IS THE REVOLUTION OF TECHNOLOGIES TRANSFORMING HUMAN RESOURCES?

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ABSTRACT

In the present paper, the modern role of human resources is presented. It has been pointed out that in the present era of globalization; emerging of technology plays a major role for the sustainable growth and development of industry, product and services industry. World Wide Web (www) and Internet based Communication Technology (ICT) has brought in unprecedented changes in society life. The sectors like, service-based industry, communication, manufacture and services are using latest technology for realizing the objectives set for them. This has given rise to knowledge customer, knowledge-maintenance personnel, knowledge-operators by virtue of the complexity of product and services. This tells upon also the knowledge-human resources. The paper has examined some aspects of emerging of technology, like, technology of convergence, role of artificial intelligence (AI), robotics automation process (RPA), big data and Internet of things (IoT) critiques of convergence. It has been pointed out that human resources is destined to play a vital role in the area of convergence of technology, consultancy market. To meet the challenges and requirements of the future technology, it is suggested that education and training of human resources needs to be refurbished. If trained properly, human resources can do wonders in achieving sustainable growth and development of both nation and industry.

Keywords: Human resources; Artificial intelligence; Robotics automation process; Big data; Internet of things.

INTRODUCTION

Human resources work as a facilitator or integrator. HR's job is a creative one, involving continuous productivity improvement resulting into smart and lean philosophy. HR's functions involve short and or long term planning and (Prem, 2019) execution of tasks. Human resources work as a staff or a consultant reporting to the top man in the organization.

Human resources possesses expertise in one or more than one areas, she or he is very sound in applying a holistic- system or integrated-approach for handling the management issues, may be related with the task or people. Human resources are a sine qua non for sustainability and growth of any industry, dealing with product manufacturing or services. Thus, Human resources plays a key role in helping to achieve the objectives set for an organization. Both product and services sectors have been continually subjected to the changing technologies, (Cho, 2015) be in services including education and training, manufacture and irrespective industry.

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Technology means a way, a method developed and implemented to attain more comfort, ease and happiness in man's life. In a sense, the concept of technology is as old as man himself. Creating fire, sowing the seeds, using wheel for various purposes, etc., are some of the primitive formats of technology known to us from the pages of history. The faculty of science and technology is but one of the paths to promote technology. Development of technology, a natural journey with no destination, is a time function, and it takes shape as per the need of man and environmental constraints prevalent, like, political, social, natural calamities, intellectual, muscular dominance, etc. Bringing together some relevant technologies towards a single point of use is convergence of technology. Emerging of Technology is an ongoing process, a journey; again, without destination. The present globalization and technology era has accelerated the process of convergence of technology, un-thought, beyond imagination.

It is a great challenge for human resources. Human resources will have to play a vital role in applying skill into emerging technologies to unprecedented convergence of technology. In the recent world history, the stalwarts worth remembering in the area of development of technologies in services of man and their convergence Ten Commandments: the universals, still relevant and must be followed by one and all in words and spirit.

The Ten Commandments are

1. Think about the terms
2. Know that knowledge is power
3. Maintain efficient standards
4. Support industries in any type
5. Increase production and services
6. Practice teamwork and effectiveness & efficiency
7. Maintain efficient standards
8. Cultivate team work
9. Practice self-help
10. Encourage imports & exports.

The aim of the study conducted to know how human resources adopted new emerging technologies to deliver product and services.

METHODOLOGY

The study has been conducted by using secondary data; the information was extracted from Scopus online database from 1989 to February 20, 2021. To procure right information for the selected topic, the study was incorporated systematic procedure, first the study used following keywords to extract information from Scopus online database via search query (TITLE-ABS-KEY (emerging AND technologies) AND TITLE-ABS-KEY (human AND resource AND management) AND TITLE-ABS-KEY (product) AND TITLE-ABS-KEY (services)) have observed 43 papers were identified, these were presented in the form of year wise and publication platform in Table 1 and Table 2.

TABLE 1
YEAR WISE PUBLISHED PAPERS

Year	No of articles

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2020	2
2019	3
2018	3
2017	4
2016	4
2015	2
2014	3
2013	2
2012	4
2011	1
2010	1
2009	3
2008	0
2007	1
2006	0
2005	2
2004	0
2003	2
2002	0
2001	0
2000	1
1999	0
1998	1
1997	0
1996	0
1995	1
1994	0
1993	0
1992	1
1991	0
1990	0
1989	2
Total	43

Source: Scopus online database.

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TABLE 2 ARTICLES PUBLISHED PLATFORMS	
Discipline	**No of Papers Published**
Conference Paper	20
Article	15
Review	3
Book Chapter	2
Conference Review	2
Book	1
Total	43

Source: Scopus online database.

The csv file was carefully studied of the abstract, keywords and papers title, the researcher involved and scrutinized, which are not suitable that were selected based on the discipline and finally, the study found relevant study in Business, Management and Accounting, again the study was used keywords via search query (TITLE-ABS-KEY (emerging AND technologies) AND TITLE-ABS-KEY (human AND resource AND management) AND TITLE-ABS-KEY (product) AND TITLE-ABS-KEY (services)) AND (LIMIT-TO (SUBJAREA, "BUSI")) the search was found 12 relevant papers though csv file found these studies were published as articles, conferences papers, book chapters and year wise and the detail information presented in the Table 3 and Table 4.

TABLE 3 YEAR WISE PUBLISHED PAPERS	
Year	**Number of Publication**
2020	1
2019	1
2018	1
2017	0
2016	2
2015	2
2014	0
2013	1
2012	1
2011	0
2010	1
2009	0
2008	0
2007	0
2006	0

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2005	0
2004	0
2003	0
2002	0
2001	0
2000	0
1999	0
1998	1
1997	0
1996	0
1995	0
1994	0
1993	0
1992	0
1991	0
1990	0
1989	1
Total	12

Source: Scopus online database.

TABLE 4
ARTICLES PUBLISHED PLATFORMS

Platforms	No of articles
Article	7
Conference Paper	5
Total	12

Source: Scopus online database.

EMERGING OF TECHNOLOGIES

Emerging of Technologies is sine qua none of man's growth and development. The objectives of Emerging of Technologies be something like a Man looks for (i) Happiness, (ii) Prosperity, (iii) Economic and Social Development, (iv) Rapid development of Human race, privileged or the last man in the society and (v) Self-realization.

Emerging of Technologies turns to be effective and fruitful if we know the Technology of Convergence in the industry. Otherwise, the whole exercise proves to be an abortive one. Industrial revolutions, the Herculean feat of the pioneer human resources, like, Henry Fayol, F W Taylor, Gilbreth, Gantt, Maslow, Muther, Maynard, and many others, have helped immensely in this respect. One, for the sake of simplicity, can consider societal development in such stages as pre-industrial society, industrial society and post-industrial society. We are in a stage of post-industrial society described through various buzz words like international business, globalization,

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knowledge society, learning organization, lifelong learning, etc. Surprisingly, our ancestors have also used the same words, may be in different context. Today globalization means (i) Downsizing, (ii) High perks (iii) Lower prices with better product and service quality and (iv) more free time, flexible working hours, etc.

The industrial revolutions that help changed man's life, by (i) Industrial revolutions yield unprecedented socioeconomic and political changes. (ii) Industrial Revolutions are the prominent socioeconomic driver, sustainable and equitable development of all sectors of the society and not only those at the top, (iii) What count is not raw muscle power and energy, what count is knowledge and information, (iv) Today's society is expected to be knowledge based, (v) Convergence of Technology may come to our help to form such a society (Villasana & Lozano, 2020).

Such a society is expected to possess five dimensions as follows

1. Economic sector: Switching over to more efficient service sector
2. Occupational distribution: Emergence of professionals and technical class
3. Axial principle: Innovation is knowledge based
4. Future orientation: The control of technology and technological assessment
5. Decision-making: The creation of new human intelligence "brain intelligence".

The present age of globalization, about knowledge, learning, technological society, organization, and the handy tool is of emerging technologies, this form of technologies cover (i) Functional convergence, (ii) Technological convergence, (iii) Economic convergence, (iv) Political convergence and (v) Geographical convergence.

Technological emerging means ever-increasing convergence of several technologies towards a single point, but neither is it a process of integration nor fusion. For instant, high bandwidth carries voice, data, image, picture, other multi/interactive media transmission in one single carrier technology, i.e., optic cable and satellite technology. The epitome of emerging technology is computer technology, Internet that combines all known communication media into one single service on a screen. Keeping in mind the difference between convergence of product categories and convergence of underlying technologies, we have been using emerging technology for several applications, to mention a few, like, The anywhere phone: fixed line, Wi-Fi, mobile network, Digital pathways: Useful hybrid services, Triple play: Internet, telephone and television services (Live-box) and Live-services: (Stork et al., 2016) Wi-Fi cordless home phone, another areas of technologies. Thus, emerging technology will leads to, divergence of product and services; i.e., mass customization and but it is neither mass production, nor batch production. It is reported that the proper mix for effective emerging technologies is to (i) systematic reliance on innovation, (ii) public research and development (R & D) expenditure, (iii) Diffusion of information communication & technology together with, rise of financial & communication sectors and economic development.

Artificial Intelligence (AI), Robotics Automation Process (RPA), Big Data and Internet of things (IoT) has added altogether a new dimension to accelerate the process of computer technology.

CONCEPTS OF AI ENGINEERING

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Artificial intelligence was discussed in 1956, it is future of the computing, but today it is reach sky high and its enabling computers to be intelligence to serve the need of the society. Now a days the artificial intelligence is used in almost all the specializations such as medical, mechanical, electrical, management, hospitals, banking, education, hacking, security so on (Boshkov et al., 2018).

Artificial Intelligence (AI) Based Work for Human

In industry there is a strong point of argument that is AI will replace human knowledge, skills and attributes, broadly classified artificial intelligence is of two types: first artificial intelligence applications, this will work as a team as human-machine and another one it will resolve very complex issues by providing the right answer.

AI-Based Labelled and Unlabeled Data

Artificial intelligence systems are very good in the classification of data, categorizing and partitioning massive amount of data to make relevant portions available (Spigarelli et al., 2013) for the human to analyze and make decisions.

Various Types of Algorithms

There are many different algorithms in artificial intelligence (Armistead, 1989), machine learning and deep learning but not based on neural network. Which are the algorithms being used in the present though it was developed in 1950, 1960 and 1970.

AI Insights Benefits

AI systems provides capabilities for engineers, it can find any answers which are never seen before in any situations that is insightful and it will be the probability of being correct.

Manufacturing - Robotics Automation Process (RPA)

The acquaintance of human-made consciousness guarantees with permit us to create machines fit for performing perpetually entangled assembling, and even structure, undertakings. Machines that are equipped for learning and improving without human intercession are a definitive objective, and this would have huge and broad ramifications. Moreover, the artificial intelligence scientists are moving forward to create more powerful AIs (Gruber et al., 2012), which is how human brains works, how human approach for learning in both formats consciously and unconsciously.

The study of Stanford University entitled “one-hundred-year study of artificial intelligence” suggested that AI does not have a significant impact on the jobs recruitment (Nawaz, 2019), on the other hand can be observed other positive impact in the society (Spigarelli et al., 2013).

The mixture of the software and hardware advancing the manufacturing line has become more progressive over the years. The robots performed simple manufacturing tasks, but now the robots are capable of doing almost all what human is doing.

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Big Data

In the era of big data, artificial intelligence is the most advanced implementations and it heavily relies on large data sets and algorithmic learning. The most important in artificial intelligence is machine learning. The machine learning is heavily dependent upon constant generation and data analysis, through the process collecting data, analyzing data this will enable artificial intelligence to learn the progress equipped with proper algorithms to identify gaps and mistakes (Chatha & Aziz, 2015), formulation of solutions and then it can perform a process and continually refine it.

Big information process takes into account a target and nitty gritty correlation of how comparable the present condition is to the ones where the arrangement has been utilized previously. This is generally straightforward when utilizing enormous information investigation methods however would be a long and costly procedure to finish in any case.

Machine Learning

The machine learning is the future of artificial intelligence led engineering; the machine learning is the study of exactly how machine will learn. (Villares et al., 2016) The aim of artificial intelligence is that machine should be capable of self-analysis, machine should adopt learning methods and to refine process to a greater level.

Natural Language Processing

Natural language preparing is a field of study committed to improving the capacity of people and machines to convey. Specifically, regular language handling means to improve the complexity with which machines can react to the human voice. AI, (Spigarelli et al., 2013) normal language preparing utilizes huge informational collections and calculation-based learning.

Natural language handling intends to refine this procedure by permitting the machine to build up a more profound comprehension of language. On the off chance that this comprehension is sufficiently refined, at that point it will arrive at a point where the machine can derive what somebody needs when given a totally new order or solicitation.

Image Processing

The image of the process of human being, (Nawaz, 2020) when people see an article, it is on the grounds that the light is entering the eye and being changed over into an electric sign. This sign is then conveyed to the cerebrum by means of the optic nerve. The cerebrum transforms this electronic sign into a picture; it is this picture we 'see'.

Machines work in a fundamentally the same as energy, set up a camera so as to record a picture to show this picture to a client. Notwithstanding, this isn't equivalent to the machine understanding the picture. With picture preparing calculations, machines break down what they see and respond as needs be. From a designing point of view, this implies machines which can recognize basic anomalies and different issues that have recognizable obvious signs.

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This kind of image processing technology could likewise have a noteworthy effect to the work environment wellbeing of designers. There may regularly be visual pieces of information showing basic inadequacies and shortcomings that are not promptly clear until the structure comes up short. By joining picture handling with information contribution from different sensors, man-made reasoning can be utilized in an assortment of settings, a portion of the spot it will be useful in building locales and the locations of flames, auxiliary respectability can turn into a worry. Having an increasingly dependable route for specialists to survey respectability could spare lives.

Internet of Things

The Internet of Things expresses a speculative system, which would associate ordinary gadgets and things together, similarly, that the web interfaces PCs from around the globe. (Frenkel et al., 1998) Permitting the different gadgets to gather and offer information would open up some energizing additional opportunities.

The Internet of Things bit by bit turns into a reality, it will progressively become something that specialists consider during the structure procedure. With the Internet of Things as a reality, the for all intents and purposes perpetual number of ways that we can interface gadgets and have them cooperate will permit new and imaginative answers for some issues.

CONCLUSION

The study presented that the role of human resources has changed over the years because of emerging technologies, it has been point out in the present era of globalization, emerging technologies being used with unprecedented accelerations in several fields like (Ko et al., 2010) medical, mechanical, electrical, management, hospitals, banking, education, hacking, security.

The article has explored the relevant information on details of emerging technologies, the core part of the paper has presented a concept of artificial intelligence and related technologies analysis and develop human-machine interface at a workplace to resolve complex problems and produce efficient and effective products and services. The future of human resource will change as per the development of technology.

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