

VERSION 4.0: TRANSFORMING OF HR PRACTICES IN INDUSTRY

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ABSTRACT

This article focuses on the way- the impact of Smart Industry 4.0 on various Industries such as Manufacturing, Banking, and FMCG along with the evolutionary effect on Human Resource Management functions and challenges of such deistical improvement. Human resource is one of those specializations which are changing drastically because of implementation of technology 4.0. The contribution of this article is conceptually based as ne revolution in the form of industry 4.0 has begun with the introduction of technology. Due to these advancements in the field, the way of carrying out operations by an HR manager is also changing. This paper goes for offering a perspective on the best reasonable practices which can advance the atmosphere of development and learning in the association, and thus encourage the business to coordinate with industry 4.0. This paper draws the consideration towards the imperative part of administration practices in industry 4.0, as the vast majority of the ongoing studies are talking about the innovative angle. This paper additionally proposes an examination of these approaches with regards to industry 4.0.

Keywords:

Industry 4.0, Human Resource Practices, SHR 4.0, Automation, Artificial intelligence, Technological Tools

INTRODUCTION

In today's era, technology is playing a vital role as it is influencing each and every sector in the economy in a drastic way. Inclusion/implementation of technology in these sectors leads to both positive and negative impact but now the conditions and way of working in more convenient and cost saving these days. Before moving ahead, it is necessary to know what the concept of smart HR 4.0 is all about. The concept of HR 4.0 has originated from the concept of Industry 4.0 of Germany which was a high tech programmes launched by the German government in order to introduce digitalization in the traditional industry ((Roblek, Meško, & Krapež, 2016).

The main focus of the implementation of this system was to direct and optimize production system with little human intervention. The concept of the fourth technological revolution has brought the concept and technology of cyber- physical system, internet of things and internet of services, a network of microcomputers etc. It also includes highly differentiated customized products, and the well-coordinated combination of products and services, and value added service. As technical advancement occurs in the field of HR, one can anticipate that organizations will open an entryway for Artificial Intelligence and Data Analytics(Jain, 2014).

It is basic that as an ever increasing number of employments end up specialized, the mastery required will continue getting more open. Through Machine Learning one can expect enrollment and general representative administration programming answer for end up more brilliant. Regardless of what time we live in, there will dependably be a requirement for straightforward, available and well-constructed tech arrangements which helps in solving the problem of HR. In the coming future, implementation of technology may have a huge impact on labor and organization and changing the way of carrying out operations. (Bonekamp & Sure, 2015).

After conducting various researches on 4.0. This research paper moreover talks about how technology is going to influencing the phase of carrying out activities in the various industry like manufacturing, banking and FMCG and what is the impact of Smart Industry 4.0 in human resource functions and what are the major challenges.

LITERATURE REVIEW

Industry experienced various model shifts due to the technological modifications and inventions. These model shifts are known as “industrial revolutions”, for example, mechanization (1st industrial revolution), high use of electrical energy (2nd industrial revolution), electronics and automation (3rd industrial revolution). Today’s economy is about to face the fourth industrial revolution, triggered by social, economic, technological and political changes. This fourth industrial revolution is also known as an industry, which is a subclass of digital transformation in existing business and current processes, replacing the manual business operations with digital computer structures. (Shamim, Cang, Yu, & Li, 2016). Mrs. Linda Bonekamp in her research paper Consequences of industry 4.0 on human labor and work organization focused on learning and education. She found that a rather consistent view particularly on job redundancies for low skilled jobs and the necessary shift towards more high skilled complex jobs which require a generally more intense focus on continuous learning and education. However, it becomes evident that a growing number of research view the implication of industry 4.0 technology not only from a microeconomics but also from a macroeconomics point of view addressing consequences from a broader perspective especially with reference to implications for social welfare and tax systems which may be completely reviewed in order to compensate for lost job income and balances off growing inequality. As per the Jeremy Bowles in his recent publication on the computerization of Euro-pean jobs, Ford - in view of his conclusions - may be as-signed to the camp of skeptics who are fairly conservative about overall future job opportunities against the back-ground of consequences resulting from industry 4.0 (Consequences of Industry 4.0 on Human Labor and Work Organization, Linda Bonekamp & Matthias Sure,2015)

As per the outcomes of the research paper by Erik Brynjolfsson and Andrew McAfee, it was found that the technological advancement will not only eliminate routine jobs but also high skilled jobs tend to be modified by pattern recognition and cognitive non-routine tasks. Similarly, McAfee came out with measures to avoid negative impacts from the cyber physical system and for providing compensation for the loss in job arising from advanced technology, such as better education, more focus on entrepreneurship and startups. (Shamim et al., 2016)

The most serious concern regarding Industry 4.0 is security. Data is collected in very high quantity and shared with the partners in the network of value. Business should seriously look after the ones who owns data and should be confident that the data in no case shall reach to the competitors. Another major issue is employment and skill development that will show the transformation of

manual labor to programming and high performance machine is driven. Employees with undesirable skill will be replaced until and unless they are trained. (“UNIVERSITY OF ECONOMICS IN International Business – Central European Business Realities,” 2017).

The accomplishment of industry 4.0 is reliant on the improvement capability of the organization along with suitable management practices. The organizations are developing capabilities to successfully manage business framework, and product portfolio, to access potential market and customers, to develop value chain processes and system. (Shamim et al., 2016).

RESEARCH OBJECTIVES:

R1: To understand the impact of Smart Industry 4.0 in various Industry

R2: To analyze the impact of Smart Industry 4.0 on Human resource functions in different Industry

R3: To Understand the challenges of Smart Industry 4.0 in Human Resource Function

RESEARCH METHODOLOGY

According to Torraco (2005) Integrative literature review, “is a form of research that review, critiques, and synthesizes, the representative literature on a topic in an integrated way such that new framework and perspectives on the topic are generated”. It fully synchronized the topic of “Version 4.0: Transforming of HR Practices in Industry”- in the review of the literature. This research is made with a collection of data’s, finding and conclusion in the fusion of an integrated review of the literature. The literature review is collected with the help of an online journal database through, Elsevier(Scopus), EBSCO (Management Research Database), and Google scholar etc. highly concentrated on management and organizational reviews. 65 articles are reviewed for this research, based on that Industry 4.0 module, content, challenges and implementation process are studied and well explained in this research. This research is framed out with the views of Torraco (2005) based on Industry 4.0 and classify the extend research.

FINDINGS

IMPACT OF INDUSTRY 4.0 VARIOUS SECTORS:

An Industry/sector is an integral part of the economy of any country as the growth of the nation is dependent on the performance of various industries functioning in that nation. As the era of technology has begun, there is a lot of advancement/innovations taking place in the sector. The

world is transforming for a man to machines which also leads to the numerous advantages. (Shamim et al., 2016).

IMPACT OF INDUSTRY 4.0 ON THE MANUFACTURING SECTOR:

Industry 4.0 includes the smart manufacturing functions, implementation of the cyber physical system (CPS) for production that involves actuators and sensors, a network of microcomputers and linkage of machines to the value chains. It also includes structures of the supply chain that are characterized by high efficiency and flexible process which are cost saving as well as offers numerous benefits such as improved management for complex products, reduce market/ logistics time and production on demand. (Henning, Kagermann(National Academy of Science and Engineering). Wolfgang, Wahlster (German Research Center for Artificial Intelligence). Johannes, 2013)

Industry 4.0 advancement in this sector leads to the introduction of the concept of Digital Manufacturing which offers various solutions offering like “Design for Manufacturing” and “Design for Servicing” which helps companies in the sector to optimize work flow during plant layout stage that enables companies in enhancing the productivity and overall output of the company. The technologies also help companies to plan and allocate their resources and also optimum utilization of available plant space. These technologies minimize the human interventions which cause minimum possible stress to workers. This reduces the chances of accidents and occupational hazards. It thus helps companies to build efficient, secure, worker friendly plants. (www.designtechsys.com/articles/advantages-technology-manufacturing.php)

CHALLENGES FACED BY MANUFACTURING SECTOR:

As the industry exist in dynamic environment there are a lot of challenges, for example, the adaptation capability of the firm to accept the changes in terms of innovation and new technology as every time new type of technology is introduced in the market due to which industry faces a lot of difficulties and the cannot ignore the adaptation of technology because of the cut throat competition in the market. (Henning, Kagermann(National Academy of Science and Engineering). Wolfgang, Wahlster (German Research Center for Artificial Intelligence) Johannes, 2013)

IMPACT OF INDUSTRY 4.0 ON BANKING SECTOR:

Over the past year's technology has increasingly been employed in the service sector transforming the way of providing services, the adaptation/inclusion of technology in service industries has become a very strong trend as service providers are now focusing towards investment opportunities in technology as they are looking forward to securing their future in the technological era. Technology plays a very vital role in managing the cost and time for any organization. The customer is now more convenient in using technology based service which provides them ease in the work as well as reduces employee/customer interface. Technology is transforming the way of working of both service provider as well as service receiver as both are benefitted from the use of this. Earlier there were many issues in carrying out a lot of time as includes lots of cost and time. Customers had to compromise with their work to visit the bank. In the present scenario, banking functions are carried out in very less time also as per convenient time of the customer. (Joseph, McClure, & Joseph, 1999)

Introduction of the concept of Fintech has bought the revolution in the banking sector. The inclusion of technology has transformed the functioning of the banking sector in a drastic manner. All the departments like lending, liabilities, third party etc. are also affected in a positive manner. After the introduction of technology now everything is done online which helps in reducing cost as well as turnaround time for banks. Now the banking services are faster as compared to earlier. Earlier a single loan process used to take around 24 days to 1-month time but now a loan application gets approved in less than 24 hours. Also at present, all the details about a client are available online. Various informative tools like probe42 and statement analyzers like Perfios, ace analyzer etc. play a major role in providing the details about a customer, their peer to peer comparison which helps lender to take real time decisions regarding funding. In terms of investments, there are various online portals which provide various details about investment opportunities which help a customer to analyze and take a decision regarding the best investment opportunities. ("Banking on the future: an exploration of FinTech and the consumer interest Coming together for change 2 Banking on the future," 2017).

CHALLENGES FACED BY BANKING SECTOR:

Adaptation of technology is favored on one side and on the other side it is as opposed on the grounds of security. There is a high degree of risk prevails in the while performing the business online. The biggest threat is hacking when some external party access the confidential data of banks and takes

the undue advantage of the information. However various measures are taken at the global level to curb this problem of security in transactions. Again the researchers have come up with new technology in order to tackle this serious issue and finally there is an introduction of a new technology known as bitcoin technology. This technology is said to be the safe technology as the information is stored in the form of blocks and it is a bit hard to break it.

IMPACT OF INDUSTRY 4.0 IN FMCG SECTOR:

Another sector which has got advantage from technology is the FMCG sector. The functioning of the HR manager has also advanced since the introduction of industry 4.0 in the sector. There is a lot of changes in the compensation system. Now the technique of e compensation is quite popular in the sector. There are online tools to measure the performance of employees which automatically gives the output about the efficiency of the employee and the data about an employee who is eligible for benefits and incentives. (<https://www.slideshare.net/MadhavDesai/hr-practices-30797614>).

FMCG sector always needed a planner to cater to enterprise needs. Introduction of technology gave birth to various software's such as ERP system which helps FMCG companies to manage their inventory system, keep a track record of stocks, to manage multiple orders at the same time and their distribution, managing supply chain, workflow, logistics and MIS reporting. Another advantage of technological advancement is carrying out transactions using mobile applications. This helps FMCG companies to serve their customers at right place right time. Mobile applications also help customers to locate product stores at ease, get alerts on discount & offers, purchase online from anywhere at any time which provides convenience to the customers and also to build customer loyalty. Earlier it was very difficult for FMCG to conduct sales in the widespread area. Automation in sales force brought a lot of advantages to the FMCG companies as it helps in connecting clients and suppliers. Sales force automation includes real time insight into data, tracking field salesman, setting targets and tracking orders. (<https://www.cdnsol.com/blog/how-it-can-contribute-in-fmcg-industry/>)

CHALLENGES FACED BY FMCG SECTOR:

While on one side technology provides a lot of benefits to the companies, on the other side it also leads companies to face challenges. After the beginning of this technological era, everything is shifted towards online. FMCG companies also follow online platforms to market their products

and in online transactions, they have to face many issues some of them are- limited reachability, the threat of hacking, issues related to the connectivity etc. (<https://www.cdnsol.com/blog/how-it-can-contribute-in-fmcg-industry/>)

IMPACT OF SMART INDUSTRY 4.0 ON HUMAN RESOURCE FUNCTIONS:

The global spread of the Smart industry 4.0 is representative of both the smart factory and smart business. Main features of industry 4.0 are vertical integration of production systems, horizontal through value chain networks assimilation, stepping up of manufacturing to engineering across the entire value chain. Its bring drastically changes in every prospect. As a result, industry 4.0 carry huge disruption in human resource domain. Smart HR 4.0 is projected for a digital revolution in the all human resource functions like performance management system, learning, and development, recruitment, onboarding, social sharing etc. The entire life cycle of an employee to the organization is evolving by smart industry 4.0(Sivathanu & Pillai, 2018).

Introduction of industry 4.0 bringing various forms of human and machine interactions which includes augmented reality and virtual reality systems, a collaboration of robots, the system with a touch interface and others. Fast adaption of technology will definitely bring first mover advantage against competitors. Industry 4.0 is also transforming the human resource management functioning in various ways. They are as follows-

Procurement Purpose:

Employees are assets of every organization even organization success are depending on employee productiveness so to select a suitable employee also a very important job in HR practices. So procurement is a most valuable function of HR. Its refers to the job posing to selecting of an employee. By fourth industrial revolution it's become easy to find job seekers and job both employers and employees use of use of various job portal like – e- recruitment web portal, any social Media-LinkedIn, Facebook. Sometime the employer selects their employee through gamification, online competition. (Jain, 2014)

Now a day with the help of smart phones and smart apps procurement process become very flexible. New generation candidate can be attracted by tactically displaying highly relevant job posting in their own mobile apps based on this profile and preferences saved in those apps' settings. It also helps to reduce the enormous amount of time, cost and manual efforts by Big Data and AI. AI & Big Data help to automate a candidate's resume and job description linking that only selected

only suitable candidate for interviews which have a maximum chance of fulfilling the human resource gaps. Now days interviews are conducting through video-based with the help of faster data network connection, which will reduce overall recruitment cycle, even the interpretation of the response of candidates will happen by the assisting of AI chat-bots in interview time itself so it also increases the feasibility of choosing suitable candidate along reducing the bias of interviewer. (Sivathanu & Pillai, 2018)

Now a day's Induction program of a new employee to the organizations is conducted by Augmented reality/Virtual reality so that new employee to guide the all rules and process of that organization and become productive from the first date of join to the organization. (Sivathanu & Pillai, 2018)

Employee Learning and Development:

Employee learning and development is important to the function of HR in every organization, after on-boarding, the organization is more emphasis on improving new joiner's skills and developing their potential to increase their productivity, effectiveness, and efficiency so that organization can maintain success in today's competitive environment. In the fourth industrial revolution, AI can assist in identifying knowledge gaps for each employee based on the skill demands in the market. Even the current scenario new generation candidates like millineries are more focus on their own career planning and prefer to take more advanced technological training which would help them to sustain in the organization over the changes scenario. Various technological advancement is helping the organizations to provide suitable training with the help of e-learning, Training Need Analysis System, Online Appraisal System (e- performance), virtual training which can be taken from anywhere at any time. Like training, performance goal can be set up on an individual basis would happen by AI. AI would assist in the process of individual goalsetting process. (Sivathanu & Pillai, 2018).

Compensation and Benefits:

Compensation and benefits are a most important factor which helps to increase employees' intention to stay in the organization in longtime. So as an HR needs to focus on this function more because its leads to employee motivation factor to increase the company productivity along with maintaining the employee retention rate. (Jain, 2014)

Compensation and benefits structure can be determined from the data base of employee performance. Promotions also based on the actual involvement of the employees assessing using objective KPIs data base. In the Fourth Industrial evolution by the help of IT tools, the whole process like payroll, e-compensation, Compensation settlement, Flexi- reward package, Facilities all is determined very frequently without doing the manual calculation. (Sivathanu & Pillai, 2018)

Employee Relation, Communication and Work Environment:

employees are the assets of the organization, to retain those assets in the organization HR main function to maintain employee relation, transparent communication, and organization work environment/culture, all of this thinks to happen by organizational development. By 4.0 industrial revolution, various technological tools are available to ensure Organizational Development along with knowledge management which helps in enhancing good employee relation and organization culture. There are so many tools present in the organization to maintaining effective communication (v-chat, WhatsApp, LinkedIn, email etc), data Protection by cloud data storage, Knowledge Management, internet, OD team development. Through all process, smooth flow of information is happening in the organization. With the help of technical tools, Organizational Development is helping in bringing organizational improvement and effective team development and an effective organization culture. (Jain, 2014)

Strategic Decision Making:

In the current scenario, HR plays the most important part as an HR Business partner for that HR need to make a strategic decision for every business prospect. In 4.0 industrial situation with the help of automation routine work of HR function is reduce and many HR processes are expected to reduce team size and provide HR department more time to play a strategic role in the organization. (Sivathanu & Pillai, 2018).

Even in a large organization, there is a large number of employee data, so manually do the data analysis and make a strategic decision is a very difficult job and there is much possibility of some errors. Industry 4.0 bring a drastically change, with the help of technology/automation all process becomes very easy. Automation can be assisting the HR to make an effective decision very quickly and effectively by different tools like- Decision Support System, Data mining tools, Artificial Intelligence system, online Analytical Process etc.(Jain, 2014)

Human Resource Information System:

Through the evolution of Industry HR function also evolve in the organization. Human Resource Information System is a most useful function in the modern times. Technology and automation bring drastically change in industry 4.0 timeline. With the help of technology transparency increase in an information system. The availability of information throughout the organization via company policies portals, employee's portals which help to maintain transparency of information regarding organization policies, employee feedback. These processes are very important for the HR professionals as they will increase the overall efficiency of the business. Technological tools use in HRIS are Internet availability of Data record of employees, Spread of information throughout the organization, employee self-service. Those technical changes in industry 4.0 creating a positive enhancement in HR practices. (Jain, 2014)

CHALLENGES OF SMART INDUSTRY 4.0 IN HUMAN RESOURCE FUNCTION:

There are a lot of challenges to the Human Resource after the introduction of Industry 4.0. The main challenges are managing the workforce in terms of reskilling and efforts may not give the desired return if employees are not aware of the forthcoming change in the field. Another challenge is the adaptation of technology. Every time new technology is introducing in the sector which results in difficulty in fast updating with the technology. In order to cop up with the talent and skill challenges, companies are looking for providing innovative workforce strategies consistently. Another thing in which the difficulty is faced is security. There is a huge data to store and analyze and simultaneously the primary and secondary issue exist regarding the confidential data also there is a threat that competitors may not use. Next issue is an investment as for technological advancement there is a need for building a value network that produces and distributes the products. Other major challenges faced due to the introduction of industry 4.0 are legal aspects, big data storage, advance analyses, developing established infrastructure, high maintenance cost, and connectivity problem. Also in the present scenario, no single vendor is able to deliver all the capabilities needed in the implementation of industry 4.0 as they are based on multiple technologies and devices that run on different networks (https://www.cgi.com/sites/default/files/white-papers/manufacturing_industry-4_white-paper.pdf)

There will also be numerous challenges to HR managers as the technological impact comes with the result in an exogenous force over which managers do not have any control or have little control.

There will be a lot of pressure for managers as they need to train people to adapt the technology and they also need to guide their teams to make an impact on the sustainability of the organization. They also have to remain active so as to shape the Fourth Industrial Revolution and direct towards a future that reflects the organization's values and success. Leaders also need to develop a comprehensive and globally shared view of the technology affecting the lives of employees and also the reshaping of the economic, social, cultural and human environment. Also, the industrial revolution has brought the war of talent with it. Now it is a big challenge for leaders to stretch them beyond their current competencies and skills to guide and support the employees to build new digital capabilities as early as possible. And this demands a dynamic combination of mindsets and behaviors, skills, the digital knowledge that are required to manage an organization in this digital era. To enable the efficient functioning of the organization, HR managers need to find the skilled employee who can easily adjust with the implementation of technology so a lot of efforts needed to put while recruiting the candidates. (<https://www.humanresourcesonline.net/what-you-need-to-lead-in-the-industry-4-0/>)

CONCLUSION

The main aim of industry 4.0 is to make product & services more attractive and more affordable through the development of product customization and it leads to a reduction in time incurs in performing activities with increasing quality and associate services. With the introduction of this technology, the world is moving towards customized large scale production and explosion in services. The implementation of this smart technology will result in improvement in the way of carrying out activities by immediate correction of defects through increased use of automatic controls. The internal organization will also benefit from this revolution through better communication and coordination between functions. Management of data under this technology will speed up the decision making for operators but also for machines which can perform automatically according to the instructions provided. It will also give a boost to the competitive strength and will promote innovation in business. Industry 4.0 revolution will transform the entire system which involves architecture, manufacturing, banking, education, consumer durables and consumer goods, IT sector, human resource management, finance, and others. The development and adaptation of this kind of technologies will be incremental and a part of long term trend. Organizations that fail to adapt to these new technologies fast will lose their competitive advantage and opportunity to lead the transformation that is currently sweeping across the economy.

LIMITATION OF THE STUDY:

The research has been done on mainly three sectors – Manufacturing, Banking, and FMCG. The research has been done on Human Resource Areas.

FUTURE STUDY:

The scope of the study- use of other function like marketing, finance, research, and development etc in management purpose. There is a need to replicate the study in other industries like HealthCare, Education, Pharmaceutical industry etc.

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