruitment[5]

E. Employee Engagement Tools: By leveraging AI one can monitor the organization's culture, giving better insights into what the employees want. It reduces costs and boosts the productivity of employees.

## V. IMPACT OF IT IN HR

In a dynamic environment Information Technology seems to have a greater impact on organizations in a dynamic environment, leading to superior human resource proficiency and effectiveness. Using IT software for employee management will increase the success of the business.

1. Better services to line managers: In strategic planning between HR and line managers, IT helps to analyse projections about future business requirements in order to determine whether to train existing employees, prepare them for promotion or hire candidates with higher skill levels to support the current employee knowledge database.

2. Talent Management: On online portals, employers could also display all required information relating to the job, careers and personal development of each employee. For the organisation, this is a great promotional tool. On the one hand, IS

keeps employees up-to-date on the organization's vacancies, on the other hand, learning and development instruments are also available for employees to work to improve their skills. [6]

3. Data management and critical analysis: When IT is used, data management becomes easier as it becomes paper-free. Most of the repeated task is not manual anymore. The performance data of employees is critically analysed by HR IT tools that help manage talent and develop more effective and effective HR policies. [6].

4. Customer service and human resource management: Employees are responsible for giving value to customers and providing them quality service in the promised time. Therefore, KPI's and critical success factors can be devised with the help of using IT tools for effective employee performance there by making a customer happy with quality work which results in an increase in organizational performance. [6]

5. Automation of HR processes: Process automation eliminates paperwork, accelerates the processing of many tasks, and adds to more proficient HR performance. Technological advancements mean businesses can use the cutting-edge innovations such as machine learning to screen applications and augmented reality to bring new people on board. [6]

6. Analytics grants access to more data: HR professionals can track the journey of the candidate by use of analytics and see at what point most individuals accept (or reject) an offer, what percentage of people open their emails, how many people are involved in the processes, and many other significant events. Thus, HR professionals may use power of analytics for data-driven choices and use historical data as a basis to restructure and improve current processes. [6]

## VI. FUTURE IT TRENDS IN HR

### A. Agile HR

Agile is a trend for businesses to think about how they can design teams and collaborate to adapt rapidly to this new dynamic world of work. The re-design of management systems, practices and procedures goes beyond agile and may have far reaching consequences for individuals, processes and culture. HR needs a change in thinking about how work should be organized and guided to take full advantage of agile benefits. IT helps any organisation to become agile. HBR's case study of ING's Agile Transformation highlights 3 core characteristics of Agile.

- a) Satisfaction of the customer is the most important goal of any organisation.
- b) Work should be broken down into smaller tasks and cross-disciplinary group of empowered people should perform them in short cycles
- c) The organization as a network

These 3 aspects have an intense impact on management and HR. It unlocks the doors of opportunity to address the changing role of HR, especially in areas where it can concentrate on creating value for the organization and supporting a great professional experience. Organisations who are already on path of an agile transition rely on their HR teams to revitalize their employee practices to create new employee behaviours that allow agile values to flow and ultimately affect company performance. HR teams aim to create cohesive solutions, driven by users, their needs, feedback, and an employee recognition strategy. [7]

### B. Blockchain

Against the wave of new technologies from cloud and mobile to artificial intelligence and robotic process automation, blockchain has the greatest potential to transform the principles and practices of the human resources function in organizations.

Blockchain technology has intrinsic features that can help HR work to resolve data validation and security concerns. First, blockchain is decentralized, with no central employee database to hack. Second, while an individual will control access to his or her data, those data are added to the blockchain and verified by such authorities as universities and government agencies and are tamperproof. A hiring organization would be able to spot any attempt to alter those data. Thus, it does away with the need for verifying the certificates and references provided, leading to saving in recruitment cost and time.

Smart contracts supported by Blockchain convert employment contract provisions into software code that can be operated on a blockchain and facilitate hiring, payroll, benefits, performance reviews, and standard HR requirements transactions. [8].

### C. Artificial Intelligence in HR

There are a lot of repeated tasks which an HR has to perform. The integration of AI with HR has solved the problem of redundant tasks and made the work of an HR efficient and simpler. Now the repetitive monotonous task can be automated leaving HR people to concentrate on more strategic areas.

The workforce of today presumes transparency in pay throughout the organisation; and elimination of disparities in race, gender, age and other pay. Proactive pay equity programs using Artificial Intelligence (AI) help organisations pay employees more succinctly, analysing data volumes inside and outside the organisation to demonstrate competitive wage rates. [5]

Chatbots are example of AI providing value to HR in a number of ways. "In the past, an employee with a question about how to get something done would ask a knowledgeable colleague for an answer,"

said Franke, author of a KPMG report on AI and chatbots, he further said "In the future, they'll ask a conversational agent, and artificial intelligence will answer their question." [9]. It's already happening, as employers have commenced utilising the technology for HR purposes. "AI and conversational chatbots in particular are useful in enhancing and automating the experience of repeatable tasks," said Jeff Mike, VP, Head of research ideation for Bersin, Deloitte Consulting. [10]

#### D. HR Analytics

In understanding, handling, and continuously improving organizational performance, HR analytics is now vital. The results are linked with the growth and development of the workforce by analytics. Organizations use predictive analytics to recognise the skills they need at all times in the workforce with accuracy. In order to evaluate external data sources and trends, leading firms are also using AI. This avoids the skills obsolescence by identifying the skills required in the future. [5]

AI and Analytics together help the organisation to look for efficient employees. It helps in generating targeted skillsets, leadership development, workforce management etc.

#### VII. CONCLUSION

The world is changing rapidly with the advent of technology and it is changing the relationship of human resource professionals with the workforce. The scope of HR activities has widened with an increase in the use of technology. HR tools support the HR department and reduce workloads and redundant works and streamline the process.

HR functions such as Talent Management, HR planning, Performance Management, Decision-making Process have become much simpler than it was the way before with the use of IT. IT has given pace in applying the above. It is also observed that

automation and digitalization will continue to reshape the job roles and skills required in the field of HR. Thus, the use of IT in HR plays a strategic role in gaining competitive advantage.

Though technology is creating a space between employees and the organization. Therefore, it is very much necessary for the organizations to understand that despite technological changes they don't lose the human touch in the organization. The future of HR is Automation, Artificial Intelligence, Machine learning and HR Analytics.

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## Digital transformation of L&D Function during Pandemic

Somashekhar Krishnamani

SBI Leadership Institute  
Kolkata

### Abstract

Purpose – The purpose of the paper is to empirically investigate how L&D departments have re-energized, revamped, diversified their structure and adjusted their offerings to the needs of the workforce during pandemic times. Specifically, this paper looks at methods adopted by Indian companies when they realized that traditional classroom training format will not be permitted for a few months at least.

Design / Methodology / Approach – The study is explorative in nature based on data sourced from secondary sources, websites, news articles and published online information. The ideas generated were bounced with subject matter experts and with a couple of L&D Heads from top Indian companies.

Findings – The study provides an insight on what will the new high performing L&D look like. How L&D will take a lead in designing and delivering digital training while ensuring learner engagement.

Practical Implications – This study could help practitioners to understand how companies have created massive efficiency gains for L&D function and for talent development by shifting to digital learning. The article also puts the spotlight on how L&D function itself have transformed and learnt quick before facilitating talent development.

Keywords – Re-energizing L&D Function, Elevated role of L&D, Speed & Scale of Learning, Ed-tech, Tech trends that will affect L&D

### Digital transformation of L&D Function

#### Introduction

Companies rely on their learning-and-development functions to help workforces learn fast. But often, the function itself needs a transformation

Before March 2020 learning adopted traditional pedagogy of classroom learning that was supplemented with some online elements which could be a combination of self-reading and asynchronous learning. But the pandemic has remarkably turned the tables on the entire learning and training industry. When Corporate universities and Learning Centers were forced to shut shop because of the pandemic all of them had to discontinue physical classes as the way of learning. Not only that they bounced back smartly by leveraging digital technology by resorting to live-online instruction. Overnight there was a paradigm shift in learning models transformed from chalk-and-talk to click-and-learn. This article brings attempts to focus on how L&D function within organizations took the lead during the pandemic.

#### Tomorrow University

When 90 percent of TATA Group's workforce suddenly began working remotely, Tata Management Training Institute (TMTC) which is the Corporate L&D arm for TATA group organized more than 50 webinars in the first 80 days. Topics for these 50 webinars chosen were critical to business, leadership

personal development and delivered by speakers from across the globe thereby creating themes with universal appeal for the staff spread across 100 countries. As these sessions gained traction within the group the participation numbers grew from 100-200 in the initial webinars to more than 1500 in the latter part of the series.

A new podcast channel was also created which focused on bringing in speakers who would share their stories in an unfiltered and first-person point of view. The effort was to keep the podcast series non-theoretical, simple with full of practical stuff that anyone who wants to be a better leader, irrespective of age, function level and career stage can implement from the next day. In addition to the webinar and podcast series TMTTC has also launched a digital platform titled 'The Tata Tomorrow University' during the lockdown and were able to get more than 10,000 learners on the digital platform.

Evaluations and assessments on training imparted play an important role. Lock down has impacted this element of learning very heavily. Therefore, a lot of companies put in efforts to adapt and come up with a new standard operating procedure (SOP) created on their Phydigital Platforms. Social Distanced Assessments, proctored in-centre assessments were designed to meet academic requirements without compromising on safety of learners and participating and proctoring staff. It is pertinent to mention that inputs from All India Institute of Medical Science (AIIMS) and Public Health Foundation of India (PHFI) and Tata Consultancy Services TCS iON played a major role in designing these SOP.

### **Role of Digital Learning Platforms**

At Dr Reddys Laboratories, Learning and Development continued unabated during the pandemic. Covid-19 proved to be a catalyst for the L&D team. Within a week

of the lockdown this organization cancelled all in-person contact sessions and launched a series of virtual programs on an Institutional Platform titled Learning Experience Platform (LXP). The programs offered on this platform were labelled as 'My Dost', 'Kahoot' with weekly learning sessions specific for working during Corona times like working remotely, leading during crisis, resilience and performance management during uncertainty. More importantly LXP design allowed for tracking employees' learning journeys online and offer them personalized experience – anytime, anywhere, on any device and at low bandwidth of internet. LXP was leveraged towards capability building efforts of the organization through creating Mentor, Coach, Teacher & Buddy profiles of Subject Matter Experts within the organization.

### **Do it yourself (DIY) Learning**

There is a fundamental shift in the approach to learning itself. The onus has shifted from being chosen and nominated for a program to carving out one's own learning journey or simply put Do It Yourself Learning. At Deloitte India, managers are not only offered opportunities to learn new skills, but they are also granted the opportunity to learn from each other, lead and apply their strengths through network, communities of practice and peer-mentor relationships by providing a technology connect. The role of L&D in this organization is to support talent development and professional growth by providing them with the tools and opportunities to actively develop the skills and capabilities as well as chart their own career path at their own pace. More importantly, these learning journey along with milestones are carved by the individual learner considering his / her personal and professional commitments and thereby personalizing this right to the individual level.

### **Content Curation and L&D**

Content curation is both an art and a science and deals with identifying with the most relevant information targeting a specific group of people, contextualizing and organizing it before presenting it to them. Basically, it is data mining learning content to spare learners the need to hunt through tons of irrelevant information to access what they need. One may ask what's this got to do with learning? Technology Assisted Learning courses have a drawback. You register in them, complete them, clear the mandatory tests and pass them, you're done. Therefore these are great way of learning to get the basics right or at most reach a minimum level of expertise. But therein lies the problem. Courses get outdated fast. New content gets published or newer topics start to become the Fad. Today it is Big Data and Artificial Intelligence but it could be out of fashion tomorrow. Therefore L&D team has to play the role of a specialist and keep up with the latest content.

### **Importance of Edu-tech in democratizing Learning**

Players like Coursera, EdX and Udemy had introduced online learning in the past decade, but this was viewed as a supplement to classroom learning and because of the global content and high costs associated with it was looked at as premium. But today these service providers have gone the extra mile and have reached out to L&D in companies offering their content at a pittance of the cost that they originally used to charge. Thanks to the pandemic, learning is now becoming democratized. Legacy libraries which were accessible to very small % of learners were not offering value for money. Asynchronous learning with global content can now be made available to large number of learners at much lower cost. To offer enhanced accessibility from any device, anytime, anywhere and at low internet speeds Ed-tech organizations use

Cloud Technology. Content for any course can be viewed and accessed from any Smartphone, Tablet or Personal computer, wherever the user is.

### **Tech trends shaping L&D Function**

Several technological advancements are shaping the way in which Learning is offered and consumed. Ed-tech has the capability to create and offer learning concepts that are appealing to all ages of learners using Gamification. L&D Functions will start adopting Gamification technology in the form of simulations, incentive-badges, likes, bragging rights to drive user engagement and enhance the experience. Integration of technology in learning will help develop and design a more custom offering by analysing and evaluating the individual more thoroughly. In order to understand and curate custom content, practice and tests, Big data and Artificial Intelligence will play a big role. Online learning has the ability to create fantastic learning experience for the learners. Wearable devices & Virtual lab experiences that integrate and adapt Virtual Reality (VR) and Augmented Reality (AR) technologies using a computer interface is one of the top trends to watch for.

### **Strategic tie-ups**

In a VUCA world where changes are happening at breakneck speed, it will not be possible for a stand-alone L&D team to address the requirements of Human Capital Development. Hence L&D functions are creating strategic tie-ups and partnerships with Business Schools, specialized training institutions to help them align skills in emerging technologies like Artificial Intelligence, Machine Learning, Big Data, Augmented Reality. They are also establishing tie-ups with Life & Wellness Coaches and Soft-skill Institutes to help them handhold their employees emotionally, mentally and adapt physically to the new normal. Self-

learning opportunities are offered to employees by providing them free access to some skill courses on Udemy, Coursera, LinkedIn Learning, etc.

### Conclusion

While there is no right answer to the question 'should employees be allowed to own their learning journey and pursue their growth agenda at their own pace' there is no debate on whether L&D function needs to facilitate alignment between individual and organization goals. Today everything is about people alignment and learner alignment. The pandemic has created a new normal in organizations and created a golden opportunity for L&D function to reinvent and harness the power of digital learning. Hyper-personalization and byte sized learning which is the new way of learning can be made possible only when L&D functions start offering learning in the digital format.

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# A Study On “Impact of technology on Human Resource Function Leading to Business Sustainability”

Ms. Indu Nair

Bayer CropScience,

HR Business Partner, Bayer Vapi

**Abstract** - Today HR is facing a very unconventional change of capabilities and capacities. Pressure on organizations and specially on HR to support & partner the business by understanding new ways of working is much higher. As the titanic shift arises due to pandemic, yet another challenge faced is to become sustainable. My personal experiences along with refer to various writeups across world on the pandemic only drills down to one point that how Leaders must be ready and competent enough to convert opportunities effectively by embracing change for ensuring business sustainability. COVID-19's impact on employees whether company or contract is huge and at the same time multiple challenges have been faced by them to ensure customer experience. This paper will throw some lights on the strategies to be adopted for sustaining business but also focus of new ways of working.

This paper recommends impact on HR, key challenges during COIVD & various strategies to deal with these challenges, thereby embracing business sustainability without compromising on values or employee experience.

**Keywords:** HR, Challenges of COVID, Strategies to sustainability

## 1. INTRODUCTION

VUCA has changed its terminology completely from Volatile- Uncertainty- Complex- Ambiguity to Virtual- United – Collaboration- Anxiety  
COVID-19 has brought in a titanic shift than ever in everyone's life. This transition is at such a fast rate that it will be there to

stay. Infact COVID is a trigger for an immediate transformation and change to take calls on big decisions today. It was only recently that we read about the flexible working norms and handle topics completely virtually by 2030, perhaps we are already in 2020 doing the same and we never envisioned about. While companies felt that there was a need of moving towards digitalization few years back, however COVID knocked the doors for immediate actions.

## II. LITERATURE REVIEWS

COVID has given us a wakeup call of Transformation in real sense and accelerating the change. We all went to sleep in one world and woke up to another doing everything differently. Various articles have been written mentioning on the impact of COIVD not only in HR but also in various sectors of the world. To better understand on how organization is dealing with the new norm, enabling change in the processes, approach on the people front, some literature review summaries has been referred and research methodology was formulated.

An article written by Jeanne Meister, focused that the Future workforce is a blend of human, gig workers & robots. Though many organizations have mandatorily shifted 88% of their workforce to work from home many also have led to unemployment. She also mentioned that COVID is an opportunity to redefine business and at the same time taking care of people.

Research by Herminia Ibarra and Patrick

Petitti, technology is something that has to be driven by the line managers or business leads instead of HR driving it. As they are the one who are close to the end customers and if they are familiarized on new technologies, getting various ideas on what works for them can make technology easy. The change in one talent strategy would lead to improvement in various others and hence there can be urgency in getting the talent innovation getting shifted faster.

According to Becky Frankiewicz and Tomas Chamorro-Premuzic said that Digital transformation is about Talent and not about Technology. It is important to put People First, have focus on soft skills, driving technological change from top to bottom, make sure we are harnessing valuable data to meaningful insights.

### III. OBJECTIVE OF THE RESEARCH

1. To study key challenges faced due to technology
2. To study various technological advancement in HR process like Training, Performance Management & Recruitment
3. To frame out strategies to incorporate technology for ensuring business sustainability

### IV. RESEARCH METHODOLOGY

#### A) Sources of Data

- 1) Primary data – based on personal experiences and interviewed few respondents from HR who are management professionals
- 2) Secondary Data - Literature from Textbooks, Online articles relating to new technology and future readiness.

#### B) Research Design

Researcher has used a case study research design as there is not much information available or known about the study. With

the use of this framework various in-depth insights can be found out.

### A. TECHNOLOGY IN VARIOUS HR FUNCTION

Covid has given a new pair of eyes to see the things from all new set of lens. While majorly all the areas of business have been impacted, in this paper the focus will be on the below 3 areas of HR which had to be changed over overnight.



#### a) Talent Acquisition

In the field of recruitment, the impact of technology and the data it captures is becoming more pronounced in terms of enhancing the hiring experience for both the candidates and the hiring teams.

The labor market has become largely candidate-driven, which means that recruiters and companies are working harder to attract top talent. According to a recruitment stat, on average businesses use up to 24 recruiting technologies to help improve their hiring process. The organizations who didn't have a technology based recruitment, post the pandemic, with each day that hiring proves to be a drag, recruiters are more likely to lose the best candidates to other firms, while companies end up spending more of their resources than what is necessary out from their core jobs.

accelerate the hiring process using a digitally-driven approach. ATS (Application Tracking System) is a great help for recruiters and employers to sort through thousands of applications submitted to them, and with more and more people on mobile and social platforms, the organization needs ATS to be capable of leveraging these channels. It is also important to consider organization's needs like accessing candidates' social media profile on LinkedIn, facebook or Twitter. By using ATS technology or the right recruitment software, organizations, specifically HR, talent acquisition or recruiters, can discover brand-new ways to connect with talent.

This technology has the ability to do video screening on candidates based on AI, English assessment driven by BOTs, Multi way – Collaborative and calibrated video interviews, real-time streaming data analytics, identifying competencies, personality reports for hiring, promotion and exit with associated streaming analytics.

ATS if enabled with AI will not only does most of the jobs in an automated way but also improve upon the screening search much better than human. Organisation like L&T has already applied this system in their organisation and the ROI is much higher than expected. Just like google capturing our likes, most visited pages, even eye movements and giving us various choices through AI enabled sensors, this can be used here for faster and better screening.

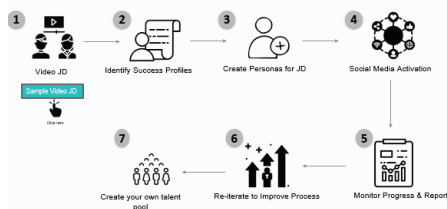


Fig 1 – The ATS process for automated screening of candidates

For post hiring, technology can further be leveraged. While there are no offices and everyone is working from home, to still making new joiner connect seamless technology plays a very important role. Organizations can initiate various technology enabled tools like;

- Online Launch Pad to track the onboarding activities of the new joiner
- 360 degree virtual induction where they can actually see and hear key people sharing welcome speech
- HR Chatbot – A virtual chat robot which is available 24\*7 to answer instantly on all the doubts, queries one has related to polices, leaves etc.
- Online Buddy /Mentor – The single touchpoint for any person to be reached out to for initial 3 months, online buddy can be kept in so that employees are comfortable to know whom to reach to



Fig 2 – Post hiring technology enabled induction

**b) Learning & Development**

Redefining learning has become the need of the hour. Hence one of the area of HR, that made a major shift is learning & Development. Various LMS (learning management system) are available in the market for foster the online learning which also captures the effectiveness of the learning as well over the period of time. Understanding the new leadership context.

In this part of the world, post covid, finding meaning and purpose in adversity with regards to development of employees is a key prerequisite to lead employees through the crisis by building personal resilience to sustain through the current phase while keeping enough reserves for what's coming next.

- One of such L&D initiative was on technical capability enhancement at Bayer Vapi. The main aim of this project was to identify the skill gap from must know jobs to future preferred to know jobs and thereby understanding the proficiency level of employees ranging from developing to outstanding. With the help of technology and tool, enablement of agile data analytics was made available to managers which helped them to know how each employee is spotted based on their skills and which developing skills they can focus upon and who are those masters who can be further utilized as trainers.

Skills	To Develop	Aware	Proficient	Master
Basic Fire fighting Knowledge		85%	15%	
Basic First Aid Knowledge		88%	12%	
Basic Knowledge of PPE/Operational	45%	22%	7%	17%
MSB position application, act as an observer for all.	17%	34%	17%	2%
Control Wheel chocking & track chocking		2%	83%	4%
Use CMAQ packing in stores & shipping		8%	72%	8%
CMAQ, changing to MS-401 /MS-402 from drums		3%	88%	11%
Control wheel chocking		4%	88%	7%
Operational packing & shipping		7%	83%	10%
OC N operation - operational response program, initial, decontamination of drums	63%	17%	12%	2%
Decontamination of drums		17%	83%	0%
Disconnection of High CMAQ empty bags		17%	83%	0%
Empty MS-401 drums shifting from 3rd floor to storage		17%	83%	0%
Foreign supplier release procedure		17%	83%	0%
Manufacturing/transporting to selected port work area		17%	83%	0%
Manufacturing/transport work according to gas permit to	47%	17%	17%	2%
Preparation of CMAQ for tank & shipping	4%	17%	20%	2%
RTU operation used for empty & filling for work.		17%	83%	0%
RTU operation/leak		17%	72%	11%
IMB & Intermediate shifting to V, J, K, S floor from F, H, W & Ash shifting from SHD to ALCIS & changing to F.	2%	83%	17%	
Software capable drums filling from ground floor to 3rd.		2%	83%	7%
Software capable drums unloading & shifting to storage.		17%	83%	0%
Small drums - Local workers from stores /trains...		17%	83%	0%

Fig 3- Snapshot of data analytics of current and future technical skills of employees at Bayer Vapi

This is how future skills can be factored, and offerings on training and learnings was made available based on the need of the organization.

- E/learning & Gamification : Technology like TGC, G.cube are the giant offerors when it comes to Gamification. Making learnings enabled thru game, video game form creates interest amongst the employees in the new way of working.

At Bayer, we have partnered with SkillsSoft where we have offered more than 900 learning topics available at any time freely accessible remotely.

- Netflix Learning series is another trend of Netfixing in e-learning which has become popular worldwide. Adopting this trend has enabled to choose a specific e-course module via a robust platform. Instead of getting a direct link to the course, a list of relevant e-courses appears on the screen. For instance, new hires may look for online courses based on industry compliance, policies, skills-specific courses and more. Based on their search, the most relevant courses pop up, along with providing exposure to other training modules that they may have not accessed earlier. Undoubtedly, e-learning holds a great potential to incorporate Netflix-like features and evolve in the next few years

c) Performance & Management – Redesigning the entire performance management in the new scenario has also become the need of the hour. At Bayer our Performance management is much agile. The goals can be added, edited and deleted based on the business needs. There are frequent check-ins and we as an organization have come out of the traditional way of managing performance and have been proactively adopting agile Performance management system.

In the new world, where monitoring performance is also a challenge, such a way of performance evaluation which has continuous feedback structure in place has proven to be much effective than a mechanical way of rating employees. Not only that Bayer has also moved away with bell curve distribution and believes in contribution statements. We have aligned our organization values to the performance to have more insights and meaning towards fit to purpose on the jobs employees do.



All the feedback and performance evaluation is tool driven which enables anytime access to comments, feedbacks not only by peer or managers but also made available cross functional stakeholders within Bayer world. Even employees can give feedbacks to their leaders online which is again a big cultural shift brought in rarely seen by the organizations to foster the culture of continuous feedback.

### A) KEY CHALLENGES

Every coin has two sides, while organizations are trying to move towards technology and digitalization which is good at one end to create sustainable solutions, ability to be the family more, no commutation, person who is introvert and had public speaking issues is now really comfortable in this way of working. Here are some key challenges faced while working in a technological environment.

**a) Office Culture** - As the world is in an unusual space & organizations exploring new working ways, employees are trying to sync in too. At home they might not have the space to work. Working mothers struggling with house chores and office meetings, domestic violence increasing post April 2020 (source: Global report) all this factors.

**b) Social connection** – while we move towards digitalization, we as an HR are somehow moving away from those connections. There are various digital tools in place and managers are empowered to use technology for queries, for assigning duties etc.. The connect becomes lesser which is a challenge.

**c) Performance Monitoring** – While Trust and integrity is the most important value. In the changing scenario where the employee connect gets lesser monitoring the performances virtually becomes equally challenging for managers. In a team there are good performers and some

non-performers and hence to achieve a goal, knowingly or unknowingly sometimes the high performers are given maximum responsibility and the non-performers cannot be tracked in a virtual environment.

**d) Burnout** – Every person is different in personalities, employees who are extrovert and would like to be with the people will not really be able to completely move to screen. Based on the responses shared by some, it was said that the usage of EAP (Employee Assistance Program) tool have been increased substantially during the period. Employees who do not have the environment to work at home can easily lead to burnout and inspite of being with the family quantity wise there are all possibilities of not having quality time.

If organization considers the above challenges, they are quite in the space of successful transformation and assure business sustainability. Here are some key strategies laid down to support the organizations to understand how best they can enable technology in HR by understanding the overall impact on the function and employees.

### C) KEY STRATEGIES

- **Fusion working Model** – By implementing a Hybrid working model Organizations can promote flexible work model rather than a fixed hours sitting. It creates a space for the upcoming generations to break this silos and move towards more agile working practice. In my last research, a key finding that came in was the gen Z and Gen Alpha are more introvert and prefer more digitalized environment. Adopting a Hybrid model can help the future generations to work digitally and also be with family as needed. can design work on hybrid model. While we have very less research on the effectiveness of the model Companies like

TATA, Deloitte have already adopted this practice and have extended the same for next 2 years. Some ideas for adopting a Hybrid working model is

- **Having Hybrid offices/ work center** – Eg: There are many corporate offices in India. The organizations can come together and provide their offices on rental basis to make usage of the ideal infrastructure at various locations. The predominant benefit is that the employees who do not have a working space at home or are living at very far location can avail the near best location nearer to their home or anywhere in the country and also can take care of their burnout or mental being. This can also promote employees to avail flexible time and flexible work style of working from anywhere.

- **Line Managers & Business Leads role** – While most of the initiatives are driven by HR or human resource team, it is very important to understand that it is the line managers and business leads are the who need to get the things done thru the employees at large. While bringing technology, it is very important to take buy in from the business leads and line managers because they are the one who will be enabling to make the change happen. Too much of function driven changes and too fast can also find its own difficulty in adoptability. Hence, involving the business leads and

- **Reshaping the culture** – While we introduce new ways of working, it is very important to share the benefits of the change. Today most of the projects driven are centrally and top driven however change cannot be imposed but has to be accepted. Eg: NASA had introduced crowd sourcing in their new strategy to solving ongoing problems. However the existing employees started feeling insecure to share the problem thinking it can impact their jobs if crowdsourcing are

capable of solving issue. Hence the most important strategy is to change the culture and to make the benefits more highlighted before the change.

- **Data Analytics to line managers** – Today one of the biggest challenge all the data is with HR and challenging to have agile data for managers with respect to People. A good strategy would be enabling reports of training, reports of performance of the team in last 3 years, analytics showing number of employees left and some prediction analysis of department for next 3 years, where employees might potentially leave etc... Today if line managers are equipped with such employee data there can be huge difference in terms of people management. Technology hence can play a very important role in meeting the day today needs and being ready for future,. All the data with HR or the old data becomes obsolete if insights aren't coming out. Hence using data for insights of managers is a win win strategy.

- **HR IT collaboration** – Enabling HR IT functions in place can really help in driving technology easily. Having an IT professional not only helps to understand duplication of process or manual process but also create some system enabled process tools which can reduce lot of manual work at the same time create insights.

- For business sustainability a great idea would be having an IT in each area distributed rather than a sole department can create a lot of difference in managing change with technology.

- **From Job enrichment to open market careers-** With the various tools and various talent management strategy the focus is on the Open market careers where people can follow their passion and work on topics which they like moving away

from the traditional systems of job enlargement or enrichment which is a big shift in the decade. Most importantly the aspiration management were most of the people were struggling to achieve can be a great forum to come up with.

## V) LIMITATIONS OF THE STUDY

1. The observations are been made by observing and interviewing employees working in a manufacturing and corporate set up set up
2. Impact of Technology in a manufacturing set up and a corporate set up are different, Hence impact can be different in different countries (developed and underdeveloped) are not considered.
3. The limited responses from various sectors of the organization can enable to understand the deeper impact on HR
4. Technologies can further be explored which required for uncertain times
5. The research would have been more captivating if the time span would have been larger.

## VI) FUTURE IMPLICATIONS & RECOMMENDATIONS

- The paper helps to have structured approach towards the clear impact on HR function
- Leaders in organizations can follow the strategies laid down for bringing in change seamlessly within organization and facing impact tactfully
- Organizational goals can be better achieved along with embracing change 'Business sustainability is assured

The study was aimed to meet all the objectives and ultimately all of them were met, however there are some limitations which were identified during the study. The study was focused within Bayer CropScience which might limit the generalization of findings and references is based on the industry types which can be

experimented to other industries & sectors as well. Perspectives from different generations, locations and sectors can also add more value to the research.

### A. References

Various secondary data were referred to through books, articles, websites, research papers. Reference to various categories are as below;

- reference of a journal article in [3]
- reference of a conference paper in [1]
- reference of a website in [17]

## VII) CONCLUSIONS

Though impact of technology in HR is an emerging topic and various articles has been published still understanding and analyzing the situation, this paper was an attempt to give an overview of some challenges in this new norm. This paper also provides some key strategies for the organization on how they can be ready to face such challenges in future which can help to deal with changes positively.

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## Technology & Employee Engagement In Times Of Work From Home (WFH)

Dr. Manisha Saxena

ICFAI Business School,

Pune

**Abstract** -With Work from Home (WFH) as the new normal, new challenges for Human Resource Management like contact less leadership, trust issues, employee engagement, performance measures etc. have been emerging at the forefront. The use of technology in the past few years and especially in the year 2020, has grown considerably and technology will continue to play a pivotal role in enabling Human Resource organizations to collaborate the business towards quality and sustainability. It has been evidenced that technological advancement and ICT can greatly contribute to the accomplishment of HR policies of the organization. It permits the company to progress its business sustainability as a whole with the help of internal processes, core competencies and organizational structure.

### Purpose/ Objectives

1. To know the challenges faced by organizations w.r.t employee engagement due to Work from Home (WFH)
2. To understand what companies are doing to engage the employees in the times of pandemic/ Covid-19
3. To find the role of Technology in employee engagement

Research Design/ Methodology/  
Approach

Secondary research through journals, magazines, newspapers, internet and primary research through interaction with employees of various companies.

Originality/ Value: The paper attempts to understand the newer challenges faced by organizations courtesy the pandemic Covid-19.

**Findings:** The multiple challenges posed by the forced WFH phenomenon due to the pandemic Covid-19 on organizations has mandated them to think on newer ways of engaging the employees so that it may result in impacting business outcomes positively. Technology has become the saviour, facilitator and enabler for the same.

**Key Words:** Employee Engagement (EE), Technology, Work from Home (WFH)

### I. Introduction

Covid-19 has necessitated a new normal and a new workplace i.e., your home. With this, have come up multiple challenges for an organization in general and the HR in particular. With Work from Home (WFH) as the new normal, new challenges for Human Resource Management like contact less leadership, trust issues, EE, performance measures etc. have been emerging at the forefront. Technology has come as a big respite in this scenario as a facilitator and enabler for smooth functioning of any type of organization across the globe. The use of technology in the past few years and especially in the year 2020, has grown considerably and technology will continue to play a pivotal role in enabling Human Resource organizations to collaborate the business towards quality and sustainability. It has been evidenced that technological advancement and ICT can greatly contribute to the accomplishment of HR policies of the organization. It permits the company to progress its business sustainability as a whole with the help of internal processes, core competencies and organizational structure.

There is evidence that Engaged employees lead to happy customers and/or in turn better business outcomes as a person's satisfaction and engagement with their job and employer plays an important role in their decision to be at work and work productively, remain with the organization, and to influence the work environment and culture positively. Highly engaged employees have a tendency to outperform their disengaged colleagues and negative ones negatively impact team performance. Enhanced engagement are more likely to impact broader business level outcomes and return on assets and other financial, HR and business metrics [1].

Effective organisations are conscious about the importance of EE as a instrument for talent management, employee satisfaction and the resultant reduction in attrition and also as a cause of competitive advantage for the firm [2].

All this makes for a compelling case for top leaders to look at EE from a multiple perspective. This paper makes an attempt to understand the role of technology in EE in times of WFH. It has been divided into four sections. Section I takes a look at the available literature on EE and use of technology for the same. Section II establishes the objectives followed by Section III on methodology and Section IV on Data Analysis and Findings. Section V gives the conclusions and the last section mentions the Future Scope and Limitations of the paper.

## II. Review of Literature

Many definitions for EE have been forwarded including key words like positive, fulfilling, physical, cognitive and emotional expression, work-related state of mind, vigour, dedication, high levels of energy, passion for work etc. Engagement refers to the experience of work by individuals as something to which they want to focus their effort, something that is meaningful to them and something that is

interesting to them [3].

Engagement can be an outcome of multiple factors in the workplace as well as some individual factors. Some definitions focus on the internal, emotional state of the employee and include employees' feelings like enthusiasm, commitment, dedication, motivation, passion, satisfaction. Other definitions link the employees' emotional state to outcomes like tenure, productivity etc. It works at all levels individual, team and organizational. Key factors influencing engagement include trust and integrity, relationship with one's manager, influence of co-workers/team members, pride about the company, employee development, career growth opportunities, nature of the job, and alignment between individual and company performance, reputation. Quite a few tools are available to measure EE [1].

EE is positively related to the time leaders spend on internal online networking platforms, the code of online networking conduct, and the presence of an open culture [4].

Thus, Engagement has been shown to be highly related to job satisfaction; organizational commitment and citizenship; employee morale and motivation etc.

Mindfulness was a very strong predictor of employees' engagement [5]. This pandemic is having a real impact on employees and you can't just dismiss their fear. Communicating often and openly fosters trust, transparency and alignment between employees and employers [6].

To create tangible business impact in a digital environment a digital leader must build trust, encourage peer learning and coaching, communicate clearly, manage direct reports' performance, develop others, Foster innovation and agility and partner for success [7].

HR is implementing AI and making more data-driven decisions. 82% of HR executives believe in the transformation of

their jobs due to increased focus on people management and decreased attention to administrative tasks and use of tools like AI [8].

Companies are using labour management systems (LMS) to improve employee performance, logistics resilience and to engage employees for a longer time [9]. EE is the answer to making associates feel safe at work, and ready to adapt quickly to new processes [10].

### III. Purpose/ Objectives

1. To know the challenges faced by organizations w.r.t employee engagement due to Work from Home (WFH)
2. To understand what companies are doing to engage the employees in the times of pandemic/ Covid-19
3. To find the role of Technology in employee engagement

### IV. Research Design/ Methodology/ Approach

Secondary research through journals, magazines, newspapers, internet and primary research through interaction with companies. Employees from companies from various sectors like manufacturing, IT, Banking & FMCG were contacted to understand initiatives of their employer's towards EE. A qualitative analysis was done and is summarised in the next section.

### V. Data Analysis & Findings

Challenges faced by organizations w.r.t EE due to WFH:

- While employee morale is the first to be hit in a crisis, motivation should be the last one to suffer [11].
- Many remote workers and businesses are still on a learning curve and could be using better practices and tools to realize greater efficiency. Among the challenges are home office WiFi optimization, cybersecurity and data protection (making proprietary information and data vulnerable), in addition to staying connected and digital

collaboration. Getting the strongest WiFi signal in home is important as slow speeds lower work efficiency and overall productivity. Remote work especially with kids doing school from home can put a lot of demand on home WiFi [12].

- The biggest people management challenge faced by the CEOs is to build very robust employer brand equity and one of the most significant ways to do so is to retain employees which is possible only if organisations provide them with a passionate work culture and environment where they can showcase the best of their abilities thereby creating a maintainable competitive advantage which is difficult to replicate [2].

- Due to the unavailability of domestic support, employees at home have been burdened with all household chores leading to time management issues along with work life balance.

- Lockdown and being stuck in home have led to instances of Depression, anxiety and behavioural changes

- Due to online the contactless leadership has become a challenge putting more pressure on HR to find ways to engage the remote employees.

- Not being able to meet colleagues and other people of the organization in addition to limited interaction has resulted in Trust issues

- With WFH, one has no specific work timing or rather finds oneself working 24\*7.

What are companies doing to engage the employees in the times of pandemic/ Covid-19?

- HR managers are leveraging non-monetary variables to enhance the teams' morale [11].

- Companies are taking help of third party for counselling or related Mental wellbeing of their employees.

- Bosses are engaging in informal interactions on a regular basis and show sincere concern about things happening around the environment and the

onsequential impact of the same on their workforce.

- Organizations are developing better communication for improving EE through internal communications. Some tips: ■ Communicate in digestible quantities ■ Communicate with them where they are ■ Be better than you were before ■ Create meaningful feedback circles ■ Care for the “whole employee” ■ Commit to listening ■ Leverage your internal networks and teams to amplify your message ■ Flag missteps swiftly and course-correct [13].
- A pizza chain gives its employees help with everything from down-time fun and fitness, to purpose in their work and mental health support and has the bottom-line results to prove the approach makes good business sense [14].
- Rewarding employees throughout the year can decrease turnover and increase engagement and performance [15].
- Sensitizing employees at all levels towards the new normal and the new expectations from colleagues, seniors, juniors or anyone in the organization has helped bring people on a common platform.
- EE and internal communication highly contribute and foster successful digital transformation [16].
- Companies set up WFH policies and related perks for employees.
- New health and safety etiquettes and systems have been developed and incorporated by staff, breaktimes have been staggered and breakroom seating condensed. The number of external visitors has been limited. Protective shields were installed at reception areas. All this have acted to lift morale [13].

#### **Role of Technology in EE:**

- New technologies are a necessity for companies.
- Online Workshops and courses for self-development and upskilling has become the trend.
- Apps like WorkJam combined

communications, tasks, learning and scheduling into one digital workplace in a timely and complete manner. A number of technology solutions focused on communication have gained traction during this crucial time, making employees’ jobs easier, keeping morale high and having a quick return on investment for the companies [10].

- Companies are focusing more on EE versus just reporting on employee performance. For example, companies can use Fitbit contests and shift vs. shift games to get workers partaking in friendly competitions with one another. This tries to maintain workforces in times where recruiting is tough and may become even more difficult as we emerge from COVID-19. Companies are going to go beyond a ‘big stick’ to motivate their workers [9]
- Video conferencing, online chat, and instant messaging tools keep teams connected and projects on track. Cloud applications enables remote workers to access secured private networks and shared files from almost anywhere. Collaboration apps, like Microsoft Teams, Amazon Chime, and Slack, put remote teams in constant contact, reduce process cycles, and enhance productivity and innovation [12].

#### **VI. Conclusion**

Engagement is about motivating employees to take that extra step in the workplace. It is about encouraging employees to have passion for their work, and recognizing the organization as more than a place to earn salary. A recent HBR article described that employees are driven by jobs that challenge them and enable them to grow and learn, and they are dispirited by those that seem to be repetitive or to lead to a dead end [17].

Challenges due to the Covid pandemic have emerged in and disrupted all kinds of markets, but EE and finding mutual purpose have helped to keep businesses running. Technology offers countless



convenient and manageable ways to build a learning culture that promotes development, retention and engagement. From hyper personalization and blockchain technology to a health literacy quiz and mobile EE solutions, technology is creating innovative ways for employers to engage their employees in multiple areas.

Leaders feel that in absence of a tool at the site level, the ability to do any reporting around compliance, or efficiency, or engagement at the corporate level suffers. A strong communications program fosters trust, transparency and alignment between workers and companies.

Technology has revolutionized the field and will continue to do so making it simpler to gauge the extent to which individuals, teams, and organizations are engaged, satisfied, and committed all the more as engagement of employees can certainly impact the accomplishment of the business. Ultimately, mastering remote work and empowering a distributed workforce necessitates finding the right digital tools that are reliable to stay productive and connected [12].

Digital communications remain the top channel used to improve EE. The rise of remote work amid the COVID-19 pandemic highlights the value of using learning management systems, and the HR professionals and other workplace managers should embrace and consider leaning on technology in their learning and development initiatives so that unique worker needs can be met and to get the job done [18], [19].

## VII. Future Scope & Limitations

COVID-19 has revealed new possibilities for how work and business get done. These are apt times which have given organizations to measure and evaluate the effectiveness and efficiency of their workforce. Though, most companies still evaluate EE on an annual, or longer, basis using traditional survey techniques. The

organizations need to learn to apply digital tools towards improving the workforce in terms of satisfaction, productivity and retention. Technology has enabled employers but implementing advanced models of EE to improve individual, team, and organizational outcomes will still need specific feedback and analysis along with organizational awareness, understanding, and willingness to embrace change. EE is not merely a one-time issue to be resolved, but an integrated, constant method of thinking [1].

An individual is at one's job for most of the day, and organizations believe that true engagement comes from knowing that one has the ability to make change within an organization and see how one's actions are supporting the greater good of what the company's trying to do. EE is the answer to making associates feel safe coming into work, and ready to adapt while on the job. As a future scope the impact of these EE initiatives needs to be seen w.r.t job satisfaction, employee retention and business impact.

The study was conducted with the help of secondary research and a limited set of employees from limited number of sectors due to time and resource constraint. Nevertheless, it offers important insights towards the use of technology for EE in times of WFH. is limited by time,

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# The Digital Revolution in HRM & its impact on Business

**Dr. Mohan V. Uchgaonkar**

Senior Deputy Director & Head HRM&A, ARAI National  
Council Member of ISTD, Corporate Member of NIPM  
Pune, India

**Mr. Avinash S. Kulkarni**

Manager HRM&A, ARAI  
Life member of ISTD  
Pune, India

**Abstract**—The digital revolution has deeply impacted almost all the fields and its way of functioning. The Academics, Engineering, Design & Simulation, Manufacturing, Research & Development, Medical Science, Sales & Marketing, etc. had a radical shift from manual work to smart work through Artificial Intelligence and hard copies to soft copies. The technological advancement in the digital world has brought a revolutionary change in the way people work, resulting in faster, easier and accurate solutions. So how can an important function of Human Resource Management remain untouched from it?

Similar to all other domains, HRM is enabled with several digital platforms, developed to support & manage the core HR functions with greater efficiency & accuracy. The radical shift of HR functions from manual paper work to application based digital work has helped HR professionals to come out of the routine work & focus on Strategic HRM to act as a Business Partner. This changed role of HRM is contributing significantly in achieving the Business objectives resulting into Business Growth & Sustainability. The recent challenge of COVID-19 pandemic has underlined the significance of digitization in various domains with a forced situation of “Work from Home” for majority of the work force.

**Keywords**—Human Resource Management (HRM), Technology, Digitization, Business Sustainability, Recruitment

## I. INTRODUCTION

“Organizations creating the right environment for their staff can have a positive impact on employees’ health and wellness, as well as their job satisfaction and productivity levels”.

If Organizations do their present business with past technology, they will lose their future presence in the market.

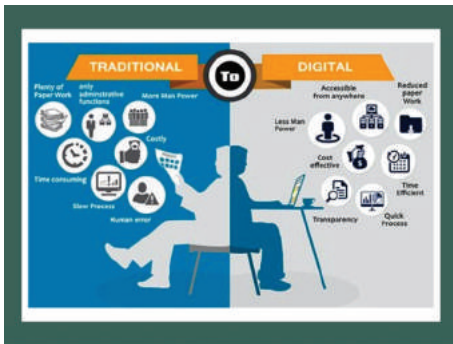
Adaptation of technology in HRM is offering the potential to improve services to the employees and management, the customers of HR department, by improved efficiency and cost effectiveness within the HR department and allow HR to become a strategic partner in achieving organizational goals & contributes to business sustainability. Digital platforms store data in a complete and secured way, automates routine processes and provides analytics that give management reports and insights for better business decision-making.

Implementing technology in HRM within an organization enables managers to gather, collect, and deliver information, as well as communicate with employees more easily and efficiently. HR technology also provides managers with the necessary decision making tools to allow them to make more effective HR-related decisions.

## II. IMPACT OF DIGITIZATION ON HR FUNCTIONS AND BUSINESS SUSTAINABILITY

The digital revolutions have brought about a radical change in the industry practices & processes. On similar lines, the HRM functions are also being aligned to this change to match the expectations & needs of the fast changing business perspectives. The industries have started exploring the

global opportunities & are aspiring to expand beyond boundaries. This has brought up a challenge for HR, of managing multi-national, multi-location & remotely working professionals from across the globe. Digitization has been a boon to HRM which has enabled the HR professionals to face the challenge of Global workforce management.



The impact of digitization on various core HR functions and its significance to business growth & sustainability is briefly stated below:

#### A. Recruitment

The function is having a direct link with business strategy which becomes the basis for manpower planning & recruitment of appropriate candidates. Let us see the impact of digital revolutions & its benefits in Recruitment process.

- a. Sources of recruitment – The conventional recruitment resources have shifted to various social media platforms & employment specific sites like LinkedIn, Facebook, Naukri, Monster, etc. which are explored for posting the vacancies and attracting relevant candidates to apply for it. This increases the reach across boundaries globally & anyone from anywhere in the world can apply as well as attend the interview through virtual online platforms.
- b. Online Psychometric/Technical tests – This is an excellent tool for funnelling of candidates, especially used for Campus Recruitment. Few of the companies have

shifted total campus selection process online, without physically visiting any of the campuses pan India. A common Online Psychometric tests & technical tests by creating individual log ids for each student is organised. The shortlisted candidates are then interviewed by a panel through Video Conferencing tools like Skype, Microsoft teams, Zoom, etc.

The benefit of this is saving of travel & stay arrangement cost as well as time of the panel members for multiple locations. This in-turn contributes to reduce expenses and increased surplus for the organization & the time of the panel members saved in the process, can be utilized for more productive work.

#### B. Performance Management System

This is a very important function of HRM which becomes the basis of various critical decisions related to individual employees, like Promotion, Incentives, Increments, Deployment/ transfer, etc.

Digitization in the PMS process helps us to streamline the process, makes it easy to manage & maintain for end users as well as the HRM and helps the management to get the inputs in various formats as required.

#### C. Competency Mapping

The database becomes a basis for Human Resource Planning & is directly linked with the business strategies and future needs of skilled manpower to realize the business plans. By bringing Competency Mapping on a digital HR platform, it can be linked to the following core functions of HR.

- a. Recruitment: Whenever there is need of manpower (either new or to fill any vacancy) the Job Description with requisite skill sets becomes readily available.
- b. Performance Management System: Competency mapping of individual employees can be linked to the PMS & becomes the basis of performance appraisal. Rating of the individual

employees becomes very easy on various skills & competency parameters.

c. **Training & Development:** The gap between the expected & actual level of skills & competencies can be the basis for Training Need Identification (TNI). The same can be easily linked & the inputs for the training cycle can be available at a click.

As a result of digitization of the HR processes linking of the various internal functions is possible enabling inputs quickly and in required formats.

#### **D. Learning & Development**

E-modules & online training programs are trending in the industrial world. Employees can enrol & attend the training modules to upgrade their knowledge & skills from anywhere in the world, even while travelling or from the comfort of their home. This has made the L&D process very flexible as well effective resulting into the upgradation of skills/competencies of individual employees as per the need of the business & organizational strategy. Few of the basic & repetitive nature of training modules can be converted into e-modules & uploaded on the intranet of the company, which can be accessible to all 24 x 7 x 365 days. Anyone can go through the modules as & when required at their convenient time slot.

#### **E. Routine/Repetitive functions**

Artificial Intelligence (AI) is a technology that allows computers to learn from and make or recommend actions based on previously collected data. In terms of human resources management, AI can be applied in many different ways to streamline processes and improve efficiency.

AI is being used in HR to automate repetitive, low-value tasks, thus increasing the focus on more strategic work. AI tools automate common HR tasks like benefits management or handling common

questions or requests.

a. **Technology & Green HR:** As a result of the transformation of major functions of HR from paper & time-intensive manual methods to an automated, time saving digital platform, the HR processes can become paper-less. This contributes to the protection of environment and maintaining ecological balance.

### **III. CRISIS SITUATION MANAGEMENT**

The dawn of the year 2020 came up with huge challenges due to the outbreak of COVID-19 pandemic. By the time mankind could realize it's seriousness and imagine its impact, the pandemic brought down big countries & it's economies to a standstill, forcing the people to lock themselves in their house for survival. None of us ever imagined that the impact of this pandemic would engulf the whole world & even the technologically advanced countries would struggle to control the spread of the virus, with thousands of deaths in a day's span. Major Industries were locked up for months together, halting the processes & progress which also stopped the income source for thousands. This challenge underlined the significance of Digitalization in the industries!

During these challenging times of Lockdown & the unlock process thereafter, the HR professionals have been on the forefront to restart the industry operations, so as to start the ball rolling as soon as possible. The challenges have been manifold, however Management with the support of HR, enabled with the mobile & internet connectivity could reach out to the employees, even during strict lockdown period, to keep them informed about the latest guidelines issued by the Central, State and Local Governments from time to time. The connectivity enabled HRM to motivate the personnel and maintain their

morale high, which helped in bringing the operations back on track steadily.

We would like to bring about the connect between Digitization in HR processes and Business Sustainability through the following few experiences during the Lockdown & Unlock phases:

- The intensity of management perspective towards digitisation and usage of online platforms started with the disruption due to the pandemic & challenge of staying connected with the employees. Staying connected with the management teams & employees was very critical during the challenging times, from management as well as every individual employee perspective, which in turn resulted in the sustainability of business.

- Acceptance of the shift from manual to digital process by all employees was a challenge, as change usually makes people uncomfortable. However, due to the pandemic situation, everyone has understood the importance of digital platform and automatically broke the shackles. People started to “Work from Home”, which was never ever imagined, in the normal course of time. This helped the HR & Accounts team to process the salaries of employees on time which obviously resulted in maintaining the morale of employees high during these testing times.

- Extending the access of official email to all through their mobile phones enabled the employees to continue the communication with the internal & external customers, which was very crucial from business continuity perspective.

- Meetings started happening on the Microsoft teams app., which helped the Management to discuss & take decisions related to critical matters, even when we were not allowed to step out of our homes during lockdown.

These were the few significant changes that brought in a paradigm shift and turned

certain unimaginable things into reality.

#### IV. CONCLUSION

The digital transformation of HR functions is a need of the hour to match the pace of the ever changing and fast evolving business scenarios. The various digital tools & platforms are designed & developed for effective management of the global workforce enrolled and deployed at multi-locations, enabling worldwide business expansion. It is almost impossible to even imagine business growth & sustainability, without a digitally managed HRM. Digitization being the future of existence, growth & sustainability of any business, the HRM has to be digitally aligned.

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## Application of Artificial Intelligence in Human Resource Management

**Mr. Ganesh Munde**

Research Scholar  
IIEBM, Indus Business School,

**Dr. Poonam Nikam**

Dean and Associate Professor  
IIEBM, Indus Business School,

**Abstract**— In the rapidly changing world, organizations are picking up technology for the business sustainability. The heavy investment by companies like Google, Facebook, Microsoft etc. in Artificial Intelligence has gained a lot of attention in the last decade. The application of AI in various functions of marketing, human resource, finance, and production departments help to work in faster and efficient way.

This research is descriptive in nature and expected to investigate the role of AI in HR department and understand the challenges and benefits it offers to improve the efficiency of the organization leading towards the business sustainability. The research is focussed on exploring the impact of AI on functions of IBM, who had successfully implemented AI in HR domain. The research paper can bring various perspectives and insights to enhance the work methods of HR in organization. Face recognition, chatbots, virtual assistants can help to identify the hidden intent of employees.

This research is important to highlight the benefits of Artificial Intelligence in Human resource management functions such as recruitment, learning and development, employee engagement etc. For the HR managers, the given research paper can give insights to get rid of repetitive and mundane activities with the help of technology.

**Keywords**— AI (Artificial Intelligence), HR (Human resource), strategic decisions, chatbots, business sustainability

### I. INTRODUCTION

HR professionals can reduce their work load by assigning the repetitive tasks to the AI tools and help utilize own talent in more strategic, decision oriented and creative tasks. The given study is different as it gives connection of AI with every HR functions be it recruitment, L&D, appraisal, compensation, employee engagement etc. “The use of artificial intelligence is likely to be 50% in HR operations in next 2 years which is just 25% right now in the business” said Mr. Bala Sundaram (Founder and CEO of Han Digital) Few traditional practices since 70-80 years like psychometric test will replace by AI very soon. To conduct Psychometric test 40-50 minutes of time consume while AI can produce same as psychometric tests in just 15 minutes of game. Unilever is best company to explain this, ‘Pymetric’ carry out 20 minutes of activities that playing neuroscience based ‘Pymetric Games’. These tools scrutinize the ability of candidate on the basis of their focus, memory power, decision making ability, risk handling, problem solving etc. The given research paper will help to understand the potential of the artificial intelligence in the different functions of human resource department and to utilize human talent in better strategic decision making in the organization.

Right from analysing the need of employees, screening of the resumes, interviewing, hiring the perfect fit, training them for new job role, managing their payroll, giving opportunity at right time to right individual are not so an easy tasks.

Technology acted as a catalyst in the whole process to improve efficiency and save the resources for more strategic tasks. Lot of employees have this assumption that HR are not fair and give biased decisions at work place. They also think that, HR is meant to please and take side of Management irrespective of employee's opinion. This major issue will be swiped out by AI will provide a more transparent workplace that would breed happy employees free from biased decisions. It comes with human nature that it has an emotional inclination towards people from same region, common language; common backgrounds which tend to create biasness, thankfully algorithms cannot think emotionally and which could help preventing decision biasness.

### **What is HRM?**

A definition by Schemerhorn (2001) is that HRM is how you are able to gain and develop a workforce which is talented; to help the company achieves its goals, as well as its mission, vision and different objectives at hand.

For the given study, HRM will be defined as process of getting new talent which should have both capabilities and competences and maintaining them to create desired results for an organization.

### **What is Artificial Intelligence?**

The English Oxford Living Dictionary gives this definition: "The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages."

For the purpose of this study, AI is defined as smart algorithms which have ability to learn, decide, identify common pattern and give a result as humans do within short span of time.

## **How AI and HRM are related to each other?**

In last decade AI has given substantial proof that it can be used to reduce time consuming, cognitive activities. HRM is known for its complexities involved in its various functions. As AI is helping lot of activities in company as in manufacturing, sales forecasting, personalised marketing then why not in HRM. AI has helped HRM to enhance

performance in its various task as recruitment, L & D, employee engagement etc.

### **1. Talent Acquisition-**

In case of bulk recruitments where numbers of resumes knock the company's door, it becomes really challenging to select the right talent for the role. Talent Acquisition software has reduced works around 75% in the screening process. It gives the perfect match between job description and skill set of the candidate.

### **2. Learning and Development-**

It is observed that all big players such as Infosys, TATA, Reliance etc. Invest a lot in the learning and development of employee. Traditional ways of learning are not so welcomed by the employees. AI can help managers to design the personalised program with respect to behavioural pattern of the employee.

### **3. Employee Engagement-**

Just hiring a talent is not the only task of HR manager. The hired talent must contribute in the growth of the organization. Employee Engagement plays crucial role to generate results in the company. It involves clarity of role, learning, appreciation, recognition, response to complains etc. AI could do fair judgement in doing all.



Due to lack of awareness about technology in human resource practices organizations are facing problems like poor decision making, employee requirement mismatch, loss of business, decreased productivity, high attrition rates, dissatisfied customer etc. and the worst part is they failed to understand the reason also. HR are considered pessimistic due to not active participation in number game. But it can be changed. HR is the quality creators in organization but because of lack of resources such as time, man power, technology etc. they unable to give the best value to the company they work.

## II. OBJECTIVES

1. To identify the benefits of artificial intelligence in human resource practices
2. To understand the impact before and after AI implementation in HR function in an organization.

## III. RESEARCH METHODOLOGY

The study is primarily depended on secondary data as there was no primary research conducted. An extensive research was conducted to identify articles from various databases such as Google Scholar, Jgate, Delnet, Researchgate and grey literature.

The motivation of this research is to explore the current state of AI and how it can be applied to the Human Resource Practices. It researched what impact AI technology has on HR and where it would be most useful in different process. This research expands current research by applying AI into existing HR practices to fill the gap on how AI can impact HR operations and possibly increase effectiveness.

To achieve more efficiency in these activities HR manager can use technology to replace repetitive and cognitive tasks and employee talent can be utilized for more of strategy building. This study includes details of organization who

successfully implemented Artificial Intelligence in Human Resource practices.

## IV. DATA ANALYSIS AND RESULTS

Mental blocks about AI in HR-

A lot of professionals thinks AI can take over the existing jobs and create unemployment in the market. The ground reality is-

1. With rise of technology new position will demand new skilled force at work places
2. Human can get assistance from AI tools to enhance the performance
3. Know-how would be the demanding factor for new market
4. Decision making is the decentralized with vertical and horizontal integration within the organizational system

“Around 45% of present day’s jobs could be automated and done by AI in upcoming 2-3 years” says Skill Generation Survey by Manpower Group.

### Benefits of using Artificial Intelligence in Human Resource Management:

The benefits of using AI in HRM have been identified in particular:

#### 1. Reducing Human Bias:

Human can lie but numbers never lie. Beauty of Artificial Intelligence is it works on that the data, numbers and patterns. Some time employee is just giving lip service and not giving the expected numbers in performance. This kind of employee may reduce the growth of company. AI can help predict the pattern and help HR to get unbiased view on performance to take respective decision on presence and compensation plan of that employee.

#### 2. Increasing Efficiency and Insight in Candidate Assessment:

Human mind has its limitation as it cannot give the same efficiency and effective

output on same type of work. To get right candidate over a pool of thousands of application it becomes very challenging to HR manager to take a decision. AI can help to get right candidate based on the keywords present in the resume. Sophisticated algorithm can help screen the right candidate with required competencies and capabilities for an organization

### 3. Recruitment agency:

Recruitment agency such as I.T.S also gets the benefit of using smart algorithm to get information of the vacancies in the company and encouraging the candidate which has the required skill set. This strategy can help recruitment agencies to improve their conversion ratio.

### 4. Predictable turnover and attrition:

One of the big challenges for HR professional is to figure out how long the employee will stay in organization and be relevant to perform on the set targets and goals. AI can assist in employee engagement by means of data collected through surveys, performance gamification, social media activities, intent behind the comments etc. AI can help HR managers to get idea about future in some extent which employee deserves for the position change and which employee needs to be fired

### 5. Recommended training methods:

Learning happens when there is desire and interest to learn. Organization pay heavy in organizing corporate training but results do not come as per expectation. Best feature of AI is it can analyse the pattern of every individual independently and suggest the different methods based on the skill set present and skill set need to develop

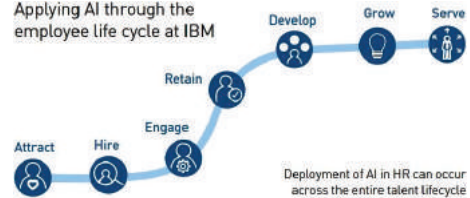
### Impact of AI in HR with IBM

How AI is benefiting to HR professional is understood in detail by considering the

giant player “IBM” who has been a major user of Artificial Intelligence in different Human Resource Practices for quite long time.

#### 1. Attract: Personalize suggestions helps get better experience

Applying AI through the employee life cycle at IBM



<https://www.ibm.com/downloads/cas/AGKXJX6M>) Traditional: Job seeker generally put keywords on various search engines to get idea about the job vacancies

Smart HR (HR with AI): IBM’s recruitment chatbots helps to know the candidate even before they apply. Depending upon the response chatbots help to find the right job to the candidate. Result: Best personalized experience for applicant, less chances of wrong fit, better attrition.

#### 2. Hire: Smooth and error free process

Traditional: With time constraint of filling so many vacancies, quality was added to hamper over quantity.

Smart HR (HR with AI): AI works with the past data. IBM Watson Recruitment (IWR) helps analyze the probability of candidate’s success to get the job from the past patterns. IWR help recruiter what is needed and which has to eliminate, ultimately helps HR for better hiring process

Result: Reduce biasness, saving of time, more possibility to get perfect fit for the role, less future hassles

3. Engage: Win Win Game for Employee and Manager Traditional: Once in a blue moon surveys are conducted which

doesn't really help to get employee's mind set at work. It was time consuming to get meaningful information from the surveys. Does not encourage any considerable action, annually conducted

Smart HR (HR with AI): AI basically helps to track the pattern of every employee under AI enabled manager. On the basis of pattern data AI can put suggestion to design the activities to increase the employee engagement

Result: Improved pro-activeness, suitable action suggestion helps to get kick of motivation for employee and increase in trust towards company,

#### 4. Retain: Action oriented game

Traditional: Bell curve performance evaluation and external market data used to formulate annual formulaic compensation Smart HR (HR with AI): AI based compensation expands the horizon over traditional methods. It helps to get idea whether the supply and demand game of relevant skills are in place or not.

Result: It cuts all the manual intervention required to put by manager to decide on right compensation.

#### 5. Develop: Customized learning experience

Traditional: Boring, time consuming class room pattern training programs which produces less impact.

Smart HR (HR with AI): Depending upon the retaining capacity of employee, personalized learning modules to develop the relevant skill. Employee learning can be enhanced by means of open learning platforms, gamification, chat bots etc.

Result: Reduced gap between employee skills and market demand. Learning is not more a boring process, employee skills set consideration in more strategic way.

#### 6. Grow: Career development

Traditional: Lack of training resource

causes better learning for top level executives and wrong expectation from bottom level to perform well

Smart HR (HR with AI): Due to standardization in customized learning, every employee irrespective of position gets the required skills training to do well in market

Result: Value addition in employee's skills set, happy employee better retention. Well educated team builds strong company

#### 7. Serve: AI for 24/7 employee interaction

Traditional: HR business service is biased to the senior management, service at lower level are more rule bases, impersonal

Smart HR (HR with AI): Irrespective of the level Chatbots can serve well to the every employee who is willing to take any particular service.

Result- Easy to design and modify Chatbots give flexibility and perform better on the feedback added on periodic interval.

### V. CONCLUSION

In the tough time of technological disruption and dominant environmental forces, it is must to understand that HR needs to upgrade their functions by using the artificial intelligence. Artificial Intelligence can transform human lives and can give relief from cognitive and repetitive tasks. To run any organization, most critical part is 'People'. It is a big challenge to use human resource and technology with their best productivity. Artificial Intelligence is transforming all the functions in the organization and Human Resource Department is not an exception. The research has thrown light on various angles and relationship between Artificial Intelligence and Human Resource Management.

AI has enough potential to transform the way of doing work in the organization. HR professionals can participate in more strategic activities and contribute in the important decision for growth. In the

dominating environmental situation it becomes necessary step to look for personalised care of employees. The more personalised experience given to employee will increase the retention of the organization.

Companies and employee both have this hanging sword to change themselves with respect to relevant skills with the changing times. Technology will disrupt the way of hiring, learning, engaging the employees. -

As it is said "Change is the only constant thing in this world"

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## Building Sustainable Psychologically Safe Management Models in times of Technological Prevalence

**Ms. Harini Sreenivasan**

Partner – Semcostyle Institute India

**Mr. Sahil Nayyar**

Senior Associate Director – HR -  
KPMG India

**Abstract** – The purpose of this research is to help organizations build sustainable psychological safety in the workplace. Methodology and approach - Over the last few months, technology has taken centre stage and the human touch is seeming to be a challenge. In the current scheme of things, the research explores different situations observed in different industries. It chronicles the experiences and the highlights the challenges faced by Human Resource (HR) professionals to keep engagement sustained due to uncertainties, both real and even imaginary. Using empathy-based conversations, the research compares and contrasts human behavioural patterns in different industries and critically evaluates the role of HR professionals especially in managing human behaviours in remote working environments. Findings – A comparison of the findings shows that there is a substantial degree of similarities in the behavioural patterns that have been observed during the last few months. However, there is significant diversity in the factors that influence psychological safety in technology intense environments. Such factors should be considered in our efforts to build models for creating psychologically safe workplaces that are sustainable and future shock-proof. Value based outcome – Identification of models for driving enhanced psychological safety to reinforce behaviours that drive organizations of the future and HR's role in spearheading that path.

**Keywords**— Psychological Safety, Sustainability, Management Models, Empathy, Remote Working, Technology

### I. INTRODUCTION

The outbreak of the corona virus in early 2020 and the consequent lockdown has had serious impact on industry sectors in India. It was unprecedented and sudden, organizations have coped with it, changed their ways of working and are looking at new ways of working in the future. Each industry has had a different experience, a different impact and also the need to adapt has been varied. The lockdown restriction halted the most economic activities and led to job loss of millions of people and revenue streams. The government took precautionary measures to curb the virus spread by restricting the movement but the virus wreaked havoc in the country. India is one of the most affected countries from coronavirus pandemic [1]. The government imposed nationwide lockdown in late March to combat the spread of the novel disease. After six months of closure India has the second highest number of cases in the world with more than 5.73 million positive cases. The government lifted lockdown restrictions in a phased manner while the shutdown took a toll not only on the country's economy but also on the mental wellbeing of its workforce.

Technology suddenly took centre stage in running businesses right from day-to-day operations to strategy implementation. Addressing technology infrastructure challenges got priority over matters related to people as that was seen as the only way towards business sustainability. Human Resource (HR) professionals came in to the spotlight to walk the tight-rope balancing technology invasion at uncertain times and employee morale by

demonstrating high human touch 'virtually'. This research presents insights into the impact of the pandemic in different industry sectors specifically the challenges faced by Human Resources (HR) professionals in managing people related matters.

## II. METHODOLOGY

Three different sectors namely Manufacturing, Information Technology (IT) and Retail were surveyed, interviews were carried out and empathy maps (using template as shown in fig 1.) were drawn that clearly highlight points around the problem statement. Respondents were asked questions around the following pointers:

A. What so they feel or think about working in the lockdown?

- I) What goes on in their minds?
  - ii) What do they think really matters?
  - iii) What do they think are their worries and apprehensions?

B. What do they hear?

- I) What influences them when they listen to colleagues?
  - ii) What did they hear more, complaints or kudos?
  - iii) What do they hear from social media and other influencers?

C. What do they see around them?

- I) What are the changes in the typical working pattern?
  - ii) What happens to the way meetings are held?
    - iii) What happens to delegation, monitoring and measuring of work?

D. What are their pains and gains?

- I) Fears, frustrations and obstacles
  - ii) Wants, needs and measures of success

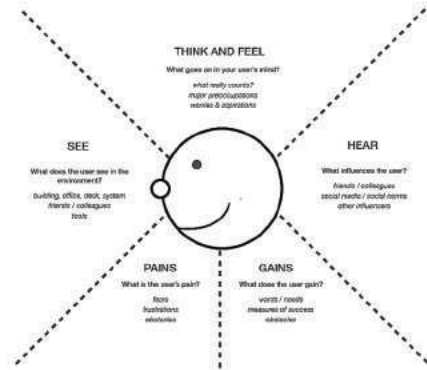


Fig1: Empathy map template

Secondary research from various sources were also collected to substantiate the findings. Data was consolidated and classified based on practical challenges and emotional impact. The latter was then probed deeper to understand the triggers. Based on observed patterns, people management models are recommended.

## III. RESULTS

A. Manufacturing Sector [2]

Manufacturing sector had to adopt an unprecedented way of working and faced challenges in adapting to the unprecedented requirements of the lockdown. HR managers were interviewed in this context and the empathy maps revealed the following.



Fig 2: Empathy Map – Manufacturing Sector

Both positive and negative behavioural patterns that were observed by HR leaders included:

- I) Increased apprehension about communication being hampered at all levels
- ii) Feeling of distrust
- iii) Improvement in asking the right questions
- iv) Better small talk before the main agenda
- v) Learning to ignore background noises and occasional disturbances
- vi) Building mutual respect

### B. Information Technology (IT) Sector [3]

This sector was a little familiar with some tools and tips for working remotely. Therefore, the initial apprehensions were minimal and the HR leaders seemed prepared to face the new way of working. But an interesting observation over the extended lockdowns was that the empathy map started to change a little. Refer fig 2. More apprehensions began to appear and the comfort in adaptability began to reduce a little.



Fig 2: Empathy Map – Information Technology (IT) Sector

Key highlights in this sector were

- I) Managers communicate better and

- ii) Fear of attrition is higher
- iii) Feeling of burn-out is increasing
- iv) Flexibility of working is well received and might be a permanent ask by candidates
- v) Apprehension about statutory compliance due to flexibility of geography.

### C. Retail Sector [4]

The retail sector was indeed quite different when we looked at the response to the stimulus. The pandemic had mixed impact on this sector in many ways. During the lockdown, while retail outlets had to remain closed, many of them began to explore possibilities of e-commerce. While business continuity was being managed, the HR teams catering to this sector had some peculiar challenges too. The retail outlets especially, the large supermarkets had a significantly large presence of security, housekeeping and warehouse personnel. Overnight these roles seem to have become redundant. HR was faced with the huge challenge of dealing with reviewing third party manpower contracts, lay-offs, statutory compliances, balancing business requirement and employee emotions etc. The empathy map for this sector had its uniqueness. Refer fig 3.





Fig 3: Empathy Map – Retail Sector

The behavioural highlights in this sector were varied and exhaustive.

- i) Fear of redundancy
- ii) Hesitant to act
- iii) Unsure of whether on the right side of things
- iv) Unable to keep morale high
- v) Technical handicap felt by most employees
- vi) HR teams feel pressurised to manage mixed age and literacy demographics
- vii) Extreme emotions to be managed between management and workforce.

#### IV. ANALYSIS

A thorough analysis of the behaviours revealed a common pattern. Interestingly, although there seemed to be industry specific challenges to overcome, behaviours and underlying apprehensions appeared sector agnostic. Three specific pointers observed are:

- i) It is all about people dealing with people
- ii) A need for processes to enable high performance by building happy workplaces
- iii) A shift from creating 'fun at work' to actually 'making work fun'

The most effective solution in the scenario where technology is becoming pervasive is a model that is driven by purpose and seamlessly works through leveraging behaviours through an understanding of human psychology and not as much through rigid templates and rules.

#### V. RECOMMENDATIONS

The findings of the research and the analysis thereof led to design of people management models that rest firmly on the aspect of psychological safety at the workplace. Psychological safety [5] is being able to show and employ one's ideas and ideologies without fear of negative consequences and of judgement or status.

It can also be defined as a shared belief that the team is prepared to take on interpersonal or collective risk. In psychologically safe teams, team members feel accepted and respected. It is important to refer to Timothy Clark's [6] contribution to the concept of psychological safety with 'The 4 Stages of Psychological Safety' framework.

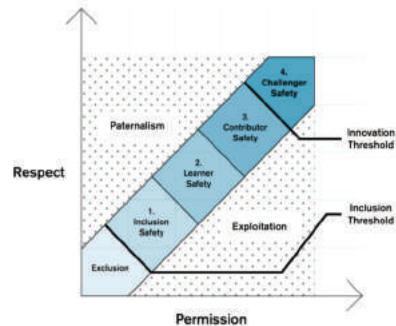


Fig 4: 4 Stages of Psychological Safety  
He defines psychological safety as "a condition in which human beings feel included, safe to learn, safe to contribute and safe to challenge the status quo – all without fear of being embarrassed, marginalized, or punished in some way."

Psychological safety [9] is often confused with trust and mindfulness, while both these concepts are only a part of the whole. Noted expert on team behaviours Amy Edmondson's research [7],[8] shows the impact of psychological safety on team behaviours. It is a group level phenomenon and models based on psychological safety measures team effectiveness using an input-output-process (IPO) model. People management models become robust and sustainable only when the focus is on the 'process' and the 'how' and not merely by usage of 'productivity' tools.

The research recommends two models based on psychological safety in teams. They are:

### A. Democratic Model

Democratic model recommends a participatory approach in decision making. While technology pushes team members away from 'coffee machine' conversations, the siloed working is to be controlled. In the democratic model, usage of technology platforms to start discussion threads is strongly recommended. Delegating by revealing step by step is to be replaced by articulating the desired outcome and encouraging team members to share ideas. Business leaders and HR teams would be benefited by modifying people processes to enable democratic model. A few of the benefits include –

- i) Better ownership resulting in reduction in attrition
- ii) Boost in employee engagement
- iii) Enhanced productivity
- iv) Improved innovation

### B. Aligned / Shared purpose Model

This model focuses more on starting with the Mission statement or simply put, 'Why do we exist?' starting at the organization level and cascading step by step to departments, teams and even individuals. Articulating the purpose in alignment with the organizational purpose drives a feeling of shared control of the business. Even when technological penetration into business operations increases, the alignment of purpose would play the role of high touch. Benefits of the Aligned / Shared Purpose Models include

- i) Leveraging peer power
- ii) Individual empowerment leading to situational leadership
- iii) Taking on aspirational roles across domains
- iv) Building capability internally
- v) Readiness for succession planning

## VI. CONCLUSION

The workforce dynamics in a psychologically safe environment combats the challenges organizations and teams would face when imposed with the mandatory usage of technology. Mutual

respect and feeling of owning the larger purpose results in better decision making. Not having a fear of negative consequence leads to driving an entrepreneurial behaviour. All of the above would help HR Teams to deal with the new VUCA and emerge as drivers of business sustainability without losing human touch.

## ACKNOWLEDGEMENT

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# Adopting AI Technology in Redefining Human Resource Management for Business Sustainability

Dr. Subramanya Manjunath

Visiting Faculty

Christ University & Jain University, Bangalore

## Abstract

The rapid technological developments and growing needs of the customers are changing the landscape of business. The extensive use of Information and Communication Technology (ICT) is already prevalent and pivotal in manufacturing and industrial processes. Further, digital transformation through Artificial Intelligence (AI) and Machine Learning (ML) has made its space in every sphere of business processes. The focus of this research paper is to emphasize how AI could be useful in redefining the management of human resources to improve its internal processes to meet customer needs and develop core competencies for business sustainability. The study highlights that AI can make a greater impact in automating transactional HR functions for reliable service delivery by eliminating repetitive manual tasks and enable HR professionals to align with business goals. The findings of the study emphasize that HR function which connects the employees and the organization could play a vital role to build business sustainability with the aid of AI technology in its process, procedures and practices. The study concludes by emphasizing HR function to adopt AI technology in streamlining its transactional activities and make its role more strategic and effective to achieve business sustainability.

**Key words:** Information and Communication Technology (ICT), Artificial Learning (AL), Machine Learning (ML), Human Resources, Sustainability

## I. Introduction

In today's business scenario of Uncertainty, Volatility, Complexity and Ambiguity (UVCA) and due to unprecedented outbreak of Global Corona pandemic witnessed during the dawn of 2020 necessitated to redefine the business strategies and arrive at new ways of working. However, technological advancements are already changing the way how the business requirements need to be transformed and develop interaction with the customers. The use of Information and Communication Technology (ICT) is already prevalent and pivotal in manufacturing and industrial processes. For instance, digital transformation through Artificial Intelligence (AI) and Machine Learning (ML) has made its space in every sphere of business processes such as manual works are getting replaced by robots ranging from window cleaning to inventory management, the interaction between machines through robots and computers for faster decisions. Further, redefining the service sector and reinventing the entertainment sector are some of the examples where AI technology plays an essential role in transforming today's business environment. Nevertheless, the traditional HR systems are also in the process of redefining to achieve effectiveness through AI technology in line with organizational business strategies. The focus of this paper is to emphasize how AI could be useful in redefining the management of human resources to improve its internal processes to meet customer needs and develop core competencies for business sustainability.

## II. Rationale for the study

It is indeed a fact and pertinent that human resources are the driving force of any business. Though human resources play a crucial role in building organizational competitiveness and achieving business goals, the HR function per se has undergone a metamorphosis from its mundane administrative activities to a strategic role in building a dynamic organization. In today's competitive and digital economy the HR function is gone beyond its traditional manpower planning and recruitment process, and its role in strategic planning and driving business growth is becoming as important as technology or business leadership. This necessitates the HR professionals to cope up with the updated knowledge in enabling the organization for strategic growth across decisions relating to recruitment, compensation, talent management, performance management, learning and development and the like.

Further, in today's context, agility, time and delivery are considered as the buzz words in a rapidly growing and fast-paced economy where both technology and sustainability are driven by continuous changes witnessed by the internet of things. The technological advancements in Information technology (IT), Predictive Analytics, Artificial Intelligence and Machine Learning in HR processes are enabling HR professionals to perform their traditional practices with much more ease and reduced time.

Although various research studies are available on the changing nature and role of HR, application and use of AI technology in redefining the role of human resource management is limited. This study attempts to identify the areas where the HR function can transform and adopt AI technology in achieving business sustainability.

## III. Objectives

- To develop an understanding of the concept of Artificial Intelligence and its application in Business.
- To get an insight into the application of AI technology in redefining human resource management process.
- To examine the adoption of AI in HRM for business sustainability

## IV. Methodology

This study is an exploratory research based on secondary data sourced from various research papers and articles includes online sources.

## V. Artificial Intelligence and its Application in Business – An Overview

Over the past decade, the world of business is witnessing dramatic changes with the revolution of AI prevailing virtually from healthcare to advertising, transportation, finance, legal, education and more interestingly at the workplace also. Though the concept of AI dates back to ancient times with philosophers pondering over the idea of artificial beings and other robots existed in some form or the other, the modern field of AI came into existence during 1956. Today, AI is prevalent as virtual reality with the aid of technological advancement and imperative for businesses to gain competitive advantage. The computerized numerical control machines which started as a program based automation is now capable of simulating human interaction. In simple terms, AI refers to any type of computer software that engages in human-like activities, including learning, planning and problem solving and seemingly as a supporting tool and not as a replacement for human intelligence and ingenuity. Further, Machine Learning (ML) is one of the most common types of artificial intelligence in development for business purposes used to process a large amount of data quickly captured by connected devices and the

internet of things into a digestible context for humans. Interestingly, it is perceived that an advanced AI algorithm offers far better speed and reliability at a much lower cost as compared to its human counterparts.

Indeed, AI is growing rapidly to leverage the knowledge-based economy and widely used in business applications such as automation, data analytics and natural language processing to streamline tasks and achieve operational efficiency. Where automation is to reduce repetitive jobs, data analytics is to process raw data and get real-time insights to make quick decisions in improving products and services, and application of natural language processing involves reading and understanding of written or spoken language through computers such as search engines, chatbots, smart assistants, voice to text and the like. Interestingly, the business applications of AI have advanced to such an extent that the individuals live and work with it in daily routines without even recognizing or noticing it. Needless to mention the other applications of AI in business includes Customer Relationship Management (CRM), Logistics, Banking, Retail, Fraud detection, Online Customer support, Cyber Security, etc. Thus AI can encompass anything from automation to algorithm, outperforms humans at nearly every cognitive task.

## **VI. Application of AI Technology in Redefining Human Resource Management**

In today's competitive business world the challenge before any organization is to think globally, act locally and its survival mainly depends on how people, process, and technology blend together to add value to the customer. The HR professionals as a guardian of the company play a crucial role by engaging the employee in developing, nurturing, motivating and driving the

workforce to gain a competitive advantage for the company. While technology is significant for business outcomes and in enabling the organization towards greater efficiency and optimization, AI in business is to transform the employees to interact with technology for the better. With the rapid growth of technology and digitalization, the HR function has no alternative but to adopt AI technology to become more agile in its transactional and mundane activities so that it can focus on more strategic business issues. Studies indicate the integration of AI into HR practices will make organizations better and facilitate to take quick decisions. AI can be embedded in transactional, operational and strategic HR functions to analyse, predict and diagnose to make better decisions. Few of the AI applications in HRM are briefly mentioned as follows.

AI can make a greater impact in automating transactional HR functions for reliable service delivery by eliminating repetitive manual tasks and enable HR professionals to align with business goals. For instance, AI in the recruitment process can significantly enhance candidate's experience by making more interactive, improve HR efficiency and reduce the lead time of recruiters in identifying best-fit to the organization and provide insights to take right decisions on compensation. AI can be used an effective media in learning and development to reinforce learning and advance skillsets of the employees. Further, new recruits can have personalized onboarding experience. AI can supplement HR in people analytics to track, analyse and manage people based on skills and talents, to maintain a balance in the organization. AI could be an advantage for HR in establishing digital personnel records and allows employees to access the basic records and perform simple HR transactions themselves. In addition, AI application can be used in shaping

organization structure which enables the HR team to identify the gaps, redundancy and helps in informed decisions about the company. Thus, the HR function needs to transform by adopting AI to streamline HR processes and stay effective in the organization.

## VII. Adoption of AI in HRM for Business Sustainability

Today's business environment is intertwined with AI technology to reduce operational cost and improve efficiency. When all facets of the business are adopting AI as a tool to sustain the growing needs of the customer in terms of flexibility, speed and scalability to remain competitive in the market, needless to mention HR function has to necessarily transform from its traditional HR processes and adopt AI technology in line with the business needs. AI serves as an effecton tool in streamlining and reducing cycle time in the hiring process, improve employee engagement through the effective onboarding process, enable learning and development of employees through interactive programs and ease out all HR transactional activities. Thus HR function could play a vital role to build business sustainability with the aid of AI technology in its process, procedures and practices and align with business goals of the organization.

## VIII. Discussion

The unprecedented needs and demands of the customers are visible through rapid growth and advances in technology necessitated the businesses to adapt to new technologies and reinvent their business processes. Thus AI technology has created a niche not only in the market scenario but also in the business. While businesses have already transformed many of its processes with the aid of AI technology such as Production, Customer Relationship

Management (CRM), Logistics, Banking, Retail, etc., HRM has to necessarily redefine and reinvent its processes by transforming transactional activities of HR with the aid of AI technology to improve employee engagement and make the employees more interactive and user friendly, thus enabling HR function to focus on strategic issues and enhance business sustainability.

## IX. Implications

In the wake of the rapid increase in technology and growing demands of the customers, AI technology has made an impact on the business to be more competitive and customer friendly. When all the facets of the business are reinventing the business processes with the aid of AI technology, this calls for redefining and reinventing the process of human resource management. The study indicates the following transactional areas of the HR function can be made more effective by adopting AI technology.

**1. Talent Acquisition** – AI could serve as an important tool in the recruitment process from framing the required skillsets of the position to screening and shortlisting the candidates including an informed decision on compensation by reducing cycle time to hire, providing cost-effective solution and enhance the candidate experience.

**2. Onboarding Process** – AI facilitates to improve the new hire onboarding process by automating repetitive, low-value tasks and provides enough time for the HR team to focus on more important tasks like mentoring and taking feedback from the new entrants.

**3. Employee Engagement** – is an important factor to boost employee morale and productivity of the organization. AI is an effective way to connect employees through chatbots or human-like

communication tool that allow employees to share their concerns on a day-to-day basis helps HR teams to understand the employee sentiments and initiate action to show the employees that their voices matter and also to take feedback, which boosts employee engagement and reduces turnover.

4. Leveraging Transactional Employee Data – AI can be used as a supplement to leverage workforce transactional details to predict employee potential, fatigue, experience, performance, etc. which helps the managers to spend more time in the shop-floor, interact with customers and training teams.

5. People Analytics – adopting AI in HR enables managers in problem-solving and assists in more informed decisions that affect employee and organization like absenteeism, performance indicators and the like.

6. Learning and development – AI can be effectively used as an interactive learning media to train employees and also prepare them for new roles with advance skillsets

The study emphasizes that HR function which connects the employees and the organization could play a vital role to build business sustainability with the aid of AI technology in its process, procedures and practices.

## X. Conclusion

The rapid advancement and growth in technology have garnered AI technology to transform the business process. When all the facets of business have adopted and seen the benefits of AI in simplifying the process and reducing cost, it is deemed necessary for the HR function to adopt AI technology in streamlining its transactional activities and make its role more strategic and effective to achieve the competitive advantage of the organization.

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## Relative Merits Of Online (e-pms) And Manual Performance Management System (m-pms) : An Empirical

Dr. M Ramakrishnan

Sr. V. P. (HR) Loyal Textile Mills Ltd.  
Chennai.

### ABSTRACT:

Information technology has had widespread effects on almost every aspect of our society. From the invention of the telegraph to the creation of smartphones, it has changed the way we live our lives and do our jobs. For example, technology has altered the way we purchase products, communicate with others, receive health care services, manage our finances, and educate our students. It has also had a profound impact on organizational processes, including those in Human Resource Management (HR) and transformed the way that organizations recruit, select, motivate, assess performance, potential and retain employees. Among HRM practices, Performance management system (PMS) becomes nucleus of all other HR Processes and quite number of studies have repeatedly established the role of PMS in influencing organizational Business performance. Modern organizations have been built around the technology for conducting business affairs seamlessly.

This study is intended for assessing the relative merits of on line performance management system (in short e-PMS) over manual performance management system (in short m-PMS). The study adopted Descriptive Research design and primary data were collected using questionnaire. Sample selection was based on Convenience sampling in one specific PSU in the city of Chennai. Collected primary data were analyzed using descriptive as well as inferential statistical tool of Spearman's rank correlation for hypothesis testing. Findings revealed that e-PMS has got greater supremacy over m-PMS in most of the aspects.

**Key words:** e-PMS, m-PMS

### INTRODUCTION

In VUCA world, business continues to get disrupted due to unforeseen and imponderable number of changes externally. It is a mammoth task for business administrator to evolve performance metrics for meeting out changing demands of volatile environment. It is critical for organizations to leverage an agile Performance Management system (PMS) to keep the workforce aligned to business objectives. In the information age, approach to technology decisions implemented in all functional aspects of the business management facilitate the process of mitigating adverse impact of environmental changes and thus, organisations achieve key targets in areas such as revenue growth, customer satisfaction, employee engagements for better productive performance and the like. Today, organizational priority has shifted to transforming the business and operating models with latest technology tools and apply such tools more specifically in the areas Enterprises Resource Planning and its implementations. Among HRM practices, on line based PMS is replaced manually driven paper & Pencil performance management system in most of the high performing organization. This research work focuses on relative merits of online PMS or otherwise referred as e-PMS over manually driven m-PMS.

### REVIEW OF LITERATURE

De Waal and Counet (2015) have identified thirty one problems specific to the

implementation and administration of the manual PMS. Advent of technology enable the organisation to resolve some of the basics problems pointed out in their research work. In the present study, the following factors, as referred by De Wall & Counet, are taken as Study variables to examine the e-PMS supremacy over m-PMS.

Alignment of organisational goals with Business plans and Job role

Clarity on Performance targets

Rater accountability

Confidentiality of Performance Ratings

Quality of ratings

Feedback on performance

Overall satisfaction

Alignment of organisational goals with Business plans and Job role.

Goal setting is much advocated in the literature, particularly practice oriented goals (Lockett 1992; Katzenbach and Smith 1993; Armstrong 1994, 1995; Cardy and Dobbins, 1994; Moores, 1994) and it has a strong theoretical underpinning. Moores, (1994) proposed a goal setting cascading model as reminiscent of management by objectives. This cascading process is commonly seen as the means by which individual goals and objectives are aligned with organizational business objectives. In many corporations performance planning is widely advocated and typically happens once a year as part of a joint discussion between jobholder and his superior. In e-PMS, deployment of performance measures have been taken over by well customized standard software to suit the needs of the organization.

Performance Contract which defines expectations, the work to be done, the results to be attained and the attributes (skills, knowledge and expertise) and competencies required to achieve these results. It identifies the measures used to monitor review and assess performance (Armstrong, 1994). In the literature, goals and objectives are interchangeably used.

Armstrong,(1995) classified objectives in to two categories viz., work objectives (concerning main task areas of the job and results expected) and developmental objectives ( personal learning objectives for improving skills and job performance).The work objectives must be consistent with business of the organization. Department objectives must be true reflectors of the corporate objectives. The objectives must be clear, well defined precisely and usage of positive workings is pre- requisite. The objective must be challenging with stretch targets to chase. The Goals/ objectives should be in measurable terms and capable of expressing it in quantifiable terms. The objectives must be achievable. It must take in to account factors that are likely to cause hindrance to achieve and similarly factors facilitating achievement. Any e-PMS instituted must meet these requirements as described above would certainly bring in sustainable business performance.

#### **Clarity on Performance targets**

Neary,(2002)identified prevalence of web based employee performance and development process (EP & DP) model to cover globally disbursed employees. It may be concluded that various research on utility value of performance appraisals in terms of development and evaluative led a step towards an integration of business demands and performance targets into designing of an online performance management system, reflecting characteristics as identified by Armstrong (1994).

Supervisors have many sources of information available to determine the appropriate performance target for individuals on the basis of job role (e.g., Titer and Larcker 2001; Murphy 2000; Dekker, Groot, and Schoute 2012). One source is the employees themselves.

However, organizations consider multiple sources of information when determining final performance targets. Dekker et al.

(2012) find that organizations use past performance, future planning, and benchmarking information when setting performance targets. They also show that organizations characteristics such as environmental dynamism and task uncertainty influence the relative importance of different information sources. Irrespective of whether the information relates to a particular business group or other business groups and/or peers, survey results of Dekker also suggest that organizations use multiple information sources to define performance targets for their divisions. While a few studies have recently started to examine the determinants of the information sources used in setting performance targets (e.g., Anderson et al. 2010; Bol et al. 2010; Dekker et al. 2012; Aranda et al. 2014), future studies can investigate further interactions among the different information sources. It is important to note that the appraiser plays a crucial role, since it is usually within his or her purview to decide which information to use and its weight.

Technologically driven e- PMS confines the scope for organization to derive information from the Business plan folders and job role and such specific sources based performance targets play a key role in enhancing the organizational business performance.

#### Rater accountability

In literature, accountability is defined as “being answerable to appraiser for performing up to certain prescribed standards, thereby fulfilling obligations, duties, expectations, and other charges” (Schlenker, Britt, Pennington, Murphy, & Doherty, 1994: 634). Levy and Williams’s (2004) conceptual framework suggested several proximal variables that influence performance evaluation decisions such as rater accountability and multisource feedback mechanisms. With many

organizations using 360-degree rating systems, it is clear that raters may find themselves justifying their ratings to individuals from various status levels within an organization. In m-PMS, the effects of this type of accountability context using a typical performance evaluation environment where raters must justify ratings to a person of higher status (appraiser’s superior) and persons of lower hierarchy (ratees), or mixed. This particular role of appraiser is eliminated in e-PMS.

Raters accountable to the individuals who are the target of their ratings should cope with accountability in a manner that allows them to make rating decisions consistent with the ratees’ actual achievement and on line PMS installed with capability of computing achievement levels and presumed leniency preferences are curtailed.

#### Confidentiality of Performance Ratings

In one of the oldest studies, Marcia B. Creswell (1963) found that the confidential condition was expected to increase rating validity and counteract the well documented leniency error in performance rating. Operational efficiency reports obtained under confidential versus non-confidential conditions were available in this study and concluded that confidential ratings reduces rater leniency.

It is proven that technologically driven automated e-PMS reduces rater bias and improves confidentiality (Huang, 2017).

#### Quality of ratings

T.V.Rao, (2000) views that one cannot arrive at developmental needs without evaluation. It may appear that development and evaluation have inter-dependency, but rendering separation difficult or impractical.

A meta-analysis of 23 studies demonstrates that the correlation between

(subjective) ratings of A meta-analysis of 23 studies demonstrates that the correlation between (subjective) ratings of managers and (objective) performance measures is higher when a relative rating format is used (comparing the employee with other employees) than when an absolute rating format is used (comparing the employee with a standard). In addition, a higher correlation is found when a composite rating method is used (rating made on a multi-item scale with scores averaged to a final grade) than when an overall rating method is used (a rating made on a one-item scale) (Heneman 1986). Finally, a recent randomized controlled study demonstrates that performance ratings based on the consensus of multiple raters tend to be more accurate than individual ratings (Picardi 2015). All these studies revolve around the m-PMS and on the contrary, e-PMS improves the quality of ratings if the technology driven system programmed with a least human intervention and manipulation. In e-PMS, the scope of multirater appraiser is feasible and thus, achieve better quality rating.

### **Feedback on performance**

Appraiser must understand various constituents of performance by breaking it into various elements and understanding the factors, which cause performance, is often referred to as performance analysis in the literature. Performance analysis proceeds feedback. It involves understanding if tasks are associated with the role, setting standards and measuring the achievements against standards (T.V.Rao.2000). Some other research focused on how employees respond to e-PM feedback (Ang & Cummings, 1994; Kluger & Adler, 1993). For example, results of studies revealed that employees prefer computerized feedback to that provided by a supervisor (Ang & Cummings, 1994; Kluger & Adler, 1993). Computerized feedback also resulted in

lower levels of motivation loss (Kluger & Adler, 1993), and higher levels of performance (Earley, 1988) than feedback conveyed by a supervisor. Furthermore, research indicated that employees were more likely to trust feedback provided by a computer than the same feedback communicated by supervisors (Earley, 1988), and computerized feedback was directly related to employees' attention to the task, whereas supervisory feedback directed attention to the evaluation intentions of the supervisor (Kluger & Denisi, 1996).

### **Overall satisfaction**

Not surprisingly, analysts argued that e-PMS has a number of advantages including enhanced efficiency, time savings, frequency of feedback, and increased focus on employee development (Spitzer, 2007). The administrator of Business is also satisfied with the elimination of rater bias, more accountability for raters while setting the goals, improved quality of rating etc. From the employees' point of view, they receive more objective ratings beyond the intentions of superiors as feedback.

### **OBJECTIVE OF THIS STUDY**

To study the relative merits of e-PMS and m-PMS by rating selective factors as described in the review of literature.

### **SCOPE OF THE STUDY**

The study was confined to a PSU in the city of Chennai and for confidentiality purpose, the name of the study organization is not revealed.

### **METHODOLOGY**

A survey on 60 Executives/ supervisors out of 327 employees was being done which constituted around 18 percent as sample. Convenience sampling method was adopted. Questionnaire was used covering selective demographic variables such as age, gender, Levels, Department, and

experience. Specific ranking question was included to rate the relative merits of e-PMS and m-PMS. Secondary data on implementation status of SAP-HR were collected through interactions with Head of departments. Demographic variables were analyzed using simple tables and percentage. Spearman's correlation was used for analyzing relative merits of e-PMS.

## HYPOTHESIS

Based on review of literature and features of PMS software in use, the following hypothesis were framed.

Ho1: Approaches for aligning of individual goals with organizational objectives are same in e-PMS and m-PMS.

Ho2: The clarity on performance targets are same in e-PMS and m-PMS.

Ho3: Approaches to rater accountability are same in e-PMS and m-PMS.

Ho4: Approaches to keeping confidentiality of ratings awarded to appraise are same in e-PMS and m-PMS.

Ho5: perceptions on quality of ratings are same in e-PMS and m-PMS.

Ho6: Approaches for feedback on performance are same in e-PMS and m-PMS.

Ho7: Levels of overall satisfaction are same in e-PMS and m-PMS.

## DATA ANALYSIS

Table 1 presents profile of respondents and analyzed using percentage. Table 2 provides the results of spearman rank correlations on specific factors between e-PMS and m-PMS.

Before analyzing outcome testing, it is noted from Table no 2 that all the seven factors have exhibited negative correlations and monotonic relationship. Spearman rank correlations values for factors evaluated were in the range of  $r = -0.617$  (confidentiality of rating) to (clarity on performance targets)  $r = -0.887$ .

Remaining factors have also shown significant levels of negative correlations

viz., alignment of individual goals with business plans/ job roles ( $r = -0.707$ ), clarity on performance targets ( $r = -0.887$ ), rater accountability ( $r = -0.697$ ), confidentiality of rating ( $r = -0.617$ ), quality of ratings ( $r = -0.757$ ), feedback on performance ( $r = -0.807$ ) and overall satisfaction ( $r = -0.790$ ).

Ho 1 proposed that approaches for aligning of individual goals with organizational objectives are same in e-PMS and m-PMS. Analyzed results indicate that the approaches for bringing goal alignment was different. ( $r(60) = -0.707, p < 0.05$ )

In Ho2 the clarity on performance target is considered same in e-PMS and m-PMS. Testing result showed that it is not same ( $r(60) = -0.887, p = 0.<05$ ) and the null hypothesis is rejected.

Ho 3 proposed to find out approaches to rater accountability are same in e-PMS and m-PMS. Null hypothesis is rejected ( $r(60) = -0.697, p < 0.05$ )

Ho 4 proposed to test the approached to keep up confidentiality of rating and results revealed that confidentiality levels in e-PMS was significantly different from m-PMS ( $r(60) = -0.617, p < 0.05$ ).

Ho 5 proposed to find out quality of rating are same in e-PMS and m-PMS. Tested results revealed that the quality levels were different. ( $r(60) = -0.757, p < 0.05$ ).

Ho 6 proposed to find out approaches for feedback are same in e-PMS and m-PMS. Tested results revealed that the feedback approaches were different. ( $r(60) = -0.807, p < 0.05$ ).

Ho 7 proposed to find overall satisfaction levels are same in e-PMS and m-PMS. Tested results revealed that the quality levels were different. ( $r(60) = -0.790, p < 0.05$ ).

## DISCUSSION

The objective of the study was to examine the relative merits of e-PMS over m-PMS. It is quite often pointed in the literature that the existence of disconnect between business plans / job roles and performance

measures. Another major areas of concern is lack of clarity in performance targets. Findings of this study confirmed that these two critical elements were adequately taken care in e-PMS. Rees & Porter, have identified that the most common problem faced when implementing a m-PMS is that there are too many objectives and sometimes these objectives would be at conflict with each other. This study findings nullifies this aspects.

Consistent with expectations, e-PMS enabled better rater accountability while comparing with m-PMS and also programed e-PMS ensured confidentiality ratings awarded to appraise. It appears that a computer server was perceived to be more or less secured than locked filing cabinets. The most critical part of appraisal process is to give feedback. This research findings indicated that the appraise seeking face to face feedback was not favoured. This is in contravention with m-PMS study of Rees & Porter,

There is unsettled discussion whether employees' level of motivation improves in m-PMS or in e-PMS. This particular aspect of advantage / disadvantage of e-PMS over m-PMS need further research. In future studies, it is important to examine the linkage between employee affective and behaviour reaction to on line feedback pf performance assessment.

## CONCLUSION

### TABLE NO. 1 : PROFILE OF RESPONDENTS

Sl.No	Demographic Variable	Frequency	Percentage	
1.	AGE	Less than 35 Years	10	16.67
		35-45 Years	18	30.00
		Above 45 Years	32	53.33
2.	GENDER	MALE	40	76.67
		FEMALE	14	23.33
3.	LEVELS	Head of Dept	12	20.00
		Managers	16	26.66
		Supervisors	32	53.33
4.	DEPARTMENTS	Technical	7	70.0
		Non-Technical	3	30.0
5.	EXPERIENCE	Up to 10 Years	6	10.00
		10 – 20	12	20.00
		20 – 30	16	26.67
		More than 30 Years	26	43.33

Performance management is an important HRM function because of the broad spectrum of business success hinges on its effectiveness. Performance Management system affects from productivity to profitability. Higher level of performance management system translates into higher and faster growth in revenue, profit and profitability. In the study organisation e-PMS addresses all aspects of performance management are adequately covered. Individual performance of employees as well as team performance measures are taken care in the programed system.

Based on the secondary data evidences it is concluded that the performance management, planning , performance management process, and performance management outcome had fairly designed and implemented in the study organization and further it is concluded that e-PMS practices exhibited supremacy over m-PMS in all study variables of the performance management system.

TABLE NO. 2:

Results of spearman mark correlation of relative merits between e – PMS and m – PMS.

Sl.No	Factor Evaluated	Spearman's correlation( r ) values	Approximate performance**
1.	Alignment of Industrial goals with Business Plans	-0.757	0.000
2.	Clarity on Performance Targets	-0.887	0.000
3.	Rear accountability	-0.597	0.020
4.	Confidentiality of rating	-0.617	0.020
5.	Quality of ratings	-0.757	0.004
6.	Feedback on performance	-0.807	0.001
7.	Overall satisfaction	-0.795	0.021

$p < 0.05$

\*\*Based on normal approximation.

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## Human Capital Engagement (HCE) - The Optimisations and Customisations

**Dr. K. Bhanu Prakash**

Professor & CFO, ICSB - Professional Member,  
ICSSR Research Projects Coordinator,  
Consultant-AI, Analytics & SAP -  
HCM, Andhra Pradesh, India.

**Dr. P. R. K Raju**

Director, Department of Business Administration,  
GIET (A), CGM (HR) Rtd., ONGC  
Rajamahendravaram, East Godavari District,  
Andhra Pradesh, India

**Abstract** - The Internet of Behaviour (IoB) (Gartner), DNA Data Storage (Microsoft), Neuromorphic Automation (Intel), Quantum Computing (IBM), Hybrid Cloud (Oracle), Augmented Humans (Amazon) and Emotional Experiences (Pymetrics) are evolving and emerge as a few Proofs Of Concept (POC) for Gen-Z. The 'Human Capital Engagement' is a new science and art in the orbit of 'Emotional Spectrum' either virtually or physically that cultivates and constitutes positive psychology about the 'World of Work' (Oxford). It revolves around 'Emotional Experiences and Commitments' of Liquid Workforce towards the organization and its goals (Accenture). The Servant Leader Mentality and Disposition enhances both team performance and satisfaction (SHRM). Yet, Human Capital Leaders (CHROs') have always navigated on the 'Emotional Dynamics in Work Place' but not at the scale and intensity unleashed by the COVID-19 pandemic (Harvard).

The Optimisations are driven by Artificial Intelligence (AI) and Machine Learning (ML), and Customisations are configured optimisations to cater the needs of the Human Capital. It's a high and critical time for CHROs' to customize algorithms based on optimisations by considering the 'Emotional Experiences' of Human Capital keeping in view the Agile, Augmented Realities (AR) and Virtual Realities (VR) (TCS). The Human Capital Engagement yields positivity in all scorecards of work-life, performance and productivity (Deloitte). The Pymetric Behavioural and Psychometric Tests (Thomas) analyse, assess and predict the behaviour of human capital physically,

cognitively, and emotionally and provide analytical and operational solutions at par with excellence keeping in view the Situation-Scenario Sensors. The earnest attempt has been made to evaluate the Optimisations and Customisations of Human Capital Engagement besides the 'Determinants and Drivers'.

The significant privacy concerns, underlying assumptions and propositions are considered while suggesting the pragmatic and prudent solutions for the World of Human and Liquid Capital.

**Key Words:** AI, CHRO, HCD, HCE, ML

Human Capital Engagement (HCE) - The Premiere

The term 'Human Capital' was at first coined by Adam Smith [1], formalized by Becker [2] subsequently by Schultz [3] referred it as an aggregate or totality of human competencies inhibited and owned by individuals or in-groups in the form of a skill, knowledge, competencies, technical know-how, behaviour and attitude, talents, intelligence, abilities etc., as intangibles for organizations to utilize at will [4] [5]. It is a highly dynamic and complex one to deal with [6], aligning people with the business and strategies for consolidating the gains, and sets a pace for 'Human Capital Development (HCD) and Control' [7] [8].

The Human Capital Development (HCD) involves the application of new ideas (competencies), identification of new potentials, and stimulates the 'Engagement of Human Capital Resources' [9] [10] [11]. The real-time

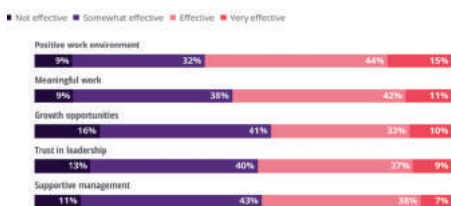


classics and boosters of HCD inter alia include Ghana's Human Capital School Feeding Programme [12], Morocco's Participatory Approach to Building Human Capital [13], Philippines's Conditional Cash Transfers [14], and Singapore's Human Capital Development Planning and Programme [15].

The phrase 'Human Capital Engagement' (HCE) was at first used and formalised by William Kahn [16] defined it as people employ and express themselves physically, cognitively, and emotionally during their role performances.

Fig-1 presents the 'Perception Analysis' of CHROs' on 'Human Capital Trends'. The positive work environment (44%) and meaning of work (42%) are effectively persuading the Liquid Workforce followed by supportive management (38%), trust in leadership (37%) and growth opportunities (33%).

**Fig-1: Fig:1 - Human Capital Engagement (HCE) - The Perception Analysis**



Source: Deloitte Human Capital Trends Survey, 2019.

Human Capital Engagement (HCE) -The Empirical Tones

The term 'Human Capital Engagement' refers to the degree to which individuals are concentrate and engross in work while carrying out their roles with involvement, commitment to, and satisfaction with work and integrates the classic constructs of Job Satisfaction and Organisational Commitment [17],[18],[19]. It is a new science and art in the orbit of 'Emotional

Spectrum' connecting either virtually or physically that cultivates and constitutes positive psychology about the 'World of Work'(Oxford).

Woolard and Shuck [20] identified 4- Approches of Human Capital Engagement viz., i) Needs Satisfying Approach; ii) Burnout Anti-thesis Approach; iii) Satisfaction Engagement Approach and iv) Multi-Dimensional Approach focus on antecedents and consequents of HCE. The HCE is described as a normative and aspirational rather than analytic and operational, and the risk is being seen by other organisational participants as 'Motherhood and Pie' rhetoric [21].

The 'Liquid Workforce' can be engaged either cognitively (experiences and senses), emotionally (feelings and actions) or physically. The engaged resources are the roots and foundations of the organisation with the competencies, passionate drive and innovation [22] [23]. Some of the HCE Modes include: empowering, improving, training and developing human capital towards enlightenment enrout achieving organisational goals and objectives.

The 'Engaged Human Capital' is an asset and a valuable resource to the organisation in return provides emotional, economic and social rewards. The level of connect either financial, emotional or physically visible varies according to Kahn's Model. The acquired physical, cognitive and emotional engagement is deeply affected by the level of psychological meaningfulness, wellbeing and accessibility [24].

### Human Capital Engagement (HCE) - The Objective Orientation

The 'Human Capital Engagement' revolves round the 'Emotional Experiences and Commitments' of Liquid Workforce towards achieving the

organizational goals and objectives. An attempt has been made to present the apple's-eye-view of 'Optimisations and Customisations' of HCE adopted and adapted by the Corporate besides the 'Determinants and Drivers' of HCE.

The peripheral objectives include:

- to present the 'Empirical Tones and Applications' of HCE in the Corporate (Infosys, IBM, TCS, Microsoft, Accenture, Fab, Maersk, Royal Bank of Scotland, Pymetrics);
- to predict the 'Digi-Transformations in the World of Work'; and
- to suggest the pragmatic and prudent solutions of HCE for the Nex-Gen.

#### Human Capital Engagement (HCE) - The Optimisations and Customisations

With the integration and pervasive applications of 5-G, a New-Generation of Information Technology i.e., 'AI Enabled HCM' evolved and emerged as a 'Data-Driven Optimised and Customised Science' app-fide to predict the future trends and trajectories of collected and extracted relevant data from 'Big Data' [25]. In the digi-era, the 'Optimisations' are driven by Artificial Intelligence (AI) and Machine Learning (ML), and 'Customisations' are configured algorithms to cater the needs of the Human Capital.

The HR and Predictive Analytics in Fab.com assess the Future Value (FV) of Human Capital as well as FV implications of Present Decisions for making and bringing changes in the decisions. The adoption of LAMP Model of HR Analytics (Logic, Analytics, Measures and Processes), as well as Research & Development (R&D) initiatives of Maersk Group enhanced the organisational power of predictability of future with the 'Engaged Human Capital' [26]. The culture of collaboration and cooperation, the flexibility and freedom, rewards and recognitions, innovations and incubations made 'Human Capital' more engaged,

empowered and enlightened in Microsoft, and Royal Bank of Scotland [27]. The IBM Cloud and IBM Watson Technologies, and KangoGift analyse the HCE trends, patterns and insights (www.ibm.com). The people are excited to come and excel to empower each day because the care and concern, health and wellbeing, and engagement of prime motives above all Human Capital Engagement accorded as the top most priority (www.tcs.com, AbbVie).

In the cognitive era, the Human Capital is highly engaged and empowered with optimising HCM Operations viz., 'BPM Redefined Approach for the New Norm' (www.infosys.com)

The Pymetrics (www.pymetrics.ai) integrates AI and Audited Technology to analyse, assess and predict the behaviour of human capital physically, cognitively, and emotionally and provide rich insights thereby improve prediction and reduce bias keeping in view the situation-scenario sensors.

#### Fig-2: Human Capital Engagement (HCE)

##### Optimising HCM Operations with Infosys BPM



Source: www.infosys.com

#### Fig-3: Human Capital Engagement (HCE) The Drivers and Determinants



Source: Question Pro

The HCM jargons ‘Talent Management’, ‘Motivation and Commitment’ are transformed as ‘Human Capital Engagement (HCE)’. The involvement, interaction and integration of ‘Liquid Workforce’ with ‘Data Science Algorithms’ driven by ‘Optimisations and Customisations’ is defined as HCM. The drivers and determinants positively influence the ‘Human Capital’ and their state of mind by vigour, dedication and absorption. The prime drivers of HCE include: (a) Wellness and Wellbeing, (b) Empowerment and Enrichment; (c) Culture, Care and Concern; (d) Career Growth and Prospects; (e) Brand Alignment and Assurance; (f) Data and Analytics; (g) Societal Relations and Responsibilities; and (h) Rewards and Recognition enhancing the ‘Engagement of Human Capital’.

The determinants of HCE inter alia include: (i) Recruitment, Selection, Training and Performance Appraisal System; (ii) Work Culture and Harmony in Workplace; (iii) Responsive Leadership; (iv) Compensation and Remuneration; and (vi) Organisational Policies, Procedures, Structures and Systems influence and impact the Human Capital Engagement and Commitment. (Linkedin)

### **Human Capital Engagement (HCE)- The Futuristic Outlook**

The Engaged Human Resources increase productivity, innovation, greater retention, lower recruitment costs all of which contribute to the financial success of a business. The commitment to go beyond maximising profits really matters, leading life piously with purpose make a positive difference to the world with experiences and creating a value for all stakeholders.

The Servant Leader Mentality and Disposition enhances both team

performance and satisfaction (SHRM). Yet, Human Capital Leaders (CHROs’) have always navigated on the ‘Emotional Dynamics in Work Place’ but not at the scale and intensity unleashed by the COVID-19 pandemic (Harvard). The significant privacy concerns, underlying assumptions and propositions are also considered while suggesting the pragmatic and prudent solutions for the World of Human and Liquid Capital.

In the era of hyper and hybrid cloud, the HCE Optimisations and Customisations will focus on Robotic Process Automation (RPA), Cognitive Engagement and Cognitive Enhancement of Human Capital, Human Capital Intelligence (HCI) and Human Capital Experience. The designing of work for wellness and well-being rather Work-Life Balance, re-skilling and resilience at times of uncertain future, the augmented and app-fied solutions are core front solutions and optimisations to thrive than strive in future.

In dictum, ‘Human Capital Engagement (HCE)’ emerged as a New Science in the realm of HCM for making strategic, operating decisions besides predicting future Human Capital and Engagement at times of pandemics. The eclectic ecstasy of ‘Human Capital’ speaks the survival, success and sustainability of an organisation. It is a concern, a sense of purpose and satisfaction in all aspects and respects. The spirit of HCE lies in ‘Live Life Happily’ and the Real Happiness lies in ‘Making Others Happy’.

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## Business sustainability through the adoption of Advanced Information Technology by SMEs of Kerala Rubber Products Manufacturing Industry

**Dr. Latha. K**

Associate Professor

Department of Business Administration,  
Saintgits College of Engineering (Autonomous),  
Kottayam, Kerala, India

**Abstract**— Purpose: The present study is intended to explore the adoption of advanced IT by SMEs of rubber products manufacturing industry of Kerala and its impact on perceived usefulness in the selected organizations in the industry. Efforts are taken to measure the relationship between the level of readiness of industrial units to adopt advanced IT and the external pressure as well as the perceived usefulness. Research Design: The study is conducted among 60 small and medium enterprises in the rubber products manufacturing industry of Kerala. Findings: It is identified through the study that the adoption of advanced information technology by the selected manufacturing units has significant and positive impact on perceived usefulness. Research limitations and implications: As the study concentrated on a specific industry, there is limited scope for the generalizability of the results to other industrial areas. The practical implication of the study is that the study results provide insights to the policy makers to provide special privileges and exemplary services to SMEs for promoting the use of ICT tools in the selected industry.

**Key words:** SMEs, Advanced IT, Manufacturing Sector, Rubber products Industry, manufacturing units

### I. INTRODUCTION

Rubber products manufacturing industry is one of the most relevant industries in the manufacturing sector of Kerala. The economic and social development of the state, to a greater extent, depends on this industry. Though Kerala has problems in finding availability of land in large scale

for the industrial purpose, many SMEs have achieved remarkable progress in Kerala through their innovative and value-added products.

The SMEs in the selected industry plays a crucial role in the manufacturing sector of the nation as it constitute more than 4500 units, which are categorized under tyre and non-tyre sector (AIRIA, 2018). The details of the rubber products manufacturing of Kerala for the financial year 2017-18 are furnished in table no.1.

TABLE 1  
An Overview Of Rubber Products Manufacturing Industry Of India (f.y. 2017-18)

Items	Nos.
Total No. of Units	6000 approx
Large & Medium scale units	500
Small units	5500
Turnover	Rs. 60,000 Crores
Tyres	Rs.35,000 Crores
Non-tyres	Rs.25,000 Crores
Value Exports	Rs.9,600 Crores
Taxes & Duties	Rs. 13500 Crores
Raw-Material intensity	Raw Material cost accounts for 65% - 70% of Industry Turnover (approx)
Principal Raw-Materials	Natural Rubber, Synthetic Rubbers, Carbon Black, Rubber Chemicals etc.

(Source: All India Rubber Industries Association (AIRIA, 2018))

The statistics given above indicates the prominent role of rubber products manufacturing industry and the SMEs in the economy of Kerala.

SMEs are confronted with significant constrains which impede their development. Due to issues such as security hazards, unfamiliarity with the internet, start up costs, lack of guidance

about how to start the process, lack of perceived advantages in implementing advanced information technology etc, SMEs are found reluctant to adopt advanced information technology. The present study is intended to explore the adoption of advanced IT by SMEs of rubber products manufacturing industry of Kerala and its impact on perceived usefulness in the selected organizations in the industry

#### Objectives of the study

The objectives of the study are listed as follows

1. To explore the perceived usefulness of adoption of advanced IT in the small as well as medium industrial units in the selected sector.
2. To understand the relationship between 'organizational readiness to adopt advanced information technology' and perceived usefulness'.
3. To understand relationship between 'external pressures' to adopt advanced information technology' and perceived usefulness.

#### B. Significance and scope of the study

Even though it is identified through extensive studies that the large industrial units are immensely benefited by the adoption of advanced IT, such studies are limited in the case of small and medium industrial units in the selected industry of Kerala. As the advanced IT adoption comprises all the areas like developing, marketing, selling, annual services etc of a business other than online buying and selling of products , the scope technology in SME sector demands more studies in order to equip such units to reap the benefits of technology.

## **II. REVIEW OF LITERATURE AND HYPOTHESES OF THE STUDY**

Jean et al. (2010) in their study have stated that SMEs of developing countries face multiple challenges in the global marketing scenario because of the presence of stiff competition. Evangelists et al., 2014 too have stated that adoption of

advanced IT is facilitated by certain factors like rapid growth of the markets in the global landscape, advancement in technologies and the transition in customer tastes and preference.

The major forces which contribute towards the intense competition include technological advancements, faster growth of markets in the international landscape, changed customer needs and adoption and use of electronic commerce (Evangelists et al., 2014). The increased competition demands for the SMEs to adopt advanced information technology, one of the prominent factors which leads to the growth and competitiveness of SMEs (Bayo-Morioness et al., 2013), (Ju and Jung, 2013), (Cardona et al., 2013) etc. This existing situation indicates the relevance of extensive research on the effect of adoption of advanced information technology for the better performance of SMEs.

A systematic review of literature indicates that the link between adoption of technology measures and improved organisational performance ( Kohli et al., 2003. Also a significant relationship between digital tranformation and performance of SMEs is established properly in most of the industries, as existing studies are restricted to certain selected industries. The measures of adoption of digital tools in the existing literature covers major aspects such as investment in digitalization, as well as usefulness of web portals, customer interface through web portals , major functionalities of web portal ( Melville et al., 2004; Chen et al., 2014). A few studies have explored the users of web portals of SMEs , to connect the variables organisational performance and user interface. In this study, the performance of SMEs in the rubber products manufacturing industry central Kerala is analyzed with respect to the adoption of

digital tools.

### A. Hypotheses of the study

With reference to the literature existing in the selected field and based on the gap identified, the null hypotheses of the study are stated as follows.

H01: There is no impact of the adoption of advanced information technology on the organizational performance of SMEs.

H02: There is no significant relationship between organizational readiness to adopt advanced information technology and perceived usefulness.

H03: There is no significant relationship between external pressure to adopt advanced information technology and perceived usefulness.

### B. Conceptual Framework

A Conceptual Framework on the adoption of advanced information technology on perceived usefulness of SMEs is shown in Fig. 1

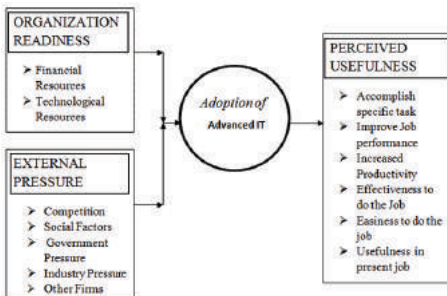


Fig.1 A conceptual Framework Adoption of advanced information technology on perceived usefulness of SMEs

### **III. RESEARCH DESIGN**

There are 235 Small and Medium Rubber manufacturing units in Kottayam. These 235 enterprises are classified under several rubber products categories such as; Rubber

Adhesives, Rubber and Footwear Products, Rubber Gloves, Latex Foam Products, Integrated Rubber Consortium, Tyre, Tube & Flaps, Synthetic Rubber, Tread rubber products, Rubberized fabric products, Rubber Sheeting, Rubber Matting etc. The response of the study is collected from 60 managers /owners of SMEs in rubber products manufacturing sector. The sample was selected using convenience sampling method. Data were collected through a structured questionnaires. The questionnaire comprises of 20 questions on the dependent and independent variables. 2 questions were subjected to find out organizational readiness and other 5 questions were asked to get the response on external pressure and 6 questions were developed to measure the usefulness of advanced information technology. All these questions in the study were measured by various items on 5- point scale. To test the impact of adoption of digital tools and the use of advanced information technology on the utility of operational procedures of SMEs, correlation and regression analyses are used.

### A. Sources of Data

Two types of surveys are conducted to collect the data of the study. In order to identify the relevant factors of adoption of advanced IT tools in the selected industry an expert opinion survey is conducted. The linkage between the adoption of advanced IT tools and its usefulness in the organizational operational procedure is studied through a perception survey for which the researcher approached the owners /CEOs of the SMEs.

There are 235 Small and Medium Rubber manufacturing units in Kottayam. These 235 enterprises are classified under several rubber products categories such as; Rubber Adhesives, Rubber and Footwear Products, Rubber Gloves, Latex Foam Products, Integrated Rubber Consortium, Tyre, Tube & Flaps, Synthetic Rubber,



Tread rubber products, Rubberized fabric products, Rubber Sheeting, Rubber Matting etc. 1880 managers/CEOs/owners of the rubber products manufacturing industrial units in the SME sector constitutes the population of the study.

### B. Variables Identified and Measurement

The independent variables of the study are the status of various organization for the adoption of IT tools as well as the pressure from external environment. The perception of managers on the usefulness of ICT is the dependent variable of the study. The factors used to measure the organizational readiness are financial resources and technological resources. The factors used to measure external pressure are competition, social factors, government pressure, industrial pressure, and dependence on other firms. The factors used to measure perceived usefulness are accomplishment of specific task, job performance, increased productivity, effectiveness to do job, easiness to do job and usefulness in job.

## **IV. DATA ANALYSIS AND FINDINGS OF THE STUDY**

It is learned that the adoption of advanced information technology in the selected manufacturing units have significant and positive impact on the perceived usefulness in the operational procedure of the selected industrial units. The adjusted R square is 17.6% which indicates that 17.6% of perceived usefulness is dependent of organizational readiness and external pressure. SMEs are considering advanced information technology to withstand competition. They have adopted advanced information technology for placing orders with customer online which will make their job easier. Adoption of advanced information technology has facilitated the managers and employees in their job performance. It is also found out that the adoption of advanced information technology can increase the productivity

of these organizations. Therefore it may be concluded that adoption and use of Advanced information technology in SMEs will help them in their business and organizational growth. It is observed that most of the variables of organizational readiness are significantly correlated to selected variables of perceived usefulness. The reliability and validity of the instrument is tested through Cronbach's alpha reliability tests and KMO and Bartlett's Tests.

The analysis of the data is detailed below.

### A. Descriptive Statistics

Descriptive analysis is carried out to examine the mean values of every factor with deviation. Average score of all variables are at satisfactory level with tolerable deviations. The descriptive statistics of various items taken in the present study is provided in table 4

**Table 4. Descriptive Statistics**

Items	N	Mean	Std. Deviation
Age	60	3.7	1.239
Education	60	3.5833	0.61868
Work Experience	60	3.3833	1.36657
Category of Rubber products	60	3.65	1.1619
Internet Service Provider	60	1.0167	0.1291
Web Site	60	1.0333	0.18102
Utilize Advanced information technology	60	1.0667	0.25155
Financial Resources	60	4.15	0.9712
Technological Resources	60	3.9167	1.27946
Completion	60	3.8667	0.72408
Social Factor	60	3.55	0.87188
Government Pressure	60	2.7167	1.21943
Industrial Pressure	60	3.1	0.69115
Depend on other firms	60	4.0167	0.83767
Accomplish specific tasks	60	3.9601	1.02662
Job performance	60	3.9167	0.76561
Increase productivity	60	3.9667	0.72487
Increase effectiveness on job	60	3.9833	0.73561
Easiness to do job	60	3.9	0.81286

**B. Impact of the adoption of advanced information technology on SMEs**

In order to test the hypothesis of on impact of the adoption of advanced information technology on SMEs, a multiple regression technique is used. It is seen that the dependent variable is well predicted through the regression model. As the significant value is less than the cut off value, it is a good fit for the data. Hence it may be concluded that the dependent variable explained by the independent variable by 17.6%.(base on adjusted R2 value. The details of the analysis is given in tables 4.1 and 4.2

Table 4. 1 Anova-Analysis

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.109	1	4.109	13.564	.001 <sup>b</sup>
Residual	17.569	58	.303		
Total	21.678	59			

Table 4.2. Regression table

Model	R	R Square	Adjusted R Square	Std. Error Estimate
1	.435	.190	.176	.55038

**Interpretation:** The degree of relationship between the variable is positive (based on R value). The 17.6% of variance in the dependent variable is well explained by the independent variables. Hence it can be inferred that 17.6% of the perceived usefulness of adoption of ICT is explained by the independent variables taken in the study.

C. Relationship between organizational readiness ( OR), External Pressure (EP) and perceived usefulness.

The relationship between organizational

readiness ( OR), External Pressure (EP) and perceived usefulness is established through Karl Pearson’s coefficient of correlation. The elements that are considered under organizational readiness are financial recourses and technological resources. The strongest relationship of financial resources is established with technological resources( $r=0.665$  and  $p=.000$ ) and also with competition ( $r=0.6675$  and  $p=.000$ ). Also it is observed that most of the variables of organizational readiness are significantly correlated to selected variables of perceived usefulness. The elements that are considered under external pressure are – Competition, social factors government pressure, industry pressure. The elements that are considered for perceived usefulness are accomplish specific task job performance, increased productivity, effectiveness on the job, easiness to do job as well as its effectiveness in performing various jobs. Hence it can be inferred that there is a high degree of positive correlation between the level of external pressure in the field and the evaluated usefulness of adoption of technology. The details of the analysis are furnished in the table 4.3

Table No.4.3 Correlation Matrix

	FR	TR	COM	SF	GP	EP	AT	IP	IP	SDP	EF	UT
FR	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
TR	Person Correlation Sig. (2-tailed) N	.665 <sup>**</sup> .000 60										
COM	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
SF	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
GP	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
EP	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
AT	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
IP	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
SDP	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
EF	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										
UT	Person Correlation Sig. (2-tailed) N	.667 <sup>**</sup> .000 60										

- FR\*- Financial Resources
- TR\*- Technological Resources
- COM\*- Competition
- SF\*- Social factors
- GP\*- Government pressure
- AST\*- Accomplish specific task

JP\*- Job performance  
 IP\*- Increased productivity  
 EOJ\*- Effectiveness on job  
 EJ\*- Easiness to do job  
 UIJ\*- Usefulness to do job

## V. CONCLUSION AND RESEARCH LIMITATIONS/IMPLICATIONS

The current study concentrated on the impact of usage of advanced form of information technology on the perceived utility in the small and medium enterprises in the selected industry.

It can be inferred from the current study that there is significant and positive impact of advanced IT adoption on the perceived benefits. It is also found out that the adoption of advanced information technology can increase the productivity of the selected SME units. Therefore it may be inferred that such measures will definitely enable them to prosper in the long run. It is also observed that most of the variables of organizational readiness are significantly correlated to selected variables of perceived usefulness of IT. A high degree of positive correlation is also established between the selected variables of external pressure and perceived usefulness.

As the study concentrated on a specific industry, there is limited scope for the generalization of the results to other industrial areas. The practical implication of the study is that the study results provide insights to the policy makers to provide special incentives and exemplary services to MSEs for promoting the use of advanced information technology in the rubber products manufacturing industry of Kerala. This study expands the scope of the investigation of the adoption and diffusion of advanced information technology by measuring the impact of a broad range of technologies on SMEs.

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## Enhancing Talent Acquisition Practices Using Technology In A Leading Consumer Durable Company: A Case Study

Prof. Mamta Mohapatra  
IMI New Delhi, India

Ms. Devika R  
IMI New Delhi, India

### ABSTRACT

Building a sustainable workforce strategy for organizations in a VUCA world is of utmost importance today and effective exploration of people, processes and technology immensely contributes to it. With sustainability being incorporated into various domains of HR, one cannot ignore the role that it plays in one of its most important domains, i.e., Talent Acquisition. Technology has revolutionized Talent Acquisition practices and has not only made it easier for organizations to find the right candidates but also for the candidates to find the right employer. Extensive use of applicant tracking systems, digital onboarding platforms, people management systems is gaining widespread popularity these days. In light of the above, this paper aims to explore the recent technological advancements in Talent Acquisition practices and how it has made it an important contributor to business sustainability. The authors have tried to explore and understand how technology is helping ensure a steady and right supply of talent, improvising the existing talent acquisition practices through innovations in this domain of recruiting and managing talent by taking the example of a study conducted in a leading consumer durable company in India.

**Keywords:** Applicant Tracking System, Requisition, Digital Onboarding, Paperless Onboarding, Digital Transformation, Geo- attendance, Business Sustainability

### INTRODUCTION

Attracting the brightest and most suitable talent to an organization isn't a one-time process, but a continuous one. While recruitment caters to the filling of immediate vacancies, talent acquisition is an ongoing strategy of an organization that looks at the long term human resource planning to find appropriate skill requirements (Jobvite, 2016). Though Talent Acquisition takes up more time upfront, ultimately it's all about building the right teams for an organization to ensure business sustainability. Traditional ways of recruiting are no longer enough in this VUCA world. The three step process for a sustainable recruitment strategy involves 'Evaluate' – re-looking at the current recruitment practices, 'Eliminate' – getting rid of redundancy, adopting tech and social platforms to re-engineer HR function and practices and finally 'Illuminate' – Employment branding and creating a green message which will support the retention efforts and will look for the alignment of this value in employee work experience (People matters, 2014). With the economy growing and hiring demands increasing for companies, recruiters are making the most use of technology to bypass the conventional methods of hiring and retaining talent. A structured focus in selection, hiring, development and retention of employees in an organization plays a pivotal role in the sustainability of the organization.

**A. The Shift from Old to New Reality :**  
In the old reality, recruitment was seen as a process to just fill an open vacancy in the organization. Jobs were scarce but people wanted secure jobs. There was little scope

for negotiation and the trend was to go with what is offered to you. However in the new reality, with the advent of technology, we see an enormous shift with new opportunities opening up at every nook and corner. The focus has shifted from just finding talent to finding and retaining the best talent. Job portals and social networks have not only improved the quality of candidate search for a recruiter but have increased competition among recruiters as often they have to share common databases of applicants. For example, professionals on Naukri, LinkedIn, etc. are accessible to all, and any recruiter can check whether they are actively or passively looking for jobs. Talented people are undoubtedly a source of competitive advantage which is becoming harder and harder to maintain. With the current reality in mind, it is important to understand what it takes to stand ahead in the game, attain the strongest position, reach out first to the talent out there in the market which is crucial for building a suitable talent pipeline and ensure sustainability.

In the changing milieu of transforming aspirations and needs, digitalization has emerged as an incisive driver of organizations strategic framework of future growth and development. Employees seek a more seamless and service experience right from the start of the hiring process to onboarding and nevertheless, throughout one's tenure in the company. Organizations continuously invest in tools and processes to equip its workforce with the skills of tomorrow. More than 60% of companies are increasing their investment in technology related to recruitment (Aptitude Research's Talent Acquisition survey, 2019). In another survey conducted among 1000 HR decision-makers (Allegis Group, 2019), 97% agree that investing more in new talent recruitment technologies would help them achieve their organizational business goals. Thus arises the need, to

understand some of the initiatives and digital transformations that organizations have taken recently to revolutionize the Talent Acquisition domain. The study conducted by authors in a leading consumer durables company supports the idea of organizations adapting to technological advancements and digital platforms to make significant value creation.

## II. COMPANY OVERVIEW

VX is a manufacturing company engaged in the business of delivering innovative and experiential product range of Electronics, Electricals and Consumer Durables. The company with a rich legacy of 43 years has over 30 branches and 40,000 retailers. The company has more than 2200 employees and has a turnover of INR 25.66 billion for the financial year 2019. Led by its technological prowess, talented workforce, innovation and design capabilities coupled with streamlined systems and processes, VX has emerged as a brand to reckon with in the fast-moving electrical goods segment. The diversified product portfolio, state-of-the-art manufacturing facilities, extensive sales and marketing network and robust customer service are helping them to move aggressively to deepen their pan India presence while catering to the fast-changing needs of its growing consumer base.

### A. Product Portfolio:

Over the years, VX has repositioned its brand from a single dimension to a strong consumer brand franchise catering to evolving and ever changing consumer needs and aspirations. The company's product range in the electronic segment includes stabilizers, digital UPS and batteries, solar inverters. The electronics category is one of the key growth drivers for the company, especially in the non-South market. The company's product range in the electrical segment includes

house wiring cables, switchgears, modular switches, pumps. In the consumer durables segment, it includes solar and electric water heater, fans, air coolers, mixer grinder, induction cook top, gas stove, rice cooker, grill, toaster, kettle. VX aims to expand its geographical footprint and product offering in the coming years in the kitchen appliances category

#### B. Sector Overview

The Indian customer electricals segment is on a supported development path emerging from a confluence of macro and demographic factors. Rising salary levels, growing desires of the middle class population, fast urbanization, better outlook for living, electrification and improving affordability are probably going to drive better penetration. VX with its pan- India presence, solid brand value and perceivability, diversified product portfolio, and exceptional distribution reach is all set to capture and make the maximum out of this enormous opportunity.

VX has significant investment in building brand equity leading to high brand recall and entry into new product categories. It is a consumer centric organization with emphasis on quality, innovation, R&D, new product development, and after-sales service having strong pan India footprint with around 40,000+ retail network. The well experienced management team with a good understanding of business and its complexities adds on to its strength.

The Opportunities that the company has ahead includes increasing affordability and premiumization of products in metros and urban areas, shortening the replacement cycle of consumer durables due to rising disposable income, increasing living standards and aspirations of middle class. Non-south markets currently account for only 39% of company's total revenue, thus providing

good scope to expand and gain market share.

#### C. Human Resources Department at VX

VX believes that human capital developed by it over the years is its key resource and secret weapon for continuing growth and development. The skillful deployment of manpower to cater to the varied requirements of different tasks and roles has been one of the best followed practices that VX adheres to. The company has consistently developed its human resources and prepared them well to take on broadened activities to make the most of the opportunities offered by the market. VX has strengthened the abilities of its workforce consistently through various in-house training sessions and job specific training programs.

The Human Resources Department in VX has adopted several strategies over the time for implementing policies and practices in alignment with industry best practices. With several new products recently launched and its fast venture into the non-South markets, the company is constantly employing talented workforce to help with such degree of development. It is the vision of the HR team to have contented employees with compensation and rewards aligned with the best in the industry. VX is cognizant of the need to align its employees to their goals, to steer the forward-looking vision of the company by leveraging core competencies and strong capabilities.

### III. TECHNOLOGY IN TALENT ACQUISITION WORKFLOW

Talent Acquisition is the process of identifying, assessing, and acquiring the right talent to meet the needs and demands of the organization. It is the responsibility of the talent acquisition team to devise strategies for sourcing, assessment, compliance standards, and fluency in employer branding practices. The focus is

more on the long-term human resource planning ensuring sustainability rather than short term vacancies or demands of the organization. The central talent acquisition team at VX consists of 5 members who look after hiring across Pan India for all grades of employees with the help of regional and branch HR.

The study on this leading consumer durable organization was conducted to get a practical exposure and understanding the recruitment practices by assisting the Talent Acquisition team and studying talent acquisition practices at the organization. This involved understanding the broad concepts of Talent Management Suite – applicant tracking system, digital onboarding, people management system, etc.

#### **IV. TALENT MANAGEMENT SUITE - APPLICANT TRACKING SYSTEM (ATS)**

Keeping track of open requisitions or candidates in the recruitment process without a proper structure or format to it can become a painful experience. There are a lot of intricacies involved in the entire process that spending more time writing emails, making phone calls repetitively is not worth it. With the technological shift happening in today's world, and an increasing focus on attracting the best talent, retaining them creates a huge difference as talented people are the competitive advantage companies are looking for these days. An efficient applicant tracking system (ATS) provides the best solution when it comes to keeping track of the openings and the entire talent acquisition process.

With this new reality in mind, the company identified that the need of the hour is to stay ahead of the curve by securing the strongest and fittest candidate, for which more investments are required in areas such as accelerating the talent acquisition

process, keeping track of talent pool and creating a good candidate experience (Fort, 2018).

##### **A. ATS solution for accelerating the talent acquisition process**

An ATS provides options to create a requisition. A requisition is a documented communication which acts as a request to hire, explaining the need for the same. A requisition normally includes Title of position, Division and department the role belongs to, Nature of position ( Full time vs Part time), Range of salary, Type of hire (new hire vs Replacement), Job description, Justification for the recruitment.

Requisitions are normally created by the hiring manager or the Talent Acquisition team (on demand) in the ATS. Approvers are auto assigned to the requisition depending on the division and the concerned department. Also, Head and VP (higher executives) of the Talent Acquisition team are automatically set as approvers who will get an email notification to accept or reject the requisition. In case a job posting is done to Naukri, LinkedIn or any social media platform from the particular requisition in ATS, screening questions can be included which will score the applicants and it can be used as an initial review. Once the candidate gets shortlisted and the time for the interview has been decided, ATS gives the ability to select a date and time to send to the candidate. Upon receipt of the same, the candidate can accept or reject it online.

##### **B. ATS solution for keeping track of talent pool**

A crucial area where an ATS can be of assistance and help is in building and maintaining a talent pool. Under this planned system, prospective candidates can visit the company website and can directly register their CV for any position listed on the site. As a result, duplication of CV can immediately be identified and will



not be accepted. Once a candidate is rejected, the information immediately goes to the candidate. In case the candidate is selected for an interview then an update regarding the same goes to the candidate for finalization of the interview at a specified schedule. It also helps flag candidates as per requirements making it easier to track and even stay in touch with them for future opportunities. Once a resume gets uploaded to the ATS, it can be added to a particular requisition or pool. This helps in keeping lists of candidates with specific requirements and be in touch with them via email communication

#### C. ATS solution for a good candidate experience throughout the recruitment process

It is of utmost importance that the organization come across as attractive to the candidates as an employer. The candidate's experience right from the time of applying to getting onboarded can have a huge impact on this very perception. It sure does help the candidates in avoiding the black-hole experience. Branding and candidate experience aided by ATS is as follows: ATS enables creating pre-set email templates for notifications, which are tied to different steps in the recruiting workflow to ensure that candidates are well informed about the progress in the process. The most used email templates include the one for sharing job description, scheduling an interview and extending the offer.

### V. DIGITAL TRANSFORMATION OF EMPLOYEE ONBOARDING

Finding the right candidate for an organization is only the first step towards the long term objective of acquiring and retaining talent. However, the process of onboarding the new employees is one that needs to be made a pleasure and not a pain. Employee onboarding is the process of integrating the new employees with the

culture and practices of the organization as well as giving the new hires access to tools and information which will help them to become a productive organization (SHRM, 2020). It is a critical weakness for a lot of organizations that result in stalling of new hire experience and momentum. A poor onboarding experience can have adverse effects like disengagement of the employees in the most crucial starting phase of the new career itself.

As organizations grow, the demand for human capital also increases. However, often in this rush to ensure a continuous and smooth supply of talent to meet the needs and requirements, recruiters fail to recognize the employees leaving the organization within a short span of joining the organization. According to a survey on over 1000 US employees, more than 30% of them have left the organization within first 6 months with around 68% of them departing within 3 months and the major reason for the same being the onboarding experience (Fica, 2018).

In the increasingly tech driven and digital world, with people expecting seamless digitally driven initiatives to make life and work easier, the experience should be no different when it comes to onboarding as well. As technology enables organizations to automate the entire talent acquisition workflow for the greater efficiency, many companies have started moving towards such digital initiatives. Let us see, based on study conducted at the organization, how digital onboarding can increase efficiency and how is it becoming the new normal now.

In previous years, VX has been undergoing a rapid digital transformation. However, with tons of paper documents being scanned, arranged and pushed into the Document Management System, severe onboarding challenges were being faced and the HR department started looking at a large scale digital transformation. The major challenges of conventional

onboarding included monotonous, tiring and repetitive form filling rituals, ad hoc and often irritating engagement system, rudimentary hard copy document collection, and most importantly lack of a proper mechanism to capture employee feedback on onboarding which is very crucial for them to feel heard and valued. An ideal onboarding experience shall address all these challenges and provide hassle-free and smooth onboarding to the new hires at their convenience.

Digital/Paperless onboarding refers to the use of employee onboarding software to speed up and streamline the onboarding processes thus making it flexible, automatic and customised as well. It improves employee engagement and ensures process compliance. VX incorporated paperless onboarding as part of its talent acquisition practice and the results were terrific. It comprised of absence of paper work, safe and secure document storage, easy access to upload documents even through mobile phones, that can be easily stored and retrieved, professional yet employee-friendly engagement, automated form generation, strategic feedback mechanism, reduction in onboarding time and gamification features. It made it possible to customize the requirements to make self-onboarding easy for the candidates which resulted in significant reduction in the exit rate of new hires. Integration of the platform with applicant tracking system and the organization's internal human resource information systems enabled two way channel between major platforms thus increasing efficiency to many folds. Gamification is another key area that is gaining wide spread popularity among employers these days and the positive impact it can create on new hires is tremendous. The digital onboarding system ensures that employees are updated about the organization through Quiz, QnA and other interactive sessions thus

ensuring a positive outlook and experience right from the beginning of the new hire's stint in the organization.

## **VI. PEOPLE MANAGEMENT SYSTEM : GEO-ATTENDANCE MODULE**

Owing to remote working in the wake of COVID-19, many companies have started leveraging the already existing technical capabilities to extensive levels as well as exploring new ideas and practices. Incorporating a tech strategic plan to organizations have helped many in improving the internal processes, core competencies, relevant markets as well as organizational structure. Innovations when supplemented with technology can create a huge impact on Human Resource Practices.

During these times of distress owing to the pandemic, every organization's topmost priority has been protecting the health and safety of its workforce as well as meeting the challenges of remote working. One major initiative taken by the organization under study in this area was the replacement of biometric punching with the introduction of geotagging and online employee attendance punching system.

From biometric punching to employee card swiping and fingerprint based scanning mechanisms, management of employee attendance has come a long way. Geo-attendance is the process of simplifying the attendance tracking in an organization by using GPS software (HR one, 2019). wherein this software can track the location and coordinates of employees. If the employee is within the designated area, then attendance will be marked. If not, it can be regularized which will go through special approvals before being considered as a normal punch in or punch out for the day.

The use of geo tagging software over the

Also, it is highly customizable in the sense that organization can make dynamic plans based on this. They can set and change the perimeter of the designated area, set specific shifts based on locations and so on.

The ease of access to data in real time helps the organization to track the employee activity in terms of punch in hours, active hours as well as helps make informed and better decisions. On the other front, when we look at this from an employee perspective, it provides the added advantage of positive employee experience, ease of use, and especially in times of COVID, safe working spaces avoiding unnecessary social contact, even if one has to physically be present at the office for unavoidable reasons.

Various employee related modules from people management system like payroll system, leave system etc., can also be integrated with Geo-attendance system for a smooth automated experience. This is one small example out of the study as to how technology can have a positive impact on something as crucial as people management. Deploying the latest and best technology and features will definitely improve the efficiency, brings in much better and positive experiences both for the employer and the employee, thus ensuring business sustainability.

## VII. STUDY METHODOLOGY

The study methodology majorly involved practical exposure, hands on experience of the various tools and systems and secondary research in areas of digitalization to get an in depth understanding. Studying the Talent Acquisition flow using Talent Management suite involved practical exposure in various phases, right from sourcing of a candidate, maintenance of employee database, keeping track of talent pool to scheduling interviews. With numerous tools and platforms emerging on the market, one finds it difficult to assess, where from and how to begin. As part of

the study done on the organization under consideration, hands on experience on the various recruitment tools and systems helped explore them in deep, analyze the various features, its intricacies and get a deeper understanding as to how it helps with the recruitment process. Familiarisation of the digital transformation of employee attendance system involved working on its Business Development document and designing of a live interactive snapshot which will capture the attendance through this software. The study also involved exposure to workplace culture, employee relations, leadership interactions by getting equipped with the finer nuances in recruitment and its related driving factors by means of multiple assignments and tasks.

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software. The study also involved exposure to workplace culture, employee relations, leadership interactions by getting equipped with the finer nuances in recruitment and its related driving factors by means of multiple assignments and tasks.

### VIII. INTERPRETATION AND CONCLUSION

While each organization houses its talent acquisition differently, the talent acquisition team is arguably the most crucial driver of corporate culture, progress, positive long term growth and development. With changing industry scenario, processes and systems have to undergo subsequent changes to be more efficient and sustainable. With technology enabling organizations to automate the entire talent acquisition workflow for greater efficiency, many companies are on the path of moving towards such digital initiatives. Based on the study conducted at this leading consumer durable organization, one could understand, how digital transformation of HR practices can increase efficiency and how is it becoming the new normal. VX has a well-defined and structured talent acquisition process being followed and is in the steering path of digitalization of its workspace with its various recruitment systems, digital platforms and new digital measures. This study gives an insight on how a company can make significant value creation by taking into consideration such radical changes in the present era and how technology can help achieve the same.

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## An Industrial Automation: A Boon or Curse for Employee at Workplace

**Ms. Rupali Gawande**

Research Scholar, Neville Wadia Institute  
of Management Studies and Research, Pune, India.

**Dr. Sonali Jadhav**

Principal, AISSMS College of Hotel Management  
& Catering Technology, Pune, Maharashtra, India.

### **Abstract:**

Really an industrial automation is boon or curse for employees is a big question. Today there is numerous changes are occurring in industrial sectors for the sake of improving productivity and efficiency in day to day activity. To withstand with globalization industry automation is very much essential on other hand machines or automation may replacing the human importance at their workplace. So, job insecurity, new task handling skill updating as per requirement of automation and technology changes in the industry sector this research article tries to focus on both pros and cons of industry automation. Automation deals to make the process simpler, easier, and faster with low risk of life to be a boon on other side it may create anxiety, depression, and stress which may hazard the wellbeing and health, safety of employee at workplace so is it a curse for employee to get an answered for all such things this study is important.

**Key Words:** Industrial Automation, boon or curse, Pros and cons of Automation, Employee.

### **Introduction:**

Industry automation is one of the essential roles playing part of the manufacturing, operations, production, controlling processes; in every sector we cannot imagine a company without automation in today's scenario, life without multimedia and industry without automation are the things we cannot imagine. Although automation and robotics make the work easier, safer and faster but it is somehow affecting the human workforce and indirectly the social wellbeing of

employees. Automation invented in 18's century grows in 19's and now they may replace human interventions in industrial process. And from that scenario we can predict the day that there will be no employees expect machines at work place. This is the most difficult task to manage importance of both human as well as machine at workplace. For instance, a cited report by Oxford economist forecasts that up to 47% of total U.S. employment is at high risk of being highly replace by automation. Productivity and yield improvement can be achieved by well-designed automation. (Scott technologies ltd, 2019).

Since from 1998, it has reported by ICRIER on the manufacturing task content in the jobs of Indian industries has been rapidly automated. Which can create a big tension, pressure and built a stress on employees, resulting disturb individual wellbeing. With past decade, it was observed that routine and non-routine task which were mainly depends on dexterity is decreasing with the increase of analytical and cognitive task. "World Economic Forum 2016" predicted that, as many as 2 billions global jobs can be replaced by automation by 2030. It Found that, automation is a great substitute for higher labour demand . Human labour and automation combination is complement to increase productivity and rising earnings of the industry (David Autor (2015) ). It can be a curse for the employees which are lower paid, lower skilled & less educated. Automation impact is uneven on different sectors, different level employees as every sector and every automation, technology skill requirement is different for different task. Hence the impact can't be analyse or

predict by studying one sector or single kind of automation., It is revealed that, New technologies are the creator of many new jobs, some are directly or indirectly related to it. Technologies and automation will result in the growth of productivity, incomes and wealth. Also, it arises labour demand and income expenditure (PwC 2018) Construction industry have countless dangerous and clumsy environment everywhere which leads to poor and unsafe working condition at site. Also due to the workers fatigueness caused by physical exertion and human errors may lead to construction accidents. Hence in order to avoid health problems and safety issue various types of robots are developed. (Li, R.Y.M 2015) Robots and automation are used on site for structural, maintenance work, window panel installation and under water construction work, which can do high hazardous work and save labour cost. Wearable robotics fastens reduce workers lower body stress which make them to work more efficiently and avoid accidents due to fatigue. (R.Y.M.Li and D.P.L.Ng.,2018) so it means industrial automation helpful for employees as well as employer so it can be boon for employees as well as employer. Every coin has two sides good or bad it depends on the perspective of employees and employer also it is mandatory to balance the need for automation and skilled employees in Industrial sector.

Automation and technologies plays a vital role in the life of both employees as well as employer. Automation and advancement is a inseparable part of everyone's life. We can't imagine life without multimedia as well as industrial sectors without automation. Although automation have positive impact (Arntz, Gregory and Zierahn (2016) argue that in the OECD on average only 9% of the jobs is automatable .and every job required human monitoring. Automation affects employment directly as well as indirectly in terms of wages,

salary and compensation mechanism etc but to some extent it impact employees adversely (Jee, 2017). such as unemployment is a big problem rising due to automation and automotive machineries, job insecurity due to lack of advance skill requirement for performing technical and machine handling task, reduce wages due to less working hours resulting by automation, (M. Muro, R. Maxim, J. Whiton 2019)To mitigate impact of automation training and capacity building for current workforce of organization will be essential. Which in severity results in anxiety, depression, stress, hypertension and can affect employees wellbeing at workplace. So it is very challenging task to decide the importance of employees as well as automation. To run a successful unit for an employer it is mandatory to balance both the entity (International Federation of Robotics), now a days organization giving emphasize on employees wellbeing as well as complete utilisation of employees skill and knowledge in combination with advance automation and technology from various sectors. Hence this study tries enlighten the aspects of industrial automation pros and cons to employee.

Jordnan (1963) proposed a model for various task and the purpose behind it to combine Human and Machine interventions by considering which is best for every task. In some task Humans are replaced by the machine and vice versa. Hence human and machines are complimentary to each other.

Objective of the study:

- To study the pros and cons of industrial automation
- To explore the concept and Revolution of industrial automation.
- To study how automation can be helpful to the employees as well as employer.

**Methodology of the study:**

This is descriptive type of study which is based on the secondary data that has been obtained through review of literature and analysis of journal articles. A reviewed was conducted for about thirty to forty important research papers related to Automation.

**Concept of Industrial Automation:**

According to D.E Seborg (1989) “The process of having machine follow a predetermined sequence of operation with little or no human labor, using special equipment and devices that perform and control manufacturing processes is known as automation, the fundamental constituents of any automated process are power source, feedback control mechanism and programmable command”. The main intension of automation is to integrate various operation of industry to reduce labour cost, to improve productivity in manufacturing operation, to improve quality of work and to reduce human error by reducing human involvement.

According to Hubka and Eder (1988) “automation is the progressively transferring regulating and controlling functions from humans to technical systems”

According to Katsundo Hitomi (1994) “Automation is the combination of Greek word Automotos which means self-moving and Latin word ‘ion’ which means a state. Atomization is the replacement of human physical labor by machine and technology but the control of this machine is exaggerated by human operators or supervisors. So, Automation is the replacement of both human physical labor and mental activity by machine”.

According to K. Madhanamohan, et al. (2013) “Automation is a way to increase efficiency and productivity. It is the

process of having a predetermined sequence of operation followed by machine with little or no human labor, using special equipment and devices that perform and control manufacturing processes is known as automation.”

According to Taylor & Francis Group “The term machine denotes every kind of electromechanical device on the industrial floor which consist of combination of series of simple and complicated machine operation as per the combination of raw materials, undergo a sequential transformation and amalgamation in order to produce a final product.

**Revolution of Industrial Automation:**

The first Industrial Revolution take place in UK in 1760 where as in the year 1785 the first completely automated industrial process was developed by Oliver Evans in the form of an automatic flour mill (Andreoni and Anzolin, 2019).

In 1873 the first ‘automatic lathe’ was invented. In 1936 D.S. Harder while working in General motors create automation in assembly line for transfer of work parts between the machines in a production process without human operation. Later on, in 1946 while working as a Vice president in ford motor company established separate Automation department.

Ford Motor Co., USA in 1950 established fully automated press machine.

Since the war in 1952 automation has greatly developed by accelerated invention of numerical control (NC) it is considered as a second revolution which gives new philosophy of manufacturing. Automation together with Cybernetics was developed by N. Wiener in 1961 has a great impact on industry.

The first industry revolution occurred in England in about 1750 to 1760 which has greater impact on human history for the reason that during this period human and animal technological revolution into the machinery. It lasted to sometime between 1820 to 1840.

First industrial revolution resulted in manufacturing industry in 1840 by water steam machine use in manufacturing process, second industrial revolution is using electrical mass production process In 1870, Third industrial revolution is the introduction of PLC and IT systems for Automation industrial uses in 1970, fourth industrial revolution is Use of IoT and CPS in manufacturing and other systems. Since from 1998, it has found by ICRIER on the manufacturing task content in the jobs of Indian industries has been rapidly automated.

#### **Pros of Industrial Automation:**

Bessen, (2017) suggests that increase in productivity due to automation will result in reduction of charges, manpower. In many manufacturing sector boom of employment due to technological changes and automation. The adoption of automation has ability to create new jobs in every sector.

S. Kiesler, and P. Hinds (2004), explored that even for monitoring the automation companies along with automation ,machinery required human workforce in order to keep employees motivated on their job company can do job enrichment, job rotation etc.

According to T. Brei, in most of the countries, Industries were largely dependent on semi-and low-skilled workers and foreign labor. In 2017 it was observed that near about 72.5% of total employment is made up of semi and low skilled worker where as 15.5% is made up of foreign workers. Due to the intensive requirement of low skilled foreign labor results in increasing labor cost because of

higher demand and labor shortage in the market, hence by using industrial automation like robots, computers, control system for different process and machineries can replace human labor with efficient working timeliness performance. Hence Automation is the alternative solution for labor shortage problems which can be solved by replacing the worker.

According to N.C. Chaudhari (2017) stated that by implementing automation in manufacturing and production industry, productivity can be increased also it helps to improve quality of the product. In result, there was increasing production due to avoiding manual delays, increasing productivity by achieving the optimum effectiveness of the machine, improves the ability saving capabilities and thence reducing the product price and giving a utility information of the machines that increasing the likelihood of analyzing the clarification for low or poor productivity. In the competitive market the success of any industries depends on their product quality, cost and customer satisfaction which can be achieved by automation technology with specifically the aid of using speed, accuracy, competitiveness and it also helps to achieve monetary profit for the organization.

Mishev,G. (2006) illustrated that implementation of industrial automation results in the reduction of human resource cost which articulate the involvement of human in the process of automation. In some cases, automation is a necessity which will provide human safety during production, manufacturing process. Human resources play a vital role in design, development, installation, Handling, maintenance and the whole management process. So, automation can be used effectively by adjoining with human hands.



According to Frohm et al., 2006, The main intension of automated system is to give more accurate, more efficient and more reliable operation than the human operators.

Also it is assumed that automated system can perform function and their job with lower cost and expenses as compare to the human resources. So, it is argued that with the higher reliability automated system would be safer system as well.

Wicken C.D (2004) Automation is the most appropriate tool for performing complex operations right first time. And problem solving with a great batch orders and bulk quantities. Henceforth automation is the necessity of modern production and manufacturing industries.

The concern that technology can make workers unemployed is, in fact, not a novel concern in economics as J.M. Keynes introduced the term “technological unemployment” during the Great Depression. According to Keynes, technology can make workers unemployed in the short-run because technical efficiency increases faster than labor absorption in the economy. The economy adjusts with this mismatch in the long-run, and accordingly, there is no technological unemployment in the long-run, and intelligent technologies instead bring opportunities for growth.

#### **Cons of Industrial Automation:**

In these decades due to the automation and technological development demand for high skill and more educated worker is increases hence there is a decrease in employment for less educated, low skill, low income or younger workers. In digital economy it is argue that technology and automation will be disturbed labor market by displacing thousands of less skilled or low skilled educated workers jobs in future. (C.B. Frey, 2017).

Due to the skill gap between different sector workers and mismatch between the place they live and job availability it may create limitation for transition of the displacement of workers from one sector to other. Hence technology can results workers unemployment. (S.R.Khan, 2018).

Process of job automation is increase because of growing concern of maintaining social distancing at workplace during COVID 19 Pandemic which more likely to reduce the job opportunities for low skilled labors. Industrial Automation is the need of time as many of the labor displaced due to pandemic. Economic shocks is also one of the reason for losing jobs, as automation cost is lesser than the human employees.

Currently industrial automation and computer technology has improved its capabilities to perform more efficient jobs with minimum time with less or no human interventions. And also, technology is getting cheaper than the labor. And for that workers employment on permanent basis is reducing as everyone hired on demand by the technology. Hence employment relationship going to change because of automation and due to this high and low skilled are getting unemployed. (D.H Autor, 2009).

In the coming decades Automation are expected to be done for the jobs such as retail salespersons, cashiers, office clerks, accountants, insurance agents, and waiters and waitresses. There is a challenge for the low skilled workers to transfer from one sector to other sector because of skill gap and geographical change for the jobs created by automation and technology. Hence automation and technology made distraction in labor force market which makes less skilled & less educated workers unemployed. (Oxford Economics, 2019).

The jobs with little on no human intervention and repetitive task are at a high risk to be fully automated like inventory management distribution and control, data collection, ware house related task, software operations (IOT, SCADA) involve repetitive task and don't have much requirement of human resources. So, in future these types of jobs can be increasingly automated. Most of the case where low paying jobs consist of repetitive task are more pron to lost by low skill worker because of demand of automation in various sectors. (JChen, 2017).

The U.S. Council of Economic Advisers (2016) suggested that nearabout 83% of jobs are more likely to be automated in coming decades for the jobs paying less than \$20 per hour are more deemed to undergo automation.

World Economic Forum 2017 stated that, Robotisation will replace more than 50% of mining related jobs by 2020. This will result tentatively of 3,30,000 jobs or near about 5% of total global workforce & there may be consequences of job loss because of increase digitalisation in the upcoming decade.

Safe work Australia generated a yearly report regarding the injuries and compensation claims for the accidental injuries cause by automation and new technological impacts in the industrial sectors. 91% of claims are for the physical injuries and musculoskeletal disorders and 9% are for other diseases like mental illness, depression caused by the stress, anxiety working with new technology and automation. (M. J. Smith and P. Carayon,1995).

Increasing demands of automation in work results in rising different types of disorders. New technologies and new workplace with innovative automations equipment's would possibly bring

blessings to the potency however additionally inflated the urgency, uncertainty and quality of choices of labor and employees at a similar time. Hence, ever-changing of technology environment work organization, and job task were potential to contribute to the issues rising equivalent to additive suffering hyper tension, mental disorders, anxiety and psychological stress.

Sachs and Kotlikoff 2012 illustrate that machines and automation are more able to substitute jobs entirely which results in creating pressure on low skilled worker in terms of wages, jobs while in contradiction it will result in increasing owners' capital.

Advancement in automation technological changes happening in industrial market it observed that human have less physical work than before automation implementation but they have to face some mental fatigue and mental illness in the automation handling, remembering, attending and thinking which in savior case may results in psychological stress and hypertension (Mishev, 2006).

### **Challenges for implementation of Industrial automation:**

The implementation of automation is a quite challenging task. Along with pros and cons of automation, industry have to face various challenges of implementing automation and technology in production and manufacturing sector. So, the clear review of such opportunities and challenges can be helpful to the industry experts to overcome their problems (D. M. Florian, 2015).

Albert Feisal Ismail et al. Found that the most critical challenges faced by industry while implementing automation are cost investment, training to the employees and flexibility. Initial cost investment is very high for implementing automation as it

requires advance hardware, software, machinery parts so it's a big challenge for industries having inappropriate capital.

Another challenge faced by the industry is to choose right automation technology, process of production which impart psychological stress, depression, anxiety on low skilled employees. To overcome such a challenge industry, have to carry out better cost investment in purchasing, installing and training to the employees. So training is also one of the challenge faces by industry while implementing automation and new technology. For accuracy in handling of automation high skilled employees are important so training place vital role to avoid such challenge.

For smooth handling of automation hiring of high skill employees, experience or expert technician is one of the important aspects of automation implementation in industry as these experts shares their experience, knowledge, skill for better handling of automation technology. They give a better solution to overcome problems and accidents during the operations.

Safety and security are one of the challenging tasks in front of industry as automated technology controls overall functioning of the operations. Due to the malfunctioning or uncontrolled condition maintaining safe and secure environment at workplace is a big challenge ( Lennvall, T., Gidlund, M., Åkerberg, J, 2017).

### **Corrective suggestions for Industrial Automation:**

McKinsey Global Institute 2017 concluded that, before organization activities automation every business should create a strategic planning for capital investment and reskilling of employees for better results.

Government should create and implement some policies and practices which can support implementation of digital infrastructure and automation in industry. Government and private sector should initiate skill-based training Programme for employees.

Boston Consulting Group 2015 stated that, for automation and technology road map for capital investment related to procurement of machineries and training to the employees are helpful for production effectiveness.

Deloitte LLP 2015 stated that, the education system should focus on improving basic stem skills like science, technology, engineering and mathematics also promote the human skills like creativity, thinking, empathy, decision making, risk bearing capacity so that the robot and automation cannot replace human beings at workplace.

The Conference Board 2015 illustrate that, industry must invest capital more in employees training in order to increase their skill for handling automation and technology which results in sustainable growth in productivity.

### **Conclusion:**

In the digital era nothing can be boon or curse for people it depends on how they treat it as threat or opportunity, Industry without automation and automation without human being is incomplete without each other, Both the aspects complement each other. Employee and employer perceptions play a vital role in case of accepting the industrial automation in various sector. Industrial automation is boon for employee with highly educated, high skill, quicker technological adoption, well trained mind for continues learning, innovation, whereas on other hand for uneducated, low skilled labor it may be a reason for losing job and cause for anxiety,

stress, depression so even though it is advantageous but it have some disadvantages for employee at workplace, so it is better to use automation and human interaction with proper balance. Nothing will be curse for employees at workplace, if industrial sectors Upgrade the skill of their employees for better innovation, efficiency in productivity, quality improvement.

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## Growth, Opportunities and Challenges of E learning Model in Education

**Mr. Aman Kothari**

Research Scholar, IIEBM, Indus Business School,  
Wakad, Pune, Maharashtra

**Dr. Rishikesh Nalawade**

Assistant Professor  
IIEBM, Indus Business School,  
Wakad, Pune, Maharashtra

### Abstract

The application of information and communication technology (ICT) has tremendously revolutionized the education sector. The rapidly growing E-learning model can be used to improve the quality and efficiency of education by creating new and exciting opportunities for both educational institutions and students. The sustainability of education sector is now getting dependent on the e-learning facilities, it can offer to students, working executives and arranging the Management Development Programmes through online modes.

The research is trying to investigate the growth, opportunities and challenges of E-learning model in higher education. The research is also inspecting the issues and challenges faced by the students and teachers towards the E-learning model. The research is descriptive in nature having inferential approach. The data collected through distinct questionnaire from students and teachers of higher education. The collected data is analysed with the help of descriptive statistics.

With the current trends of digital workplace and work from home, E-learning is becoming an increasing norm in effective and efficient delivery of education. The outcome of the study helped to gain insights about the opportunities and challenges faced by the learners and facilitators in teaching learning process.

**Keywords:** E-Learning, Sustainability, Education, Technology, Human Resource, Skilling

### I. Introduction

The advancements in various technologies have brought many changes in the world and that change affects the need of such technologies in education sector. These conversions in technologies have changed the methods of teaching and learning. In ascertain the importance of technological advancements in education sector, global investments in ICT to improvise teaching methodologies have been initiated by the leaders.

### A. Learning

Learning can be defined as two-way conversation between a learner and a teacher, for a certain outcome. Learning is defined as a change in behavior and understanding. In other words, learning is working for getting some defined outcome out of it.

### B. E-Learning

E-learning has emerged as a key element for better access of the knowledge and creating a new path for the learners. E-learning as an activity started by developed countries and the way they implement it will become a benchmark for the user of e-learning. The term e-Learning refers to electronic learning, means with the help of different tools and technology one can understand or learn what they want to learn. E-Learning has the ability to change completely the old form of education, because it could deliver quick learning at lower costs, increased access to learning, and willing to accept the responsibility for all learners in the learning path. It enables schools to easily transfer knowledge and important information to multiple locations.

1) Evolution and Scenario of E-Learning  
Some years back if we talk about students and teacher they were use same criteria of learning and teaching throughout their career. But as time passes, students and teachers are not stick to the same methods they were using. With the changing environment and advancements in technologies they need to have updated their skills and enhances their knowledge. As it is a saying that “one should never stop themselves from learning” same way students and teachers start using virtual learning program. Since this new technology is not only adapted by the institutions but also they use this to promote new methods of learning. Nowadays, E-Learning model is used by whole world with the help of World Wide Web. And now it is changing from simply e-learning to e-learning 2.0. The term e-Learning 2.0 refers to the evolution of new technologies in this model of learning. From an e-Learning 2.0 perspective, conventional e-learning systems were based on content delivered to students using Internet.

The world has changed dramatically from old life to today’s technological world. Similarly, learning has also changed from the standard classroom to distance learning and now to online learning, where students learn in “invisible classrooms”. It requires an expert knowledge of the e-learning tools and techniques, so that the courses or the material of the education is easily accessed and understood by the users.

## II. Methodology

E-learning is the easiest and fastest tool to educate people. If we consider the population in India it is hard to accommodate all the people in specific university or educational area to get the education. Many institutions are implementing e-Learning to meet students’ needs, especially those of non-traditional students with full time jobs. Since e-Learning is conducted using the

Internet and World Wide Web, the learning environment becomes more complicated. Students’ initial perceived satisfaction with technology-based e-Learning will determine whether they will use the system continually.

The research is descriptive in nature having inferential approach. The objectives of the research are to investigate the growth, opportunities and challenges of E-learning model in higher education, to inspect the issues and challenges faced by the students and teachers towards the E-learning model. The data used for research is both primary and secondary. The data has been collected from two distinct questionnaires designed for student and faculty.

The method which is used for sampling is convenience sampling for teacher and students. The collected data is analysed with the help descriptive statistics.

## III. Results

The collected data has been filtered, coded and analysed with MS Excel. The results from data analysis are presented as per the respondents i.e. students and teachers.

### A. Students

After analyzing the data, it is found that more than 70% of respondents use ICT tools for their study. Table 1 shows the responses for various e-learning platforms.

TABLE 1

Data showing platform used by students

E-Learning platforms	Coursera	Udemy	BYJU's	Google classroom	Others
Responses	122	83	41	117	47
Percentage	55%	37.4%	18.5%	52.7%	21.11%

TABLE 2

Data showing perception and attitude of students towards e-learning.



Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Adequate infrastructures are required for implementation of e-learning programme.	27 12.16 %	29 13.06 %	59 26.57 %	71 31.98 %	36 16.21 %	222 100 %
E-learning materials are extensively used in enhancing and developing skill.	19 8.5%	25 11.26 %	64 28.82 %	83 37.38 %	31 13.96 %	222 100 %
It increases job related knowledge through its course content.	23 10.36 %	25 11.26 %	66 29.72 %	80 36.03 %	28 12.61 %	222 100 %
Contents of e-learning are designed as per the requirements of the skill relating to job than in the traditional method.	24 10.81 %	25 11.26 %	61 27.47 %	85 38.28 %	27 12.16 %	222 100 %

Source: Compiled by researcher

Analyzing another questions belong to identify their attitude towards e-learning with the help of question which ask what they get from e-learning. Do they find out some usefulness out of it? So by analyzing the result it is interpret that around 70% respondents feel that e-learning mode can increase their learning effectiveness and around 42% says that it improves their performance and around 37% says e-learning can enable them to accomplish tasks more quickly. Also based on the analysis when asking question about which platform is more effective and efficient either traditional or online platform. More than 60% says that both are equally effective and efficient. And also their experiences of using e-learning platforms are good. Their overall experience is on positive side.

Overall when taking all the questions into

consideration e-learning plays a positive role in the field of higher education and professional certifications. The attitude, perception of the students towards e-learning is positive whether they are boys or girls. All of them have good experience with e-learning. And they find out e-learning is equal important as traditional learning.

### B. Teachers

More than 60% respondents use ICT in their teaching. About 70% respondents are comfortable while using ICT and only 5% are uncomfortable.

TABLE 3  
Data showing Platforms use by teachers

	Video conferencing	Pre-recorded lectures	Google drive and similar collaborative	Problem based learning projects	Others(Coursera, ERP, LMS, Google classroom etc)
Responses	47	33	27	16	47
Percentage	61%	42.9 %	35.1%	20.8 %	61%

Source: Compiled by researcher

TABLE 4  
Data showing difficulties and challenges faced by teachers

	Technical Issues	Adaptability struggle	Computer literacy	Internet connection	Computing devices	Others
Responses	51	14	8	44	14	2
Percentage	64.6%	17.7%	10.1%	55.7%	17.7%	2.53 %

Source: Compiled by researcher

TABLE 5  
Data showing the perception of teacher towards e-learning

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
E-learning is better medium for students for their studies.	5 6.33%	15 18.98 %	27 34.18 %	26 32.92 %	6 7.59%	79 100 %

E-learning provides a good platform for higher studies.	5 6.33%	12 15.20%	27 34.18%	25 31.65%	10 12.66%	79 100%
E-learning is developing skills of the students.	2 2.53%	10 12.66%	27 34.18%	27 34.18%	13 16.45%	79 100%
E-learning makes better use ICT tools than traditional method.	7 8.86%	10 12.66%	22 27.85%	31 39.24%	9 11.39%	79 100%
E-learning provides better opportunities to design better content than traditional learning	3 3.79%	17 21.52%	18 22.78%	29 36.71%	12 15.19%	79 100%

Analyzing the data based on challenges and difficulties faced while using e-learning platforms so most common challenges they are facing is technical issues where more than 60% respondent give their response and second common challenge they are facing is internet connection where more than 50% give their response. Overall technical issues and internet connection is the primary challenges of respondents they are facing towards e-learning. Else other issues are not so common among them i.e. adaptability, computer literacy and computing devices.

The benefits according to the respondent shows that e-learning platform or with the help of e-learning the education system get improve in terms of the quality of teaching as well as accessibility and time flexibility of the users but there is some demerits that sometimes it hampers the teaching due to poor network connectivity there is lack of input from the trainer and also in terms of test the knowledge of students there is lack of self-discipline and also there is

plagiarism while conducting online exams so this are the demerits they feel not good for the students during their education.

So overall considering all five statements together more than 40% respondents are agree with the statements and more than 35% are neutral with their response that means they are neither agree nor disagree. So their response gives a positive feedback relating to the statements.

After analyzing all the questions of questionnaire together it shows that more than 70% respondents show their positive response towards e-learning model. They feel that e-learning plays a vital role in developing student's career in higher education and professional certifications.

#### IV. Discussions

Overall both students and teachers have positive response towards e-learning. There are challenges as well they are facing while using e-learning platforms but there is growth and opportunities as well which will be beneficial for students and teachers. For the prospects of career and skills students votes in favor of e-learning and teachers votes is also in favor of e-learning. Some of the parameters which show there is a 50-50 votes in favor of both traditional and e-learning forms. Overall there is a conclusion drawn on the interpretation of data is that both forms of study have their benefits and demerits. In today's world e-learning comes out with new technology which really very helpful for students as well as teachers. While in some aspects traditional gives more importance by teachers as well as students. E-Learning is medium which has lot of opportunities and growth prospects. For the purpose of higher studies or professional certifications it plays a vital role. The development according to the changing environment, involvement of new courses, platforms are surely making a good, effective and efficient mode of learning.

### A. Major Findings

The environment of upper education is evolving everywhere the planet. Rising costs, shrinking budgets and an increasing need for distance education has made educational institutions re-examine the way that education has been delivered. In response to the current changing environment, e-learning is being implemented more and more frequently in instruction, creating new and exciting opportunities for both educational institutions and students. Some key findings drawn out from secondary data in the research are as follows:

1 According to the previous study done in UMSA university of Bolivia there is lack of technological infrastructure – such as bandwidth—causes a variety of obstacles for teachers and students in striving for e-learning.

2 All teachers who took part in this study had various previous experience of teaching with technology. Most of the teachers also explained that they felt comfortable using technology. Regardless of the teacher interviewed, all informants said they required more professional training in using technological tools for educational purposes.

3 According to the analysis most of the students agree to the statement that the adequate infrastructure is needed for implementation of e-learning model.

4 According to the study of survey it is also find out that with the help of e-learning mode one can increase learning effectively and also increase their performance in their study.

5 Most of the challenges in India faced by teachers while using e-learning platform is technical issues. According to the findings internet issues and Technical issues are the two major difficulties they faced while using e-learning platform.

6 According to them they find e-learning is a good platform to for students for their study. With the use of e-learning students develop their skills and also it provides

better opportunities to design better content than traditional platform.

7 It is also find out that teachers agree with the statement that with the help of e-learning there is an increase in academic achievements of students and also helps in tracking performance of the students properly.

### B. Suggestions

1. E-Learning is definitely an edge over traditional learning but the learning is something wherein human to human connection is required so giving this thing as important point e-learning needs to be give attention towards it.

2. It requires a proper investigation as well as understands the need of the teachers as well as students before implementing so that after investigating all this platform gives a better usage and develops interest of using the platform.

3. E-learning model needs to be more effective and efficient in terms of technology so that the majority of the respondent's issues are not arising in future.

4. In this current crisis this mode of study provides teachers to deliver their knowledge to the students and students gather that knowledge from the teachers so if the content is more appropriate and updated it will provide a good platform for students to gain the skills as per their interest.

5. Some of the teachers suggest that it needs to be developing a technology which is used to check descriptive answers as it is difficult for teachers to check descriptive answers through e-learning platform.

6. E-learning needs to be developed as per the needs of rural areas as the education system in rural areas is not as effective as in urban areas.

### V. Conclusion

In this era of advanced technological tools like Artificial Intelligence, Machine learning, QR code, advanced ICT tools for

for streaming video, audio files, the e-learning has become very important aspect not only for aspirants but also for education institute. The central and state universities have to adopt and upgrade the various means for educating the students.

To reap the benefits of demographic dividend of our young country to become a super power, it is very much required to implement and use advanced technological tools for skilling the youth of the nation. There is recent example of Mr. Ranjitsinh Disale who was awarded with Global Teacher award, 2020. Mr. Ranjitsinh is using lot of advanced information technological tools for teaching school children.

Currently various platforms used for e-learning are Massive Open Online Course (MOOC), NPTEL, Coursera, UpGrad, Byju's, WhiteHat Jr, Udemy, LinkedIn Learning, Khan Academy etc. The response these platforms have received not only from students but also from working professionals.

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## Impact Of Technology In Human Resource Supporting Business Sustainability

**Dr. S. V. Bhave**  
Director (HR & IR)  
Bharat Forge Ltd.  
Pune, India

**Mr. Milind Nikumbh**  
Sr. Manager ( IT )  
Kalyani Technologies,  
Pune, India

**Ms. Lorraine Coelho**  
Manager (H.R)  
Bharat Forge Ltd,  
Pune, India

### ABSTRACT

This research article has studied and analysed the Business Sustainability and role of Human Resource function with the help of intervention of technology.

Existence of all other functions depends on sustainability of business. The sustainability of business depends on market condition, international policy, economic condition, shifting of business segments, requirement of newer skills and competencies and implementation of HR Technology within an organisation enables managers to collect, analyse the data and involve with top management in evolving business decisions, thereby supporting towards business sustainability. During last one decade, Human Resource function has experienced a lot of changes with intervention of technology, which provides managers to enable them in taking timely and fast decisions and allow business to bring in more market effectivity. This article has studied and analysed the types of HR Technologies have positively impacted Human Resource Function and the factors developing towards positive building blocks encompassing land, labour, capital and entrepreneurship.

Through proposed research article researchers has collected the data on:-

- Job Analysis and design
- Talent Acquisition
- Talent Retention
- Training and Development
- Performance Management
- Industrial Relations
- Modernisation in Attendance System.
- Aspects related to Business Sustainability

This research article has its focus on

technological advancement supporting HR, and how such technological interventions support in developing and strengthening internal entrepreneurship. Article also throws light on how intervention of technology in Human Resource function helps in easing out working environment and be enabler for embracing the change, which is good for present and future.

### KEYWORDS

Technology, Job Analysis and design, Talent Acquisition, Talent Retention, Training and Development, Performance Management, Industrial Relations, Business Sustainability

### 1| INTRODUCTION

Digital Technology has significantly supported business – this we can see today. In a rapidly growing and fast passed economy, technology and sustainability are driven by continuous changes brought through by internet of things, artificial intelligence (AI) and robotics. The use of technology in the past few years has grown considerably and will continue to have its intervention for ensuring not only continuation of business, but for sustainability too. Technological advancement, information and communication technology has greatly contributed to each and every area of business, in particular human resource functions. Through this article we have analysed and studied different ways of technology supporting changing face of human resource function. Intervention of technology in human resource function has impacted HR practices for enhancing employability, ensuring better

productivity and changing traditional work place. Human Resource information System (HRIS) has largely helped smoothening human resource function and enabled experts to devote their time to do quality business activities. In short, intervention of technology has definitely made life of not only HR professionals easy but has also ensured business stakeholders to concentrate at their respective work area in a more passionate way.

The Authors of this article have attempted to study and analyse how changes have taken place, what were the key factors in change management, how technology has worked as an enabler for ensuring business sustainability and supported each organisation to become a learning organisation.

It is pertinent to note that, there is radical shift in HR processes because of digitalization. Earlier most of the systems were manual and person oriented. In this century Digitalization, Augmented reality, Virtual reality, Robotics, Machine learning and Analytics Era are the reality of the day. Earlier we were using punching cards to record the attendance of employees and timekeeper used to collect the attendance data and upload into database to process the attendance. This has been replaced with HID / Smart card and employee data gets populated into database within fraction of seconds and update the dashboard. Timekeeper role is changed from timekeeper to MIS Specialist. This is applicable for leave cards too. Paper based leave cards are converted to digitalize card.

Business Intelligence and Analytics plays vital role in HR Dashboards / Visualizations and drill down MIS reports. Earlier, one use to take 4-5 days to collect, cleanse, consolidate and present the HR MIS. Analytics now has a pervasive influence across HR functions, from recruitment to workforce planning, from benefits administration to diversity. At the same

time, analytics models have become more sophisticated, going beyond the historical analytics models of the 2000's. HR can leverage predictive analytics for accurate forecasting, prescriptive analytics for automated recommendations, and real-time analytics for in-the-moment decision-making.

We are now using latest technologies from employee hire to retire. Solutions like SAP Success-factors , HCM , Darwin Box are very good for employee selection, employee central , recruitment , on-boarding , e-learning , PMS and succession planning. Most of these products have built in business intelligence and analytics module. Kronos application is the excellent tool for workforce management. This will take care of white collar and blue-collar employees. We can use the same system for contractual / casual and consultants effectively. All these applications have gateway to mobility and tight security. These products are available on premise and cloud platform.

Augmented reality in HR goes hand in hand with virtual reality implementation. AR/VR technology has the potential to move beyond being a mere tool of fun and game to facilitating transformative enterprise application development. Simulation of a real-world environment through AR/VR can help in making the decisions better with machine learning by analyzing the employee's reactions in different scenarios. It has the potential to fill gaps and address issues that are hard to replicate in the real world, be it recruitment, learning, on-boarding or performance management. In turn, it will lead most of the future trends in human resource management.

This research article has aimed to throw light on not only present status of technological intervention in human resource function but also attempted to throw some light on futuristic approach.

## 2. LITERATURE REVIEW

A brief review of literature with regard to “Technology in Human Resource Function Leading to Business Sustainability” is conducted in depth. Though intervention of technology is experienced by human resource function by present generation, we could experience a few limitations to review the availability of literature, highlighting its intervention in human resource function from futuristic point of view.

### A] THE NEW TALENT MIX

Post COVID, job market has experienced unbelievable changes. These changes are here to stay. There is a rapid adoption of digitalization. This trend has got amplified across hiring workflows, video interviews and has replaced face to face meetings. Industries have experienced a new way of working and that is “Work From Home” (WFH). Senior leadership has embraced work from home as long as there is no compromise on productivity. This has happened only with the intervention of technology.

### B] WIDER TALENT SCAN

Location of business has become immaterial and technology is enabler to believe this. Digital skills have become a prerequisite for most job roles, irrespective of the fact of what is your location. Employees from different age groups are aiming to learn and earn with extra capacity and want to leverage skills to cope up with the changing lifestyle. Semi or retired professionals are leveraging their experiences with the help of technology to have extra source of income. All this has helped human resource function leading to business sustainability.

### C] With the availability of high speed technology, following roles are in high demand

- Data analysts and data scientists
- AI and machine learning specialists
- Software and application developers

- Robotics engineers
  - Process automation specialists
  - Information security analysts
  - Internet of things specialists
- (Economic Times dated December 20-26, 2020)

### D] HR FUNCTION – A VALUE ADDITION

Recently human resource function has started adding value and is considered as a main function in ensuring sustainability of business.

For employers the value of the HR function lies in the bottom-line. Greater productivity, higher quality, better customer services, positive employee relations and lower costs are among hundreds of factors that typically contribute to higher profits. Such factors are often directly improved by innovative and effective HR practices. Historically, businesses would account for HR functions as an expense and learning as a depreciable asset. Today when we are talking about value addition from every process and function, HR is viewed as an investment that can lead to future exponential gains, which was not the case earlier. What underpins the success of organizations is their ability to add value to the inputs they use. Adding value in this sense is the central purpose of business activity. (Ashok Chanda and Shilpa Kabra, 2000).

### E] Change Management

The Human resource management (HRM) function involves the recruitment, placement, evaluation, compensation, and development of the employees of an organisation. The goal of human resource management is the effective and efficient use of human resources of a company. The human resource information system (HRIS) are designed to support (1) planning to meet the personnel needs of the business (2) development of employees to their full

potential, and (3) control of all personnel policies and programs. Originally, businesses used computer based information system to (1) produce pay checks and payroll reports. (2) maintain personnel records, and (3) analyse the use of personnel in business operations. Many firms have gone beyond these traditional personnel management function and have developed human resource information systems that also support (1) recruitment, selection, and hiring; (2) job placement; (3) performance appraisals; (4) employee benefits analysis; (5) training and development; and (6) health safety and security. (James A O'Brien, George M. Marakas, Ramesh Behl, 2013.

Burdett (1988:28-9) argues that organizations are approaching a new era and that that era requires a new response. In particular, he argues that organizations need insightful thinking and that there are three potential means to better respond to change.

#### **F] SUSTAINABILITY**

Sustainability or sustainable development has been described in many ways: Meeting our needs while not compromising the ability of future generations to meet their needs. Sustainability covers three realms: Economic, Social and Environmental. Businesses have long referred to this as the triple bottom line. Human resource function always supports change of process and bolsters employee commitment through orientation, selection and job descriptions, training, reviews and rewards, investment and retirement funds (Darcy Hitchcock & Marsha Willard, 2008). All these activities are being done with the help of technology and thereby support human resource function, leading to business sustainability.

#### **3] RESEARCH OBJECTIVE**

The present study has following objectives:-

A] Elaborate and examine present work

practices in organisation.

B] Identify area where technological intervention has helped human resource function in ensuring business sustainability  
C] Suggest a way forward for HR professionals to adopt.

Adequate review of literature has been done, information is collected from research papers, books, internet, and newspapers.

#### **4] RESEARCH METHODOLOGY**

The study is based on qualitative and quantitative research.

Qualitative analysis is done based on literature review. That submits certain limitations to the issue, hence quantitative analysis is also performed for the study.

The study is exploratory in nature. Competitive analysis is done using the descriptive data analysis method. The questionnaire was made on the trend observed in the literature review and the employee life cycle to understand and explore significant HR aspects from practitioner's point of view. The data was collected through the questionnaire and around 46 respondents were selected using purposive sampling. Respondents were informed about the objective of the study. Open ended and close ended questions were asked to respondents. No reference of the names of the respondents and the company is done for the analysis and reporting purpose. Majority of the responses are from manufacturing sector.

The data was analysed using excel and charts are prepared for better understanding of responses.

#### **5] DATA ANALYSIS**

A total of 46 HR professionals across manufacturing industries took part in this survey. Based on the data collected through the questionnaire following are the key



findings

**A] Years of Experience**

Out of 46 respondents 8 were having 5-10 years of experience, 8 from 10-15 years of experience, and 15 were having more than 30 years of experience.

B] Respondents were asked if functioning of HR in your organisation is still on manual basis. It is evident from the response majority of the respondents opined that functioning of HR is not on manual basis now. It is now evident that HR professionals have started using technology in their respective organizations.

C] About 85% of respondents have opined that manual working in their organisation has disadvantages. However, about 15% of respondents felt that there are certain areas in business where you need to have manual intervention.

D] 97% of the respondents felt that there is a need to transform the HR function to fully automated processes.

E] 85% of the respondents felt that employees in their organisations were fully trained towards intervention of technology in human resource function. Figure 1 as follows in graphical form will support this statement



Figure 1

F] 70% of the respondents expressed their opinion that technology in human resource function will make their life easier as supported by Figure 2.

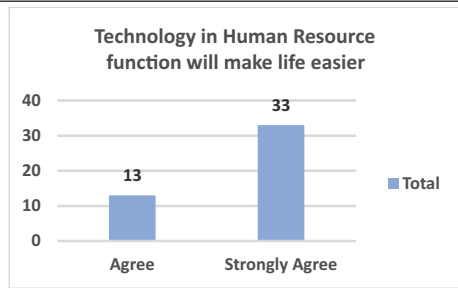


Figure 2

**G] Job Analysis and Job Design**

In present circumstances there is a requirement of change in approach for doing job analysis and job design. About 92% of the respondents felt that technology has helped their organisation for job analysis and job design. Please refer Figure 3 as follows:-

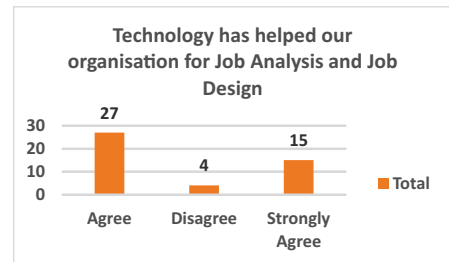


Figure 3

**H] Talent Acquisition**

Talent Acquisition is considered as one of the important function of human resource department. Technology has impacted Talent Acquisition practices with the help of internet, various hiring platforms like naukri.com, LinkedIn, twitter, etc. HR functions has seen a high level of digital transformation in the area of talent acquisition, inclusive of talent management, background verification, etc. Figure 4a will indicate that 90% of the respondents felt that in their organisation talent acquisition activities are fully with the intervention of technology.

In today's candidate-driven recruitment process, hiring the most suitable candidate is an ongoing challenge. Whether it is

making the candidates apply for the job, introducing them to the organization or undergoing the whole recruitment process. When a potential candidate arrives for the interview, he/she can get a virtual tour of the company, its daily life, and culture, and meet prospective co-workers with the help of VR experience. This virtual reality in HR would help the candidate to get a better understanding of the organization and its work environment.

In the interview process, an interviewer doesn't need to spend time fetching key skills and details from the resume; instead, an AR/VR-based application can scan the candidate's face and show all key details. Also, AI/ML can help in extracting and analyzing important information from facial expressions captured during the virtual tour and interview process, to store unfiltered, unbiased emotional responses as data.

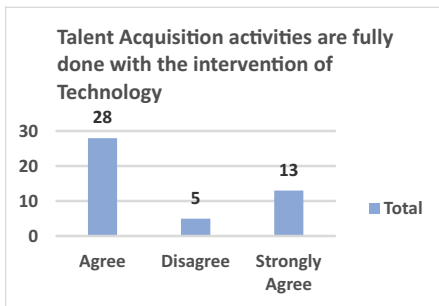


Figure 4a

Technology also helps HR function to create a Classic Dashboard of HR processes: Such interactive / drill down dashboard envisage the key KPI at a glance and if we click on trend icon, we will get the historical trend. We can add the various filter on the fly and generate the desired reports on single click. If we add the filter of any location / department / Grade / Gender / Function / Cost Center, all the eight KPIS get changed according to our filter condition. Please refer Figure 4b which substantiates the subject.



Visualisations : Division / Plant wise man power presentaiton in Block chart , this will present us the plant wise head count and if we click on any block it will drill down to further department wise – cost center wise head count . If you select the location like Mumbai , Indore, Nashik, Singapore , Goa, then entire dashboard is changed for the selected location. We can do the analysis by service period or age of employees.

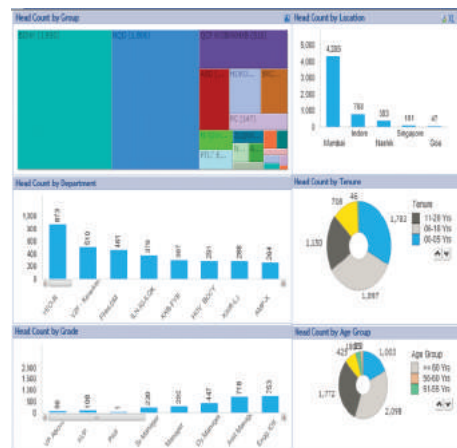


Figure 4b

I] Employee Satisfaction Indicators

Job satisfaction is a major of contentedness with respective job, whether they like to job or some aspect such as nature of work supervision, behavioural component, etc. The facts which are measured on the survey also include security, compensation, relationship with superiors, peers, and subordinates. Positive indication of individual employee is indication of high

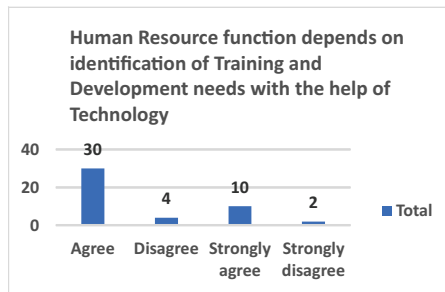
level of employee involvement. 65% of the respondents felt that in their organisation employee satisfaction survey largely depend through intervention of technology. Figure 5 will support the statement



Figure 5

J] Training and Development

This is one of the top most important function of organisation. This refers to educational activities within the company created to enhance the knowledge and skills of employees while providing information and instructions on how to better perform specific task. Training and Development process is an organisational activity aimed at improving the performance of an individual or group of employees in the organisational setting, leading to business sustainability. 92% of the respondents felt that human resource function depends on identification of training and developmental needs with the help of technology. Through specific spatial design, AR/VR-based applications can create a simulated environment of the real world and avoid any untoward incident during safety training. It can help manipulate virtual objects and create a scientific phenomenon, which is difficult to experience in the real world. On the other side, a mobile platform can present the content in 3D format and make it more interesting to learn. As pictured with the figure 6.



N] Workforce Management System

There are various aspects of managing the workforce that were taken into consideration during the lockdown period and are being continued by lot of manufacturing organization.

Traceability of the employees coming into your official premises during the Covid-19 , a solution that can help with the below advantages apart from the complete solution that we have for the workforce management of your White collared & blue collared employees , working at various plants , corporate offices or working from anywhere.

Ensuring the employee is scheduled to come

Track his punch time at the gate against the schedule in real time

- Track other people who were at the gate during the similar time as the employee in real time.
- Track the department at which the employee has worked on that respective day in real time.
- Track the people who were available in the department / shop floor / plant during the same shift as the employee has worked.
- Creating a complete report on the above parameters with the reference to an employee whose traceability needs to be checked.
- Additionally to meet challenges imposed by current Covid-19 situation, below are the areas that are very important to be taken care until the end of the pandemic:
- Digitized declaration of Covid-19 symptoms.

- Staggered scheduling to manage social distancing at shift start.
- Staggered lunch breaks to ensure social distancing in canteen.
- Skeletal staffing to ensure minimal presence of workmen in production plants.
- Capacity planning of the workforce in the plants in line with the government guidelines in the respective zones.

Attendance system speed up the affected employees

When someone is infected with communicable disease, quickly identifying the people with whom they have been in contact is critical. In the workplace, this process is cumbersome without visibility into who was working when and whom. Having a tool to rapidly identify employees who may have met an afflicted individual is key.

Kronos system has tool for employee contact traceability. This tool helps organization to identify potential contacts. The tool uses employee time clock entries that have been present in Kronos system to identify potential contacts who were working at an identified location at the same time as the afflicted employee. The contact-tracking tool is easy to use and not required health related information.

We can unlock the hidden values of workforce data for improved decision-making. There are following key benefits of it-

**ACCESS LABOR PERFORMANCE INSIGHTS** on demand to keep results in line with expectations.

**GET VISIBILITY** into troubling trends while there is still time to take corrective actions.

**IDENTIFY ROOT CAUSES** of performance, productivity, and behaviour issues.

**CONTINUOUSLY IMPROVE RESULTS (KAIZEN)** by managing to company-specific or best-practice KPIs

Kronos Analytics gives us following

visualisation:

- 1] Late coming / early going MIS for the selected dimension.
  - 2] LWP count and trend
  - 3] Consecutive absent trend
  - 4] Leaves consumption pattern
  - 5] Real time Head count on shop floor on any date / time / location / dept. / CC
- Please refer Figure 9a and Figure 9b which will substantiate the above statements

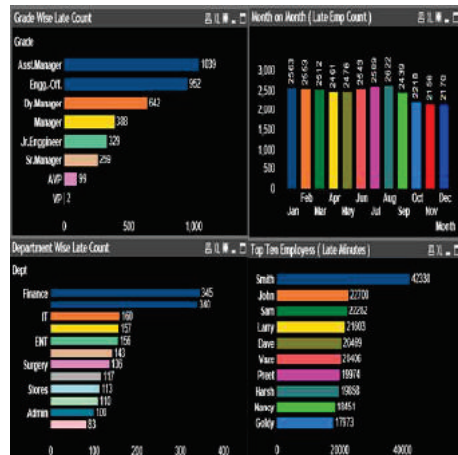


Figure 9a

O] Department wise / Grade wise Late coming LWP Analysis:

Chart 9a is a dashboard of late coming instances by grade, department and month on month for a selected fiscal / calendar year.

We can drill down to any chart till employee level. Top ten employees chart gives us the top ten employees list whose were coming late for the selected year. BI tools like Qlik view / Tableau / BOBJ are very efficient for dash boarding.

Interactive dashboards gives summarised and detail information to management on single click. User can do the slicing / dicing on the dashboard to derive the correct information.

## Figure 9b

Chart 9b represents the LWP information for selected dimension. User can drill to any chart till employee level on leave without pay and exceptional information.

## 6. CONCLUSION

Digital technology has significantly impacted the human resource function in recent past.

Business intelligence and analytics are considered as vital points in HR dashboards / visualisation eventually supports drilling down MIS report. In earlier time due to manual intervention, one use to take multiple days for generating MIS reports.

With the intervention of technology in HR function, organisations are able to generate important data pertaining to talent acquisition and development, on boarding process, training and development, performance management, compliances, industrial relations, etc.

It is proved from the above data and analysis that technological intervention helps in achieving business sustainability in multiple manner.

Attracting competent employees from market, retention of high potential employees, ensuring high level of involvement of various stakeholders, such as employees, customers, suppliers, etc. are few of the benefits organisations have achieved in ensuring business sustainability with the help of technological intervention in human resource function.

Thus, it is evident that in order to ensure sustainable growth for the organisation, it prudently needs to implement a robust and effective Human Resource Management System backed by AI / AR, Business Intelligence and Data Analytics/ Visualisation tools. This shall play a pivotal role in value addition for the overall enterprise. As we know, all the systems / functions are tightly integrated into a ERP like SAP and employee basic information is flowing from HREMS to Planning,

Production, Costing ( FICO ) function to achieve the organisation goal. Digitalisation in overall processes of the organisation makes it competent.

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## Change Management Strategy To Establish Performance Driven Culture

Mr. Atul Badkas

Research Scholar, GH Raisoni University  
Director - Human Engineering Solution

### Abstract:

Human Resources development practices are very important to the bottom-line growth for any organization. The success of business is largely dependent on the strong Human Resources function. The purpose of the research is impelled by the need to empirically test the role of Human Resources Practices with special emphasis and focus on the clarity of role & responsibilities, performance, competency reward and recognition in the junior management cadre employees in one of the continuous batch processing chemical industry. The relationship of junior management cadre – JMC employees is one of the most important set of workforce who execute the orders of management leading to achieving the daily, monthly and yearly targets, improvement in productivity, effectiveness and efficiency. The current research signifies the importance of HR practices from the organization's perspective. The research findings provide insights for implementation and further achieve sustenance.

Most of the research findings have been accepted and implemented as a pilot project for one plant and subsequently for the other plants. By administering the survey questionnaire; qualitative data has been collected and outcome analysis & recommendations submitted to Management for their further action. The gaps identified thereafter shall improve the performance driven culture.

### Key words:

Organization Development, Change Management Initiatives, Driving Performance Culture, Role Clarity and

Competency, Productivity, Reward and Recognition.

### Introduction:

In the era of cut-throat competition and changing customer requirements, the leading organizations are forced to undertake extensive reforms to cope up with upgrading, updating and tapping new business opportunities. Most of the organizations are shifting their focus from traditional Human Resources practices to value creating to all stakeholders and proactively emphasizing on the volatile business environment. To establish the Change Management strategy, the Corp HR, President Operations decided to implement this important Change Management Initiative in one of their plants by identifying the pain areas such as attraction, attrition and lack of Role Clarity and absence of Appreciation, Reward and Recognition.

The HES Company (name changed) with visionary leadership has drawn their Vision – Mission and Values for the Company three years back. The Company has introduced speciality chemicals and other niche products as per the requirement of customers. Developing organization culture is a long-drawn process. It plays a key influencer of the performance and establishes significant source of performance and consistent achievements. The Human Resources strategy not only ensure organizational effectiveness and improves overall efficiency but also enhance human capital's involvement in change management initiatives that determine performance driven culture.

The Company's consolidated total income is INR 4265CR for the FY 2019. The

HES Company (name changed) considers its employees as most valuable resource and ensures strategic alignment of Human Resource practices to business priorities and objectives. The Junior Management Cadre (JMC) employees are termed as executors. Their performance matters and has direct impact on the top line growth. Attracting, developing and retaining the right talent and keeping them motivated is one of the focus areas of Human Resources function. Build the performance driven culture will continue to be a key strategic initiative and the organisation continues to be focused on building up the capabilities of its people to cater to the business needs. Given growth plans of the Company, an important strategic focus is not only nurturing its human capital, but also proactively focus on preparing all employees for the challenges of the future. The Company's continued efforts to provide a healthy, conducive and competitive work environment to enable the employees excel and create new benchmarks of quality, productivity, efficiency and customer delight. The Company always believes in maintaining mutually beneficial, healthy and smooth industrial relations with the employees and the Unions by having continuous dialogue and communication. The blue-collar employees are an essential foundation for the success of any organisation and the proactive initiatives taken have ensured that there is no friction resulting into smooth, cordial and trusting Industrial Relations.

#### **Research Scope:**

- A) Selection of plant operations, where headcount strength of JMC is maximum.
- B) The performance driven culture has to be established to drive business growth.
- C) Identified pain areas are on higher side.
- D) Potential of horizontal - vertical growth and acceptance among employees is high for change initiatives.

#### **Research Objective:**

1. To establish performance driven culture in the organization.
2. To provide career progression path for Junior Management Cadre.
3. To Develop System of Performance Evaluation and Employee Development - SPEED™ framework.
4. To Identify and develop Skills & Competency inventory for Junior Management Cadre - JMCs
5. To Develop Steps Towards Appreciation & Reward & Recognition – STAR™ framework.

#### **Methodology:**

The strategy to design the research has been adopted by collection of data by way of questionnaire from target group and focused group discussions with their superiors. A simple random sampling method has been used with entire pool from which the statistical sample has been derived. To substantiate the results further; a systematic sampling method has been used.

The data collection is of primary nature where the data has been collected first hand for necessary analysis and recommendations to client company.

Process steps: Developing Skills & Competency Framework.

Step 1: Design Job Description as per Organogram

Step 2: Develop Position wise Job Roles.

Step 3: Incorporate desired Skills & Competencies for Job Roles.

Step 4: Identified Gaps - desired VS actual (incumbent position holder)

Step 5: Develop Skills & Competency Directory for department & then incumbent.

From the above, it can be concluded that Human Resources function seems to be focused towards enhancement of skills and competency that defines the career progression of employees. The intentions of Company Management are very loud & clear in terms of their focus on retaining the talent.

Process Steps: Defining Job Description – From the below figure 2; it can be observed that Job or Role Description is a very important & fundamental step. It defines employees about their output and performance. If Job description is not clear to employees or in other words if the expected outcome is not known to employees, then employees are confused and get dis-engaged from work. To establish certainty in commitment towards organization and thereby the retention is guaranteed as employees are aware about expected contribution. They are also aware about opportunities & growth path career progression.

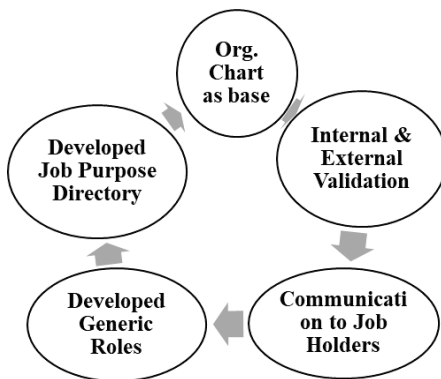


Figure 1 – Defining JD

Process Steps: System of Performance Evaluation and Employee Development - SPEED™ framework

A performance management system works towards the improvement of overall organizational performance by managing performances of teams as well as individuals for ensuring achievement of overall organizational ambitions and goals. An effective performance management system can play a very crucial role in

managing the performance in an organization by:

- Ensuring that employees understand importance of their contributions to the organizational goals and objectives.
- Ensuring each employee understands what is expected from them and equally ascertaining whether the employees possess the required skills and support for fulfilling such expectations.
- Ensuring proper aligning or linking of objectives and facilitating effective communication throughout the organization.
- Facilitating a cordial and a harmonious relationship between an individual employee and the line manager based on trust and empowerment.

Performance management practices have positive influence on the job satisfaction and employee loyalty by:

- Regularly providing open and transparent job feedback to the employees.
- Establishing a clear linkage between performance, progression and compensation
- Providing ample learning and development opportunities by representing the employees in leadership development programmes, etc.
- Evaluating performance and distributing incentives and rewards on a fair and equated basis.
- Establishing clear performance objectives by facilitating an open communication and a joint meaningful dialogue.
- Recognizing and rewarding good performers at appropriate platforms.
- Providing maximum opportunities for career growth.

An effectively implemented performance management system can benefit the organization, managers and employees. Viz:



<p>Organization Benefits</p>	<p>Improved organizational performance, objective assessment, employee retention and loyalty, improved productivity, overcoming barriers in communication .Clear accountabilities &amp; cost advantages.</p>
<p>Manager’s Benefits</p>	<p>Ensures efficiency &amp; consistency in performance. Saves time and reduces conflicts, identify strengths / opportunities for development. Establishes 2way communication</p>
<p>Employee’s Benefits</p>	<p>Opportunity to simplify expectations, self-assessment opportunities, clarify job accountabilities and contribution to improved performance, clearly defines career paths and promotes job satisfaction.</p>

Clearly defined goals, regular assessments of individual performance further helpful in defining major skill and competency gaps which in-turn serve as a useful input for designing the training and development plans for the employees.

Sampling & Data Collection:

This research is limited to Junior Management Cadre employees from one single location. The respondents chosen from all sections and departments. Similarly, from all shifts and without any gender bias, age, experience, qualifications etc.

To ascertain facts, random sampling method was chosen and questionnaire developed on 5-point scale i.e., Strongly agree being highest to strongly disagree being lowest. The questionnaire is clustered into 5 major areas as desired client company.

Cluster 1 = Titled as JDs Importance to Position Holders. 10 questions group (Q1, Q2, Q3, Q4, Q6, Q7, Q9, Q10, Q11, Q12)

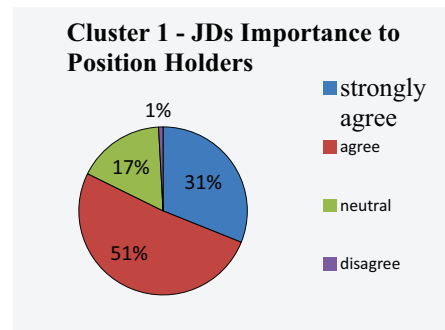
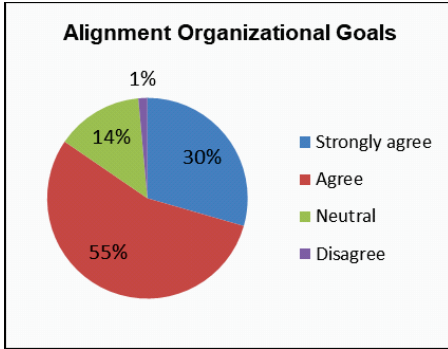


Figure 2

Interpretation / Analysis: Out of the sample size of 435 participants; 51% employees agree and 31% strongly agree to importance of Job Description to position holder. In all, 82% i.e., 357 employees agree to the importance of JD which plays vital role for performance driven culture.

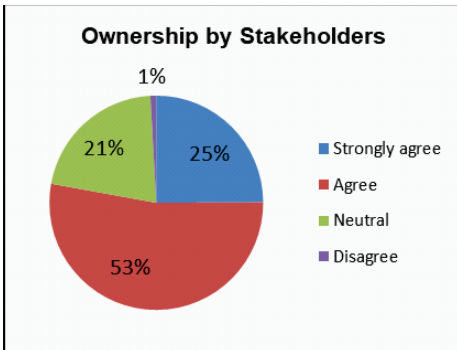
Table 1

Cluster 2 = Titled as Alignment to organization Goals. 05 questions group (Q12, Q15, Q16, Q17, Q24)



**Figure 3**  
 Interpretation / Analysis: Out of the sample size of 435 participants; 30% employees agree and 55% strongly agree that performance driven culture has alignment to organization goals. In all 85% i.e. 370 employees agree the five questions clustered in alignment to organization goals.

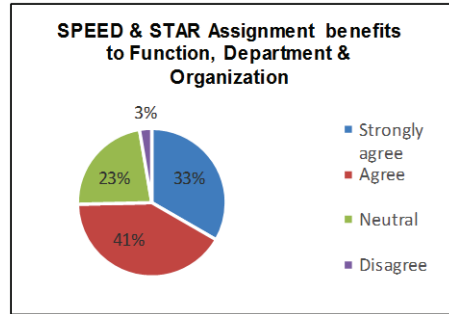
Cluster 3 = Titled as Ownership by Stakeholders. 06 questions group (Q5, Q13, Q19, Q20, Q21, Q22)



**Figure 4**  
 Interpretation / Analysis: Out of the sample size of 435 participants; 53% employees agree and 25% strongly agree that it is the ownership to be taken by stakeholders. In all, 78% i.e. 339 employees agree that it is the responsibility to take the ownership by stakeholders for establishing the performance driven culture by these change

management initiatives.

Cluster 4 = Titled as SPEED & STAR - Benefits to Function, Department & Organization. 03 questions group (Q8, Q18, Q23)



**Figure 5**  
**Interpretation / Analysis:** Out of the sample size of 435 participants; 41% employees agree and 33% strongly agree that change management initiatives to establish performance driven culture is beneficial to their own Function, Department and Organization.

**Findings & Conclusions:**

Most of the medium and large size organizations focus on the people development and achieving the business targets. Many of the organizations have structured approach and efforts are directed towards establishing the Performance based Culture. In few organizations, senior and middle level management cadre employees have been covered in the “Performance Based Culture”. However, the junior management cadre employees who are the backbone of growth engine have been missed out. There is always high level of attrition, deviations in following SOPs, non-contributory approach and ownership etc. has been observed.

It is concluded that the process of change management initiatives; communication, connect and clarity, if provided to junior management cadre employees, these sections of employees get motivated to perform better. The contribution of this

section of employees valued by organization and by way of launching of appreciation, recognition and reward policies, the retention and longer stay is ensured. These JMC employees get training and development opportunities and thereby advancement in career progression.

To enhance the organizations' wider performance; strong people process is essential. To build a performance-based culture, supporting infrastructure and involvement of all stakeholders is must. Most importantly, the people who will be holding the torch to implement these kinds of assignments must be dedicated to achieve the desired results.

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**Abbreviations:**

HES Company: Name of Company (name changed)

JMC – Junior Management Cadre

SPEED™- System of Performance Evaluation and Employee Development

STAR™- Steps Towards Appreciation & Reward & Recognition

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## Cybercrime And Cyberpsychology For Business Sustainability

Ms. Risha Sarkar  
MA Clinical Psychology,  
Amity University, Noida, India

Ms. Gunjan Singh  
Visiting faculty, AIPS,  
Amity University, Noida, India

**ABSTRACT** – The cohesive application of technology to combine software systems with development, production objectives and fundamental facilities has extracted prospective advantages. Technological innovations have entitled corporations to aspire about strategic subsets for economic, social and environmental sustainability while achieving exceptional business potential to serve organisational as well as societal goals. Big data analysis, artificial intelligence, edge computing and robotic process automation are some of the technological trends that has swept business strategies with sustainable decision making, data analysis and management, reinforcing sustainable business aspects and inducing financial sources. At odds with the benefits, the exposure that technology in business provides, is menacing and substantiates the vulnerability of these technological trends. Cybercrime is typical to organisations, varying in ways and targets of attacks. It is ultimately user-enabled, specifically due to decipherable behaviour patterns, the absence of vigilant cyber security and education across organisations. The susceptibility of employees is exploited by third party routes, indicating that they can be a great risk to cybersecurity in business not controlled properly. Using the resource-based review as the conceptual fundamental, this manuscript develops a framework of human behaviour in cyber and information security and the contribution of human resources to control the risks of cybercrime in organisations and protect end users. Lastly the paper highlights the importance of having an

organizational Psychologist to aware employers and employees about the psychological impact of cybercrimes and the relate symptomology. It's an attempt to propose a theoretical framework for both HR's and Organizational Psychologist to execute and practice the INDRODUCE, SENSISTIZE AND CREATE MODEL to attain better Business sustainability.

**KEYWORDS** – Technology, business sustainability, cybercrime, human behaviour, edge computing.

### I. INTRODUCTION

In laymen terms, technology may be simply defined as the implementation of empirical information to deal with pragmatic industrial needs and scientific innovations. The incorporation of technology in business began in the early nineteenth century with the use of revolutionary instruments of business. The use of electricity as an energy source and means of communication like telephone accelerated the processes of the business syndicate and helped access other opportunities in the arena of transactions and communication. The desirable and insistent benefit can be achieved by organisations through planned and calculated use of technology. This requires effective uses of human resources who can ensure an organised and systematic use and planning of technological assets to sustain the organisations' needs for present and future requirements, respectively. The proposition of technological road-mapping has been progressively followed in corporations to promote revolutionise the interactive application and growth of

of business and technology, advantaged by advanced communication structures. This has enabled partnerships among people from business and administration to tackle affairs of sustainability while creating organisational breakthroughs. The absolute consolidation of technological evolution in our lives, over decades, has obscured the threats posed by them.

Cybercrime is a global risk, prompted by unsafe internet browsing methods by uniformed users, executed by organised partnership with the intentions of inflicting significant losses of assets and information.<sup>14</sup> The easy accessibility of internet and confidentiality of behaviour of criminals present cybercrime with minimum difficulties.<sup>21</sup> This additionally complicates the process of tackling these attackers, challenging the security of business organisations and customers.<sup>19</sup> During the 1990s, the victimization of cyberspace users was as a result of weak security of system networks within organisations with divulgeable access codes. A modern cybercriminal attempts to strike its victims with infected malware, unwillingly downloaded on computers via spams, fake websites, Wi-Fi compromises, compromising web-based databases, trojans, human errors, etc. This enables the criminal to access information and affect economic security or even remotely operate the business systems.<sup>4</sup> Considering the significant differences of cybercrime over time, a number of factors can be associated with them:<sup>25</sup>

**Intention** – With the general correlation to criminal behaviour, cybercrime was previously incited by trouble making teen hackers with the provocation of beating the system, or boosting one's own ego, engaging with easier to perpetrate legitimate organisations or individuals. A characteristic that has been replaced is that, cybercrime is currently driven by financial gain, spying, revenge, and beliefs.<sup>22</sup>

**Means** – These attacks are technology

based, however, differing in the methods of infiltrating into systems through functional malware. While incorporating the technological aspects through automated tools and modifying malware variants, another feature that may be included is social engineering, targeting specific victims based on their internet behaviour.

**Impact** – The fundamentals of cybercriminal impact is both social and psychological, depending on the users' perception of risk and fear which may lead to changes in behaviour, if systems are interrupted, data is lost or compromised, or occurrence of other undesirable consequences.

At present, the association of cyber criminals have adopted to flexible working environments, with the absence of fear of get detected easily, even to the extent of befriending employees. A recognisable proportion of organisation workers are lenient over protecting information, thus accidentally sharing critical information and falling prey to phishing and frauds.<sup>20</sup>

## II. REVIEW OF LITERATURE

The purpose of this paper highlights the complexity of managing human factors in information security. Studies conducted have depicted technology and human behaviour are the leading contributors of security shortcomings.<sup>5</sup> Technological contrivance alone cannot remove targeting of cyber security, but rather addressal of poor human behaviour as a significant degradation to malicious cyber-attacks needs to be administered by organisations.<sup>27</sup> In 2005, Shultz described that human behaviour has been undermined in protecting information or business approach. This has been followed by trivialising of organisational databases, faulty transactions, data theft or even jeopardising national security.<sup>23</sup> The uncertainty of human actions requires construction of behaviour models in organisations to understand the stance of human errors in cybercrime and prevent

them. These models need to recognise both employee and criminal courses of conduct to expand security measures.<sup>20</sup> Artificial Intelligence (AI) has the capacity to assess significant amount of data and scan for security and information threats, to the point of preserving organisational safety. However, AI itself requires human intervention in order to operate and upgrade to mitigate areas of future attacks.<sup>3</sup>

The Wall Street Journal in 2019 reported that a sum of €220,000 (\$243,000) was gained after an AI software was used to mimic the chief executive's voice demanding the fraudulent transaction. Law enforcement authorities and AI experts anticipate that attackers would use AI to programme cyberattacks.<sup>2</sup> As the range of cyberattacks are multitudinous, it is nearly unfeasible to identify the patterns of these attacks, thus growing persistent over time. The increase in the size and capacity of data from organisations big and small, it is impossible to resist cyber criminals from hacking and engaging in criminal deception. Big data analytics is created to easily manoeuvre growing volumes of big data, credited to the sophisticated data algorithms of data analytics structure.<sup>24</sup> In 2005, the National Cyber and Crypto Agency in Indonesia established the Indonesian Security Incident Response Team on the Internet Infrastructure / Coordination to acculturate with stakeholders about IT Security, conducting administration, identification and alerting of threats to network security from foreign countries, while protecting network usage and controlling log file databases and internet security statistics in Indonesia.<sup>13</sup> An, Jungkook et al. in their study, elaborated that in spite of the rise in importance of big data analysis to combat cybercrime, researchers have been lagging in identifying the advantages of new and more powerful data-driven analysis methods. They suggested that organizations should aim to obtain a deeper understanding of the nature of the

cybercrime.<sup>6</sup> Odumesi et al., recommends that an integrated approach to fight against cyber criminals and ensure cybersecurity in all consequences in Nigeria.<sup>7</sup> One hopeful option to investigate cybercrime is to use computational forensics based on advanced data analytics to prevent and combat cybercrime. As such, machine intelligence and computer modelling should be an integral part of the investigations. Studies have explained that human behaviour is incompatible and Relationships highly impact human behaviour and lack consistency, with a popular belief that bad things cannot happen with individuals themselves but 'others'. Studies have suggested that employees undertake risky practices and were actually rewarded as they were seen as helpful for allowing an event to take place without applying security measures or practice.<sup>9</sup> The number of malware infections on a machine are related to the number of downloaded, unsigned, and low prevalence binaries for all categories of users. Moreover, software developers appear to be the most prone to malware attacks.<sup>16</sup> While shifting employee behaviour is apex in cybercrime, the lack of cybersecurity education and surveillance in the business are creating a threatening cyber environment for organizations. An amalgamation of software-based security, employee education and vigilance in business is necessary to reduce risks.

### III. METHODOLOGY

This research outlines the descriptive analysis of employee behaviour which plays an inevitable role to enable cybercrime. The qualitative research method is used to review the existing literature in the sub-areas of cybercrime, cyberpsychology and human resources in organisations and produce a framework on a holistic approach to mitigate criminal deception in cyberspace. The nature of human behaviour is dynamic and is limited in quantification and hence, requires a research method for investigating subjects

in daily lives can be recognised, while producing descriptive data so that the details of certain phenomena are studied.

The objectives of this study are to elucidate the relevant aspects of cyber-attacks and employee behaviour, the contributions of machine algorithms and cloud analytics and the role of HR to reduce these attacks in business organisations to maintain corporate sustainability. Pertaining to the goals of the study, this review has been thorough research from digital databases and subjected to frequency counts to fulfil the quality requirements of the research. This paper highlights the role of an organizational Psychologist at a firm and suggests best practices for both HR's and Organizational Psychologist to execute and practice the Introduce, Sensitize and Create Model to attain better business sustainability.

#### IV. DISCUSSION

##### A. Understanding Human behaviour and Cybercrime

Failing security technology in companies has been attributed to erroneous human conduct, lack of following business protocols and risky online behaviour. The human variable places itself in areas of victimization to cyber-attacks while undermining their intensity and putting a company in a threatening position to online frauds. A number of researchers have associated unsafe online actions of behaviour to personality traits. Shropshire et al. (2006) suggested that obeying company's information security agreements is linked to the traits of agreeableness and conscientiousness.<sup>8</sup> In contrast, persons with an extraverted personality trait were more likely to breach such agreements.<sup>15</sup> Another relationship between dangerous employee behaviour and cyber-attacks is the attitudes of employees towards their organisations. They tend to form a risk compensation

framework, where there is a sense of reassurance that protection from the host organisation can prevent compromises in cybersecurity.<sup>10</sup>

Individuals suffering from a variety of clinical disorders including ADHD, impulsive control disorders, borderline personality disorder, substance and alcohol abuse, psychotic disorders, bipolar disorders display impulsive behaviour. A survey conducted by Hadlington to examine the relationship between the three dimensions of impulsivity and risky cybersecurity behaviour (RScB) explained that there is a positive correlation between attentional impulsive behaviour and risky cybersecurity, but there exists a negative correlation with non-planning impulsivity.<sup>10 11</sup> The concept of self-control has been closely studied with perpetrating crime. But the relationship is heavily between low self-control and victimisation while studying crime. According to various studies, people with low self-control are preyed with malware attacks while engaging online. This suggests that employees with impulsive behaviour can suspect cyberattacks more often compared to employees who lack impulsivity.

The size of a company can contribute to risky behaviour of employees. The enormity of a company, its business budget, security and communications network influence the flexibility of employees' engagement online. This implies that the expense factor of a business, to an extent, controls the degree of awareness among employees and their actions in protocol violations. However, studies in this area are limited to produce a generality.<sup>11</sup>

##### B. Role of HR in Reducing Cybercrime

I. Fear Appeals: One form of effective element to achieve the desired consequence in human resource management is fear appeals. In case of violation to information security in businesses, a fear appeal will encourage to control threatful situation, or simply not engage in one by careful and

precise cognitive analysis of such situations. The fear appeal model targets its employees to be cautious while participating in online vents like viewing suspicious mails, links and websites, transaction requests etc. This framework approaches the needs of cybersecurity while assisting employees in danger control to mitigate situations of cyber breaches.<sup>12</sup>

**II. Negative Reinforcement:** Employees, in general, have their options with obeying security protocols and is impacted by their goals, insights and attitudes. They may positively or negatively correlate with company goals, resulting in protocol compliance or conflicts, respectively. Negative reinforcement, given by B.F Skinner in his theory of operant conditioning, includes removing a negative stimulus to motivate a desirable behaviour. For example, employees will be able to protect the information security of their organisation if they refrain from indulging in risky cyber space behaviour. Here, the desirable behaviour, protecting the information security of the organisation is reinforced when the negative stimulus is removed: indulgence in risky cyberspace behaviour. Negative reinforcement is a type of motivational behaviour and can be a potential tool for motivating employee behaviour when implemented appropriately, in organisations. It encourages employees to perform better so they can have an unpleasant condition removed from their work environment.<sup>17</sup>

**III. Behaviour Modification:** Organisational behaviour modification was introduced by Fred Luthans and R. Kreitner to propose a behavioural approach to improve performance for HR management.<sup>18</sup> This includes the identification of behaviours associated with performance, followed by measurement, analysis and intervention.

The behaviour is firstly identified as desirable, undesirable or critical and its magnitude is measured through observation. The measurement of behaviour will help in determining the success in changing the employees' behaviour. At the next step, a functional analysis of the behaviour that requires modification, is done and finally an intervention strategy is prepared.<sup>26</sup> This model of behaviour modification can be helpful in alteration employees' behaviour who have been engaged in impulsive actions online more than once, thus endangering cyber security in a particular organisation.

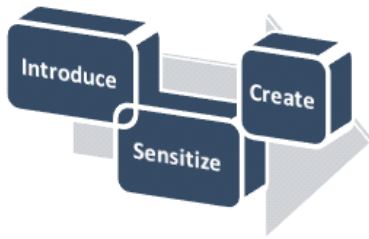
**IV Psychoeducation as a Tool to Empower Employees:** Psycho-educating co-workers and employees about cybersecurity risks may also help the employees to adjust their perception and, subsequently, their behaviour toward privacy. It is essential that psychologists and HR's must reach out beyond the office space and buildings to communicate with the employees via mainstream broadcast mediums like social media and company's online portals and platforms. We must also educate the software developer, lawyer, policymaker and all of us users who are unwitting accomplices of the attacker.

## **V. CONCLUSION**

Individuals are at a psychological disadvantage when faced with cybercrime. They are often not presented with sufficient information to make optimal decisions in privacy sensitive situations. Calculated under this bounded rationality, estimates of risk-versus-payoff parameters are skewed. But even in cases when sufficient information is available, individuals, enticed by prospects of immediate gratification, and under the influence of optimism bias, tend to fall victim of hyperbolic discounting, and assign lower risk values to privacy decisions.



Figure showing the Proposed ISC Model for a better Business sustainability.



By being considerate of human behaviour at work place in cyber-space, mental health professionals like psychologists may use the proposed strategy, the Introduce, Sensitize And Create model for a better cultural and behavioural shifts toward higher security on both the individual and the collective levels by understanding the behavioural economics governing people's perception of risk and reward, in light of the a aforementioned cognitive limitations. Another ideal route to target cybercrime, is to develop an approach where organizations can generate systems which can identify social situations in which individuals demonstrate a higher tendency to discount the risk of sharing private information. These algorithms based on such situations may be further utilised to reduce the rate of cybercrime at an organization. Identifying patterns of criminal and malicious activities through observing deviations from normative behaviour, and interacting with technology providers to develop security systems capable of detecting such activities, taking into consideration the psychological distortion influencing privacy decisions. By advising Policymakers and Legal groups in the company on the psychological and the social impact of cybercrime in order to increase the rules and regulation to a level comparable to that of non-virtual crimes. Delivering such policies at the employee admission will help them know that they may reach out for a better legal help if they become a victim of a cybercrime. Understanding the impact of cybercrime on

victim's behaviour throughout the stages of victimization may also generate a different insight. Organizational Psychologist should understand the symptoms in order to optimize and keep treatment as per the requirement and symptomology of the victims. Sometimes victims feel more affected and associated with the cyber frauds which may result into more severe psychological symptomology like anxiety, depression, panics etc., considering the sensitivity of the symptomology better intervention shall be planned by the organizational psychologist.

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## Changing Pedagogical Methods Leveraging Digital Technology in Management Education

Dr. Anu George

Department of Management Studies Viswajyothi College  
of Engineering Technology

**Abstract**—The last eight months have seen widespread disruption in all walks of life. The regular tasks which had been coloured with monotony have to be done with a lot more thought and there is no more the benefit of hindsight experience. Digital technology has provided the right framework for re-engineering lot of processes. The new normal has necessitates us to think differently about delivering value and also go against the timely habitual methods in every action. One of the beneficiaries of the digital innovations has been the entire realm of education. The challenge is not only of disseminating knowledge to the students but also their ability to absorb content, understand and reflect without the benefit and comfort of a classroom atmosphere, which we have always take as granted. The following paper attempts to dissect the delivery of courses in the management education, digital literacy and takes a closer look at the areas of teaching, digital teaching tools, online classrooms, group interactions and the methods of joint study in these changing times. While, the immediate changes are due to the exigencies brought in by the emergencies of the pandemic, some of the newer methods are here to stay much after things return to normal. The paper also bases extensively on research and interactions with students, academia and the industry using digital platforms. The nature of the research and findings are meant to provide insight to faculty and students alike on the changed normal in management education.

### I. INTRODUCTION

The last one year has been that of

disruptions. Nearly every walk of life has been impacted by the pandemic COVID-19 and these changes have ushered in new ways of working across various sectors in the economy. The ability to make correct judgements and a frame to figure out how to deal with the impending challenges is missing. This is also because no amount of experience taught us how to tackle a medical pandemic and what to adopt in terms of risk mitigation methods. While various industries were affected to different degrees, the objective of this paper is to analyse the changes encountered in management education and what would be the way forward in terms of pedagogical methods and changes which will also set course to the way management education is delivered. Management education has traditionally been addressed as a

‘foundation’ course aligning more to the generalist school. It seeks to combine various streams of knowledge into a cogent structure which enables students to use frameworks to evaluate management situations using multiple lens and to make intelligent decisions based on data, logic and acknowledged management principles. These principles are also articulated in order to address topics in science, humanities, finance amongst others and designed to connect ideas and think in multidisciplinary ways to better manage situations. Classically, education also relies on a lot of interactions and meetings – not just the student – teacher exchange but also the group exercises, case discussions, simulations and the interactions with people from the industry who lend pragmatism and practicality into some of the key decision frameworks that

the students learn. These group interaction avenues help the students visualise a lot of daily life issues professionals face and get an opportunity to debate and discuss topics which are current and contemporary. With the lockdowns and the increase in restrictions of physical travel, classrooms – all methods of pedagogy have been stretched to unplanned limits. Now a student is often a square on the computer (frequently just a black box with name) and not even love on the screen. The teachers lack the ability to get a pulse of what they have understood and what they have not and this also restricts their abilities to gauge the understanding, mood and the unsaid cues from the students. The digital tools have also been multifarious but the primary one has been the video conferencing platforms various colleges have adopted for the classroom activity. These platforms need basic connectivity and students and teachers have logged in using their private networks and devices. Besides the laptops which most students have today, students also log in with their smart phones. The sessions and delivery has some semblance of efficacy but this covers only one part of the learning – the classroom environment, the conversations of the students amongst themselves, the body language of the students, the water cooler banter and the casual interaction between the student and the faculty are left untouched. Added to this, is the question of the ability to use digital tools. A lot of students have experienced social media and are ardent users of websites, adept with internet surfing and use of digital apps. But the complications of online classrooms and the ability to imbibe as much as in a physical setting is very different between students. Digital classrooms need a lot of focused attention than the physical rooms which by nature of it construct helps to focus attention and takes the mind of diversions. In today's management education besides language literacy, numerical literacy and the business lexicon – digital literacy is also vital.

## II. METHODOLOGY

The critical opinion of a wide mix of respondents was gathered with three population sets 1. Corporate professionals

who interact with academia and engage for recruitments and internships 2. Faculty of management colleges 3. Students of management education Three different questionnaires were deployed. The intention was to collect data in a objective Likert scale and also have open ended questions for the respondents where they have given responses which were written by them or collated from what they mentioned in one to one conversations. The questionnaire developed for the students had a set of twelve questions, the set for the management faculty had 15 questions and the one designed for the professionals had 15 questions. Questions pertaining to usage of online education, challenges and opportunities were posed to all. Around 53 useful student responses were elicited,

20 faculty and 15 industry personnel. The author also obtained responses from the industry personnel on a one-to-one basis. The primary areas of focus were to understand the impact of digital technology in the realm of education. The respondents were asked on the effectiveness of the online platform of education, the efficacy of the commonly used platforms. Most educational institutions had switched to the online exam mode which was a totally new experience for the student and faculty and an effort was made to understand how acceptable this was to the academic community. Increased interactions with the industry was recorded during the pandemic and the study addressed the area in terms of perceived usefulness and the willingness of the industry to accept this form of interaction at a heightened pace. Another present day concept that emerged during the pandemic was online projects and internships. An attempt was made to study the same from the student, faculty and industry stand points. All groups were asked to state inherent benefits and evident problems in order that a holistic solution finding be sought and established. The study attempted to discover a potential set of skills that the students would have to develop given the volatile times. Descriptive data was gathered and summarised to proffer meaningful conclusions. The questions and the forms are attached in the appendix.

### III. DISCUSSION

The student community were largely neutral to the questions of online instructions being the new normal in education, and to the question whether the current blend of digital tools compensated the absence of physical classes. Students are warming up to the fact that online exams are a reality and welcomed the mode, it will be a challenge to teachers to keep the questions creative and individualised. Interestingly only 57.9% of students were of the opinion that the increased mode of online education will not help to maintain the quality of education. This could be attributed to the fact that all their lives, they had been used to the physical classrooms and the transition is not appealing. It would be interesting to pose this to smaller children who were exposed to online education at a much younger age. 47.2% of the students were highly concerned that were not getting enough interactions with their classmates and teachers. While online student projects got a thumbs up, the concept of online student internships were poorly embraced. It could be attributed to the fact that while projects are mostly research based and has less social interactions, student internships are viewed as their window to the corporate world, before actually setting foot in and hence the whole package deserved a offline approach. The biggest challenges faced by the student community was the technical issues of poor connectivity and the lack of open communication during the online classes. The Management teaching fraternity are more open (41.2%) to the concept of online education and believe that the digital tools will serve as abridge in the coming days. They pre-empt a fall in the quality of education, despite being open to online projects, internships and the possibilities of more students standing to gain from making these activities online. The teaching community stands divided on the issue of lower recruitments this year. They are upbeat about areas like higher access to all, education being more affordable, increased empowerment in the teaching learning processes, more exposure to e learning from across the globe. Major areas of worry are the low teacher-student interactions which go a lot more than

mere transfer of knowledge, a concern that content delivery is not exciting and engaging as in a classroom setting, low digital literacy experienced by teachers and students, and negligible face to face evaluations. So the pluses are minuses are evenly balanced according to the teaching community, who also expect the industry to close skill gaps by closely interacting with the student community. The industry representatives 33.3% holding managerial roles in marketing and 33.3% from operations and strategy roles. Around 66.7% of them believe that online education is a way forward and that the digital tools will well compensate for the physical classes. They encourage online exams and see these are continued reality and permanent changes in education. 55.6% expressed concern that the quality of education will be impacted. About 66.6% of them think that the induction content for newbies will need to be altered at the organisation. 88.9% of them said they welcomed more online interactions with the students in the form of talks and webinars. Another similarity with the student community is that around 88.9% of them were positive towards online projects. 44.4% of them think that online internships will not have the desired impact on the students and none of them agree that its a good idea. 88.9% of them think that placements can be severely impacted in the coming years. The concerns raised includes a lack of mastery in self-learning by the student, lack of social interactions, dearth of group learning, no opportunity to manage interpersonal relationships, power and network issues and low digital literacy. Suggestions from the industry included to incorporate as many Adjunct Professors from the industry globally, to handle courses and topics of current relevance, institutes to find more opportunities for industry student interactions, corporate mentors, case study discussions and panel discussions, Industry-B school joint certifications, upskilling led by the industry, develop process notes where management bodies create commitments to the student community in a variety of ways including pre- sending industry problems to students and soliciting interesting solutions.

#### IV. RESULTS

##### A. The Need for Digital Literacy

The digital modes of communication and dissemination of knowledge is here to stay. Students need to learn to grasp more using the medium and the teachers need to modulate their delivery to suit the modalities of the video conference. But there is also a surfeit of apps which makes the process easier. The basic feature if recordings itself is useful for the students to replay the entire class at their convenience. The flip side is also the tendency, to not listen in rapt attention and feel smug that it can be seen and heard later. But such tendencies can be addressed with minor measures like tests and questions. There are also a host of apps for all the associated activities – note taking, voice notes, voice recording questions and converting to text and also using book marks in the classes to mark the significant portions, when they can be replayed.

##### B. Interesting practices to enhance faculty – student interaction

The delivery has also to change to additionally infuse engagement. One of the teachers we interacted with insisted on using live boards rather than power point presentation, using the marking to sum up the content and not just show a summary slide. Another teacher reiterated the need to more questions and asking students to articulate what they have learned during and after these sessions. The basic point is to have the constant reminder that the sessions cannot be a replica of the classrooms but a different mode of delivery with its procedures and modus operandi.

##### C. Interesting practices on industry - academia interactions

Industry interactions often make the difference between a good course and a great course. Students need to constantly bridge the gap between what they read in text books and how some of that is translated into business tasks and activities. For this, it is of high imperative that there is industry exposure through lectures and internships. Ironically, while the pandemic has brought in restrictions, the online access to the industry

leaders has made the discourse richer and there is a surge in the visiting faculty that colleges have been able to muster these days.

##### D. Industry Internships

The realities of a work place is different from what the student conjures in his mind. Internships provide them an avenue to experience some of it themselves. The modern- day version of internships for professionals is a route often explored and now made mandatory in many institutions. The process is always well meaning and hopes the student gets

the best of a ‘corporate experience’. At times the corporates too don’t see the ‘light’ of having interns. Much heard is the laments of interns who complain that they got was warmed- over projects, company propaganda, and lots of social events, where they were but an extra pair of hands. The challenge in pandemic times has been the inability of corporates to entertain and coach students in their premises. But most of the corporates we interviewed seemed to have instituted a process for offline projects where students can bring in a blend of desk research and online conversations to embellish their project time and also learn from the industry guides. Online has also helped corporates engage more students for internships.

##### E. Innovation and learning it

Innovation is clearly important. The ability to understand and modify concepts to the reality of today, need students to be prepared to thinking in lateral and diverse ways from their predecessors and most importantly be ready to adapt as needed. Innovative also needs you to put focus on a positive feedback loop: there needs to be a clear purpose which attracts creative ideas, and a unique culture which nurtures passion in their teams, which drives students to be more inventive. The social impact of the work, the thrill of solving interesting problems, a hue of autonomy, the excitement of collaboration, and the enhancements of one’s skills are all key ingredients to the kind of purpose-driven culture that fosters disruptive innovation. Companies with the greatest innovation rates

often have loftier ambitions and a higher purpose that energizes and unifies its people. This is indeed true for the young professionals too. They need to look beyond simply generating profits for shareholders to creating value for all their stakeholders. The popular examples of Apple removing sales targets and adding customer satisfaction and service to its core metrics are interesting if not audaciously exemplary

#### F. Changing roles of management communication

Communication is also connected to the deeper connection that employees have to their work. Do they see the greater purpose in what they are doing? For the professionals entering into the portals of their careers, it is an interesting challenge. The mindset of an inquisitive student cannot be forgone and it is ability to adapt to new technologies and business models, that will prove paramount in handling change. Ideas have to be articulated a lot better and also with the ability to synergise with digital working models. The power of the individual idea has more premium than ever before. View of the world will have to change as it cannot explain several phenomena which have evolved in the digital era. It is not just technology but how management intuition is configured. The new age managers need to constantly remind themselves that while the foundations of management communication remain the same, the delivery and articulation will have to follow the route of the technological innovations of the day – Content may be the same but the delivery mode will permanently change.

#### V. CONCLUSION

The new normal in education will be an adequate blend of digital tools and the physical classrooms. Both faculty and students will have to pick online collaboration tools which will find symbiotic relationships with course material. An interesting app like Roam Research helps students to connect reference material that they create as notes across subjects. Such connections will also help them, find the relevance of management

frameworks across various subjects and also help them build some structure to whatever they learn. Digital tools will also instil synergy with education and the future employment scenario. The student who enters the portal of employment and entrepreneurship has some baffling puzzles to solve. The traditional career ambitions are sure to be disrupted some of the attractive jobs of today will change in nature and character. The key competency a professional need to nurture today is the ability to unlearn and to learn new things. Perhaps, higher education prepares one for this travail, but it is by no means a clear indicator. Every industry has a ‘technology moment’ and this is the moment for management education in particular. The interesting thing about technology adoption is also the timing. We have seen several instances of right tech at the wrong time. The right time for technology introduction is still a mystery. With so many new technologies around we have presumed that the introduction is now, but that is not always true. While the major fear is about being late in technology introduction, being early in the market is also a worry. There is always a thin sliver between being before your time and being a pioneer. But now we can safely say that the technology moment has arrived! Another concept which emerges is the changing dynamics of work-life balance. In the pandemic time, because of a large number of professionals working from home, the regular working timings have been flouted with work spreading to weekends and late hours in working days as well. Not to sound prejudiced, the concept is on the low ebb now according to the industry respondents we spoke to. We have increased tools of connectivity so much that, we never really shirk off our office space in our minds. Freelancing and part time engagements is another trend we have seen emerging. Freelance is more about the individual resources who have skills, which you require temporarily and they move on – with no strings attached. The new opportunities through connectivity and mobile apps have several companies who match resources with these temporary chores and assignments. This will bring significant disruption in the future.

So, what does all this mean to the youngster entering the portals of work in this decade? For the youngsters starting their careers, there is a new world order emerging and you will be ill advised if do not pay attention some of the following tenets.

- Career planning is the not the responsibility of a distant HR manager in the firm you are working in. It is your and only your core responsibility!

- Have a constant watch on the skills you are adding onto your armour. You are only as good as the skills you acquire and upgrade. You can no longer hide behind the big tag your organisation provides

- Build relationships wherever you work. Careers are mostly like the double merry go round - You will cross the same people quite a bit!

- Look at yourself as a corporation delivering services!

- Whichever way the future pans out, whatever the industry drums up, the business will see less of 'loyal employees' and more of self-reliant corporate citizens.

- While placements will still figure high on the 'key performance metric' for every management college, the point to realise that the roots of these lie in enhanced student experiences and their ability to understand and cogitate about the world around them. The fundamental motto should be to enable them to take on the changing world around them. For these temples of higher learning are to prepare them for life and not just make them earn a living. Placements, endowments, higher ratings - will always follow.

Management education is often the last engagement opportunity to prepare our youth for a vibrant, fast changing future. Lifelong learning and the ability to assess, value and embrace change will remain fundamental to their trysts in various careers and streams. The large changes that we need are more fundamental than the issues of digitization and the emerging technologies. We need to focus on much more basic things to modify and implement.

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## Influence of Technology on Job Insecurity Among Employees of Manufacturing Sector

**Ms. Karen Maria Rajam A**

Student - Master of Social Work  
(Human Resource Development and Management),  
CHRIST (Deemed to be University),  
Bengaluru, Karnataka, India

**Dr. Princy Thomas**

Associate Professor – Department of Sociology  
and Social Work, CHRIST (Deemed to be University),  
Bengaluru, Karnataka, India

**Abstract-** In today's world, technological advancements are moving in a mammoth pace with the advent of Artificial Intelligence (AI), Robotics, Machines, Applications etc which has resulted in the creation of new jobs and skills which are highly sought after but it can also impact some workers whose jobs are redundant and repetitive in nature. There is a higher chance of their jobs getting automated and getting replaced by new technologies. The purpose of this research is to find out the level of impact posed by technological dimensions on job insecurity of employees who are working specifically in manufacturing sector in India. The study followed a quantitative approach and descriptive research design with a sample size of 125 employees working in manufacturing sector. Validated and Standardized scales such as Perceived Usefulness, Perceived Ease of Use, Technology Adoption, Techno Insecurity and Job Insecurity was used to collect data. The study concludes by embracing technology as an opportunity to redefine and reinvent processes by both employees and organization in order to sustain business. The result of this study will help organizations to revitalize their current onlooking of technological advancements to make them flexible and ready for the future. It will also help the employees to understand how they can approach and feel secured in the presence of new technologies.

**Keywords-** Job Insecurity, Technology, Automation, Industrial 5.0, Job Security, Job loss fear, Technological advancements

### I. INTRODUCTION

In today's world, technological advancements are growing in a mammoth pace. When we look a decade back, one can understand that there were no technological inventions as such. But today we have technologies which makes our lives simpler and easier. It has also evolved in the modern world with the advent of Artificial Intelligence (AI), Robotics, Machines, Applications etc which has created a variety of new jobs and skills which are highly sought after. In particular technological advances despite many benefits, have altered job tasks and demand for certain types of work [1]. Jobs which are redundant in nature are highly susceptible to automation. The presence of robots and AI are increasing rapidly in the past few years. Robots saves cost and finishes the work output with much accuracy than humans. A human's labour is limited in a day but robots can work uninterruptedly. When we take manufacturing sector in particular, we can clearly understand that blue collared workers who are working with machines and equipment's in factories are high at risk. Also, white collar jobs such as managerial or executives have some risk factors of getting their job automated. Every job or skill is finding a technological alternative in present scenario to get the work done simpler and faster.

When we think of Human Resource jobs the current trend has become technology driven. For instance, in recruitment AI based interviews are conducted to screen the candidates, trainings have become virtually enabled and gamified, queries are addressed by chatbots, performance management, employee engagement,

motivation, job satisfaction are monitored through analytics and metric patterns. Each and every department in the organization has technological advancement opportunities. Robots are taking over receptionists and cashier's jobs in some organizations. When it comes to manufacturing industries, robots and machines are highly capable of doing the shop floor work of employees with more accuracy, less man power and time saving. For instance, a single programmed robot can finish the assembly of a component in a fraction of minute rather the same component when its assembled by three or more workers with longer duration.

Some employees are reluctant and fear to learn and adopt to new age skills and technologies. Each and every person has some kind of lag when it comes to handling technologies. A Generation X person can struggle to operate computers/laptops or even smartphones unless they have got experience in handling it as they might have started to work before 30 years ago, where technological advancements were absent at that time. Workers who are illiterate or has low educational background might fear to adopt when they are introduced with new technologies. Generation Z workers don't face struggle with technologies as compared to Gen X or Y persons as they have grown up with technologies. But still, some Gen Z people struggle to learn software programs, applications in the evolving environment when they have no opportunities to learn or when they are not skilled enough to adapt to it. We must try to find out what causes or motivates people to accept or reject technology. There are two main determinants as per studies which were conducted earlier. The first thing is people decide whether to use an application or not based upon a belief that it will help in their job to perform better in simpler term the level of usefulness [2],[3],[4],[5]. This can be referred as perceived usefulness. Second thing is people can use or reject technology based upon their belief if they think an application can be easy to interact or work with or in simpler terms the level of usage. This can be referred to as perceived ease of use [2],[3],[4],[5].

Perceived ease of use of technology must be

studied to know if the workers find technology easy to use and work with. Usefulness of technology must also be found out when they work with technologies say programmes, machines or robots etc. Because it depends upon the technology, they use for instance in manufacturing industry a worker must adopt programming for machines in their day-to-day work or they must handle robots or when a person who is not well versed with using technologies such as computers are given with a work to update and analyse data in a computer.

This study is about the influence of technology that has a possibility to lead to job insecurity. This study is conducted to understand the influence that manufacturing sector create in terms of technological advancements that would lead to automation and disappearance of specific jobs. It also results in people to be susceptible to technological or automation wave. This study will also analyse all the possible dimensions of technology to find out the impact on job insecurity.

## II. REVIEW OF LITERATURE

Job Insecurity is the powerlessness to maintain desired continuity in a threatened job situation [6]. There are different consequences identified by researchers when they feel job insecurity which includes job dissatisfaction, proactive job search, noncompliant job behaviours [7] high level of stress and anxiety for employees [8].

The acceptance of technology [9] and fear of job insecurity [10],[11] is a discussion topic among researchers. [12] conducted a study to provide insights to organizations and individuals on the reality of technology readiness and adoption. The cross-sectional study analysed 341 Arab workforces (Millennials and Gen Xers) about the extent to which they are fearing job loss due to technology and investigates the impact of age. It is found that the level of job insecurity due to technological advancements were very low among the Arab workforce. It was evident that technological advancements differ from country to country. According to [12] generational differences had no effect on tech-related job insecurity. Job threats vary

based the job positions, qualifications, professional level and type of job. [13] studied a car component factory and found that workers who did only elementary studies or did not pursue studies perceived new technology was posing a greater threat to job security, than did those workers with a higher education. Employees belonging to automated department perceived a lesser degree of threat to job security than those employees belonging to the department that was still undergoing its initial stage of automation. Employees who held positions of lower professional level (specialists) had a more negative perception of the introduction of technology in their work place than did those who held positions of higher levels of qualification. Workers who used non-computerized technology (mechanics) considered the introduction of new technology to be more threatening than did those workers who employed a computer-based technology.

It is also found that specific job characteristics and automation leads to job insecurity [11]. Employees with automation-proof skills are needed are also less likely to be concerned about other causes of job insecurity. The results suggest interpersonal skills are important, as having a job that requires significant personal interaction is strongly associated with lower concerns about job loss. Having a repetitive job is found to be associated with a higher concern about being replaced by machines and computer programs. The data further show that the vast majority of those concerned about automation are also concerned about the security of their job for other reasons. Moreover, those who do fear automation are typically equally or even more worried about other reasons for job insecurity [11].

[14] identified the four main areas of employee concerns which can happen due to the implementation of robots. Some of the areas are General Robotics Orientation, Job Security, Management Concern, and Expected Changes. The study perceived that the employees in different job classes would have different perceptions regarding the planned implementation of industrial robots. Low-skill line workers were anticipated to be

concerned about displacement and the security of their jobs, whereas high-skill employees were expected to find new opportunities salient and to feel less threatened by job loss. There was a tendency for some line workers to believe that their jobs would be more socially isolated than at present, in comparison with the job setters, and skilled traders. Finally, some respondents believed that there would be little change in their jobs [14]. All these studies show that technology implementation create job threats to employees. Therefore, we hypothesize that Technology has an influence on job security.

### III. RESEARCH GAP

Today the world is becoming more and more aware of industrial 5.0. Evolving technologies and advancements have both positives and negatives associated with it. The phenomena of job insecurity which can happen due to automation is less explored in research studies. Hardly any research study can be found on the impact of technology on job insecurity. This study is one of a kind which captures the insights from employees working in manufacturing sector of India on how they see and approach technologies at their workplace.

### IV. OBJECTIVES

The present study has the following objectives,

- To study the perception of job insecurity level of employees.
- To study the relationship between technology and job insecurity.
- To study the influence of technology on job insecurity among employees working in manufacturing sector.
- To suggest the companies and employees to take steps so as to face and sustain in the emerging trends.

### V. HYPOTHESIS

- Hypothesis 1 (Alternate): – There is an influence of technology on job insecurity
- Hypothesis 2 (Null): – There is no influence of technology on job insecurity

## VI. METHODOLOGY

The study is quantitative and descriptive in nature. Purposive sampling technique was used for the sample of the study. Participants were informed about the objective of the study. No reference to the names of the respondents and the company is done for analysis and reporting purposes. Around 125 responses from the participants were received who were working in Manufacturing Sector in India. The primary data was collected through validated questionnaires by circulating in Google Forms to acquaintances, friends, relatives, colleagues, neighbours who knew or associated with manufacturing sector employees. Self-administered questionnaire was used to collect the socio demographic details of the respondents like gender, age, education completed, sector, employment level, job title, year of experience (in current company) and total years of experience. The following validated questionnaires from different researchers were used to collect data. Perceived Usefulness Scale (PU) – David (1989) Perceived Ease of Use Scale (PEU) – David (1989) Technology Adoption Scale - Axelle Meouchy (2019), Techno Insecurity Scale – Tarafdar (2007) Job Insecurity Scale – De Witte (2000). Respondents opinion has been recorded using 5-point Likert scale ranging from 1- Strongly Disagree, 2 – Disagree, 3- Neutral, 4 – Agree, 5 – Strongly Agree. Reverse Scoring was taken into consideration. Based on the data collected through the questionnaire, several statistical tests were performed on the data such as Normality test, Spearman's correlation and Regression analysis. SPSS Version 26 was used to perform quantitative data analysis. Microsoft Excel was used for presenting charts for better understanding of responses received.

## VII. DATA ANALYSIS AND RESULT

Out of the total 125 employees, 66% consists of them were in the age group of 18-27 years 16% of them were in the age group of 28-37 and 10% were in the age group of 38-47 years and 9% of them include 48-57 years. The sample consist of 82% Male and 18% females. In most of the manufacturing sector,

the number of male employees is comparatively higher than female employees.

TABLE I  
Test of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Job Insecurity	0.150	125	0.000	0.965	125	0.002
Technology	0.079	125	0.052	0.945	125	0.000

a. Lilliefors Significance Correction

Normality test was conducted to find out if the data is distributed normally or not. Job insecurity and Technology (total score of four dimensions) was taken to test. Table I indicates that the data is not normally distributed ( $p < 0.05$ ). Considering the non-normal distribution of the data, non-parametric tests are used for analysis.

TABLE II

The sample consists of 45% of under graduates, 26% of diploma holders, 25% of post-graduates, 3% of them completed 12th standard, 1% of them completed 10th standard and 1% of them completed Ph.D. The sample consists of 42% of middle level employees, 40% of junior level employees and 18% of them were senior level employees.

The employee's perception about job insecurity vary among the manufacturing employees. 41% of employees disagree about job insecurity, 24% of the employees strongly disagree about job insecurity, 22% of employees are neutral about job insecurity, 11% of employees agree about job insecurity and 2% of employees strongly agree about job insecurity

	Mean	Std. Deviation	N	Job Insecurity	Perceived Usefulness	Perceived Ease of Use	Technology Adoption	Techno Insecurity
Spearman's rho								
Job Insecurity	9.03	3.105	125	1.000	-.208*	-.189*	0.147	.608**
Perceived Usefulness	35.78	5.262	125		1.000	0.100	-.362**	-.0110
Perceived Ease of Use	18.91	1.996	125			1.000	0.166	0.147
Technology Adoption	43.31	5.254	125				1.000	.336**
Techno Insecurity	14.04	3.073	125					1.000

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Spearman's Correlation test was done to analyse the correlation between Job Insecurity and Technology where it is divided into four dimensions namely Perceived Usefulness, Perceived Ease of Use, Technology Adoption and Techno Security. The dependent variable is Job Insecurity and the independent variable is technology (combined with four dimensions).

Table II shows that,

1. The dimension Perceived Usefulness (-.208) has a negative correlation on Job Insecurity which is significant at the level of 0.05
2. The dimension Perceived Ease of Use (.189) has a positive correlation on Job Insecurity which is significant at the level of 0.05
3. The dimension Technology Adoption (0.147) has no correlation on Job Insecurity
4. The dimension Techno Insecurity (.608) has a positive correlation on Job Insecurity which is significant at the level of 0.01
5. Out of four dimensions three dimensions are correlated and one dimension is not correlated. Since the majority of the dimensions has correlated, it can be said that there is a significant relationship between the two variables which is technology and job insecurity.

TABLE III

Regression Coefficients

	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Beta		
(Constant)	-1.341		-0.504	0.615
Perceived Usefulness	-0.044	-0.075	-0.904	0.368
Perceived Ease of Use	0.238	0.153	2.049	0.043
Technology Adoption	-0.019	-0.032	-0.363	0.717
Techno Insecurity	0.589	0.582	7.273	0.000

Note: Adjusted  $R^2 = 0.363$

a. Dependent Variable: Job Insecurity

b. Predictors: (Constant), Techno Insecurity, Perceived Usefulness, Perceived Ease of Use, Technology Adoption

Regression analysis is performed in order to understand the magnitude of influence created by independent variable on dependent

variable. Here, the four dimensions of technology are taken separately for analysis. Table III shows that the adjusted R square value of the analysis is 0.363 which shows that 36% of the job insecurity can be explained by Perceived Ease of Use (Beta=0.153,  $p=0.043$ ), and Techno Insecurity (Beta=0.582,  $p=0.000$ ). The dimensions perceived ease of use and techno insecurity has a direct influence on job insecurity as  $p < 0.05$  and the dimensions perceived usefulness and technology adoption has no influence on job insecurity ( $p > 0.05$ ). The results show that there is an influence of technology on job insecurity.

### VIII. DISCUSSION

Technology has become an essential now in our day to day lives. It has made our lives so easier. Even though the introduction of new technologies has positive outcome majorly it also has negative attitudes associated with it. When we see from an organization's perspective, companies must look into their structure deeply to be flexible for transitioning the technological changes. Hence, organizations must be future ready and be open for adapting new technologies into work force. Companies must take utmost care and notice to train employees of all levels when a particular technology is introduced at their workplace.

The study reveals that technology has an influence on Job insecurity of employees. Jobs which involved more personal interaction reduces the fear of losing job because of automation [11]. When a proper training is done with regular workshops for learning the new technology deeply, employees won't feel insecure about the knowledge they possess for operating a particular technology. Different types of training methods must be put into force for training the employees to adapt to the new technology. This will help the employees to feel confident about working along with technologies and it won't create a fear to use it. It will also help the employee to see the technology positively by making them realize the value of using it for their better work results.

An individual or an employee must understand the value of technology and try to maintain a stability by constantly educating themselves about new technologies and new skills which have emerged from it. Familiarizing themselves and becoming skilled with technology always has an upper hand at everything. When a person or an employee is willing to be open to adapt and learn new technologies, there is no place for feeling insecure about losing their jobs to technology.

### IX. LIMITATIONS

There may be some possible limitations in this study. The data was collected only from manufacturing sector employees excluding other sectors. Since, the data was collected online and quantitative in nature it was difficult to reach all levels of employees and interpreting their raw reactions on perceptions of job insecurity and technology.

### X. SCOPE FOR FURTHER RESEARCH

The scope of future research for this study can be made by examining job insecurity by differentiating between industries and to research deeply about a specific job level or job type with a larger sample size. As technology becomes more powerful, organizations will rely less on some kinds of workers, such as blue-collar workers and workers that perform routine and mundane tasks, which can easily (and already have started to) be automated. Qualitative study can also be done for understanding the reasons, opinions and thoughts of employees. An interesting future study would be a comparative one measuring job insecurity level of workers from different industries/sectors, as well as workers at different hierarchical levels of the organization.

### XI. CONCLUSION

This research studied different dimensions of technology to find out if it creates job loss fear or insecurity in employees. This research study found out that employees working in manufacturing sector are feeling insecure or fear about their job security due to technology.

Technological advancements are happening rapidly and it has become irreplaceable in a human's life. Although technology can automate some jobs, we must understand that it can't ever replace the place of human beings. The technological revolution which is happening is not a battle between human being and technology rather these two factors will always be interdependent on each other. Without the latter one can't survive or operate efficiently. Technology can make its way into the work environment or running an organization at any time as the world progresses day by day.

If organizations are not willing to adapt or be ready for the future, there is a higher possibility of going obsolete and lose their place in the market of their competitors. When we look from an employee's or individual's perspective, a person who is skilled and who has the ability to keep up with latest technologies are always ahead up of others in competitive aspects. Even though technology can disrupt work force and automate jobs, the human being has the supreme power than technology. A person skilled at technology can successfully control and win over it as technology is only an outcome of a human mind and it cannot become a conqueror of human brain and intelligence.

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## HR Technology as an Enabler for Redefining Organizational Sustainability

Ms. Jhilmil Das  
GRSE Ltd, Kolkata, India

**Abstract:** The Human Resource Management (HRM) function has been found instrumental in order to provide a comprehensive framework for creating a culture of sustainability and environmental stewardship across organizations. Sustainability has increasingly been considered as the business imperative and organizations have made significant investments in this front. Business sustainability from the point of view of HRM is a management and leadership philosophy which enhances the financial factors in the organizations. Business models are changing globally after embracing digitalization. Digital transformation has resulted in enhanced social and environmental outcome, leading to rapid progress on the diversity and inclusion (D&I) agenda at the workplace. Current technology solutions can be an enabler in increased D&I framework. The increased demand for business sustainability validates the pressure on organizations to promote D&I technologies in order to cultivate diverse workforces with inclusive cultures. The study is based on available secondary data sources, viz. internet, company website, social media, blog sites etc. The study outlines the impact of HR technology to achieve the business outcome of organizations through sustainable employee practices. This is the first such study in the area of D&I technology and business sustainability.

**Keywords:** digital transformation, technology, sustainability, HRM, D&I

### Introduction

The Human Resource Management (HRM) function has been found instrumental in order to provide a comprehensive framework for creating a culture of sustainability and environmental stewardship across organizations. Diversity and inclusion (D&I), has emerged as the top talent management priority for today's organizations in order to achieve sustainable business practices<sup>1</sup>. While inclusion facilitates organization to create a viable work environment and culture which values differences, respects and leverages individuals without biasness, on the other hand, diverse teams helps to provide wider perspectives and boost performance and innovation. Studies reveal that organizations with an inclusive company culture are twice as likely to excel in their financial targets, six times more likely to be agile and eight times more likely to achieve better business outcomes than their counterparts.

The pandemic has hit organizations globally with severe disruption and daunting impacts leading to huge disruptions in people practices. This has further enforced huge change in the established business processes and practices of organizations with technology at the center of such transitions, leading IT and HR teams to collaborate and ensure seamless work deliveries through implementation of the requisite technology infrastructure. Organizations have increasingly shifted focus to train their employees on new technologies like Analytics, AR/VR and Artificial Intelligence, Robotics etc. The transition towards digitization strengthened the



collaboration within and across teams, which led to more productive work routines, reinforced and healthy work practices, which further aims to translate into higher business growth in the post-COVID era and boost economic growth. The diversity and inclusion (D&I) practices, though essential for company's recovery, resilience and innovation in post pandemic phase posed to bear the risk of being slipping off the radar at the time of this crisis.

### **The emergence of technology-based HR applications**

Technology is not the be-all and end-all for all social problems encountered in the modern world, however the introduction of latest technologies like Artificial Intelligence and Machine Learning has a remarkable potential as a game-changer in the area of diversity and inclusion at workplace with improved outcomes and rapid progress<sup>2</sup>. Consider the example of facial recognition, which requires identification of facial features and pre-defined parameters which are specific for a race or ethnicity. However, application of this technology with the view of permitting selection of potential employees, can be technologically biased if the algorithms as well as the different types of features and parameters across genders and ethnicities are not taken into consideration<sup>3</sup>. Usage of gendered language in recruitment advertisements tend to lead potential candidates to ponder and rethink and test the language before considering to apply for any position. With futuristic technological interventions in talent sourcing based on diversity and inclusion agenda, organizations can reduce the gender stereotypes and biases significantly in the recruitment outcomes. The field of technology in the field of HR is evolving rapidly, which can help business leaders facilitate in recognition and elimination of such biases with every new deployment<sup>4</sup>. Current technology solutions can be an enabler in increased diversity and inclusion framework. Data science driven insights and emerging technology solutions that can challenge our thinking, influence existing processes and ultimately change human behaviors result in improved systems

and ensure bias-free outcomes at workplace.

### **The agenda of D&I Technology**

Diversity and Inclusion (D&I) is not a new concept in the current business environment, however over the recent few years, the D&I spark has grown into a burning flame more so due to movements like #Me Too, Black Lives Matter etc., which induced senior leaders across organizations to strategize in order to build more diverse and inclusive workforce. It is in this background that the technology companies have begun to launch a series of new and innovative tools to support diversity and inclusion policies in the workplace. New technological capabilities along with the accelerated requirement creates an opportunity to take up Diversity and Inclusion issues in novel ways. Diversity and Inclusion (D&I) technologies consist of enterprise software that provides outcomes or tools with a view to process or practice at the micro or macro level efforts, which in turn helps organizations to become more diverse and inclusive. The primary purpose of the current technology is not just to conform to the statutory/certification requirements, but to continuously improve D&I measures in the organizations. The study conducted by Red Thread Research<sup>5</sup> stresses upon the fact that increased awareness among has resulted in technological innovation, which helped to put the awareness into practice, like sentiment analysis, AI, machine learning and pattern recognition, which indicates that companies can more easily create consistency and scalability in people management, development, learning and education opportunities through the application of such technologies<sup>6</sup>.

### **D&I Technology addressing people needs**

A wide range of technology products are available today, which have been designed to enable employees to share their perspectives, and the Red Thread Research study shows products specifically tailored for D&I agenda, for example, Pluto offers a platform that enables users to anonymously report information on

misconduct, harassment and discrimination at workplace, with additional offering of transparency as to when and to whom the reports are to be routed. There are instances of tools such as Balloonr, Glint, Organization View, Planbox, Pluto and Waggl, which are specifically designed to allow employees provide anonymous ideas and response to ideas in return. The increased importance of objective decision-making has become the primary driver for increased demand in D&I analytics and associated technologies, which has resulted in a growing number of technological tools aimed at monitoring, analyzing, and addressing D&I challenges.

The most apparent benefit of D&I technology is to create consistent, scalable practices that can help to identify or mitigate biases in organizations. Most of the time human resource related decisions like skill assessment, behavioral analysis, hiring assessment, performance evaluation, promotion or compensation decision leave a lot of room for bias. The current D&I technological solutions are designed with a view to bring in processes that helps to identify bias and enable removal of such bias and also improves understanding of the current state of diversity and inclusion in the organization. With wider vision, top management benefits from better perception while measuring and monitoring the impact of D&I initiatives. Based on usage of D&I technology tools, four broad categories have emerged as below:-

1. Staffing
2. Analytics
3. Development
4. Engagement

**1. Staffing:** The D&I technologies largely focusses on talent acquisition including candidate sourcing and selection. These tools generally provide organizations access to larger and more diverse pool of candidates with inclusive features such as:

(a) Established networks of diverse candidates, viz. Advancing Women, Door of Clubs, Fairygodboss, Headstart, IBM, InHerSight, Interviewing.io, Jenna AI Inc., Joonko, Jopwell, LinkedIn, Power To Fly,

Scout Exchange, Teamable and Workplace Diversity;

(b) Recruitment advertisements for specific underrepresented groups, viz. Wonderkind;

(c) Enhanced search capabilities to identify candidates based on specific attributes, such as gender, background or ethnicity, viz. Atipica, Entelo, Headstart, HiringSolved, LinkedIn, PowerToFly, ROIKOI, Scout Exchange, SeekOut and Yello.

(d) Bias reduction in job postings through text analysis like Applied, GapJumpers, TalVista, TapRecruit and Textio;

(e) Application of AI to remove identifying informations from resumes, viz. Applied, Blendoor, Eightfold AI, Entelo, GapJumpers, Greenhouse, Ideal, Limbo, Newton, Oleo, Seekout, TalVista, Whitetruffle and Woo;

(f) Using AI capability to highlight specific job-related data like Blendoor;

(g) Bias reduction features in the process of candidate background check, for example Checkr and GoodHire;

(h) Specific skill sets to reduce likelihood of screening out diverse candidates through blind assessments, viz. GapJumpers, Greenhouse, HireVue, Interviewing.io, Pymetrics and Triplebyte;

(i) Skill Checks to match existing job descriptions through Resume analysis using Bowmo, Censia, Eightfold AI, Harver, Headstart, HiredScore, IBM, Limbo, Jenna AI, Plum, Pymetrics, softfactors, Teamable, and Visage;

(j) Job posting outreach to professionals from various ethnicities like Jopwell.

(k) Bias reduction through standardization of interview processes like TalVista;

(l) Reduction of biased behavior through reference of diverse candidates, viz. Greenhouse.

(m) Assessment of interviewers' potential biases through video-based AI tool, such as 8 and Above

(n) Understanding candidate fitment through candidate cultural alignment scores, viz. Fortay.

**2. Analytics:** Almost a quarter percent of technology tools used in diversity and inclusion focus on D&I analytics, which focusses on key performance indicators

(KPIs) to prepare user-friendly dashboards for top management such as:

- (a) Talent representation. Examples: Allie, Aleria, Blendoor, Diversity Dashboard, Diverst, Fortay, Glassbreakers, HRx Technology's Analytics product, LinkedIn, Namely, OurOffice, PeopleFluent, Pipeline, Pluto, Qlearsite, SAP SuccessFactors, Stratus TMS, viGlobal viIntegrate, Visier and Workday;
- (b) Analysis of pay-related equity, viz. ADP, DBSquared, PeopleFluent, Pipeline, Sameworks, Syndio Solutions, Visier and Workday;
- (c) Analysis and recommendations related to talent sourcing and selection like Joonko and TapRecruit;
- (d) Organizational Network Analysis (ONA) to assess organizational diversity, such as OrgAnalytix and TrustSphere.

**3. Development:** Study reveals that out of the total share of D&I technologies, around nineteen percent of the tools focus on employee development, mentorship and career enhancement practices, for example, the app-based Translator facilitates participants to pose difficult questions in an anonymous manner, which helps moderators to analyze the psyche to assess the level of emotional comfort of the participants and engagement with them after the session. In addition, a great potential has been witnessed in the case of virtual reality training in order to help staff to understand the experiences of candidates with varied backgrounds, experiences and identities in a better way, and also as to how best it can respond to specific situations like incidences of aggressions or sexual harassment at workplace. A number of service providers have also been noted who aims to deliver customized training within the workflow of the existing employee processes, such as Allie, which uses chatbots to offer micro-training with a view to reduce bias. Crescendo, for example has developed a product that uses the candidate details like demographics, location in the organization and communication style in order to recommend learning content on using unconscious bias appropriately. Another D&I tool, viz. Envisia Learning's

NeuroTeamView helps organizations to measure psychological safety and interpersonal trust by understanding the social and emotional awareness among various teams.

There are D&I technology solutions which provide tools to the diverse candidates to identify mentors from within and outside the networks, such as SAP SuccessFactors, Planbox, Chronus, Glassbreakers, Insala, Mentorloop, Guild, and Levo. Landit, one more D&I tool helps diverse employees by offering personalized career choice and advancements, executive coaching, and targeted skill enhancements. BeingVR, another D&I technology provider in the area of learning and development uses digital storytelling to help people immerse in realistic scenarios, which in turn can help them transform their workplace behavior, resulting in engaged and memorable experience of encountering various real-life situations and scenarios.

**4. Engagement:** The study highlights the D&I technologies, which focuses on employee engagement and retention and includes tools encompassing employee experience, communications and voice. The tools use sentiment analysis to analyze text communications used by employees for sentiment or biases and offer solutions for planning and understanding the work experiences of diverse groups, for example, Allie, which uses Slack chatbot to collect and analyze information about the experiences of diverse employees. SenseHQ, another D&I tool offers worker journey maps to detect experiences of contract workers. Tools such as Culture Amp, Fortay, Glint, Limeade, Qlearsite, and Waggl allows organizations to customize employee survey questionnaire with a view to focus on diversity and inclusion agenda. D&I tools like Mesh and Pluto analyzes employee voices, whereas Workometry offers customized text classification models, which works on open-ended employee feedback<sup>7</sup>.

The study also revealed application of natural language processing for employee development and analysis of day-to-day written communications of employees with a view to screen their sentiment and biases<sup>8</sup>,

like Bunch.ai, which helps organizations to analyze their culture real time and figure out non-inclusive behavior of the teams. Cultivate, another D&I tool helps to measure the variance in the managers' communication approaches and provides self-awareness on team inclusion. Many organizations are increasing using D&I tools to better understand the employee experience and commitment to its inclusive culture, for example, Send, the cloud-based e-mail service provider uses Culture Amp D&I survey to gather data from organizations and take action based on survey results. The tool not only fostered special interest groups but also created "fireside chats" to provide chance to the employees to share their stories. It also helped to create women's leadership groups as well as multiple employee resource groups representing a wide array of interests.

### **Impact of D&I Technology**

The world of work is changing fast. The growing concern of organizations to promote sustainability through D&I initiatives is fast growing since last few years. Despite implementation of various D&I initiatives by organizations, it is witnessed that not all drive inclusion equally across the workforce. In the case of D&I programs, it is important because it addresses the "social" or "S" pillar of sustainability, which used to be largely overshadowed by environmental and governance issues in the past. The business leaders have been compelled to take time to transform the organizational culture by creating a community with integrated diversity and inclusion principles supported at various stages of the employee life cycle. The organizations that create a people-first, mature employee experience culture ultimately creates long-term business value.

Creating a business culture that embraces inclusion and diversity is essential to the success of both the organizational goals and the wellbeing of staffs. Utilizing modern technology solutions can help to develop unique D&I strategy and set up for success and growth ahead. The increase in demand for D&I technology validates the raging supremacy of the diversity and inclusion

agenda in current times, followed by increased pressure on business leaders to cultivate diverse workforces in organizations with focus on inclusive cultures. Therefore, understanding the intersection between technology and human dynamics has emerged as an essential area of focus, especially while addressing D&I challenges in complex situations. In combination with the inclusion of technology, it is also essential for organizations to take proper steps to implement D&I initiatives and measure its impact. In order to achieve sustainable business environment through impactful D&I initiatives, as a first step, companies need to assess their D&I strategy in order to address shortcomings by focusing on communication, collaboration, well-being and inclusion. Diversity and inclusion technology enables organizations to create significant component of employee experience, which helps them to promote the concept of promoting diversity and inclusion. The D&I technology helps companies to get a better understanding of D&I performance by creating awareness and feedback for their efforts and in turn, serve investors to make investment decisions.

Achieving the goal of business sustainability It can be witnessed that emergence of new business models, new technologies, challenging environment and rapid pace of growth has created severe disruption to the concept of "business as usual". The primary challenge is that organizations must also operate in these changes at the same speed. It is thus imminent for organizations to continually evolve and change in order to adapt to the changing business scenario. The businesses are at a constant need to conduct business more effectively in order to re-align business models, technologies and organizational culture in this digital age. While considering the transformation journey, in order to achieve the desired level of sustainability, the digital strategy needs to be broader as it entails much more than just digitalizing current processes and buying digital solutions. The key to organizational success is not merely to possess the right, advanced technologies, but also having the right mindset of leaders and people within the

organization for the readiness of the organizations towards its journey of transformation. Sustainable transformation can be accomplished through adoption of sensible approach, strategy and collaboration.

Overall, it is not just the HR leaders, but the business leaders who need to realize the strategic approaches for sustainable transformation of organizations. It is equally imperative for organizations to enable their leaders and workforces to embrace the change and build value proposition in the opportunities. From a longer perspective, such collaboration should happen within the workforce communities and ecosystem. In totality, D&I technology has not only helped organizations achieve competitive edge but also a sustainable edge in order to become future-ready. However, in combination with the inclusion of technology, it is also essential to ensure proper steps to implement D&I initiatives and measure their impact. Creating a business culture that embraces D&I is essential to the success of organizational goals, which can be further strengthened by utilizing technological solutions to develop unique D&I strategy for ensuring business sustainability for today's organizations.

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## Technological Interface in HR Processes leading to Business Stability

**Mr. Sadashiv B. Patil**  
Asso. V.P.- HR, IR & Admin.  
Bharat Forge Ltd., Baramati,

**Dr. Dinesh B. Hanchate**  
Dean, IIIC  
Comp. Engg., VPKBIET, Baramati

**Abstract**—There is great momentum across nearly every industry as organizations embrace an automation. It combines recent trends in advanced technology which is useful for making process automatic to manage and improve business processes. That's why it becomes today's demand of digital workplace for engaging employees in all the services is to have advanced and technological facilities at available to the employees at work. This digital workplace makes us easy to retrieve and collect the data which enables to get better analytical information. This provides informed insight in the company's operating system. It helps to perform employee's job more and more accurate and precision way with technological automation. This Intelligent automation is not a simple technology deployment, it is about business and operating model transformation and a defining factor for the future workforce. This article reflects the perceptions of technology that will continue to play a pivotal role in enabling Human Resource organizations to collaborate the business towards quality and sustainability.

**Index Terms**—Technological advancement, Information and Communication, Human Resource strategies, Digital HR function

### I. INTRODUCTION

Those days are now gone when we had to work in the official hour in the physical space. Today's web and digital world access atmosphere has made nearly blurred the line between work place and other place. Now a days, one can work

form anywhere. As the distinction between professional and personal life dissolves, and the workplace becomes truly digital, employees are communicating and collaborating in unprecedented ways. Below given chart shows a new technology adoption speed with many older technologies. X axis shows it has changed in a much shorter time span [1]: Figure 1 reveals, cell phones, smartphones, social media, tablets shows fast-rising adoption rates. In the above chart standing most rising technology adoption are the tablet and computer, which went from nearly 0% to 50% adoption in five years or so. The important reason for adoption of this newer technologies partly because modern tech needs less infrastructure. Nowadays, HR teams have to solve critical problems in the business. They have not only many business challenges but also performance improvements exponentially in the drive. They have to show larger business outcomes, profitability and sustainability. The adoption of new technology to HR team enables them to capable of solving above challenges. Business sustainability from the point of view of human resource is about how people

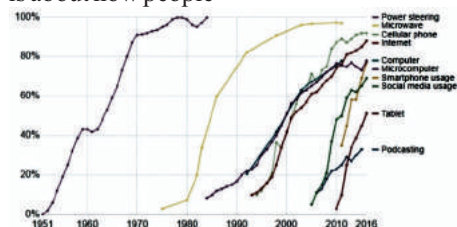


Fig. 1. Technology adoption speed chart are most enable to contribute to success at their workplace. There are number of reasons why Business sustainability is

closely related to Human Resource Management. The direct effect of implementing technology in human resource will certainly help shaping business sustainability. It's nothing but automating transactions, targeting information and learning content to help employees to do their jobs more effectively. Therefore HR could guide the organization's leaders in the incorporation of sustainability in its strategy and help the re-alization of Sustainability. There is primary beneficial solution of applying new technology is to improve efficiency and drive cost-savings by automating repetitive tasks. This happen some till some year before. But now Implementing technology in HR enables to gather, collect, and deliver information, as well as communicate with employees more easily and efficiently. This HR processes greatly reduced the amount of administrative work and allow management to focus more of their time and energy on managing their workforce. However changing the structure of work and bringing the social communication concept to the workplace to connect people is made easy.

Due to Artificial Intelligence (AI), progresses and advance-ments in technology and automation are changing with high speed in the transforming businesses. It changes the work style and the workplace itself. Robots of all types in automation and customer-service bots executing on AI algorithms are all examples of today's scenario. This industrial revolution and changes make us to see tremendous and drastic changes in business and society. Such automation makes the productivity high and also substitutes the some of the work to be done automatically in the efficient and quality manner to have increase in production of the jobs and else.



Fig. 2. Technology adoption speed chart

## II. ARTIFICIAL INTELLIGENCE (AI) IN HR FUNCTION

We know that long-term HR strategies focuses on business performance and output. The new era of AI comes. An AI has become opening door for many and limitless opportunities in every field. It is too applicable to HR and the most valuable assistance for HR professionals.

An AI is special branch of computer science and engineer- ing. It is a domain which solves cognitive level problems. It associates with different types of human and animal in- telligence. The other part of AI is Machine Learning (ML) which processes data more quickly than the average human. AI is made for making the machines to think like humans. It performs tasks such as learning early stage and test the data in the next stage for problem-solving, reasoning, and language processing. All these make the employees feel easy in the workplace. Therefore Artificial Intelligence (AI) now becomes great phenomenon for HR's transition from administrative to strategical mission critical.

Just like human and animal has the sensors to sense, understand and act and react. This philosophy is used in automation to enable machines to sense, understand, learn and act by the sensors and transducers – either independently or with human assistance. This automation capabilities make the machines and in tern employees empower to understand the automatic processes and their variations. Intelligent au- tomation can perform not

only manual tasks but also make intelligent decisions as a human can.

### III. Key Takeaways

- 1) The valuable use of AI does not make human work's devaluation. Actually it gives more and more focused and strategic planning and work implementation.
- 2) The virtual reality can make the work easy and improved in improving recruiting and training efforts.
- 3) HR will certainly play major role on offering guidance in 2020-21.

The center point of being future work in HR moves around the following two main themes [2]:

- The influence of various use of artificial intelligence and ML i.e Machine Learning algorithms on today's work around the world.
- The improvement in the workforce structure for independent workers are taken into consideration.

### IV. Objectives Of Technology

- Make the changes in strategic HR Policy so that we can redefine and review these policies in the line of critical business challenges which we will face in future after adapting the teleological, digital and AI tooled changes in the human resources .
- After the modification in the technological changes it will be upper-held task to stabilize the business even after adoption of technology which makes disruption in Business.
- With the Business intelligence, Technology in mapping, employee data will impart us correct, atomic, non redundancy, more perfect data and reports.
- We can achieve the effectiveness and efficiency by Changing HR function. One has to change it's procedural part for decreasing lead times, costs, and service levels which results in performance improvements.
- We have to increase the adaptability of the technology for making the business

more adaptable in its response in the face of disruption.

- Fuelling HR transition : transformation from Administration to Strategic to mission critical.

### V. Types Of Technologies Used In Human Resource

HR with the managers, operation departments with the employees have to use the new incoming technology for improvement in the business the way they do. So that some important areas of HR functional tools are shown bellow. It give rise to work faster and more efficiently for business sustainability [3].

- 1) HRMS (Human Resource Management System)
- 2) Performance Management system. (PMS)
- 3) Artificial Intelligence in Recruitment, on boarding, Training and Retention.
- 4) Payroll software.
- 5) Performance Evaluation, Compensation and Benefits management ...
- 6) Employee engagement.
- 7) Reducing bias in HR decision making.
- 8) Measuring return on Investments.

### VI. Expected Challenges

#### A. Apprehension to Change

Normal human being doesn't support to the changes. New technology adoption makes the employees and work place environment in anxiety and even resistance among employees. Human beings see this changes as not as technical changes but as threats in the view of workers and their subordinates.

Their fear ultimately goes in the envision that they will be will be replaced by a automatic machines or computers. Of course, they feel that these machines and computers can do the job cheaper or faster. Developing strategies to combat this resistance to change is key to the human resources manager's role.



### B. Scarcity of skilled workforce

The next important challenge towards the companies are skilled workers or workforce. The lack of these workforce nearly happens to in the many industries. Then, Human Resource Management (HRM) often goes in dilemma of finding these skilled workers who are expert at using new technology. Then it becomes time consuming and cost expensive to make the employees compatible with technical need. We have go for again education & training program-mes, conferences and seminars to retain employees' skills updated.

### C. Identification and Training on core areas

It becomes timely work of HRM to provide training and support to make them compatible with the technological adaptable environment in the companies. One has to do it for the business sustainability. Human resources Management can face this challenge head on by identifying the core areas of the business where training is needed and facilitating training opportunities for employees.

### D. Talent Retention

According to a November 2012 poll by the Society for Human Resource, Human resource professionals themselves anticipate that retaining the best employees will be the greatest HR challenge in future [2].

### E. Leadership Development

The Society for Human Resource Management (SHRM) Competency Model concludes that a main factor for achieving success in HR professionals is leadership proficiency [4]. It imparts

- 1) navigation the landscape of industry,
- 2) building the cooperation,
- 3) driving results with strategic planning and execution
- 4) and responsibly ethical corporate practice.

This competency cluster has to do the technology interface which helps to make

up above competencies found within the SHRM Competency Model. As companies grow and expand, it becomes cumbersome to improve above competency. The technology interface will certainly give chances to overcome from challenges to develop the leadership.

### F. Culture

Culture in the specific areas gives the birth to the new challenges. Different cultures leads to diversity which becomes challenging for making same platform culture to be adapted in the companies. Technological changes in the companies make the employees come on to the same and suitable platform after the acquaintance of the technology. Cross-cultural teams and diversity management are tools used by HR to positively impact a diverse workplace.

### G. Technical Talent

Technically talent in the domain needed for companies is important to fill the specialised positions. If employees lacks in technical field companies find keen difficulties with rat race of training and keeping the competent employees with others to perform the jobs [5].

## VII. CONCLUSION

With this study, we came to conclusion that, technological advancement, Information and Communication can greatly contribute to the fulfilment of Human Resource strategies that can propel path to digital Human Resource function for business sustainability. The availability of AI tools for employees and HR makes the environment technological and accurate result oriented. Hence, HR will certainly become more technological adaptable to make themselves technical oriented. They can perform their manual task with the auto- mated way and in intelligent way. Their decision power makes them to go on the correct path.

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## A Study of Use of Social / Digital Media Technology in HR Processes leading to Business Sustainability.

Dr Milind Kulkarni

Director

Dr Milind's HR Solutions Services

### Abstract

**Purpose:** HR Function is responsible for Human side of the Organization and Social Media is becoming Part and Parcel of day-to-day lifestyle of younger Employees. For effective Talent Management, Employee Communication, Motivation and Engagement and other HR Processes — HR Function has started utilizing Social Media more and more aggressively to enhance Value Addition towards Business Sustainability.

**Design:** Researcher has conducted Literature Survey and collected Secondary Data on the subject, identified Research Problem, articulated Hypothesis, designed Research Model, developed suitable Questionnaire, conducted Pilot Study, and made appropriate modifications in the Questionnaire. Collected Primary Data which was analysed to validate Hypothesis and recorded Observations and Recommendations which will add value to the Body of Knowledge on the subject.

**Findings:** Researcher has following major Observations, Findings and Recommendations in brief:

1.HR Processes are leading to Business Sustainability 2. Social/Digital Media Technology is used in HR Processes 3. Post Pandemic era, the need to use Social Media in HR Process is expected to increase substantially, to enhance value addition for Sustainability of the Business.

**Keywords:** Social/Digital Media, HR Processes, Business Sustainability, Statutory Compliance, Green Initiatives, Talent Management, Employee Communication, Employee Engagement,

Employee Communication.

### 1)Introduction:

#### 1.1) Basic Concepts:

1.1.1. Business Sustainability - 'Sustainability can be explained as the process of managing an organization by considering three different aspects, viz. economic, social and environmental. It may also be referred to as the triple bottom line approach. Three important areas where the potential of business sustainability can be explored are:

- i. Resource optimization through 'recycle, re-use and reduce' strategies in business processes and supply chains,
- ii. Protecting brand value through stakeholder engagement and support including fulfilling regulatory requirements and
- iii. Selling to a niche market of green consumers ready to buy products and services at a premium.'

1.1.2. Management Functions: Business Sustainability can be achieved by integrating & aligning all Management Functions including HR Function.

1.1.3. HR Function: HR Function is responsible for Human side of the Organization which is mainly responsible for Talent Management (Attracting, Engaging, Training and Retaining), HR Life Cycle Management, Performance Management, Compensation & Benefit Management, Reward and Recognition of Good Work Contribution, Industrial Relations and Discipline, Employee Communication, Moral and Motivation issues of all employees, Compliance of various Statutory Obligations etc. Employees, more importantly younger Employees are Technology Savvy and use

of Social Media/Digital Technology in their day-to-day Life Style to express, communicate and network etc.

1.1.4. Social Media: Social media are interactive computer-mediated technologies that facilitate the creation or sharing of information, ideas, career interests, and other forms of expression via virtual communities and networks. The common features are as follows:

- Social media are interactive Web 2.0 Internet-based applications.
- User-generated content such as text posts or comments, digital photos or videos, and data generated through all online interactions, is the lifeblood of social media.
- Users create service-specific profiles for the website or app that are designed and maintained by the social media organization.
- Social media facilitate the development of online social networks by connecting a user's profile with those of other individuals or groups.

1.1.5. Use of Social Media in HR Process: HR Function which deals with Employees, are required to align with their Lifestyle of use of Social Media Technology. For example - HR uses Corporate Website to create Attractive Image/Brand Building to attract Talent for Recruitment. Sourcing of suitable candidates is facilitated through Websites of Educational Institutes, Professionals Associations, Data Bases (Naukri, Monster etc.) and network sites like LinkedIn, Facebook etc. Many organizations share/circulate information about internal Job Posting for inviting interested employees to apply or to refer suitable candidates out of their personal network (which is incentivized). Interviews are conducted on SKYPE or

WhatsApp to save time/travel of Interviewer and Candidate. Attendance/Leave/Pay Roll/Generation of standard Certificates etc. are organized through Employee Self Service Portals. WhatsApp communities are created for free and two-sided communication amongst the small or big groups. Platforms like Facebook/Instagram etc are used by HR/Employees to share/communicate their Achievements, events, celebration, and family gatherings etc. with Colleagues. Employees are encouraged to share their articles, Blogs and contributions on Corporate Website. E-Modules of Training and YouTube Videos are used for Training. Meetings, Discussions and Learning Sessions are conducted on interactive platforms like Zoom, Google Meet and Microsoft Teams etc.

1.1.6. Good, Bad and Ugly side of use of Social Media by employees during duty hours.

- Good — It is easy, interactive, instant and effective,
- Bad — Employees may use Social Media for their personal networking during duty hours, which is objected to by some Employers considering it as a waste of time and hamper productivity.
- Ugly — Company provided Laptop, PC and Mobile can be used to seek alternative employment — during duty hours. Company specific confidential information can be leaked or shared with unauthorized persons or organization for unethical and illegal purposes. Hence, there are conflicting views about use of Social/Digital Media in Management Processes including HR Processes.

1.1.7. Pandemic and Remote Working – During the Pandemic, Organizations are compelled to encourage employees,

wherever possible to work remotely/Work from Home and provide Training, Monitoring, Incentivizing employees/Supervisors to adapt to this new work practice. This is New Normal work arrangement, which is enabled by use of Digital/Social Media Technology extensively. HR Function has also started using Social/Digital Media more innovatively and creatively for more and more HR Processes (including Attendance Marking/ Leave/ Working hours etc.)

1.1.8. Need for the study Government of India is giving push digitization. During Pandemic period, to continue Business Activities within restrictions of guidance for personal health/safety, Organizations are adopting more and more use of Social/Digital Technology. There is growing demand for more innovative/creative products and services in the field of Social/Digital Technology. There is need to Study how HR will explore use of Social/Digital Technology in HR Processes which will lead to Business Sustainability.

1.1.9. Relevance and Importance of Study: The Study of use of Social/Digital Media Technology in HR Processes leading to Business Sustainability is very relevant considering the crises faced by HR Professionals to keep Business Processes active within the guidance of personal safety/health and future work process in the Post Pandemic New Normal scenario. This study will add value to the Body of Knowledge of HR Fraternity and will provide pointers for future action plans. This study is also likely to stress need of extensive investment in Social/Digital Media Technology as Business strategy for its Sustainability.

## 2. Literature Survey (Secondary Data)

2.1. How HR Function contributes to Business Sustainability?

“HR professionals can assist in providing formalized structures to help operationalize sustainability within an organization — such as providing staff with training and development; incorporating sustainability into the onboarding process for new employees; offering incentives and recognition for sustainability achievements; and having policies that promote worker cooperation and involvement with the company’s environmental objectives.”

Ref: Jacquie Fegent McGeachie Director of Public Affairs Communications and Sustainability at Kimberly Clark Australia and New Zealand.

2.2.) What is Social Media?

‘Social Media is - forms of electronic communication (such as websites for social networking and micro blogging) through which users create online communities to share information, ideas, personal messages, and other content (such as videos)’

Ref: Webster Dictionary.

2.3) Use of Social Media Technology in HR Function

‘Social media is two-way, instant Communication, allows people to share their life events, their opinions on matters of political or social significance and their feelings. In any organization, HR function deals with all employees related matters like payroll, recruitment, employee engagement, learning and skill development, work environment, talent acquisition, leadership, employee communication & attracting future employees etc. HR uses Social Media to create an engaging two-way dialogue between the company and the employees. HR, uses Social Media to know the pulse

of the employees – what works for them, what doesn't? Social Media is an apt tool for corporate branding and engagement. Social Media increases visibility and credibility of HR. Social Media accelerated speed of recruitment process, aid real time and on the go Learning Processes, used for taking a 360-degree feedback from employees. Social media facilitates informal interaction with employees. There is need to set out a Social Media Policy and educate employees — to avoid its misuse.'

Ref: SHRM Annual Report 2018.

#### 2.4) Extensive use of Social Media in HR Function – in Post Pandemic Era

'The Covid-19 is becoming the accelerator for one of the greatest workplace transformations of our lifetime. How we work, exercise, shop, learn, communicate, and of course, where we work, will be changed forever! Organizations and HR will be required to Ramp up Training and Investment in Remote Working with the help of Social and Digital Media Technology. HR will be required to evolve more empathetic schemes for Employees (physical, emotional, mental and spiritual) Well-being to help them to cope up with heightened anxiety. Organizations would consider the New Normal - an Opportunity to Re-Think & Re-define their Business Models, and they will protect and invest into their Teams of Employees. There Will Be a Surge in Remote Working after the Corona virus with extensive use of Social/Digital Media Technology. New parameters, tools/methods of measurement of Performance will be evolved. Organizations will move from hiring based on skills. HR will transform talent models and digitize talent value chains. Organizations will outsource routine tasks to machines (with AI) and humans will focus on creativity and critical thinking. Learning (e-Learning) will be Radically Transformed with help of VR & Mobile

Apps. Organizations/HR will invest on Re-Skilling Employees.'

Ref: Ms. Jeanne Meister - Article title 'The Impact Of The Coronavirus On HR And The New Normal Of Work' published in FORBS June 2020

### 3. Research Design

#### 3.1) Research Type, Approach and Research Strategy

Considering nature of Topic, Researcher considered Qualitative -Phenomenology method appropriate for this Research Paper. It deals with Study of use of Social Media in HR Processes – which is Inductive (based on Observations, Patterns, Hypothesis and Theory) since behaviour of Population/Sample is Fluid, which will need approach of Exploration and Discovery.

3.2.) Research Problem: What is status of use of Social/Digital Media Technology in HR Processes leading to Business Sustainability? What is likely use of Social/Digital Media Technology in HR Processes, during Post Pandemic Era, leading to Business Sustainability?

#### 3.3) Research Purpose and Hypothesis:

a) Purpose: To investigate Status and likely use of Social/Digital Media Technology in HR Process leading Business Sustainability.

#### b) Hypothesis:

First Hypothesis

H1 HR Processes lead to Business Sustainability

HO HR Processes do not lead to Business Sustainability

#### Second Hypothesis

H1 Social/Digital Media Technology is used for HR Processes

H0 Social/Digital Media Technology is not used in HR Processes

### 3.4) Sample Size and Data Collection Method:

a. Population: HR Professionals PAN India is the Population which is estimated to be around 10000. Considering limited resources of Researcher and restrictions due to Pandemic, Researcher decided to rely on Social/Digital Network of HR Professionals to collect Primary Data.

b. Questionnaire: Researcher designed suitable Questionnaire for the Research Topic, with reference to the Research Problem, Objectives and Hypothesis etc. on Google Forms, for collection of Primary Data.

c. Pilot Study: Researcher conducted Pilot Survey covering sample of 15 HR Professionals. The data received was analyzed, results were compared with Research Objectives and feedback/suggestions of Members of Sample Survey were considered, based on which the Questionnaire was suitably modified.

d. Final Questionnaire was launched on various Network Groups of HR Professionals on LinkedIn, Facebook, and WhatsApp, covering approx. 3000 HR Professionals. Researcher received 30 responses, which were considered as a Primary Data of Representative Sample of HR Professionals.

e. Analysis - The Primary Data was analysed in the light of the Research Problem, Objectives of Research Study, Hypothesis and Observations were recorded, Recommendations were suggested before Conclusion of the Research Study.

### 3.5) Limitations of Study: This Research Study has following limitations:

a. Due to limited resources of Researcher

and restrictions due to Pandemics, Researcher relied on Social/Digital Media to reach out to maximum number of Population available on Network.

b. Limited number of Respondents submitted filled Questionnaire which was considered as a Representative Sample

c. Researcher has considered the information received from the Representative Sample on the Questionnaire, without any verification due to limitations of resources.

## 4. Analysis of Primary Data

### 4.1. Demographic Data:

Respondents who confirmed they are currently working in HR Function were only considered as valid. The Respondents are working various levels from HR Executives, Assistant Manager HR, HR Manager, Regional HR Manager, Vice President HR and Director HR in various industrial organizations.

### 4.2. Whether HR Function is leading to Business Sustainability?

Researcher selected 7 HR Activities which lead to Business Sustainability.

Table 1: Whether HR Function is leading to Business Sustainability

Sr No	HR Activities supporting Business Sustainability	Respondents confirming
1	Compliance of Statutory Obligations.	100%
2	Compliance of Prevention of Sexual Harassment of Women at Workplace,	100%

3	Compliance of Regulations regarding Safety, Health and Welfare.	100%
4	Improvement of Employee Engagement and Satisfaction.	96%
5	Diversity and Gender Equitability amongst Employees.	93%
6	Brand Building of Employer – to attract Talent.	85%
7	<b>Green Initiatives to protect environment.</b>	<b>80%</b>

From above data, it is obvious that out of First Hypothesis ‘H 1 HR Processes lead to Business Sustainability’ stands proved beyond doubt and ‘H 0 HR Processes do not lead to Business Sustainability’ stands rejected.

#### 4.3. Use of Social/Digital Media in selected 10 HR Processes:

Table 2: Use of Social/Digital Media in selected 10 HR Processes

Sr No	HR Process	Current Use	Future Use
1	Recruitment and Selection Process	82%	88%

2	On Boarding and Induction Process	76%	78%
3	Attendance and Payroll Process	89%	100%
4	Performance Management Process	71%	75%
5	Employee Communication Process	88%	93%
6	Training and Development Process	82%	85%
7	Compliance of Statutory Obligations	85%	96%
8	Employee Engagement and Satisfaction Process	78%	88%
9	Promotion of Employee Health/Safety/Welfare Process	85%	96%
10	Attracting Talent through Brand Building of Employer	75%	83%



**From above data, it is obvious that out of Second Hypothesis ‘H 1 Social/Digital Media Technology is used for HR Processes’ stands proved beyond doubt and ‘H 0 Social/Digital Media Technology is not used in HR Process’ stands rejected.**

4.5. Selected Qualitative Comments of Respondents:

- a. Post pandemic lots of activities have been designed to work on online platform and digitization of routine activities is the key focus.
- b. Post COVID-19 employees needs to be motivated to report to office at least twice a week as work from home has really put employee’s morale down for last 6 to 7 months.

## **5. Observations, Recommendations, Conclusion:**

### **5.1. Observations:**

- a. HR Function is contributing to Business Sustainability. Though some HR Professionals need to appreciate certain Business Sustainability HR Processes like Green Initiatives, Brand Building of Employer and Diversity/Gender Equality.
- b. Social/Digital Media is used in most of the HR processes. HR Professionals who are not utilizing Social/Digital Media currently for On Boarding/Induction Process, Brand Building of Employer, PMS and Employee Engagement — may explore its power/usage and learn technic to use the same in the future.
- c. Post Pandemic there is possibility of increased use of Social/Digital Media in HR Processes, which shows progressive attitude of HR Professionals.

### **5.2. Recommendations:**

- a. Post Pandemic Era — considering increased need of use of Social/Digital Media in HR Processes, many new products/services are likely to be invented/developed in near future to meet the need and suit to the requirements.
- b. HR Professionals may realize power of Social/Digital Media tools in HR Processes and will get trained themselves and explore more creative uses of the same in more and more HR Processes.
- c. Business Leadership may appreciate need of use of Social/Digital Media in HR Processes leading Business Sustainability and investment in providing necessary infrastructure and encourage HR Professionals to use the same effectively.
- d. Use of Social/Digital Media needs to be regulated/controlled to avoid its misuse

### **5.3. Conclusion:**

HR Function is synced with Sustainability of Business and for more effective contribution it is using Social/Digital Media Technology in many HR Processes which is likely to increase during Post Pandemic Era. However, organizations will need to regulate use of Social/Digital Media to avoid misuse.



## **Information Technology and its role in the Performance of the Human Resource Management Function: As a study a selected firm in the City of Blantyre, Malawi**

**Mr. James Gabriel Chilita**  
Ph.D. Scholar  
DMI ST John the Baptist University  
Malawi

**Dr. R. V. Palanivel**  
Dean of Arts  
DMI ST John the Baptist University  
Malawi

### **Abstract**

When new employees are being engaged, traditional the personnel function would require them to submit personal information, certificate copies, medical certificates National Identity cards, among others. These would be photocopied and filed within the human resources department or with the registry for future reference. The calculation of salaries and management of leave and other employee benefits would be done manually or on a single stand-alone computer, pay slips would be printed and the accountant will deposit pay cheques into the accounts of the employees at the bank.

For factory workers, clocking cards are no longer useful as employees can use biometric finger prints to clock in and out and the system records the precise time the employee clocked and out in a particular day.

This has nowadays stopped in many companies and even government departments with the coming of information technology and computerized payroll systems which would manage data, leave, third party payments and salaries, leaving very little paper work for filing if any. Information technology has changed the way human resource functions are carried out and this has also led to reduced operation costs, which means more profit for the organisation and also an organisation that would remain sustainable into the future.

**Keywords:** Payroll systems, HR Functions, IT, Employee benefits.

### **Introduction**

The use of information technology has

improved human life in the workplace and the way of doing things in the personnel department. Using information technology has improved the way human resource management functions are carried out for example the administrative aspects such as employee benefits management, remuneration and compensation. Some activities as salaries and wages calculations and payments, third party payments such as medical aid, pension and provident fund deductions, leave management as well as training and development, not overlooking the whole process of recruitment, selection, placement and termination of employees have improved quite a lot. Information systems are also enabling human resource practitioners and management to carry out employee performance appraisals timely and effectively and management personnel records for quick retrieval and safe storage. The role of the HRM Department has also received recognition as a strategic function not a supporting one.

### **Literature Review**

#### **Human Resource Management (hrm)**

This refers to the policies, practices and systems that influence employees' behaviour, attitudes and performance (Noe, Hollenbeck, Gerhart and Wright, 2010:4). The responsibilities of human resource departments include, employment and recruitment, training and development, compensation, benefits, employment and community relations, personnel records, health and safety, and strategic planning (Noe et al, 2010:6). According to Noe et al (2010:5), only recently have companies looked at HRM

as a means of contributing to the profitability, quality and other business goals through enhancing and supporting business operations.

### **Changes In The Hrm Function Due Information Technology**

According to Noe et al (2010:9) the amount of time that the HRM function devotes to administrative tasks is decreasing and its roles as a strategic business partner, change agent and employee advocate are increasing. The catalyst of the changes in many aspects has been information technology; Noe et al. (2010:9) cited administrative processes such as employee records and allowing employees to get information about and enroll in training, benefits and other programs. Outsourcing of administrative activities has also occurred, a situation where a third party or consultant, provides such services instead of the company itself (Noe et al 2010:9)

### **Role Of Information Technology In Human Resource Management**

In their study Piry, Hatamkhibari, Janfeshan and Ghahramani (2013:1034) reiterated that in the present era implementation, development and maintenance of information systems for HRM is one of the most important business processes for managers and organisations as they are faced with new challenges. The Piry et al study (2013:1035) found that information technology produced some results in the practice of human resource management such as:

- The accuracy and speed of performance,
- Transparency and integrity in system design,
- Timely feedback,

- Development of staff skills,
- Conducting of necessary training through virtual education.

A study by Saha and Majumder (2017:82) defined performance appraisal is the process of assessing employee performance by way of comparing present performance with standards which have been already informed to employees, subsequently providing feedback to employees about their performance level for the purpose of improving their performance as needed by the organisation. Kettley and Reilly (2003) cited in Saha and Majumder (2017:84) defined a Computerized Human Resource Information System (CHRIS) as consisting of, “a fully integrated organisation wide network resource related data, information services, databases, tools and transactions.” In the same study Saha and Majumder, (2017:84) cited Chamaru de Alwis (2010) who defined Human Resource Information System (HRIS), as “a computerized system used to collect, record, store, analysed and retrieve data pertaining to an organisation’s human resources.”

The Saha and Majumder study (2017:85) outlined some objectives of using IT in performance appraisal as including the following; to help automate the processes of HRM and save time and cost and to reduce the efforts required and paper work involved. To help in the automation of performance appraisal organisations make use of various performance management software such as Workforce Performance Management and Talent Management Software which help to systematically record all data about employees performance,

store information in metrics where employees current performance can be compared with targets and standards, they also help to analyse the training needs of employees , monitor systematically employees progress and their review and feedback and the improvement in the performances.

HRM practitioners are also concerned with career planning for their organisations. According to Mamoudou and Joshi (2014:38), career planning tool is a generic, learning, knowledge-based system that helps top leaders to manage the personal development and path career of employees.

Mamoudou and Joshi (2014:34) point out that one of the most important online supports within Human Resources is tracking the Human Resources Development Core Processes.

### **HRIS Used In Human Resource Management Functions**

A study by Adewoye and Obasan in Nigeria (2012:31) revealed the kind of HRIS used by some banks and the kind of HRM functions on which information technology is be employed. In their findings the indicate that many banks have gone beyond the traditional functions of HRM but have developed HRM Systems that support recruitment, selection, hiring, job placement, performance appraisals, employee benefit analysis, safety and security (Adewoye and Obasan, 2012:31). According to Adewoye and Obasan (2012:31) recent areas of HRIS implementation include: Payroll, Work time, Benefits administration, HR Information Management, Recruiting, Training/E-learning management systems and performance records. The findings of Adewoye and Obasan study (2012:33) indicated the following empirical evidences of the impact of IT on HRM.

<b>Areas of impact of IT on HRM</b>	<b>Before adoption of IT</b>	<b>After adoption of IT</b>
Efficiency of HRM activities and processes	49	85
Employee communication and engagement	49	79
Role and skills of HR managers	43	78
Overall average value in %	47	81

**Source:** Adewoye and Obasan (2012)  
Source: Adewoye and Obasan (2012)

The findings showed an overall mean efficiency and effectiveness of HRM was 47 per cent before adoption of IT and later improved after adoption of IT by 34 percent to 81 per cent.

### **Objective Of This Study**

The objective of this study was to assess the confidence of HRM Practitioners within some firms in the City of Blantyre in the efficiencies that HRIS bring into performance and the practice of HRM.

### **Methodology And Data Collection**

To carry out this study, data were sourced from both primary and secondary sources. The secondary data sources were sourced through desktop research from different published materials, the internet and libraries while primary data were collected through semi-structured interviews with major players in HRM in some leading companies in the commercial City of Blantyre in Malawi. The questionnaire was designed based on four variables which were identified through literature review, these were: Efficiency of HRM activities and processes, Employee communication and engagement, Changing roles and Skills of HRM Practitioners and HRM position on a modern organisation's organisation chart.

Respondents were HRM Practitioners who have been in the industry for an average period of 10 to 15 years in the same company or not more than two companies during this period. The aim was to find out their experiences as Malawi adopted the digital aged from around the year 2000 to now. The dependent variables were selected in order to determine the role of information technology on the performance of human resource functions in the selected state-owned enterprises. Most companies in Malawi are smaller but the bigger ones are in the financial services sector and parastatals. The government sector has been very slow in adopting IT overall. 10 state-owned enterprises were purposively selected for the study. These state-owned enterprises have got national footprints across the three regions (provinces) of Malawi and hence have got not less than 200 employees on their payrolls at a minimum.

### INDEPENDENT AND DEPENDENT VARIABLES

The independent variables were identified based on the core focus and skills of human resource management in the knowledge era among HRM Practitioners. The dependent variables were identified based on some ordinary human resource function tasks. The variables are as follows:

**Independent Variables:** Speed of Payroll processing and personnel records maintenance and retrieval

**Dependent variables:** Speed, efficiency, accuracy of information, timeliness and cost saving.

**Independent variables:** Changing role of human resource management function in the organisation and skills required for practitioners.

**Dependent variables:** Talent management, Employee training and development. IT skills, recruitment and placement.

**Independent variables:** Employee engagement, communication

**Dependent variables:** Performance appraisal, availability of information, work flexibility

**Independent variable:** Positioning of HMR Function in the organisation

Dependent variable: Strategic role of HRM, major function of the organisation, contributes to strategic decision making, ranks equally to other functions

The semi-structured interviews were conducted, questionnaires were filled by the interviewer and follow-up questions were put to the respondents based on their responses to the questions on the questionnaire. Summaries were made of all the responses recorded. Comparisons were made amongst the ten organisations of the role of information technology in the performance of these organisations before and after the introduction of HRIS. Data was then analysed for the study to demonstrate the role of information technology in the performance of HR functions in these organisations.

Themes and trends were noted from the summarised responses and determinations were made as to what the overall pictured was emerging from the results of the study. Thematic analysis was used to determine the overall themes emerging from the content of the results and from the ten state-owned enterprises some basic statistical analysis were made regarding the response rate and the similarity or differences in the results of the study.

### Data Analysis And Findings Discussion

Role played by HRIS	Before (%)	After (%)
Speed of Payroll processing and personnel records maintenance and retrieval	40	90
Changing role of human resource management function in the organisation and skills required for practitioners and cost reduction	45	80
Employee engagement, communication, Job satisfaction	35	80
Positioning of HRM Function in the organisation	30	70
Overall average %	37.5	80

**(Source: Primary data, 2020)**

Descriptive statistics were used which considered overall total responses and percentages were calculated about the how each variable came out. The dependent variable were evaluated on the basis of the independent variables as discussed in the methodology of the study. Thematic analysis was carried out on the content as gathered from the respondents. Major themes such as efficiency, timeliness, less costly and non-traditional emerged from the data of the study.

The response mean for the role of IT on speed of payroll processing and personnel records maintenance and retrieval was 90% against 40% before the adoption of IT. The response mean for the role played by IT on the changing role of HRM and skill required for practitioners was 80% versus 40% for the period before the adoption of IT. The overall response average for the role played by IT on employee communication and engagement was 80% against 35% before adoption of IT. The response mean for the positioning

The table below shows the summarised responses for the time before and after HRIS were adopted by the companies: Tabulated evidence of the role of IT in performance of HRM Functions

It can be observed from the tabulated results that overall IT played a very big role in the improvement of the HRM functions. Before IT was adopted by these state-owned enterprises the overall effectiveness in the performance of HRM functions was at an average of 37.5 percent but after adopting IT performance improved to 80 percent an increased improvement of 42.5 percent. The speed of processing payroll and personnel records as well as their maintenance and retrieval was at 40% before IT was adopted but this improved to 90%. Salaries were processed on time; newly recruited employees were able to get their first pay in the month on employment or the next as opposed to the past when it could take between 3 months and 5 months before the newly employed could get their salaries. Employee records could take more than 5 months before they could be updated especially when someone has died or retired. Files kept manually could be lost between offices and accessing employee records improved with computerised information systems.

Human resource management was looked at as being about managing people who were not an important resource for the organisation, employee records and at times taking part in the recruitment of new employees. Other skills such as financial management were not considered to be part of it. With the adoption of IT all human resource managers had to be retrained in IT skills so that they could manage the payment of salaries a function which was in the hands of the account's office. With computerised payroll systems it meant that all salaries were to be prepared in the payroll office, which falls under HRM. New skills were learned and HR managers

replaced some personnel in the account's office. This led to streamlined and restructured accounts and human resources departments, fewer errors in salary calculations and payments. These effectively reduced some costs which were being incurred before IT was adopted.

Employee engagement, communication and job satisfaction through improved and timely information availability, work flexibility, enriched job descriptions, ability to apply for services online like leave taken, requests for salary advances, employee performance appraisals and overall top –bottom communication had the one of the lowest average score of 35% before adoption of IT improved to 80% after adoption of IT.

HRM function was considered as a supporting function to main organisational functions of Finance, Operations and General management (Administration). HR Managers were considered to mere pushers and custodians of files within the organisations and the score before adoption of IT was only 30%. The adoption of IT improved the rating to 70%. HRM was accorded a strategic role within the management structure of these organisations regarding talent identification and management and advising management about future needs of the organisation, which would require better skilled employees for the organisation.

## CONCLUSION

The study has provided results that indicate the importance of adopting IT in the Malawian State-owned Enterprises. Four independent variables were identified. These were; Efficiency of HRM activities and processes, Employee communication and engagement, Changing roles and Skills of HRM Practitioners and HRM position on a modern organisation's organisation chart.

There was an overall improvement of 80% in the performance of HRM functions after the adoption of IT from an overall average of 37.5% before adoption. These state-owned enterprises only represented the rest.

Malawi has 60 state-owned entities and many public sector offices in urban and rural areas. Most of these do not have IT infrastructure in them, this means that the performance of HRM functions is still very poor. The government must move with speed to have them too adopt IT. The overall conclusion, however, is that IT has help to improve the performance of HRM functions in the state-owned enterprises and that assuming there has been doubts about its role, these should be erased and more should be done to fully have a digital public sector.

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## Leveraging Technology in Human Resources (HR) Function to drive Business Sustainability

Dr. Subir Bikas Mitra,  
GAIL (India Ltd.)  
New delhi

Shri Yashwant Chauhan,  
GAIL (India Ltd.)  
New delhi

Mr. Arnab Pramanick  
GAIL (India Ltd.)  
New delhi

**Abstract**— Sustainability can be considered as a consciousness that the human beings and the environments are interconnected. In business context, sustainability can be viewed from the prism of TBL (Triple Bottom Line, phrase popularized by John Elkington in 1994). TBL is a reporting system which focuses on economic, social and environment outcomes. TBL goals ('People, Planet & Profit') can be effectively achieved through the use of Technology in Human Resources Function for both micro-level (employee) and macro-level (organization & broader community).

**Approach**— In our real world implementation of Human Resources (HR) Function led Technology Initiatives, GAIL has adopted a priori CBA (Cost Benefit Analysis) based approach for driving business sustainability. Accordingly, SMART (Specific, Measurable, Achievable, Realistic, Time Bound) goals have been set through effective Project Management approach. The Initiatives were vetted against the TBL outcomes through real-time Data generated in the system and from stakeholders' feedback.

The initiatives are aimed at achieving adoption through-out the organization so as to derive positive employee experience, operational efficiency, stakeholders' satisfaction and substantial reduction in paper based decision making. The experience of such Initiatives prepares the business case in GAIL for leveraging technology in Human Resources Function to provide on-demand HR services 'Anytime, Anywhere' through Technology

enabled HR PoS (Point of Services).

**Outcome**— The core purpose of this article is to review the concept of Leveraging Technology in HR Function to drive Business Sustainability. After detailed deliberations on the subject and based on the outcome of the real world interventions undertaken, this article essentially establishes the very fact that by leveraging the technology in HR Function, organizations can effectively drive the sustainable competitive edge besides creating an attractive Employer Brand (i.e. Employee Value Proposition).

**Keywords**—Business Sustainability, Leveraging Technology, Triple Bottom Line, Human Resources (HR) Function, sustainable competitive edge, Employee Value Proposition

### I. INTRODUCTION

In spite of the fact that COVID-19 Pandemic has thrown our world into an uncharted territory, we truly believe that eventually the use of technology will see a sharp rise across functions leading to extremely positive outcomes; and collective enhancement of value & growth for businesses in the global markets.

Moreover, the coronavirus outbreak has actually allowed HR Function to effectively demonstrate the importance of HR Strategies for mitigating People's risk. During the entire lockdown, the role of HR has been very crucial in how they had been handling the ongoing crisis and ensuring smooth operations of their organisations. Today, HR is no longer working behind closed doors; and has become a crucial part



of driving the organisation's success. During these unprecedented times, the role of HR Leaders has become all the more important, and they are expected to respond quickly and comprehensively; considering immediate, short-term, and long-term consequences.

Further, the need for remote working would grow the demand for automation and collaboration tool; and increase the shift to cloud computing. Thus, it is imperative to keep employees motivated and enthused to achieve this future together. In these times, HR Function is tasked with ensuring adequate enablement and engagement of teams while also preparing for some hard decisions.

Hence, as HR Function, we have no option but to appropriately build our Strategic Capabilities and Plan & Prepare ourselves much better for the unforeseen disruptions unfolding in the future accordingly.

In the above backdrop, this article is an attempt to review the concept of Leveraging Technology in HR Function to drive Business Sustainability. Researchers have undertaken a review based research work based on real life interventions business experience and based their own understanding of the topic.

## II. LITERATURE REVIEW

Based on the theme for the research article and given the current context of globally evolving unprecedented times, literature review is summarized as under:

### (A): COVID 19

According to World Health Organization, Coronaviruses are a large family of viruses which may cause sickness in creatures or people. In humans, several coronaviruses are known to cause respiratory contaminations running from the normal cold to more serious ailments, for example, Middle East Respiratory Syndrome

(MERS) and Severe Acute Respiratory Syndrome (SARS).

"The most as of late found coronavirus causes coronavirus disease i.e. COVID-19". This new infection and malady were obscure before the outbreak started in December 2019 and same is presently an Officially pronounced pandemic, as it has truly affected in one way or the other pretty much every Country Globally. Starting at now Globally COVID 19 effect can be summed up as under:

- People Infected: 8.49 Crore plus
- Deaths: 18.43 Lakh plus
- Countries Impacted: 218
- Time since Outbreak: 13 months plus

### (B): Role of technology in Human Resources Function

Almost all firms now provide universal access to multiple HR value streams through technology and web based applications, dramatically changing the practice of human resource management. These changes often result from the need to cut costs and expand or improve services. Recent research shows, organizations that successfully adopt sophisticated HR technology tools outperform those that do not. But because most organizations already have automated basic HR administration, the simple automation of HR processes can no longer assure a competitive advantage. Instead, organizations must determine how to use technology to transform their HR practices and market their HR brand.

HR is evolving into a more technology-based profession because organizations need to:

- Streamline HR processes and reduce administrative burdens. Reduce HR administration and compliance costs.
- Compete more effectively for global talent.
- Improve service and access to data for employees and managers.

- Provide real-time metrics to allow decision-makers to spot trends and manage the workforce more effectively.
- Enable HR to transform so it can play a more strategic role in the business.

Transformational changes in HR Function using technology requires a fundamental change in the way HR professionals view their roles. Now HR professionals must not only master traditional HR Competencies, but also must have the ability to apply that knowledge via technology.

According to Deloitte's Industry 4.0 research, enterprises are already subject to digital transformation because of the increased productivity, reduced operational risk, and meeting customer demands to a greater extent.

The Fourth Industrial Revolution combines people and technology. Three alternative scenarios of the technological impact on the future workforce are being discussed. According to the first of them, work would be optimized through automation. A company would use the available opportunities to expand, as the workforce would be supported by robots and artificial intelligence, thus optimizing future work. In the second scenario, automation would be replaced by cooperation, being the priority for Industry 4.0. In addition, this scenario would provide the workforce with a voice, making it more involved rather than alienated. Its aim would be to take advantage of the best practices from technology companies, eliminating the tools that disrupt the workforce and joining labor organizations and governments in the development of new workforce strategies. The third and final scenario would bring about a digital transformation that would result in a workforce transformation. The level of expertise in automation would frequently exceed

human ability, which should nonetheless not be underestimated in terms of the potential ingrained in specifically human skills, making them even more important in Industry 4.0. In point of view, the progressing application of Industry 4.0 technologies will not result in total automation causing a competitive conflict between humans and machines, but efforts will be made to achieve the best possible collaboration between humans and machines.

The demand for highly skilled employees will grow as a result of the aforementioned transformations, and there will be less demand for workers presenting less advanced qualifications. Thus, it is of the utmost importance to make efforts to prepare employees for the new challenges imposed by technological changes. That is why it seems justified to describe which employee competencies will be crucial in the future.

It can be inferred from above that Role of technology in Human Resources Function, actually enables organizations to strategically develop Capability & Competencies (Knowledge, Skill & Attitude) of their People in line with the organizational requirements so as to efficiently and effectively address the critical dynamic business requirements while operating in a globalized economy.

### **(C):Sustainability**

Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability is composed of three pillars: Economic, Environmental, and Social—also known informally as Profits, Planet, and People.

Sustainability essentially urges Businesses to outline choices regarding ecological, social, and human effect as long as

possible, as opposed to on transient increases, for example, next quarter's profit report. It impacts them to consider a greater number of variables than basically the quick benefit or loss included. Progressively, organizations have given sustainability objectives, for example, responsibility to zero-waste packaging by a specific year, or to decrease overall emissions by a specific rate.

With the fast paced Digital Evolution changing the way businesses function, organizations have a great opportunity to re-imagine their processes for delivering a sustainable competitive advantage.

### III. RESEARCH METHODOLOGY

Researchers have undertaken an review based research work based on real life business interventions and based on their own understanding of the topic.

GAP analysis and Cost/Benefit analysis were performed between 'As Is' & 'Proposed' Processes prior to development of the systems to set clear objectives for development.

Systems were developed using an Iterative model where critical functions were developed first and then additional functionalities were added to the system in subsequent iterations.

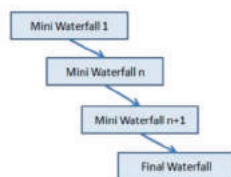


Fig (a): Iterative Model

### IV. REAL LIFE INTERVENTIONS OF TECHNOLOGY

GAIL has always been at the fore-front of Technology adoption. SAP Enterprise

Resource Planning (ERP) was implemented in GAIL in 2005 along with implementation of SAP HCM Module. Gradually Technology has been scaled across all processes of GAIL to obtain maximum leverage. Use of Technology in HR Functions has been a key highlight. Some of the recent key initiatives which really sets it apart are the implementation of various new aspects of technology like IoT, BI, Mobile Apps (Android/iOS), etc. (i.e. Real life interventions undertaken by GAIL to leverage technology in HR Function to drive Business Sustainability) are described as under:

#### 1) ROBOTICS/AI

Identification of HR Use Cases is underway for RPA (Robotic Process Automation) implementation. Repetitive manual tasks will be automated through RPA thereby freeing resources for better deployment. Also automated reconciliation can be achieved through custom designed BOTs. Implementation of RPA across HR processes will also reduce manual errors improving quality of HR services.

Development to Chat Bots is in design phase. The Chat Bots will serve as Personnel Assistant/HR Helpdesk to cater to employee queries. The use of NLP (Natural Language Processing)/AI will help the Bots to understand and answer user queries. It will change the way how HR information is disseminated and consumed across the organization. Employees will be able to interact with the BOTs through their Smart Phones (Android/iOS) or any other OS devices and information will be available on-Demand at the click of a button.

#### 2) Internet of Things (IoT)

With a focus on Employee Health, GAIL has provided every employee with GARMIN Smart Watches. The Smart Watches record various health statistics

which are stored in GARMIN Connect Mobile App. Employees can provide consent to GAIL to gather their Health Data through GARMIN Connect App. The Data is then synced/ retrieved from GARMIN app through custom built APIs. The development of such a system really helps GAIL to track Employee Health in real time and creates a context to help employees with their health needs. The current situation arising out of COVID-19 also highlights the need for such application (Refer Annexure-A).

Annexure A: Implementation of IOT to gather Employee Health Data through GARMIN smart watches



Figure (b) : GARMIN Vivo Smart Watch

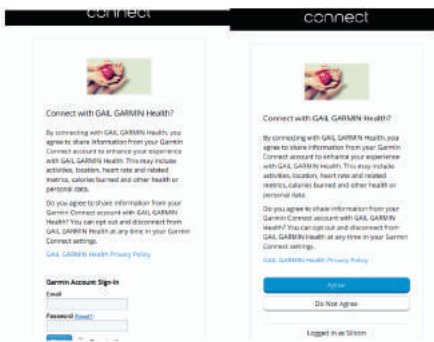


Figure (c) : Employee Consent through GARMIN Connect App

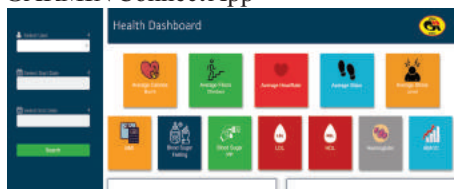


Figure (d): Employee Health Dashboard

### 3) Cross-Platform Application for Retired Employees to claim Medical Benefit

Retired Employees can now claim Medical Benefits from GAIL from the safety of their home using GAIL Golden Retirement Portal. Earlier, retired employees were required to submit physical bills to local HR for further processing. With implementation of the system, retired employees can now login to Golden Portal with their credentials, create PRMS Requests and upload soft copies of Medical Bills from a Single Window. Events like submissions etc. are also notified through system generated email/sms. Data is then exchanged between Portal System & SAP system. HR /F&A subsequently process the PRMS Requests through SAP. Thereafter, the status of the PRMS Requests are sent back to Portal. The Retired employees can also track the status data of their requests through the Golden Portal Window (Refer Annexure-B).

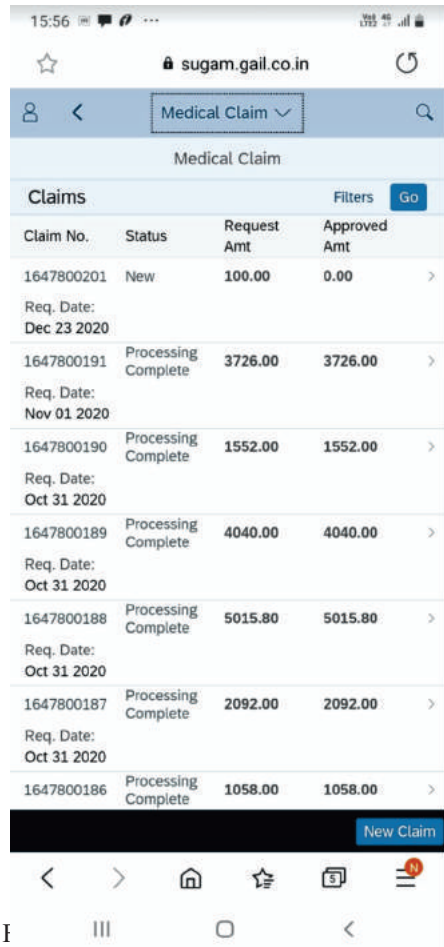
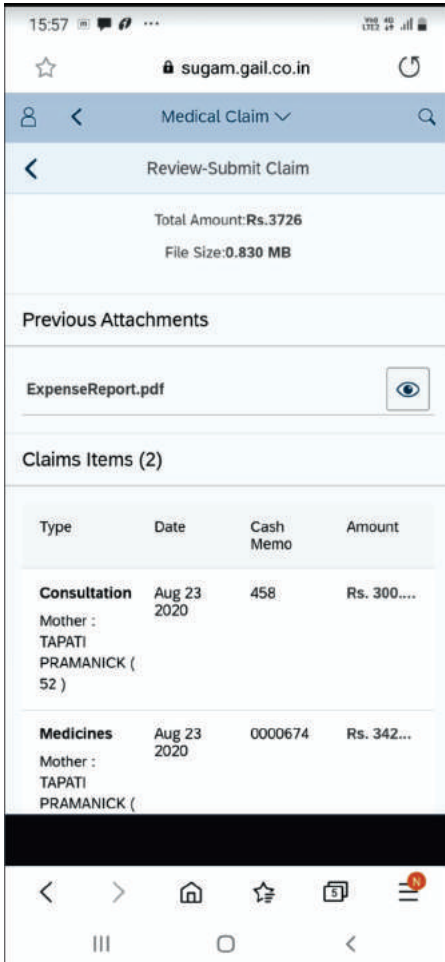
Annexure B: Cross Platform application for PRMS Claims

### 4) Mobile application – Medical Claims of Active Employees

SAP FIORI based mobile application for Medical Claims has been implemented and same can be downloaded from GAIL APP Store (similar to Google Play Store) for submission and tracking of Medical Claims using Mobile/Handheld Devices over any public ISP network. Bills can be uploaded using Device Camera. The application compresses and converts the files into standard PDF before submission. Provision for Re-call and Return of Bills is also built in the application. The functionality for event based (submission, return etc.) communication to the employee through mail/sms has also been

developed (Refer Annexure-C).

Annexure C: SAP Fiori Based Mobile Application for Medical Claims



5) Self-Booking Tool – For Flight Booking using Balmer & Lawrie API

Self-Booking Tool provides end-to-end complete solution for all flight booking needs of the employee. The application has been integrated with SAP standard Travel Module to provide a seamless experience to the end-users. Employee can book/view/cancel/re-book flight tickets against an approved Travel Request from a single window. Billing, Invoicing, Vendor Payment etc. are automated & flows in a seamless manner (Refer Annexure D).

Annexure D: Self Booking Tool

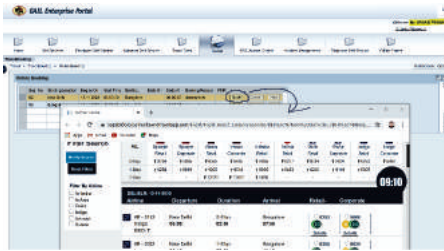


Figure (h) : SAP Portal and Balmer & Lawrie Window

6) Mobile application – Travel Expenses Reimbursement

Mobile Application for Travel Expense Reimbursement enables the employees to claim Tour Expenses (Hotel Accommodation, Food Bills etc) from their Smart Phones or any other Handheld Devices. The application is integrated with standard SAP Travel Module. Employees can upload their bills using Device cameras which eliminate the requirement for submission of Physical Bills. Event Based Notifications are system generated. Employees can also track the status of their requests from a single window. (Refer Annexure E).

Annexure E: SAP Fiori Based Mobile Application for Travel Expenses Reimbursement

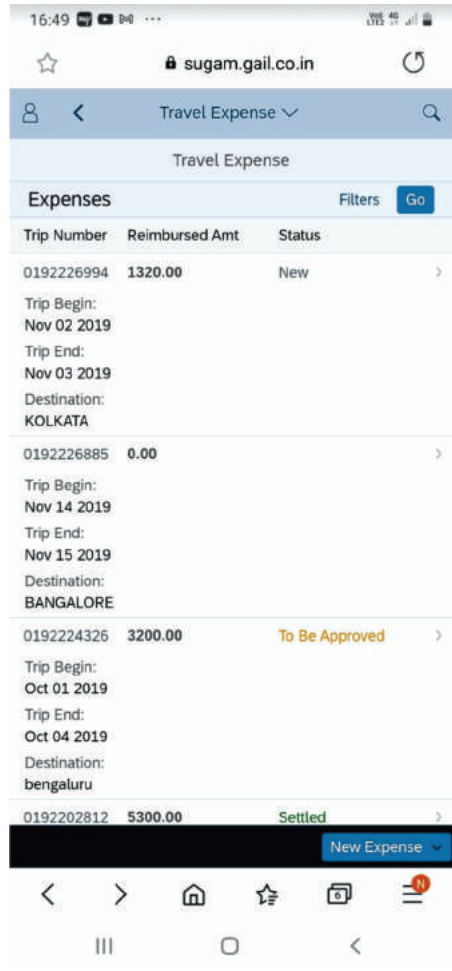
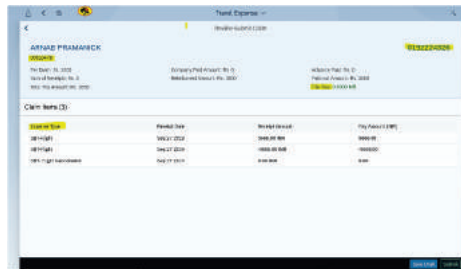


Figure (I): Application Landing Screen



7) Owing to emerging COVID-19 situation, Trainings were conducted over Collaborative Platforms like Microsoft Teams Meeting, Google Meet etc. Also self-paced Online Courses are hosted for employees to develop their knowledge and skill (on-Demand).

8) No Conferences/events are being conducted. Scheduled programmes were all cancelled/postponed. Meetings are being done continuously through Video Conferencing and relevant applications as per business requirement.

9) A dedicated team of GAIL's senior doctors was formed to address medical needs of regular and superannuated employees through tele/video consultation during the lockdown period. During this period, the number of cases relating to mental stress, and psychological problems were treated. In one serious case from remote location emergency tele-consultation was arranged from a super specialty hospital at New Delhi and the patient benefitted and treated efficiently.

10) Encouraging Learning and Development of employees during the ongoing pandemic and in order to utilize time effectively during the lockdown period, to enhance professional and behavioural skill sets, employees were provided access to online micro learning courses by leveraging technology through the GAIL Training Institute. Large number of employees joined and completed the micro learning e-courses and got benefitted. Further, it was also communicated that online mode of training will be largely followed for ensuring learning and development of GAIL employees.

11) During the period of lockdown and in an effort to make the best of this situation, an initiative of bringing out an in-house publication of e-books has been launched

wherein budding authors of GAIL family are contributing. These e-books were finally published under different categories viz. articles relating to General Management and Operations, Short Stories, Poetry, Cooking Recipes, etc. Besides, employees were also actively engaged in activities like "Slogan Writing and participation in online Quiz competitions, etc.

12) To foster sense belongingness amongst employees, in an innovative approach, GAIL employees recorded a song to highlight the importance of social distancing and unity in these difficult times. The entire song titled 'Ek Doosre Ke Liye Hai Khade Aap Hum, Ek Doosre Ke Liye Savdhan Hum' was recorded and put together by employees while working from home and uploaded on the company's social media channels.

Numerous measures/initiatives as illustrated above were taken by GAIL to comprehensively address various challenges emerging on account of COVID-19 by leveraging technology in HR Function to drive Business Sustainability. Hence, the Company through the above actions actually demonstrated its strategic response through the use of technology in HR Function with a sole objective to ensure Business Sustainability.

## V. FINDING

Needless to mention, interventions deliberated has a huge impact on HR Function with a significant alliance with Business Sustainability (Planet, People & Profit). Outcomes of some of the aforementioned HR Function led technology initiatives are further analyzed from the business sustainability perspective as under:

**TABLE A**  
TBL Outcomes of the Initiatives

TBL(Triple Bottom Line) METRICES			
Initiatives	People	Planet	Profit
IoT-GARMIN	Tracking the health, wellness of Employee;  Scope for providing Customized Assistance to the Employees in dealing with Stress, day-to-day health needs	NA	Preventive Intervention. Helps to reduce medical Cost for the organization
Cross Platform PRMS Application	Retired employees need not physically submit the bills either at Post Office or GAIL office. Owing to COVID-19 situation such intervention helps to reduce physical interactions while delivering efficient, safe dispensation of Medical Services for the aged and vulnerable;  Saves money in paper printing , postage/courier services;  No hassle of misplacement of bills;  Faceless HR services	Paperless , Environment friendly;  No miles travelled by the Paper bills (carbon neutral)	Cost of Storage/ Maintenance Paper Bills eliminated;  Cost of Misplacement of Bills eliminated
Mobile application Medical Claims	Faceless processing of Medical Bills (physical interactions are eliminated);  No misplacement of original bills (reduce hassle);  Tracking is real-time;  Claims can be created anytime, anywhere;  Time savings through Better User Interface	Enables Paperless working	Saves Paper, Printing and storage costs of Physical Bills.(1,60,144 Medical Claims have been created by the employees within few months);  Centralization Processing resulting Manpower Rationalization & Cost Savings related to the activity (Estimated Savings of 2+ Cr. / year)
Self-Booking Tool	Hassle free single window operation;  Helpdesk facility available;	NA	Cancellation Charges Savings : 0.5+ Cr per year 2) ITC savings on GST : 0.25+ Cr per year

	No upfront payment by the employee;  Integration with Travel Module, SBT expenses are created in auto;  Time savings		
Mobile application – Travel Expenses Reimbursement	Faceless processing of Medical Bills (physical interactions are eliminated);  No misplacement of original bills (reduce hassle);  Tracking is real-time  Claims can be created anytime, anywhere	Enables Paperless working	Saves Paper, Printing and storage costs of Physical Bills;  Scope for Centralization resulting in Manpower Rationalization
Other Initiative –Online Trainings & Courses	Virtual Interactions from a safe Environment;  No travelling required;  No hassle of making travel arrangements , preparation;  Self-paced courses allow the employee to learn at their own speed	No miles travelled by the employees (carbon neutral)	Boarding, Lodging, Travel Expenses, DA not incurred (Avg. Estimated Cost : 30,000 INR per employee per travel );  Stationary Costs not incurred

**VI. CONCLUSION**

The success of the HR Digital Initiatives in achieving sustainable Triple Bottom Line outcomes reaffirms and highlights the need for Digital Evolution. With the Planned Future Initiatives such as RPA, Bots etc. organization will usher into the next phase of “Digital Yatra” improving Business Sustainability and touching people lives and hearts through carefully curated Technology enabled HR touch points. Thus, HR will become an on-Demand value stream which can be accessed ‘Anywhere, Anytime’ through Transparent Digital Interfaces. In fact, the interventions discussed in the article are aimed at achieving adoption through-out the organization so as to derive positive employee experience, operational



efficiency, stakeholders' satisfaction and substantial reduction in paper based decision making. The experience of such Initiatives prepares the business case for organizations at large for leveraging technology in Human Resource Function to provide on-demand HR value streams 'Anytime, Anywhere' through Technology enabled HR PoS (Point of Services) besides creating an attractive Employer Brand (i.e. Employee Value Proposition).

Through this article an attempt has been made to essentially drive the point that uses of technology in HR Function by organizations is absolutely essential for building responsible future businesses and creating sustainable business value in the long term. Organizations can do so by re-imagining its internal processes, organization structures & core competence. Further to realize this dream businesses/organizations must start their Digital Transformation journey in letter & spirit for unlocking the collective people potential.

Keeping in view of above, it can be reasonably concluded that uses of technology in HR Function is extremely critical, as it will ultimately help in achieving following positive outcomes so as to thrive with Business Sustainability (Planet, People & Profit) in the new world order:

1. Good Health & Well-being
2. Ensuring Quality Education
3. Decent Work and Economic Growth
4. Industry, Innovation and Infrastructure
5. Sustainable Cities and Communities
6. Responsible Consumption and Production
7. Climate Action

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## Factors Influencing HR Professional for Implementing e-HRM

Mr. Shantam Sharma

Director HR,

MPCG Mobile Private Limited, India,

### ABSTRACT

Human Resource Management is very crucial function in any organization and Business performance is influenced by Human resources management intervention. In India integration of Technology with Human Resource management function is regulated by many factors, HR professionals plays vital role in technological interventions in HR. E-HRM is technological solution or computer software that is used by the human resource management (HRM) team as a source of employee master data for complete life cycle of employees, which is use to perform operational and transformational role. Objective of the study is to identify Factors influencing HR Professional for implementing e-HRM and to suggest measures for effective e-HRM implementation. This study was exploratory in nature and survey method was used to gauge opinion of HR professionals through well-designed, structured and closed ended 'Likert Scale' (Ten Point Scale) questionnaire to get perception of the respondents. Present study has been administered on 100 HR Professionals from manufacturing and service sector on the random sampling basis. To check reliability of the scale Cronbach's Alpha Test was applied. Analysis of data was carried out using MS Excel and Statistical Package for Social Science (SPSS 25.0). Factor analysis is primarily used for data reduction & identification of factors for implementing e-HRM.

### Keywords

Human resources management, e-HRM, Human Resource Information System /

HRIS, information technologies, application

### INTRODUCTION

Human Resource Management evolved in last one century, post establishment of Royal Commission for Labour and appointment of Labour Officer. Post-independence in 1948 Factories Act came in force and Welfare Officer became statutory position in the organisation. Later during 60's concept of Personnel Management evolved, deals with Labour Welfare, Industrial Relations and Personnel Administration. Subsequently broader umbrella adopted during 80's as Human Resource Management (HRM) to facilitate during life cycle of employees as business partner. Hence concept of Human Resource Management (HRM) evolved from servitude to modern era of professional working, where people are considered as strategic partner for Business

Technology evolved rapidly in last three decade. Smart work became new norm against hard work. Leading to automation of major business processes. e-HRM (Electronic Human Resource Management) may be defined as amalgamation of Human Resource Management with technology, so as to deliver HR requirements of the Organisation. (Ruël, et al., 2004). Adoption of e-HRM in last decade is facilitated by rapid development of cyberspace and information technology, leading to synchronization & standardisation of HR Processes and decentralisation of HR task.

Earlier the HR functions were only delivered by the HR professionals, but

line-managers perform many transactional tasks of Human Resource Management after digital integration through e-HRM. Information technology (IT) has become crucial requirement of modern world. Face-to-face human resource management task are been swapped by e-HRM, every organisation should focus for enhancing effectiveness and productivity. The aim of this study is to understand factors influencing HR professionals for implementing e-HRM in the organisation.

### CONCEPTUAL FRAMEWORK

Human Resource Management terminology evolved from "personnel" to "industrial relations" to "employee relations" to "human resources" (Michael, et al., 1985), now it has become a challenge for HR to transform from HR to electronic HR.

Style of decision making by managers of 21st century is influenced by Information System. e-HRM enable organisations in getting cost-efficient customised information at right time, to the right people, in right form duly encrypted, leading to operational efficiency and smoothening of decision-making process, leading to enhanced managerial effectiveness. (Al Mamun & Islam, 2016) e-HRM convert, store, protect process, transmit, and securely retrieve information through web-based solution influenced by web application technology using computer software & hardware to deliver an online real-time Human Resource Management Solution in line with HR needs of the business. (Ruël, et al., 2004)

### REVIEW OF LITERATURE

In 1990 first time the term e-HRM was used for more effective and efficient information flow, of internal application of e-business techniques to add value to the management (Ruël, et al., 2004). For deployment of new technology, knowledge of technology and expertise of HR Professional is a significant

determinant fact (Warren, 2004).

Human Resource professional are facilitated with e-HRM, to become strategic player by enhancing both functionality and affordability. (Hussaina, et al., 2007). Support of Top management is mandatory to ensure favourable environment for adoption of e-HRM. (Premkumar & Roberts, 1999). Internal prerequisite for the user technology adoption is relative advantage. (Jeon, et al., 2006). Social influence and behavioural intention are the major factor for adoption of e-HRM (Rahman, et al., 2016) and user acceptance of the technology can be pushed by HR Professionals (Huang & Taylor, 2013)

e-HRM helps organizations in enhancing productivity, enable effective training and development, performance management, monitoring employees, retaining and managing the talented workforce, facilitate deployment of knowledge management techniques, interpersonal communication, compensation and benefits administration. e-HRM is very useful for building skills and competencies of the employees, career planning and succession planning, recruitment and hiring, on boarding and induction of employees. Significant help in the management and retention of talented employee, payroll maintenance. Facilitates all HR activities like employee monitoring through e-surveillance and others are Critical success factors due to e-HRM (Sheriff & Ravishankar, 2011).

Quality of the outcomes from HRIS is linked with Organizational performance. (Al-Tarawneh, 2012). Regulatory compliance has a great impact on the successful adoption of e-HRM (Troshani, et al., 2010). Quick response and access to information are important benefits of implementation of e-HRM, whereas financial support is a major barrier for adoption of e-HRM. (Ngai & Wat, 2006).

e-HRM adoption has a significant relation with size of the organization, Top management support and competition. (Teo, et al., 2007). Gender, experience and education is not associated with implementation is e-HRM (Al Mamun & Islam, 2016). Implementation of e-HRM enhance efficiency by reduction in process cycle times & paper-work, enhances data accuracy and optimisation of workforce (Lengnick-Hall & Moritz, 2003). Improve the levels of efficiency and effectiveness of HR Professionals (Doughty, 2012). As transactional HR process are automated after implementation of e-HRM, hence Human Resource professionals have more time to focus on strategic tasks and able to manage people better which is company's most important resource. (Varma & Gopal, 2011).

HR professionals have more time to support organisation for business strategy & transformation initiatives after implementation of e-HRM, but no such study found on actual enhancement of HR professional involvement in business decision making. (Parry & Tyson, 2011).

Good effect on e-HRM effectiveness can be with behavioral intention as mediating variable, but performance expectancy not affect e-HRM usage through behavioral intention as mediating variable e-HRM (Kwan, et al., 2019).

Employees should be provided with the electronic Human Resource Management framework where they can easily view the HRM activities which will generate effective Human Resource Management framework. (Siam & Alhaderi, 2019).

HRM effectiveness at policy and practice level can be enhanced gradually by implementation of e-HRM. e-HRM plays a crucial role in strengthening the HRM framework by improvising the clarity and enhancing the stability of HR messages. In this era of globalisation, polices and practices should be uniformly implemented across all locations, not only

in one country but in all the countries where ever company is present, this can be achieved through e-HRM.

Further, mindset of employees and line manager need to changed, they had to appreciate and accept benefits of web-based HR tool for effective implementation of e-HRM.

With rapid advancement in technology, HR professionals have to understand and accept e-HRM for enhancing effectiveness of HRM. e-HRM will be mandatory in few years and no need to even discuss and will be treated as obvious! (Ruël, et al., 2004). In other words, introduction of innovative management technologies should be considered as a condition for improving the quality of professional and innovative training and professional selection of specialists who are capable to solve the problems of personnel management in modern ways will be compulsory. (Kaznacheeva, et al., 2020)

## OBJECTIVES

- Identification of factors influencing HR Professional for implementing e-HRM
- To suggest measures for effective implementation of e-HRM

## RESEARCH METHODOLOGY

### • The Study:

The study undertaken was descriptive in nature and provided insights into factors influencing HR Professional for implementing e-HRM.

### • The Sample:

The sample of 100 HR professionals were taken on the random sampling basis from Manufacturing and Service sector.

### • The Tools:

#### (a) For Data Collection:

This study was exploratory in nature and survey method was used to gauge opinion of HR professionals through well-designed, structured and closed ended

After reviewing the relevant literature, definition of e-HRM was outlined. 17 statements/items were identified and administered on a sample of 100 respondents selected randomly and constituted of the professional from private and public sector of manufacturing and service organizations.

To check reliability of the scale Cronbach's Alpha Test was applied. An Alpha Coefficient of 0.70 is considered to be good reliability estimate of the instrument. In the present study, the Alpha Coefficient Value is found to be 0.956 (Refer Table-I).

(b) The Tools for Data Analysis:

MS Excel and Statistical Package for Social Science (SPSS 25.0) were used for analysis of data collected from samples Factor Analysis

Sampling Adequacy is measured by KMO & Bartlett's Test of Sphericity, it is recommended to check the case to variable ratio for the analysis being conducted. While the KMO ranges from 0 to 1, the world-over accepted index is over 0.6. In this study its value is found to be 0.914. Also, the Bartlett's Test of Sphericity relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study. It is recommended that the Bartlett's Test of Sphericity must be less than 0.05, for Factor Analysis In the present study it was found to be less than 0.05. (Refer Table- II)

Data reduction and summarization is primarily done by using Factor analysis, the whole set of interdependent relationship among variables are examined, factor analysis facilitates us the group of variables (most common with each other) to study and describe variability among observed & correlated variables in terms of potentially lower number of unobserved variables called 'Factors'. The final scale was subjected to

principal component method of factor analysis using vari-max rotation (Refer - Table-III).

## RESULTS

The study was administered on 100 respondents and the scores obtained were subjected to factor analysis and two factors were identified. These are- Strategic Perspective and Transactional Perspective (Refer - Table- 4)

The data was subjected to factor analysis using SPSS and 2 Factors emerged: Strategic Perspective and Transactional Perspective

Factor I: Transactional Perspective

This was measured by items 14,16,17,5,7,6,11,10,13,&12. These items are "Better supervision and control of manpower can be done with e-HRM[Factor Load :0.865]"; "Employees views can be captured and establish smooth communication with employee by eHRM[Factor Load :0.849]"; "Negotiation with labour union are aided through facts based on e-HRM Data[Factor Load :0.774]"; "Improve employee satisfaction by delivering HR services more quickly and accurately through e-HRM[Factor Load :0.759]"; "e-HRM facilitate Compensation and benefit management[Factor Load :0.738]"; "e-HRM help in managing Statutory compliances in better way[Factor Load :0.729]"; "e-HRM facilitate handling Grievance management[Factor Load :0.728]"; "e-HRM aids in implementation and administration of HR practices[Factor Load :0.690]"; "Performance management of employees can be done easily by e-HRM[Factor Load :0.635]" and "e-HRM provides a comprehensive information as a single integrated database[Factor Load :0.593]".

**Factor II: Strategic Perspective**

This was measured by items 4,2,1,3,15,8,&9. These items are "e-HRM

"e-HRM helps in Analysis of all HR processes & performing HR analytics easily[Factor Load :0.828]";"Through e-HRM advanced strategic activities like training and development, developing job content and employee reward programs etc can be performed better[Factor Load :0.808]";" e-HRM shift the focus of HR from processing of transactions to strategic HRM[Factor Load :0.797]";"e-HRM helps in Reengineering HR processes, practice and function[Factor Load :0.738]";"e-HRM Maintain HR records including personal information of employees and have time access to data[Factor Load :0.649]";"e-HRM is used for self service including web portal for enhancing Employee Experience[Factor Load :0.611]"and "e-HRM helps in employee turn-over tracking and analysis[Factor Load :0.507]".

### CONCLUSION OF THE STUDY

In this VUCA (Volatile, Uncertain, Complex and Ambiguous) business environment, speed is key to success. Organisation can go a long way towards success, if amalgamation of Human Resource Management with technology is implemented as e-HRM with right perspective, keeping challenges in consideration.

e-HRM enables better management of every Organisation, eliminates redundant activities which are transactional in nature and provides more accurate, error free timely appropriate personnel information, resulting in cost effective, transparent and open culture.

The application of E-tools will bring tremendous productive changes in HRM and facilitate HR professional for transformational activities which are strategic in nature and align with business objectives of the organisation.

Two factors were identified from this study

i.e., Transactional Perspective and strategic Perspective that influence HR Professionals to implement e-HRM in an organization. Also, the study provides various suggestions to the top management and policy makers for effective e-HRM implementation

### SUGGESTIONS FOR EFFECTIVE e-HRM IMPLEMENTATION

#### I. HRM Related

- All stakeholders to be Involved from beginning so as to have buy-in
- Clarity on the part of all users regarding the question- "How I am benefited?"
- Creating Commitment to change from top to bottom
- Developing Culture of Knowledge management
- Creating IT Culture and educating users on benefits of technological solutions
- Appropriate and Adequate training to the users

#### II. Technology Intervention related

- e-HRM solution should have both desktop & mobile application, compactable to all mobile platforms, framework & environments
- e-HRM modules should be interactive and user-friendly for Capturing & Amending information. Should allow user to view & hassle-free download of statutory and other required information.
- E-learning module should promote interaction among employees through engaging & effective solutions. So as to create a culture of learning in the form of learning communities and knowledge network, resulting as overall organizational learning.

### LIMITATIONS OF THE STUDY

However, the present study has limitations in terms of time and resources, hence may not be true representative of the whole population of the country. So, before generalization, there is a need to conduct an in-depth study covering broader geographical area and larger sample size.

**APPENDIX -****Table I: Reliability Test**

Reliability Statistics	
Cronbach's Alpha	N of Items
0.956	17

**Table II: KMO And Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.914
Bartlett's Test of Sphericity	Approx. Chi-Square	4519.332
	Df	0.78
	Sig.	0

**Table III: Rotated Component Matrix**

Rotated Component Matrix <sup>a</sup>		
	Component	
	1	2
VAR00014	0.865	0.156
VAR00016	0.849	0.249
VAR00017	0.774	0.186
VAR00005	0.759	0.398
VAR00007	0.738	0.368
VAR00006	0.729	0.481
VAR00011	0.728	0.289
VAR00010	0.69	0.568
VAR00013	0.635	0.535
VAR00012	0.593	0.577
VAR00004	0.266	0.828
VAR00002	0.198	0.808
VAR00001	0.18	0.797
VAR00003	0.289	0.738
VAR00015	0.561	0.649
VAR00008	0.414	0.611
VAR00009	0.49	0.507
Extraction Method: Principal Component Analysis.		
Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

**Table IV: Factors With Their Loadings**

Factors	Name of the factors	Items	Factor Loads
F1	Transactional Perspective	14,16,17,5,7,6,11,10,13,6,12.	7.360
F2	Strategic Perspective	4,2,1,3,15,8, & 9	4.937

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## Work Life Balance in The Age of WFH and AI

Mr. Shuvajit Chakraborty,  
NIPM member no L25721  
Deputy Manager, AIC of India,  
New Delhi

**Abstract** – The year 2020 is like no other year. The COVID- 19 pandemic has introduced the new workplace – Home. Working from home has broken down the barrier between workplace and home. The AI and related technologies have enabled this new workplace. The earlier approach of compartmentalization of these two lives is no more functional. The technology has brought about changes where work has entered the domestic life and domestic life sometime slips into the work life. The work life balancing has now adopted a new paradigm.

The paper aims to explore this new paradigm by studying the effects of this new technology enabled Work life balance, on the businesses and the lives of the workers. The paper explores economic, psychological and social aspects of this new work life balance. The paper adopts exploratory method of investigation and makes extensive use of internet resources and other secondary sources. The paper tries to find the solution to challenges posed by this new work life balance.

**Key words** – Work life balance, Work from home, artificial intelligence, economic effect, social effect, psychological effect

### Introduction

2020 is a leap year that started on a Wednesday. This does not make it special as leap years are repeated every 4 years. What makes it special is the event occurring in this year, the spread of Pandemic COVID -19 and events following the spread. While earlier pandemics such as Black death (1331-1353) or Spanish Flu (1918-1920) spared

certain geographic localities due to poor means of communication and resultant contagion, the present pandemic had wider reach due to improvement in means of communication. This put forth extraordinary challenges which were met by extraordinary means. The means most adapted was LOCKDOWN. A term that was more familiar to law enforcing agencies as a method of enforcing law and order became a part of everyday conversation. People were required to stay wherever they were. This made businesses and organizations to adopt new strategies for business continuity. Work from Home (WFH) is one such strategy. This is the remote working method where the Employees' home became his workplace. Technology including Artificial Intelligence (AI) played a great role in making this possible. For example, an apprehension that was widespread when this strategy was adopted was that, monitoring the productivity and quality of output from remote workers would be impossible. Artificial Intelligence has come up with solution to this challenge. Machine learning based programs allow monitoring employee performance in a noninvasive and accurate manner. Various tools are now available from simple Google Forms and sheets to software such as Timedoctor, Tsheet, Hivedesk, Timely etc.

This has brought about new challenges for the work life balance, where earlier people would neatly compartmentalize their work and domestic spheres. These two spheres have now coalesced into a seamless entity with one entering the space reserved for another earlier. This paper explores this new reality and its implications.

## Review of literature

Achievement of work life balance has been a desire of much of the working population in the modern times and much research has been conducted in this field. Nancy R Lockwood in her 2003 research article "Work/Life Balance Challenges and Solutions " published in SHRM research quarterly found that Generation X and Y employees who value their personal time, couples struggling to manage dual-career marriages, or companies losing critical knowledge when employees leave for other opportunities, work/life programs offer a win-win situation for employers and employees. Steve Fleetwood in his 2007 article published in International Journal of Human Resource Management (March issue) concluded that there is an inexorable link between work life balance and certain flexible working practices. P Delecta of SPIHER, Chennai wrote in the April 2011 issue of International Journal of Current Research, "If one has managed to allocate the required time for every aspect of life duly and not to reflect the problems in one part of life to another it means that he has been able to achieve work-family balance." E. Jeffrey Hill, Brent C. Miller, Sara P. Weiner and Joe Colihan in their study titled " Influences of the Virtual Office on aspects of Work and Work/Life Balance" published in Personnel Psychology , December 2006 revealed the perception of greater productivity, higher morale, increased flexibility and longer work hours due to telework, as well as an equivocal influence on work/life balance and a negative influence on teamwork. An early study on the work from home by Alan Felstead ,Nick Jewson, Annie Phizacklea and Sally Walters titled "Opportunities to work at home in the context of work.life balance" published in the Human Resource Management Journal ( August 2006 issue) concluded that the option to work at home is more likely to be available in the public sector, large establishments and work environments in

which individuals are responsible for the quality of their own output. These workplaces are typically less unionized but not especially feminized.

The findings of all these studies have now been taken over by the turn of events in 2020. A new paradigm must be found for the new times.

## Methodology

The method adopted in this paper for finding new paradigm in work life balance in the new times was exploratory research as the contours of the new paradigm are yet to be concretized. Secondary data was extensively used both due to time constraints and ease of access. Online research one of the fastest means to gain information was taken for this paper. The pitfall attached with this method is deluge of data including dubious data. Every effort was made while preparing this paper to avoid data whose antecedents seemed to be doubtful. No hypothesis was formulated this paper as the paper aims to understand the evolving scenario and previous base knowledge on the issue is low. This paper follows method of descriptive research observing and describing behavior with no attempt to modify the behavior.

## Economic analysis

The sudden forced Working from Home following spread came as a blessing in disguise for many businesses and organizations. William D. Eberle Professor of Economics in Stanford's School of Humanities and Sciences and a senior fellow at the Stanford Institute for Economic Policy Research (SIEPR), estimates that estimated 42% of the US workforce were Working from Home full time as of June 2020. The comparable figures for India are not available but June figures when Unlock 1 began in India will be comparable based on anecdotal evidence. Even in December 2020 when

unlock has been implemented in most parts of the country; certain sectors like education, information technology and finance are continuing with the Work from Home. Aside from obvious risk reduction on health front and resultant risk to financial health of individual employees, organizations and businesses are finding it economically beneficial. TCS is set to allow 75 per cent of its workforce to work from home, by the year 2025. Facebook has extended its work from home policy until July 2021. Google will allow its employees to continue working from home until at least June 2021. They save on the rentals and infrastructure spends as office space rentals and infrastructure spend in most metro cities in business regions is quite high. The employee absenteeism gets reduced as the employees now stay at their home to work and reasons such as difficulty in commute or certain responsibilities at home are no longer applicable. This has brought certain benefits for employees also as some of them need no more stay in expensive rentals in tier 1 cities or metro cities but can work from their homes in small towns and villages.

The technology including AI ensured that WFH was possible in the most economical manner by introducing tools such as remote working technologies such as Virtual Meetings, Remote monitoring etc. Cheaper internet connectivity has enabled explosive growth in online tools, allowing many white-collar roles to be done at home and keeping managers and business owners in touch with their staff. Users of Microsoft Teams soared to a new daily record of 2.7 billion meeting minutes in one day, a 200% increase from 900 million on March 16, the company said on April 9. Even amid security concerns, Zoom has gone from being used by 10 million office workers a day to more than 200 million people.

### Psychological analysis

This new normal of Working from home has had different effects on different people. Some of the employees have seen their productivity increase as there are now less of distractions and they can concentrate on their work at hand. On the other hand, some people have sense of ennui, not having physical presence of coworkers and clients. The education sector is a classic example, earlier teachers in a classroom especially when teaching very young people got feedback on the effectiveness of their teaching just by looking at the facial expressions of the students. The virtual classes for most of the tools are still to allow for such instant feedback. This has led to a sense of ennui especially in older teachers who have spent their lifetime teaching in classroom.

Dr Dominique Steiler, professor of people, organizations, and society at Grenoble School of Business (France) found that three ways working from home is damaging employees' mental health:

1. The sudden lack of physical connection can leave employees feeling they have nowhere to turn when they feel stressed or anxious.
2. Adapting to working from home, which can also contribute to an increased workload. There's the temptation to work longer hours.
3. The virtual meetings can trigger fatigue and leave participants feeling—ironically—disconnected. This issue is particularly acute during larger meetings, where the speaker is unable to see individual faces.

Earlier people compartmentalized work and life in two separate airtight compartments. When moving from domestic life to work life they adopted different persona and different mentalities. It was normal for a hard as nails manager to be a soft doting father or mother or son or daughter or spouse in his domestic life or

for a strict disciplinarian parent at home to be a soft persuasive salesperson at work. Now Work from home has broken the wall separating two compartments. The separate lives have entered the space reserved earlier for other. This has created a confusion and resultant irritation for many people.

The psychological effect of technology enabled remote working has proved to have been diametrically opposite in separate studies on stress felt by employees. A 2017 report by the European Foundation for the Improvement of Living and Working Conditions suggested that 41 percent of remote employees report higher levels of stress compared with just 25 percent of their counterparts who work in the office. According to a 2018 survey that Mental Health America conducted with FlexJobs, about 71 percent of people would like to work from home to reduce commute-related stress.

A part of the stress in the present work from home is due to the app and device centrism putting constraints on the design of digital workspace. As the technology including AI evolves the stress will be reduced by contextualization and focus on the task or outcome that the user is trying to achieve and not the application or tool they are using. Using data analytics from employee mood, movements, and speech patterns, the AI tools can offer recommendations on when workers can take breaks or when they are adopting unhealthy work patterns. This will be great enabler for healthy work pattern when working from home and work stretches due to longer work hours.

### **Social analysis**

The Work from Home enabled with AI had both negative and positive social effects. The digital divide existing in the society that was subsurface earlier has surfaced in the COVID -19 induced work from home. Certain jobs had enabling technologies

which allowed people to work from home, but other people had no such luxury. Mostly highly educated people got the opportunity to work from home and mostly people working on jobs with low educational requirements could not work from home. The work place/ office also served the purpose of socialization and building up organizational esprit-de-corps. The work from home as of now does not provide any scope for above functions. Some of the employees who work mostly in virtual space may face communication challenges when working in physical space when the situation demands. Some of the employees are bombarded by distractions at home: children demanding attention, spouses, and roommates interrupting, street noises drilling into the consciousness. It is found that few times working parents in midst of their organizational meets find wailing children disrupting. Some of the people become lax about organizational culture and business etiquettes. Recently there was a report in newspapers where an advocate working from home appeared in a vest for Rajasthan High court hearing. Some of the jobs which depended on the commute of employees to office such as Taxi drivers and office canteen workers will be lost. So will be the work of office janitors or gardeners. These are the challenges that the developers of future technologies for remote working and management using those technologies must carefully handle.

The positive social effects of working from home may be seen in employees spending more time with their families, taking care of personal errands, and pursuing their outside interests without sacrificing productivity. The work from home has empowered female employees. Before the advent of work from home, they had a difficult time balancing their domestic and official responsibilities and sometimes make difficult choices. The work from home has removed such dilemmas. The

people who had restricted movement capacities either due to physical conditions or social responsibilities have found their scope of earning has been enhanced by the technology aided work from home.

### Conclusion

Artificial Intelligence has taken steps to enable remote working or working from home. There are many economical, psychological and social benefits of remote working. It has the potential of changing the face of the economy and society in the same way that adoption of industrial technology has done in the earlier century. People will be freed from mundane tasks to take higher level tasks associated with various jobs. Some of the old jobs will be lost and some new jobs will be created. The evolution process was there but the COVID 19 and lockdown imposed to combat it, has force fastened the evolution. Many processes which would have evolved, if the evolution had followed its natural pace could not take place. The lacuna is visible in form of the various shortcomings in the economic, psychological and social aspects of the work from home. Some of these challenges were explored in this paper. These challenges are to be more deeply studied by future researchers. The solutions have to be designed by both the developers of artificial intelligence and the businesses and organizations which will be using them for fulfilling their various needs.

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## Comparative study of technological changes brought in by EPFO for EPS procedures

Dr. Akshay Narayan Ganbote

### Abstract:

Employee provident fund organization a government organization recently migrated from traditional procedure of EPS manual filling to online procedure. Human Resource Department from every organisation caters to the fulfillment of the data provision to the government social security giant. The employees which were quite dependent to the familiar human faces from human resource section have to get dependent on the technologies. The traditional paper work has been replaced by the online swift procedures implemented by EPFO pan India. The paper focuses on how the transitional change brought in by provident fund organization affected the behavior of retiring employees. The paper also focuses on the technological effectiveness to measure the satisfaction level of employee superannuating from services. This study also caters to evaluation of awareness done and training given by human resource for improving effectiveness. The paper through various empirical data collected would present the effective implementation of Digital India mission policies of Government.

**Keywords** :Social Security, Pension, Retirement benefits, provident fund and employee pension, Technology, transition analysis.

### Introduction:

The technology has been an important factor in every individual's day to day life. It plays a vital role in deciding the speedy completion of work. The 21st century has been a revolutionary one in respect of technology and its effective implementation. Each and every business activity has been highlighted by the

improvisation through the technology. The effect has been fourfold and varied. The impact of Technology has been illustrative on various areas. The Communication, efficiency, security, speed and numerous other merits serve as the important for transition from present state. Technology plays an important role in every minor to major activity nowadays. The Social security schemes have been a subject of major discussion as it has defined the impact of policies on the measures defining the means of leaving. The social security schemes post retirement has least been covered by the private players. The impact of the laws and legislation has been tremendous. It has moulded the implementation of various post retirement social security schemes. These are Gratuity, provident fund and Pension. The pension has been the vital of all for the discussions as the provision and implementation has been a critical. The private players have no pension schemes maintained. The total private industry has been dependent on the government backed EPFO pension schemes. The EPFO apart from the provident fund caters for pension fund and EDLI. The corporate has no specific pension fund of its kind as such. The government major EPFO has been an oldest pension fund regulator in India. Other private pension fund players are at the behest of individuals.

### EPS - Employee Pension Scheme

The Organized sector was introduced to a new pension scheme in 90's with objectives of helping employees in the organised sector. The eligibility criteria for the pension scheme (EPS) was an employee must be subscribed to provident fund of EPFO through an employer. The

contribution from the employee salary towards the pension scheme is done through the employee's salary.

### **About EPS:**

The employee provident fund organization the parent organization caters to effective implementation of procedures related to EPS. The organization ascertains through employer that the employee receives the pension at the age of 58 years. The scheme is available for all the employees who are new as well as presently working in the organization. The 12% contribution is borne by both the employee as well as employer. It is calculated as the 12% rate to Basic and Dearness allowance of the salary. This contribution is made toward the EPF. The contribution of employer is divided into 8.33% which goes to EPS. While employees total contribution is credited to provident fund. The EPS is a regular source of income post retirement. After the employee retires. The eligibility for the EPS is as below

1. One must be a member of the EPFO.
2. One must have attained the age of 58 years.
3. In case you defer the pension for 2 years (until you reach the age of 60 years), you will be eligible to receive the pension at an additional rate of 4% per year.
4. One must have completed at least 10 years of service.
5. The EPFO EPS withdrawal process

To withdraw the PF balance and the EPS amount, the EPFO has launched a 'composite form' to take care of withdrawals, transfer, advances, and other related payments. The withdrawal process becomes simpler and less time-consuming if an employee has Aadhaar number. This is because if your Universal Account Number (UAN) is linked to employees Aadhaar number, the process can be done online on the Member e-Sewa portal. On the other hand, if employee does not have Aadhaar number or your UAN is not linked with Aadhaar, then employee will

be required to visit EPFO office to submit the withdrawal claim from your EPF account.

## **II. LITERATURE REVIEW:**

Change management:

Change management is the modern phenomena. Most of the business organizations now are going to change their activities and the organizational culture, because due to the advancement of latest technology, changing the production techniques, the changing behaviour of the customer, the economic changes, the business world changing activities force the business organisation to bring change on their activities. The change can be defined as the decision of management to alter the present procedures of the activity into a new one. This may include the new activity new style or model. This is done to cope up with the rapid changes in the business environments. The aim of this change is to achieve the profits and business advantages over the rivals and competitors. The implementation of change can be done in the structure of organization, the employees of organization, the technology of business, production techniques, administration or management change, change management have proof different organization when they adapted became the successive organization. It can define the change management also by the help of following words. Coetsee (1999) states

“Organisational improvements are difficult to implement when the organizational change develops a kind of resistance through the skepticism from the employees of organization. The ability of management to achieve maximum gain and the benefits from the change depends on the strategies brought in by the management to effectively implement the

environment of change. The achievement of the change is in the minimizing the resistance of people and encouraging the acceptance and support.”

Impact of Information Technology on Human Resource Management:

The organization sustaining in dynamic environment has large influence of Information Technology. The effectiveness of human resource can be well achieved through the utilization of information technology. The business efficiency can be attained through the use of information technology applications in various human resource procedures and practices. The pension system being one of them has increased the satisfaction of employees.

The manifestation of innovation in Human Resource Management can be achieved in numerous ways. They areas follow:

- To provide real time solutions with flexibility.
- To identify new procedures and systems.
- To identify new practices to achieve satisfaction.

The above innovations allied with the human resource creates a positive impact and output at large. Rosabeth Moss Kanter, one of the leading management theorists of her time, the innovation plays a vital role in rebirth and success of business organisation (developing new products, introducing novel services, and operating procedures), entrepreneurship (taking business risks) and inclusive management (encouraging all employees to participate in making decisions about work).

Following are the positive impacts on Human Resource Management brought in by ICT:

1. Better services to line managers
2. Enhancing management
3. Effective recruiting
4. Data management and critical analysis
5. Inventory management tools and human resource management
6. Cost-reduction and efficiency

7. Customer service and human resource management

8. Career development and human capital management

9. Automation of HR processes

### III. The Research Methodology

The sample size of 100 respondents was randomly selected. The level of significance was kept to 0.05 level with standard deviation 95%. The test used for the test was Annova

Hypothesis

H0 : The employees are not satisfied of technological changes brought in by EPFO for EPS procedures.

H1 : The employees are satisfied of technological changes brought in by EPFO for EPS procedures.

#### A. OBJECTIVES:

To highlight and study the new process of pension form filling brought in by EPFO.

To study the technological changes brought in by EPFO for EPS procedures.

To differentiate the advantages and disadvantages between the old and new process of pension form filling brought in by EPFO.

Source	DF	Sum of Square	Mean Square	F Statistic	P-value
Groups (between groups)	1	5.445000	5.445000	3.967869	0.0477506
Error (within groups)	198	271.710087	1.372273		
Total	199	277.155087	1.392739		

Table 1.1: Statistical Interpretation for One Way ANOVA test, using F distribution

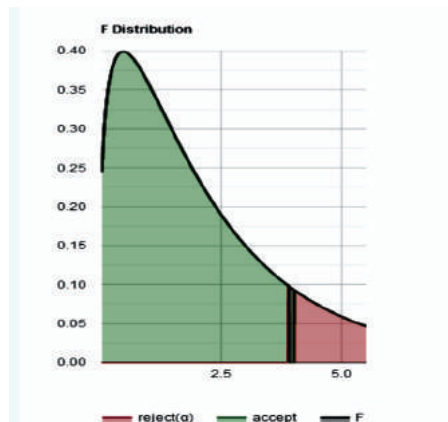




Fig 1.1: One Way ANOVA test, using F distribution df(1,198) (right tailed)

1. H0 hypothesis  
 Since  $p\text{-value} < \alpha$ , H0 is rejected.  
 Some of the groups' averages consider to be not equal.  
 In other words, the difference between the averages of some groups is big enough to be statistically significant.
2. P-value  
 p-value equals 0.0477506,  $[p( x \leq F ) = 0.952249 ]$ . This means that the chance of type1 error (rejecting a correct H0) is small: 0.04775 (4.78%)  
 The smaller the p-value the stronger it support H1
3. The statistics  
 The test statistic F equals 3.967869, is not in the 95% critical value accepted range:  $[-\infty : 3.8889]$
4. Effect size  
 The observed effect size f is small (0.14). That indicates that the magnitude of the difference between the averages is small.  
 The  $\eta^2$  equals 0.020. It means that the group explains 2.0% of the variance from the average (similar to R2 in the linear regression)
5. Tukey HSD/Tukey Kramer  
 The means of the following pair are significantly different: x1-x2.

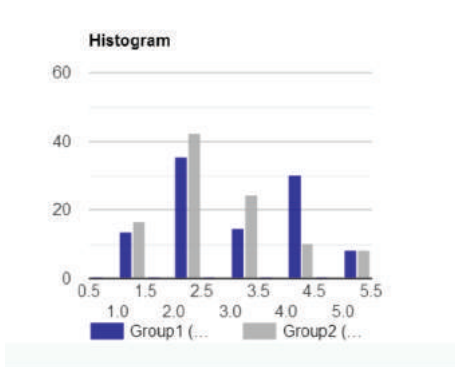


Fig 1.2: Histogram

**V. OBSERVATION:**

The satisfaction of the individuals with regards to the new pension process implemented by the EPFO has been well accepted by the group interrogated with. The result shows the difference between the averages reflecting a real difference between the groups. The F statistic represents the ratio of the variance between the groups and the variance inside the groups. This highlights the resultant independent variables which make the significant impact on the dependent variable seen by the result of the statistics. The P value for the hypothesis one is below corresponding value of level of significance. Hence the null hypothesis is rejected and alternate hypothesis is accepted.

**VI. CONCLUSION:**

The technological changes brought in by the government by various schemes like digital India have successfully paved to inroads to traditional statutory procedures of Human Resource Management. The traditional methods of statutory compliance like EPS filing were tedious and cumbersome to retiring employee. The online one online procedure has also highlighted the one window compliance of Government. The post retirement social security scheme has not only got security but the upper hand over the traditional paper works. The AADHAR authentication and validation has also secured the delivery and ascertain the end customer satisfaction. Here the customer being the employee has upheld the Human Resource Management commitment towards the employee satisfaction backed by the government coordination.

The results of statistical test prove the alternate hypothesis to be true to be accepted. This states that the independent factors used like documentation and time

were correlated to the level of satisfaction. The objective of research paper to testify the satisfaction level of the employees towards the technological changes brought in by the government giant EPO in EPS was achieved. As the p value is stronger to support the assertion of alternate hypothesis and hence the research paper accepts the alternate hypothesis. While it also defines the varied scope for further research in area as very least research material is available on the subject matter.

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## Business Networking in the Digital Age

Mr. Rajesh Nair  
Associate Partner,  
EY LLP, Kochi

### ABSTRACT

Corporate executives often say that ‘it is not about what you know, it is about who you know!’. Business networking has become an important and is being perceived as a discipline which needs to be taught and not just left to chance, it’s a skill one develops through experience. But things have changed during the last year. The pandemic has ensured that we cannot have the luxury of pumping hands and physically exchanging cards. The warm firm handshake is often replaced by clicks. There is a ‘click’ to follow someone and perhaps ‘two clicks’ to befriend someone. This also means that the shyness and the physical unpleasant aura of meeting strangers has been replaced with the ability of accosting someone with an email, visit to a webpage and use of networking sites like LinkedIn.

The paper looks to establish that the mechanics of forming deep and profitable relationships using the digital tools and platforms. The essence of these relationships are about looking into mutual successes beyond the spirit of just connectivity or not to always look at success and profit as the pure outcome. It is about your ability to give more than the opportunity to receive and a reminder that your interest in someone else’s success will often be reciprocated. So, all the digital technology changes are about reminding yourself that these are new avenues to express generosity and that success is not a zero-sum game.

### INTRODUCTION

We live in an age where there is a lot of human connection, people we meet, those we live with and many more we come

across socially and professionally<sup>1</sup>. For every topic under the sun and for everyone we meet, there is information and snippets available on the internet and often well catalogued. From normal daily habits to the interactions at workplace, we are facing new ways of working and living, in every aspect of life. When we pause and look at the welter of change around us, the scenario which stares back to us is that of massive flux. It does not require us to dig deep to the roots of change to see that technology is the primary disruptor of our times. The quotient of change also requires us to be far more creative and proactive than the yesteryears<sup>2</sup>. It is not just enough to be great problem solvers, today we need to be pre-empting and identifying potential problems. While the thinking capacity to master new technologies will be key, these critical skills need to also be buttressed with aggressive pace and nimbleness.

Most of the information that we have around us needs to be synthesized into byte sized knowledge and connected with what we know and have learned in the past<sup>3</sup>. This also brings in paradigm shift in the way we think, work and live. Add to the demographic dimension, there is the massive advent of technology that we must negotiate with. The laptops, the constantly flickering smart phones are an extension of the human body for today’s professional. Very simply, the average knowledge worker of today has these massive distractions whether she is at her workplace or at home and trading casual banter in a coffee shop!

This brings in the modified managerial mind. Today, you need to focus on multiple things at the same time. A deep thought is often fighting for mind space with a phone

call, an email, a social media notification and the like. This is not just a ‘youth’ phenomenon. The middle aged and the retired senior citizen too has all these multiple distractions and grapples with the same sort of challenges. The time and intent to focus on a task is becoming more and more ephemeral and this leads to what the management gurus call – the light touch! This is not the subtle management scholarship of deftly maneuvering but the complete inability to ‘think through’<sup>4</sup>. The less we do this, we also mentally teach ourselves to focus less

A lot of our professional development happens with the multifarious interactions we have at the workplace and in allied settings. This is not just through the valuable confines of work but also comes from the what cooler discussions and the pebbles of organizational culture you unconsciously pick up in your time with various entities. These nudges that you get is important to your outlook and perspective<sup>5</sup>. While culture itself is like the vitals of an organization, professionals gain a lot from it and embrace maturity through it. You will need to foster avenues for these conversations and fellow experts. This can happen through industry or sector networking forums much like Rotary, TiE, CII, FICCI et.al

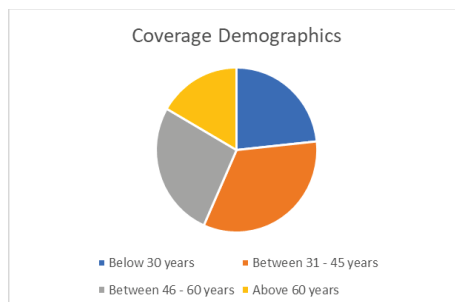
Just as we settled into a schedule of networking, comes the pandemic. Suddenly we had a lot less opportunities to meet, introduce, find common interests, topics to chat about and lesser avenues to match skills and needs in relationships. This also ushered accelerating adoptions of digital tools for various business activities. With the changing realities, it is of high imperative that the professionals and students of today understand the ‘digital’ perspective of things. This is not just changing ways in which business is done but also about the large shift in the way we work, communicate and think. In

this context, an important question is – What is your Digital Quotient (DQ)<sup>6</sup>? It represents your ability to understand the digital context, learn new ways of working, unlearn some of the seemingly archaic practices of the past and embrace the digital environment completely. Qualitatively, it means having an eye on the horizon, understanding disruptions not just in the large business landscape but in your respective work domains. It is a no-brainer than some of the routine work with have ‘Bots’ and robotic process automation bringing in efficiencies<sup>7</sup>. So skilling oneself and thinking meticulously is the need of the hour and is the moot question to ask yourself is – how will you differentiate your digital quotient to manage your businesses, build professional networks and your career?

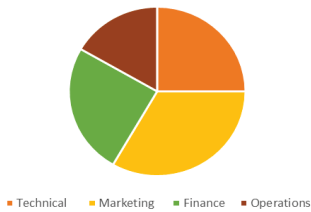
## METHODOLOGY

The data collection has been over one to one sessions of the various programs conducted under the aegis on EY LLP, TiE Kerala Chapter, CII Kerala, Kerala Management Association and Rotary programs in Kochi.

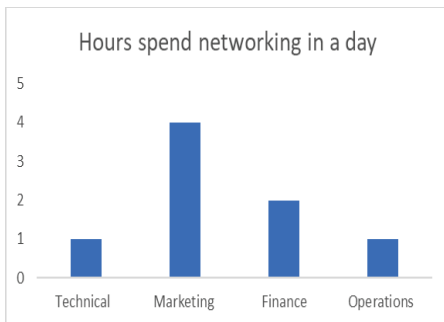
The coverage of around 60 professionals across industries including government services. The discussions were also held in ‘virtual networking lounges’ in four conferences covered. With most of the social forums going online, the questions of the tools and preference were also covered in these conversations.



Professional Profile



While travelling and physical meetings have severely got restricted networking sites which facilitate online connections and networking opportunities have increased by quantum. Popular sites like LinkedIn have increased engagement time, new members and adoption of allied paid services. Even industry bodies have seen more programs albeit online.



A lot of these professionals have also seen this opportunity as useful to build contacts. The reach out to interesting professionals and the ability to broach conversations have not been affected by the lack of physical meeting avenues.

## RESULTS

The summary of the conversations can be broadly classified around four themes. The thread which runs across all these different themes is also the fact that, the lack of physical movement has not affected the ability to network for these professionals and there have been a much larger impetus to reach out to connects and build newer networks in the pandemic

time.

Leveraging existing social networking sites

Besides a business networking site like LinkedIn, even the traditional social networking sites like a Facebook and Instagram have upped the ante in providing networking platforms. The new formats of Live events and 'mashups' brings together like-minded professionals or professional with common interests and quests. Most professionals we interacted with averred that they have stepped up their use of virtual networking sites.

### Finding the right routine

Workplace discipline like punching or clocking time or the biometric sensors which unobtrusively take timings and instil discipline are all directive mechanisms. But they have their benefits when it comes to time management and the ability to budget and allocate time to various priorities at work and in the personal domain. Regular routines are also catalysts to efficiency and productivity. It also calls for tremendous drive and motivation to make it work. Lot of structures and support functions are always taken for granted. So, when you become your own boss, there is also the need to make sure that you are a great 'employee' to yourself too.

### Collective networking

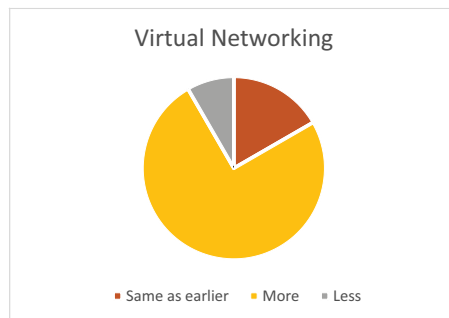
From time immemorial, leadership has always been treated as a singular attribute. The word 'leader' always prods us to think of great men and women. We look hard and pry into their life and actions, on the adversities they faced, and how they always came out successful and with flying colours. We are fascinated by these stories. Whether in a board room, a classroom or even during the bantering in clusters near the common eating spaces and the coffee dispensers, we are completely in awe of these stories. A good percentage of books

and publications which come out of the management literature publishing anvil each day, a significant number are the 'inspiring' stories of leaders, which we gobble up as Aesop's Fables. We are also driven by the 'narrative fallacy'<sup>9</sup> as the experts say, of presuming that the leader had the tenacity and prescience to make great decisions, can network at will and take calculated risks. In these encouraging and enervating tales, we miss out a vital ingredient of leadership – The collective ecosystem and the presence of other leaders around him or her. Networking unlike leadership has always encouraged a collective approach. It is not when we direct but when we collaborate and think together that we build relationships. Collective networking is much like distributed leadership where we leverage multiple skills and competencies across and strive to move to a common goal to achieve.

### Emotional security of a physical networking space

Most of us need the structures of a physical place to direct our efficiencies and thoughts. We also need the learning environment that a workplace provides and the emotional security of being part of a larger team / group. Loyalty to an organisation and a sense of belonging is often needed for us to work with mental pressures. But if you have the drive to learn and initiative to embark on tasks on your own and have a keen focus on your learning and development, work from home is for you. Much like consultants, you can accelerate your learning trajectory through not just interactions but budgeting adequate time each day for personal development. This is not easy and requires tremendous discipline and relentless focus on the work tasks at hand. You also need to be driven by actively engaging in work and have to develop the ability to certify the completion of your work. For the casual chats, it is necessary you build platforms

for informal chats – whether it be a group chat, a group mail or a group video conference. The benefit which we do not fathom is also the fact that most others are also looking to opportunities to network in the virtual world. Close to seventy five percent of the respondents said that they are focusing more on networking during these times, with questions related to how other professionals are coping with the restrictive times, their respective sectors, what is happening in their careers and their outlook of the future.



### CONCLUSION

The charters of all these societies / clubs / forums are with the best intentions and with the verve to provide a platform for all likeminded people who can contribute to a large common good. What eventually happens, at times, is that these groups become more an extended business or career networking platform and the basic ethos of the very idea of formation dissipates with time. Another cardinal mistake some of them make is to seek new members 'who are like them' – similar profiles, similar younger people – bringing in a diversity gap, will satisfy a deficient component to generate the best of good ideas.

As business professionals, our connections are the pulse of what we have achieved and what we are capable of. How do these connections come about? It comes from giving. When we are helpful to the environment around us, when we never hesitate to help someone in need, it creates

a good will that is inexplicable nor is it part of some complicated array of strategic moves. It needs to be a sheer act of wanting to help. This is what we could call 'collaboration commerce' – business getting created and done through collaboration. It is important to have a network of connected 'smiles' around you. It brings happiness and confidence in our abilities and a sound fulfilment of being 'good'.

Always remember - Often a win-win situation turns into a situation where we are secretly following up to make sure that the other person has not got more than we have from the deal. That perhaps is akin to keeping score and constantly looking at the scoreboard of achievements. We cannot create great relationships in business or in life by keeping track in such a manner. It cannot be a fifty – fifty proposition, it needs to be a hundred percent winning proposition of the other person. Focus completely on the success of the other person and go with focus and intention to help them achieve what they want. You will walk out in a successful deal having created a personal ambassador, who will respect and like you for life.

An interesting idea is to involve students in social networking projects in schools and colleges. Humans are wired to socially connect. Connections are not just for starting a venture or to sell, but a way of thinking and a way of life. It is the constant quest to do better, to doggedly follow improvements and develop the keenness to make a difference. We regularly see jobs being the end of creativity and people become just a 'pair of hands' doing things without thinking and without the zest to make a difference. One gets worried when educated creative young people say that they can't find employment, when just opening their eyes can open them to a panorama of problems to solve and to create a business out of. A guidance from a senior person in their network can help a

lot in making that difference.

Any success is often more than ninety five percent, the victory of a human interaction. And that results from being your genuine self. This comes from the skill of always being 'you'. You can modulate and synchronise your behaviour with timely principles of human nature, but it is not the 'wrapping' people care for – it is the core product inside the wrapping – YOU. When you genuinely want the other person to succeed, you will find meaning in the transaction and understand the value of being authentic ...

It is important to remember that giving is not part of a roadmap or a strategy or seeding to create a future success. It is also not about developing undue influence by pushing. Gravity always works when you create a pull. You will literally find it impossible to keep pushing. How far can you push a piece of rope? Is it not easier pulling it? It is never about how much push you have on someone but the pull you have on them<sup>10</sup>. Always remember, people always buy from someone whom they love and trust, given all other hygiene factors are similar.

Your ability to sell or just interact improves by quantum by putting the needs of the other person foremost. It is the most fundamental rule of life – to get and network you need to prepare to give first!

The key moot question is - Will this change networking models, for ever? Will it change the way we build our social connection in and outside work change? Experts think it will. Organisations will increasingly evaluate whether there are functions where employees can be given the work from home option. We would have also mastered the online tools and perhaps this will also reduce the need to physically do meetings, create a case for travelling less. The travel time between places itself could lead to larger productive gains and organisations will seriously evaluate the need for a lot of casual and

unnecessary movement.

It is an interesting juncture to sculpt your tasks at your own interests and priorities. You may find a lot of meaning in your work, ability to choose what you want to do and aggrandize the sort of experiences you need in your repertoire! Most importantly if you are a vision what you work life should be, here is an opportunity to create it !!

10. Permission Marketing – Seth Godin

11. A world without work – Daniel Susskind



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## Role Of Artificial Intelligence In Recruitment Process

Dr. Swathis. S

Assistant professor

Yuvaraja College University of Mysore  
Mysuru

**Abstract :** The role of Artificial intelligence in development of sustainability of business and recruitment has been discussed in the paper. The paper is based on secondary data. In today's world we see that application of technology has Hit the all MNC companies. one of the latest technology that is AI has becoming the part and parcel of recruitment process. so after studying the paper you will be able to understand the methods, process and tools used in recruitment process with the help of Artificial intelligence.

**Key words :** Artificial intelligence, Recruitment, Sustainability of Business, MNC companies. Technology.

As the technology has hit the all the activities of human. In the HR department all most all activities are taking place with the help of technology in 2020. The entire world is experiencing the adaptation of technology. It not only essential but part and parcel of the work during 2020. From recruitment to retirement all the activities of HR is happening with the help of Technology. The role of Artificial intelligence is becoming bigger and bigger day by day in the process of recruitment. Artificial intelligence (AI) is the ability of a computer program or a machine to think and learn. It is also a field of study which tries to make computers smart .They work on their own without being encoded with commands

AI will change the recruiter role through augmented intelligence which will allow recruiters to become more proactive in their hiring, help determine a candidate's culture fit, and improve their relationships

with hiring managers by using data to measure KPIs such as quality of hire Artificial intelligence in recruitment can significantly improve candidate engagement through improved communication between candidates and employers. This is because it can provide candidates with updates, feedback and guidance, as well as answer their questions in real-time.

Evolution of Artificial Intelligence (AI)



Oracle and Future Workplace AI at Work Global Study 2019

Recruiting is a labor-intensive procedure. Each association has its novel enlistment measure including different things, for example, shortlisting, personal investigations, planning, meeting, assessing, reaching references, and ultimately on-boarding. Regardless of whether you are running a four-man show or overseeing many laborers, you have to smooth out your enlistment cycle and choice system. There are many practical techniques for effectively discovering up-and-comers, and narrowing your pursuit. Most organizations utilize a wide-cluster of advances to sort out and survey the huge number of uses or continues they get. Online HR programming assists with accelerating the employing cycle just as distinguish qualified competitors. AI is becoming a must-have in the recruiter's toolbox.

AI is Transforming 5 Crucial Areas of HR



Oracle and Future Workplace AI at Work Global Study 2019

### Research methodology.

Descriptive method is used in the paper to explain the role of artificial intelligence in recruitment process.

### Scope Of The Study

The scope of the study is confined to artificial intelligence in recruitment process.

### Source of data:

Only secondary data was extracted from different published sources such as surveys, manuals, annual reports, HR policies, company records, magazines, reputed journals and website data was used.

### Advantages

#### a) Candidate Sourcing

In order to attract applicants, different methods may be used, such as referrals, job fairs, web postings, etc. This method can be conducted internally as well as externally. Companies can use HR software that uses an algorithm to scrape the portfolios and profiles of all possible applicants.

#### b) Resume Screening

with an Applicant Tracking System

Many applicants are submitted to a resume database where organisations seek to decide if the candidate meets the requisite

criteria and is eligible for the opening of a vacancy. Requirements can include wage expectations, requirements for schooling,

keywords, etc. The resume database plays a key role as all candidate resumes for each and every work vacancy can be saved and sorted.

#### c) Video Interviews

Video interviews are a substitute for face-to-face interviews and are a major time-saving tool that helps streamline the candidate selection process. In order to avoid the first step, phone call round of interviews, a video interview can be preprogrammed for candidates to respond in a video, recruiters may write text questions or prerecord video questions. The video interview is shared with the stakeholders to watch and watch after submission.

#### d) Integrations

As an Applicant Tracking System (ATS) is incorporated with various applications, it can reduce the manual labour needed for executing various functions. With only one sweep of the app, the Profile of the candidate can be captured from several job sites. Without of His process will require recruiters to manually input the data of the applicants into the system, which would entail several hours of data entry.

e) Screening and shortlisting the Right Candidates  
Screening candidates with the current database helps explain which candidates, based on their results, attrition rates, and tenure, have a history of greater success and which ones have been ineffective. For this no manual screening of resumes is needed. The programme for handling human resources automatically screens and shortlists the applicants, thereby making the process less time-consuming.

AI recruitment trending in 2019.

1. Automated Candidate Sourcing
2. Candidate Rediscovery

### 3. Candidate Matching

### 4. Hiring Remote Workers

### 5. Internal/Employee Referrals

### 6. Diversity Hiring

### 7. Customized Employee Value Propositions

### 8. Natural Language Processing (NLP)

### 9. Facial Expression Analysis

#### 1. Automated Candidate Sourcing

Recruitment advances in AI now allow recruiters to automate their sourcing process and broaden their scope at the same time more than 300 million social accounts can be examined by such solutions, something that even a small army of human beings would not be able to do.

#### 2. Candidate Rediscovery

In order to screen the current applicant pool for strong past applicants, some providers use AI technology that might be a good match for a new position. Ranking can also include promising profiles that for months or years have been forgotten about.

#### 3. Candidate Matching

Another interesting use of AI in recruitment is still in the sourcing space can be found in the candidate matching part of the process. Here too, we see a shift towards a customized candidate experience.

#### 4. Hiring Remote Workers

In today's job market, companies sometimes don't have a choice but to hire remote workers. There can be several reasons for this. Perhaps there simply are no suitable candidates available in their area of business. At that time AI helps companies to get right candidate.

#### 5. Internal/Employee Referrals

Another great way to hire high-quality people is via your existing employees. Referred new hires are often a better

(culture) fit, they are more engaged, less likely to leave, and they are more productive. Employees are check using AI technologies

#### 6. Diversity Hiring

AI may be a hot topic in recruitment land, but so is diversity hiring. A diverse workforce has a lot of proven advantages for companies:

- It improves employee happiness, productivity, and retention
- It improves innovation and creativity
- It's positive for your employer brand
- It increases your workforce's range of skills, talents & experiences

#### 7. Customized Employee Value Propositions

After all, every employee is different, so while a specific set of benefits may be perfect for one employee, it may not quite work for another. Thanks to AI (analyzing personalities, among other things) it could soon be possible for companies to offer an EVP that's adapted not just to their various candidate personas, but to each and every individual applicant.

#### 8. Natural Language Processing (NLP)

Among other things, NLP can help on resume classification, ranking, deep extraction, identification and semi-automation in the recruitment process.

#### 9. Facial Expression Analysis

The technology is able to analyze a candidate's facial expressions during the video interview, hence capturing their mood, and assess their personality traits. Sure, not everyone is a big fan of this AI-infused facial recognition technology as part of the recruitment process. Some say that people who know that their facial expressions are analyzed may be tempted to show self-consciousness,

## List of Company using AI for Recruitment.

**Hilton :** Hilton uses AI as for follow up interviews and arranging for final office calls for eligible candidates.

**ThredUp:** They use mass SMS text to employ 100-200 new individuals every month. For scheduling the interviews.

**Humana:** Video and audio interview screening is done with the help of AI.

**AT&T:** B2B Sales Development Program are done with the help of AI.

**Allstate:** Allstate uses phone interview first then adopt personal interview.

**Procter & Gamble:** AI tools like online and on site are considered before the candidate been interviewed.

**CapitalOne:** The overall planning of hiring, recruiting, Offering, transfer and onboarding met expectations with help of AI.

**Mya Systems:** Mya uses chatbot system to simplify the recruitment process.

**Allyo:** Allyo uses AI system in smart screening, assessment and systematically scheduling the interview.

**L'Oréal:** L'Oréal is using chatbot for enhancing recruitment.

**TechMahindra:** Tech Mahindra uses an Alled method to find the required applicant profile from ahuge resume database, which helps sort the correct profile according to the job description.

**Mindtree:** Mindtree, an IT company based in Bengaluru, has used AI applications extensively in all its verticals, especially

HR. In our selection process, AI plays a very significant role.

**Unilever:** Unilever uses HireVue for ranking the video interviews ,based on that best candidate will be taken for the job.

**Param.ai:** A startup company based in Hyderabad usesAI .uses prescreen and describe candidate as good ,bad and average based on past hiring pattern.

**HireVue:** Uses video interviews in initial level of hiring.

**Pymetrics:** By running at least 50 of their top performers through multiple games to measure cognitive, social and emotional traits to create a profile of the dream employee for a job, custom algorithm for each client business.

**HiringSolved:** AIpowered recruiting tool that allows diversity during the process of selection.

**Hiretual:** Digital assistant for recruiters that expands the scope of a recruiter that helps recruiters to identify and hire the right candidates with the right ability sets up to 10 times faster since its sources are accessible on more than 30 sites such as LinkedIn, GitHub, Quora, Facebook, Twitter, AngelList and Reddit, as well as 700 million internet professional public profiles.

**Koru:** To effectively balance candidates against open vacancies, Koru leverages AI.

It is difficult to believe, but AI will assist in determining the integrity and ethics of the candidate to decide if they are fit for the job. The business will check reliable applicants and allocate the staff accordingly. In reality, for ondemand applications like Uber, Zomato, and so on, this AI functionality has proven to be a boon.

### Artificial Intelligence Role In Helping Business Sustainability

AI will support companies with demand forecasting, helping to reduce the amount of transport required. AI will help minimise or eliminate waste in the management of water supplies, while minimising costs and reducing the effects on the environment. AI driven localised weather forecasting can help minimise water use.

### Disadvantages

- Data availability and a large amount of knowledge is extremely necessary for any AI programme to simulate human intelligence.
- Unconscious biases can be discovered through the program. A basic understanding of the way technology works and knowledge is therefore important.
- An E-commerce giant that abandoned its AI tool, which favored males for tech roles, is a clear example of this. AI recruiting firms have been told by the MNC and a few consider the possibility of algorithmic bias.
- While predictive recruiting tools seldom make affirmative hiring decisions, rejections are often Automated by them.
- Human touch is missing in the recruitment process. Most of the time emotion can not be identified very easily.
- Trust issues arises when the employees are recruited with the help of modern AI (artificial intelligence) tools.

### Conclusion

The application of Artificial intelligence has been boon to the field of Human resource management. After the IT revolution we seen most of the companies

are MNC companies with huge amount of employees working all over the world. For all HR operations and functions AI has eased the method, made cost effective with less amount of time consumption. AI has been one of the greatest supports for business sustainability. Without the business sustainability no organization can survive. But still the traditional human emotional touch is lacking in the AI. Overall all we can say that AI has always been supporting business sustainability and recruitment process.

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## A Study of Issues and Challenges of implementation of Artificial Intelligence in HRM

Dr. Venupriya,

Associate Professor, AMS School of Informatics,  
OU Road, Hyderabad

### Abstract:

Automation and artificial intelligence are playing a vital role in current business sustainability. Artificial Intelligence can be beneficial in different kind of HR areas which include recruitment and selection, talent management, knowledge management and of direction, administrative management. In fact, the primary purpose of those technologies is to available HR from time-consuming missions to perception of high value-delivered obligations. Artificial Intelligence is a technology that qualifies machines to think, understand, and accomplish tasks previously carried out by humans. AI has been grown exponentially in the past decade. Artificial intelligence is helping IT companies make better, faster decisions. HR managers have implemented Artificial Intelligence software to benefit further recruiting and create more competence in the overall recruitment and selection process. Artificial Intelligence technologies provide enormous prospects to advance functions in human resource. This paper further elaborates the genuineness, Issues, and challenges of implementation of artificial intelligence in HRM.

**Key words:** Human Resource Management, Artificial Intelligence, Issues and challenges, Implementation, Business sustainability.

### Introduction

Humans see the information in front of us and use our intelligence to draw conclusion. machines are not but we can make them appear intelligent by feeding them the right information and technology.

The world is constantly becoming more prone to technology due to globalization which implies organizations must stay up to date in order to be competitive. Human Resource Management (HRM) is more important than ever, especially with a focus on the recruitment of new employees which will bring skills and knowledge to an organization. With technological advances also comes the opportunity to streamline activities that previously have had to be carried out by humans. Therefore, it is of the highest importance to consider and evaluate the impact technology might have on the area of HRM and specifically the recruitment process.

Artificial intelligence is a technology that allows computers to learn from and make or recommend actions based on previously collected data. In human resource management AI can be applied in many ways to streamline processes and improve efficiency. Organisations adopting AI into their human resource process at varying rates. It is clear to see that the technology will have a lasting impact on the field as it becomes more widely accepted. HR professionals prepare themselves for these changes by understanding what the technology is and how it is applied around various functions.

### Literature Review:

Vivek Yawalkar (February 2019) "A Study of Artificial Intelligence and its role in Human Resource Management" - Volume 6, Issue 1 (E-ISSN 2348-1269, P- ISSN 2349-5138) - The research paper is descriptive in nature. The researcher used secondary data and concluded that a role of AI is larger into various functions carried out in human resource department



whereby robotics companies can handle recruitment, hiring, analyzing the data, collecting the data, reducing workload at workplace and enriching workplace efficiency.

Cliff Saran (2019) A survey of 350 US and UK-based CIOs, chief financial officers, vice presidents and IT managers has reported that IT decision-makers are becoming increasingly aware of artificial intelligence (AI) bias. Nearly half of AI professionals across the US and UK say they are “very” to “extremely” concerned about AI bias. Data Robot’s research found that AI is used by organisations to execute functions across departments, including human resources (35%). The survey also reported that 85% of IT leaders who took part in the survey believe that AI regulation would be helpful for better defining what constitutes AI bias and how it should be prevented.

Martincevic and Kozina (May 2019)– Paper showed the vital entirety of challenges that AI based recruitment involves are unconscious judgement through hiring procedures by organizations. It was also concluded that companies should be capable of train people and machines to evade these favouritisms.

Dinesh G. Harkut and Kashmira Kasat (March 2019) “Artificial Intelligence - Challenges and Applications” – In this study based on open access – peer reviewed it has concluded that building trust, AI human intervention, Investment, High expectation, Data security are few of the challenges which is faced by the organisations.

### Purpose of the study:

The purpose of this study is to research the assumption that technical progression, in specific Artificial Intelligence, have from HRM process. It aims to investigate the Issues and challenges of AI in HRM. Where AI can be implemented and possibly make the process more effective by working on

these challenges.

### Objective of the Study:

The main objectives of study are as follows

1. To study the issues and challenges of Human resource management while using Artificial Intelligence.
2. To measure the ways to overcome the AI challenges

### Research Methodology:

The study is based on secondary data, which was composed from various pre-published Articles, Printed sources, online websites, HR blogs, and Survey reports available by various Recruitment Process Organisations.

### Human Resource Management:

It is the strategic approach to the efficient management of people in a company or organization such that they help their business gain a competitive advantage. It is designed to expand employee performance in service of an employer's premeditated objectives. Human resource management is mainly concerned with the management of people within organizations, focusing on policies and systems. Human Resource Departments are responsible for managing employee-benefits design, employee recruitment, training and development, performance appraisal, and reward management, such as managing pay and Employee benefits benefit systems. HR also affects itself with organizational change and industrial relations, or the balancing of organizational practices with constraints arising from collective bargaining and governmental laws.



HR professionals generally cope with large amounts of paperwork on a day-to-day basis, ranging from department transfer requests to confidential employee documents. Documents must be on file for a considerable period. HRIS started in the organisations with the help of AI. The use of human resources information systems (HRIS) has made it possible for companies to store and retrieve files in an electronic format for people within the organization to gain access to when needed, thereby reducing the need for physical files and freeing up space within the office. HRIS also allows for information to be accessed in an appropriate manner; files can be reachable within seconds. Obtaining all the information in one place also allows for professionals to analyze data quickly and across multiple locations because the information is in a centralized location.

Recruiting has mostly been influenced by information technology. In the past, recruiters depend on printing in publications and word of mouth to fill open positions. HR professionals were not able to post a job in more than one location and did not have access to millions of people, causing the lead time of new hires to be drawn out and tedious. With the use of e-recruiting tools, HR professionals can post jobs and track applicants for thousands of jobs in a variety of locations all in one place. Interview feedback, background checks and drug tests, and onboarding can all be viewed online. This helps HR professionals keep track of all their open jobs and applicants in a way that is quicker and easier than before. E-recruiting also helps eliminate limitations of geographical location. Jobs can be posted and seen by anyone with internet access. In addition to recruiting portals, HR professionals often have social media presence through websites such as LinkedIn, allowing them to attract employees through the internet. Social media is biggest platform for companies today scenario. They can help build the company's brand by posting company news and photos of company

events. Recruitment and onboarding has made the role of the human resources department in recruitment much easier, artificial intelligence also allows for simpler and more meaningful applications on the candidate's end, which has been exhibited to improve application completion rates.

### **Artificial Intelligence:**

AI will no doubt transform the way companies do their hiring. It is clear to me that Recruitment Process Outsourcing (RPO) providers are uniquely situated to help lead companies through these changes, because they bring with them the following strengths:

**1. Big data:** Without Big data, AI just is not very, well, intelligent. As technologies gobble up vast amounts of data, and anonymized data can be shared throughout clients, RPO companies have tremendous access to data to feed artificially intelligent systems. Because it operates in a controlled environment, the RPO provider can also have high-quality data, whereas HR tech companies lack the time and incentive to curate data, ending up with a trickier version.

**2. A persistent focus on candidate experience:** While automation will reduce costs, it can and will hurt candidate experience when done poorly. As the steward of a client's brand, an RPO partner must design the right experience, recognizing that the job seeker's experience is an emotional one and finding the right touchpoints to maximize engagement. In an experiment with one of our clients last year, we eliminated phone screens and automated the hiring process to push candidates directly from their application to the manager interview. The first thing that happened was that candidates stopped showing up. They were not engaged, so it was not a big deal to blow it off. We inserted a shorter "engagement call" by a recruiter, not to do an interview,

but to build rapport and an emotional connection with the candidate. Interview rates shot right back up.

3. Skilled experts required to get the job done: The modern HR department like RPO has many specialists, but it is never enough. Teams need core experts in technology, recruitment marketing, compliance, and sourcing. Moreover, they need specialists who help them hire in far-flung locations or incomprehensible industries. It is not practical to assemble a core team with the expertise a partner can provide. In the team of the future, there are experience designers, marketing strategists, data scientists and recruiting concierges designing, redesigning, and executing customized experiences for candidates.

4. Accountability for results: Like the recruiting shifts before it, there will be lots of technology sold. It will be sold from fancy demos and great salespeople and implemented with tight project plans. But results will be murky, and vendors will say that the client did not do 'P' right or is too slow to adopt change. Clients will blame vendors for poor training or the lack of PQR features in the software. With an RPO partner, the accountability is clear: get results. An RPO provider cannot just sell something because its demos well, they need to produce results. This reduces risk for those innovative employers who are willing to lead the charge by partnering with a provider that is accountable for the entire process.

In HRM main function is Recruitment and Selection. The step change in recruitment is coming. Technology will soon modify how we hire each other, but not how we want to experience being hired. By combining technological expertise with thoughtfully crafted experiences, RPO partners are the best resource to help businesses build their path in the new world.

### **Issues and challenges of AI Implementation in HRM:**

AI is still a long shot in any domain of human activity, the speed of progress towards specialized AI systems in health care, automobile industry, social media, advertising, and marketing is considerable. Considerably less progress has been made in issues around the management of employees even on the first step of the AI path, which is decisions guided by algorithms. An important entirety of challenges that AI-based recruitment entails is unconscious discrimination during hiring processes by organizations. Employee facing problems that exploitation of AI can cause, such as losing jobs to automation and in some cases AI systems can be used when there are undesirable ends. What especially touches recruitment, is the possibility of losing jobs to automation, since there are already many job positions that have been replaced by AI programs which in turn can increase unemployment. Even though AI-based systems are extremely beneficial at recognizing talent, there are still some activities that should be conducted by humans, namely activities such as negotiations, appraisal of cultural fit and rapport building. Primary challenges of AI Implementation are following

- Complexity of HR phenomena
- Data challenges from HR operations
- Fairness and legal constraints
- Employee reactions to AI-management
- Overreliance on historical data in machine learning models
- Uncertain human behavioral responses to AI-based interventions
- Increased cybersecurity risks
- Adverse impacts of AI applications
- Difficulties in measuring effects of intervention strategies.

### **Business Sustainability:**

Business sustainability, also known as corporate sustainability, is the management and coordination of environmental, social, and financial demands and concerns to

ensure responsible, ethical, and ongoing success. Depletion of non-renewable resources, for example, is obviously not a sustainable practice. The review indicates that future studies of AI for Business sustainability should incorporate.

- Multilevel views
- Systems dynamics approaches
- Design thinking
- psychological and sociological considerations

• Economic value considerations

The above Opportunities show how AI can deliver immediate solutions without introducing long-term threats to Business sustainability. Various companies are developed AI in their organisations for their Business sustainability.

• Google's DeepMind division has developed AI that teaches itself to minimize the use of energy to cool Google's data centers. As a result, Google reduced its data center energy requirements by 35%. Google's public cloud offering is called Google Cloud Platform.

• Microsoft has committed to be carbon negative by 2030. Microsoft also runs massive public data centers (cloud offerings) under the name Microsoft Azure.

• Amazon has a long-term goal of powering its global infrastructure using 100% renewable energy. This includes its cloud platform AWS.

### Conclusion:

As per the above study it can be concluded that the AI Implications for organizational effectiveness are important to study. The main benefit of AI was the speeded quality and elimination of routine tasks, while the major challenge was the company's overall readiness towards new technologies. The real need of implementing AI should be carefully considered. AI must not be viewed as a problem solver or function to make a hard decision for all the HR function to make for all the HR functions instead it should be used as a tool to add value to our knowledge and business sustainability.

This paper discussed the issues and challenges of implementation of AI in HRM. Hence companies that are interested in using AI in their organisations mainly in Recruitment process organisations.

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## TECH BUZZ TO BUSINESS LEVER

*“I think this is exactly the right time to be discussing how automation can provide the benefits of greater efficiencies, greater cost competitiveness, productivity and shorter time to market”.*

- Sunil Mathur,  
Managing Director,  
Siemens India

*“By using AI and ML routines on top of the data that we have gathered for the last 5 - 6 years, we are able to predict certain reliability issues”.*

- Sanjeev Sharma,  
Managing Director,  
ABB India

*“With cloud computing technology, the cost of compute has come down so significantly lower that I am able to do a proof of concept with negligible cost and show value to business”.*

- Chirag Boonlia, CTO,  
Embassy Group

*“Larger consumer technology firms have so much data and their ability to understand their customers based on the data and create user journeys or stories for their customers is immense”.*

- Anjani Rathor,  
CDO, HDFC Bank

**Source: The Economic Times: Pune,  
Monday | August 31<sup>st</sup> 2020**



## About NIPM

National Institute of Personnel Management (NIPM), is the only all India body of professional managers engaged in the profession of Human Resource Management, Industrial Relations, Labour Welfare, and Training & Development in the country. It came in to existence on 15th March 1980 as a result of merger of two professional institutions, namely the Indian Institute of Personnel Management (IIPM) established in 1948 in Kolkata and the National Institute of Labour Management (NILM) established in 1950 in Bombay, now Mumbai.

With its National Office at Kolkata, NIPM has a total membership of about 10,000 spread over 53 Chapters all over the country.

NIPM is a nonprofit making body devoted to building professional excellence in the field of Human Resource Management through regular activities ranging from Evening Lectures to People Process Quality Certifications. Post Graduate Diploma in Personnel Management (PGDPM), the 2 years flagship academic programme of NIPM is widely recognized by industries in India for a career in HRM. NIPM has set up dedicated wings for Corporate Training & Consulting and Research & Development to leverage its vast experience and expertise. NIPM 4000-2016, the Global Standards for Quality of People Process, is aimed at defining global benchmarks for HR processes in organizations. NIPM 4000-2016 certification is the mark of Excellence of people processes in organizations.

The annual National Conference (NATCON) of NIPM is the greatest learning event in the country attended by eminent business and HR leaders from India and other Asian countries. The HR Excellence Award of the Institute, to be the most valued Award, is set up to track and recognize the HR professionals who make a significant difference. NIPM also organizes regular seminars, workshops, conferences on contemporary themes, and HR technical trainings for technical update through its Chapters across the country. NIPM reaches out to Management Students for their early professional grooming to make them 'Industry Ready'. The Student Chapters of NIPM are taking Root. 'Personnel Today' the professional journal of NIPM, is the most valued publication.

All endeavors of the Institute are aimed at continuously defining and redefining the benchmarks of Professional Excellence for People and People Processes and supporting the professionals and organizations achieving them.

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## NATIONAL INSTITUTE OF PERSONNEL MANAGEMENT

**Address :** Southend Conclave, Tower Block (3rd Floor), 1582, Rajdanga Main Road, Kolkata – 700 107

**Ph .:** 033-2441 7255