

Available online at <http://www.ijims.com>

ISSN - (Print): 2519 – 7908 ; ISSN - (Electronic): 2348 – 0343

IF:4.335; Index Copernicus (IC) Value: 60.59; UGC Recognized -UGC Journal No.: 47192. 1st July

Digital Transformation in HR

Manju Amla, Prof. (Dr.) Meenakshi Malhotra

University Business School, Panjab University, Chandigarh
Corresponding author: Manju Amla

Abstract

This paper investigated the concept of digital transformation in Human resources management and how new technologies are helping various HR functions and its employees. The study is descriptive in nature and secondary data has been used like company reports, web sources, expert blogs and research papers. The study has explored the concept of “SMACI” THE WEB OF TECHNOLOGY, the use of Artificial Intelligence (AI), HR Chatbots, Machine Learning, Robot process automation (RPA) in making the basic functions of human resource management (recruitment, screening, interviewing, Onboarding) smarter, faster and effective. The study also contributed in the literature by exploring the various tools which are used by the companies for the advancement and development of HR department. The benefits of having digital transformation in Human resource management, possible barriers or challenges a company has to face while transformation and solutions to overcome those challenges has also been explored with the examples of Indian companies and their innovation in businesses.

Keywords: SMACI, HR Chatbots, Artificial Intelligence, Robot Process Automation, Machine learning

1. Introduction

Artificial intelligence, Robotics, Virtual Reality, Machine Learning-The Tsunami of technology is here and it has smothered societies, cultures, economies, and businesses. The World is on the edge of fourth industrial revolution. This revolution contains a mixture of technologies that slowly fading the lines between digital, physical and biological arenas. It involves processes and product ranging from driverless cars, smart robots, artificial intelligence (AI), Nano technology, the Internet of things, Virtual Reality for the digital world and 3D printing are among the few, which attract the future. Digital transformation has changed the customer expectations and has reconstructed the concept of product enrichment, collaborative innovation, and organizational structure.

Stolterman and Fors, (2004) described digital transformation as digitalization, it's a business model driven by 'the changes associated with the application of digital technology in all aspects of human society'. Gassmann et al., (2014) described it as the 'ability to turn existing products or services into digital variants, and thus offer advantages over tangible product'.

The MIT Center for Digital Business and Capgemini Consulting defined it as the use of technology to radically improve the performance or reach of enterprises' (Westerman, et al., 2011,).

“Technology & Human” the combination of these two creates magic. As machines can replace humans in almost every task and can do better and faster but it also gives us the Humans, opportunity to focus on what makes us Human. Gary Kasparov, the Russian Chess Grandmaster who was the first world champion to be

defeated by a machine has an interesting take on the same. He explains machines have the calculation; humans have an understanding. Machines have instructions; we have a purpose. Machines have objectivity; we have passion". This is the reason why the relationship of these two is so fascinating that this evolution has disrupted the HR space and is helping in filling the gap of technology in HR. Technology enables HR to connect its employees with modern tools for better understanding. Digitalisation is proving very helpful for HR managers and professionals, as it frees them from long HR processes and enables them to focus on the activities that have more strategic value to their businesses. Almost all the functions of HR have witnessed an inrush of technology in the past decade. It has gained more power in 2005 when Workday was founded just to provide software solutions to human resources and financial management. Then in 2011, SuccessFactors was acquired by SAP, and purchase of Taleo by Oracle in 2012, all these things helped in making HR digitally strong. Now more and more companies are coming up with new technologies and introduction of software applications (Fitbit, chatbots and data analytics), are helping them in the hiring process, promoting their personal brand, striking a work-life balance among employees and taking a proper care of their health. There is a report by McKinsey & Company which reveals that half of all existing work activities could be automated by currently existing technologies, which will save around \$16 trillion in wages. The present research aims to contribute to the understanding of digital transformation by identifying the impact of digital transformation on Human resource development. What kind of new technology solutions is helping and going to help in future in the development of human resource development? What are the benefits of using technical solutions to human resource with the possible barriers and solutions to overcome those barriers or challenges?

2. Literature Review

The concept of digital transformation was first mentioned by Patel and McCarthy (2000) however they didn't conceptualize the term. There are few studies which provide an insight into the concept. One of them was The Capgemini research of Westerman et al. (2011), they specify digital transformation as: "*the use of technology to radically improve performance or reach of enterprises*". Similarly, Stolterman and Croon Forst (2006,) defines digital transformation "*as the changes that digital technology causes or influences in all aspects of human life*". From another perspective, Lankshear and Knobel (2008) describe digital transformation as the final level of digital literacy. At this level, digital technologies enable innovation and creativity and stimulate significant changes in professional and knowledge domains. These definitions clearly show that digital transformation doesn't entail gradual incremental changes, but fundamental "radical" changes due to digital technologies. Lucas et al. (2013) in their study identified 7 different dimensions to segregate technology-driven transformations. They propose that when three of the dimensions are significantly impacted, a technology-driven change is considered transformational as proposed.

Bharadwaj et al., (2013); Fitzgerald et al., (2013) they considered digital transformation as the combinations of information, computing, communications, and connectivity technologies. Applying digital technologies is often referred to as digitalization. Digitalization is characterized by Fichman, Santos, and Zheng (Fichman, Santos, & Zheng, 2014, p. 5) as the "practice of taking processes, content or objects that used to be primarily (or entirely) physical or analog and transforming them to be primarily (or entirely) digital". Digitalization is something which occurred before the hype of digital transformation and is something that will most likely happen

indefinitely. Piccinini et al. (2015) conducted a literature study to determine, amongst others, how customer behavior is changing due to digital technologies. Consumer information has greatly increased due to increased accessibility and availability of products and services through digital devices, anytime, anywhere to everybody (Hennig-Thurau et al., 2010; Smith & McKeen, 2008). Customers now know the exact products and services available, their prices and attributes influencing and are changing their purchase decisions (Clemons, 2008; Kauffman, Li, & Heck, 2010). Consumers also develop their digital competence, they are able to evaluate and purchase products and services online, without consulting intermediaries (Granados & Gupta, 2013; Lucas et al., 2013).

3. Research Objectives

1. To study digital transformation in Human Resource Management context.
2. To identify the key enablers of Digital Transformation.
3. To identify the benefits of having the digital transformation for HR and businesses.
4. To identify the challenges HR has to face while adopting digital transformation.
5. To identify the possible ways to overcome those barriers or challenges in the journey of digital transformation?

4. Research Methodology

Material and Method: - This is a review based descriptive study in which the material which we have considered is secondary in nature. The secondary data which is available from online sources such as company reports, blogs of experts, websites, Research papers, and magazines have been used.

5. The Concept of SMACI of Digital Transformation

As HR is heading towards the digital revolution and the future is characterized by Big Data, mobile, artificial intelligence, social media, and cloud computing, the ability for organizations to manage their people will grow more flexible, agile and customized. Social, mobile, analytics, cloud and internet altogether make a web of technology which is called as SMACI. This technology web empowering enterprises across critical digital dimension including products and services, customer experience, operations, and workforce. The integrated play of SMACI helps in delivering content, commerce, and collaboration to customers anytime and anywhere in a comprehensive, personalized, contextual and cost- effective manner. SMACI unfolds as follows:-

Social media—social channels give assistance to businesses in interacting with their customers.

Mobility is shifting the focus of application development away from the traditional ‘desktop based’ approach to a ‘mobile-first’ one.

Analytics is enabling enterprises to explore large volumes of data to gain insights and drive strategic decisions.

Cloud computing is reshaping the way software and services are sold and delivered.

Internet of Everything (IoE) is opening significant opportunities by connecting everything to the internet.

6. Benefits of Digital Transformation to Human Resource Management

- a) **Smart Recruitment:-** There is research by **Bersin's** firm which shows that nearly 40% of companies are using some form of AI in HR. Organisations like IBM, SAP, Facebook, GE, and Hilton worldwide are already using this game changer technology to screen, interview and recruit new talent. What Artificial intelligence (AI) does, it simplify the functions within the company and gradually develops the intelligence to work smarter without replacing the human element in Human Resource department. IBM is using IRIS which is designed by Watson, prioritize which position to fill, based on some inputs. There are some of the artificial recruiting tools that are making the businesses more productive, better and fair of course. Some of the most popular are-**Mya (My Recruiting Assistant), Arya, Olivia, Pomata, Rai.**
- b) **Ease out the Screening and Interview process-**Artificial Intelligence is also proving very helpful in automating the interview process by assessing candidates' word choices, speech patterns and facial expressions. AI can turn a 15 min video interview into a set of 20,000 data points on facial movements, innovation and word choice to evaluate a candidate. Tools like **Amy** and **Clara** Labs are used by companies to schedule interviews, work meetings quickly, seamlessly and without wasting any intervention time. Artificial Intelligence is helping Human resource department in screening process by analyzing the past success records for a job profile and then assess the available talent pool to identify the most suitable candidates with the adequate skill set and experience. It can also help in collating data about the behavioral aspects of the potential candidates through machine learning and determine if those candidates are a right culture fit for the organization. HR Chatbots like **HireVue** and **Talent Pitch** measure candidate's skills and personalities against those who have been successful in the same job, looking at qualities like facial expressions and word choice.
- c) **Enhance Onboarding experience:-**Recently Boston consultancy group found that Onboarding had a strong impact on employee retention. So it's essential to make the first impression worth for. Artificial Intelligence is helping HR in building this first impression strong and positive by redefining the whole employee joining process by creating journey maps, right from pre-hiring assessment and interviewing to Onboarding and employee orientation. Chatbots are used by the employee where they can easily ask their questions whenever they come up, freeing HR to handle more employees
- d) **Data security and Transparency-** Technologies has the power to ascertain whether certain corruption, bribery or other potential wrongdoings is about to be undertaken by an employee. Tools such as Big Data and In-memory technology allows companies to scan vast amounts of non-structured data (e.g. emails, texts, scanned invoices etc.) and search for critical clues to unwanted and potentially illegal activities (e.g. look for invoice referencing facilitation fee'), that ensure the legal assurance to the shareholders and the company employees. Ernst & Young (the Accounting firm) is already using such kind of a tool.
- e) **Increase Efficiency:** - Robotic Process Automation (RPA) is a smart AI/machine learning technology that learns how a worker does a repetitive task. Robots are particularly helpful in processes that require a lot of data processing. Typical tasks for robots include: collecting data from XLS files or systems, running reports, copying data, checking data for completeness, reading, processing and submitting e-mails, entering data in HR or Payroll systems and pre-populating forms. In one account payable shared service centre.

RPA has replaced the work of 482 out of 500 total workers. More flexible workforce resulting in happier and more productive employees.

- f) **Enhance workplace learning**- Cloud productivity solutions such as Microsoft 365 can help employees to work and collaborate at peak proficiency without wasting time by creating a more streamlined working environment. AI tools can also help Hr function to make personalised career development entailing different learning and development programs, that will boost employee productivity and job satisfaction; bring down work-induced stress level and employee turnover and many other benefits.AI tools such as **Engazify** provide instant feedback; monitor their progress regularly; recommend ways of improvement and attaining growth in their job roles. For knowledge sharing and finding there are **Obie** and **Niles**, for career advice **Wade&Wendy**, in the wellbeing area **Yogi**, and in the learning domain **Duolingo** is appearing,
- g) **Enables Companies to stay competitive**:-Digital advancement has not remained a choice, it has become an essential part of competitive and surviving strategies. The key to the good technology is that it works for you. Whatever the size of your business, start with a strong digital transformation strategy, and choose the right technology to fit your business objectives.

7. Challenges

As technologies are making waves in Human resource department, the future of HR is challenging because employee perceives any form of cognitive tech as a threat to their job security. The role of HR would be more important now to assure people of their skills and the need to exercise the same, while automating the redundant parts of their jobs. Some of the possible challenges which an enterprise has to face are given below:-

- a) **Resistance to change**: - Technology is not the silver bullet that will magically rid us of all the problems; it can't solve any problem unless we change the underlying mindsets People normally don't encourage change unless and until it became the urgency. This is also confirmed by a recent psychological study which states that only 38% of people actually like changes. When an organization plans transform its whole process it is obvious for an employee to freak out of the fear that now machines will replace them. These fears and resistance should be removed by open communication with a proper clarifying thought of how digital transformation can be done, what positive changes it will bring, and how it will be beneficial for their daily work.
- b) **Leadership support**:-A leader should be there to support and motivate the technology as most of the companies won't able to pursue with digitization as their managers or leader were not supportive enough. So it is a necessary thing to have a good leader's support that encourages innovation.
- c) **Getting the right talent**:- One of the essential things to support digital transformation is the collaboration of interdepartmental employees. Don't let the division to harm the system and for that ensure the right technical superiority at right place .it will bridge the gap between the developer and communicator.

Organizations need to recruit for the future with jobs skills that they have not considered to meet forthcoming changes in the digital marketplace.

- d) **Understanding Customer:-** Companies like Amazon, Uber, Airbnb, and Tesla have changed the expectations of the market forever. The average consumer now expects brands to be able to understand their unique wants and needs and create a customized experience to suit. Most business leaders understand this principle but often find themselves caught in a discussion about technology.

Above are some of the most common challenges or barriers which a company have to face in the journey of digital transformation countless others exist like, identifying right digital opportunities, right technology selection etc. To meet the manifold challenges posed by digital transformation, individuals and organizations should have the confidence and commitment to make digital integration a strategic imperative. The success will depend on whether every employee and manager is ready to anticipate, innovate and participate in each step of Digital Transformation. As there is a solution for every problem, we just have to change the perspective. There are some of the suggestions to handle this transformation with ease so that it will prove more and more productive to the businesses.

- Hr leaders should attend specialized HR technology events where cutting edge, new solutions are demonstrated. The right approach to transformation is to understand the future before planning out the things.
- Develop a digitally enabled team-Waiting for technology vendors to show up with a pre-built new set of processes and work procedures can take your company way behind the competition. Smart firms are those who look for the opportunity and derive serious strategic advantage from these new technologies.
- Everything is beneficial when is used to date so the hr technology and processes which are now become old, discard them with pride and embrace new.

8. **Success stories in India**

Reliance Jio, the 4G telecommunications, and digital services company is the perfect example of digital transformation. Which was came up with a vision to build a national 4G network across 18,000 cities and towns in India to serve hundreds of millions of customer. They have started with an employee value proposition strategy that supports employees, candidates, and business managers and the service they offered was easy to use, quick to buy and come with safety. Digital-first HR programme was used which allowed staff members to complete the tasks with the help of real-time apps and cloud-based services. Secondly, they streamlined their all hr processes, technologies (including SAP and a series of cloud apps such as Salesforce.com,) policies into one single application. They have automated and streamline almost all of their major activities. All these activities helped reliance to build a strong HRIT enabled the network to promote its services and help in making it's successful.

People Strong:-Human resources solutions and technology company people strong developed India's first HR Chabot 'Jinie. It acts the role of an employee's personal work assistance and helps in work-related queries such as applying for leaves, collating and completing employee data, answering company policy-related questions and many more.

Hero Motor Cop has implemented a SAAS(software as a service)-based Talent Management Platform, which not only appreciate and understand the internal talent pool but also touches the available talent pool outside the company.

Jindal Steel and Power Limited (JSPL) is constantly learning and adapting new technologies. Their key interventions in HR are as follows:-

- **Onboarding touch points** its starts working whenever a new employee accepts the offer letter, a link is sent to him/her to update all personal information, which automatically updated the SAP employee data. This is saving their time from hiring to Onboardings.
- **Online Performance Management System (PMS)** which sets the goals, records KRAs and competency mapping. The key feature is that it is a paperless process.
- **Online Employee Self Service'** platform provides basic information for the employee, payroll, attendance, leave, and entitlements etc. on a single click.
- **Learning and Development System- Gyandrishti**, it provides skill enhancement training material on the functional, behavioral and technical field. It is just-in-time training where the employees are empowered to choose the pace and content of learning.
- For employee engagement, they have an intranet portal called '**JSPL Connect**' which showcases company information to employees like policies, recent achievements, awards received, important announcements, messages to employees from the leadership team, posting of internal jobs, provision for any suggestions that employees would want to give to management etc.
- Analytics tool called '**ClickView**' which has a direct interface with SAP systems to highlight metrics, dashboards & trends. With the help of this data-driven approach, talent practices in an organization have become one of our strategic capabilities and talent data is always integrated with the organization's business data.

Kaya Limited is using a platform called **kaya café**, which starts working automatically whenever a new candidate joins, keep a check on on-boarding and provide access to policies. They are using a system called **Wooquer** – which is used to deliver refresher training programs.

These are the few success stories of using digital into business. The path of digital transformation in HR is bright ahead.

9. Findings & Conclusion

The main purpose of this paper was to find out the meaning of digital transformation in Human resource management and how Hr functions are taking advantage of it. To our knowledge this study was first which have gone deeper into the meaning of digital transformation in terms of the whole HR by analyzing the current tools

and technical solutions, which are used by the various HR functions. Artificial intelligence, Big Data, Cloud solution etc are some of the tools that companies are using in making their HR functions and employees, stronger, faster and smarter. The papers also have talked about the challenges and the possible remedies for it. The study can be concluded that Human resource management is all about human touch and that touch will gain more power with the aid of technology. As HR is at the forefront of the fourth digital revolution it's important to facilitate this advancement without impeding the human element. In India also technology has helped companies like Reliance Jio, Hero Motor Corp., Kaya limited, Jindal Steel and power limited and many more companies in managing their talent, services and requirements in a more streamlined way.

References

1. Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., and Venkatraman, N. 2013. "Digital Business Strategy: Toward a Next Generation of Insights," *MIS Quarterly* (37:2), pp. 471-482.
2. Clemons, E. K. (2008). How Information Changes Consumer Behavior and How Consumer Behavior Determines Corporate Strategy. *Journal of Management Information Systems*, 25(2), 13–40.
3. Fitzgerald, M., Kruschwitz, N., Bonnet, D., and Welch, M. 2013. "Embracing Digital Technology," *MIT Sloan Management Review*, 1-12.
4. Fichman, R. G., Dos Santos, B. L., and Zheng, Z. E. 2014. "Digital Innovation as a Fundamental and Powerful Concept in the Information Systems Curriculum," *MIS Quarterly* (38:2), pp. 329-353.
5. Granados, N., Gupta, A.: Transparency Strategy: Competing with Information in a Digital World. *MIS Quarterly*, vol. 37, no. 2, pp. 637-641 (2013).
6. Hennig-Thurau, T., Malhotra, E. C., Frieger, C., Gensler, S., Lobschat, L., Rangaswamy, A., & Skiera, B. (2010). The Impact of New Media on Customer Relationships. *Journal of Service Research*, 13(3), 311–330.
7. Kauffman, R. J., Li, T., & Heck, E. van. (2010). Business Network-Based Value Creation in Electronic Commerce. *International Journal of Electronic Commerce*, 15(1), 113–144.
8. Lankshear, C & Knobel, M 2008, *Digital Literacies: Concepts, Policies and Practices*, Peter Lang International Academic Publishers.
9. Lucas, H.C., Agarwal, R., Clemons, E.K., El Sawy, O.A., Weber, B. 2013. "Impactful Research on Transformational Information Technology: an Opportunity to Inform New Audiences," *MIS Quarterly* (37:2), pp. 371-382.
10. Patel, K & McCarthy, MP 2000, *Digital Transformation: The Essentials of EBusiness Leadership*, McGraw-Hill Professional.
11. Piccinini, E., Gregory, R., & Kolbe, L. (2015). Changes in the Producer-Consumer Relationship-Towards Digital Transformation. In 12th international conference on Wirtschaftsinformatik (pp. 1634–1648).
12. Stolterman, E. and A. C. Fors (2004). "Information Technology and the Good Life." In: *Information Systems Research: Relevant Theory and Informed Practice*. Ed. Kaplan, B. et al., London: Kluwer Academic Publishers.

13. Solis, B. Li, C. and Szymanski, J. (2014). Digital transformation. ALTIMETER. [Online]. Available : <http://altimetergroupdigitaltransformation.com/img/dt-report.pdf> [Accessed 23 December 2015].
14. Westerman, G, Calm ejane, C, Bonnet, D, Ferraris, P & McAfee, A 2011, 'DIGITAL TRANSFORMATION: A ROADMAP FOR BILLION-DOLLAR ORGANIZATIONS', Research report, Center For Digital Business, MIT Sloan School of Management; CapGemini Consulting, MIT Sloan Management Review, Cambridge, MA.
15. BOOK

Keyur Patel Mary Pat McCarthy (2000) Digital transformation; The Essential of E-Business Leadership, KPMG/McGraw-Hill, 01-Jan-2000
16. WEBPAGES/WEBSITES
 1. Digital Transformation Challenges
<https://simplified-analytics.blogspot.in/2016/09/digital-transformation-top-5-challenges.html>
 2. The role of AI in recruiting and Onboarding <https://www.quantumworkplace.com/future-of-work/the-role-of-ai-in-recruiting-and-onboarding>
 3. Artificial intelligence and recruitment
<https://workology.com/artificial-intelligence-recruiting-human-resources/>
<http://recruitingtools.com/artificial-intelligence-recruiting-tools/>
https://www.peplematters.in/article/hr-shared-service/chatbots-the-latest-technology-fad-in-hr-15293?utm_source=peplematters&utm_medium=interstitial&utm_campaign=learnings-of-the-day
 4. HR Chatbots
<https://hrtrendinstitute.com/2017/06/06/invasion-chatbots-hr/>
 5. Brands using Chatbots
<http://gm360.in/list-leading-brands-using-chatbots-india/>
- REPORTS
 1. Accenture (2016) Digitally radically disrupts HR, Accenture.com
 2. Capgemini Consulting (2016) Digital Transformation Review
 3. Deloitte University Press (2016) Global Human Capital Trends 2016, The New Organization: Different By Design
 4. Ernst & Young (2015) Imagining the Digital Future
 5. People Matters Media Pvt. Ltd and SAP Success Factors (2016) Digital transformation- The state of HR technology in India
 6. Forbes insight (2016) How digital transformation elevates human capital management