

Conforming PEPGI system of industrial revolution 4.0: Recommending SUPFRA approach for LIS fraternity

Dr. Soumen Mallik

Assistant Professor, Department of Library and Information Science, Vidyasagar University,
Midnapore-721102, West Bengal, India¹

soumenmallik@gmail.com

ABSTRACT

The emergence of industrial revolution 4.0 across the globe is manifested by a sudden and radical transformation in societies. The contemporary 4th industrial revolution (4IR) is characterized by a convergence of different technologies into digital technology. Therefore, the prevalence of 4IR is dependent on the existence of the digital revolution which is sought to be the predecessor of the present revolution. This article identifies PEPGI as an underlying synchronized system of five core components namely - Politics, Economics, Policy, Governance, and Internationalization (PEPGI) responsible for sustainable industrial revolution 4.0 in the human society. Librarianship in the era of 4IR requires a strategy for conforming PEPGI. This article analyses the philosophy of PEPGI and identifies its influence in materializing 4IR. Finally, this article recommends a strategy called SUPFRA approach in conforming PEPGI of 4IR. SUPFRA approach is an acronym for Subject, Users, Platform, Format, Resource, Accessibility (SUPFRA) is recommended in this article as a strategy for the library fraternity to conform to 4IR conveniently.

KEYWORDS: Digital Revolution, Digital Divide, Information Revolution, Digital Library, Library 4.0

1. INTRODUCTION

Human civilization is a manifestation of continuous transformation in different aspects of society. A few such transformations may be radical and occur suddenly to change mankind completely - these are called 'revolutions. Every sphere of human civilization realizes the impact of a revolution, starting from occupation, education, nutrition, religion, etc. Historically revolutions have been identified by a combination of different means of livelihood like - variety in occupations, scope of education, used equipment, types of food, appearance or style statement of the mass and nature of entertainment in the society. Contemporary human civilization is sought to be experiencing the 4th industrial revolution (IR) which is based on its immediate predecessor digital revolution. An engineer turned economist Klaus Martin Schwab coined the term '4th Industrial Revolution in the year 2016 with

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the reference that it would be building on the digital revolution characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological. The impact of the 4th industrial revolution (4IR) will be manifested by the 'smart' technologies on everything, everywhere, including research and libraries. While analyzing revolutions in modern society, a synchronized system of different components has been found to be deciding the means of livelihood in societies across the globe. This article identifies PEPGI as an underlying synchronized system of five core components namely - Politics, Economics, Policy, Governance, and Internationalization (PEPGI) responsible for a sustainable revolution in human society. The convergence of a variety of technologies which is characteristic of IR 4.0 could not have been possible without the patronage of PEPGI. The PEPGI facilitated 4IR succeeded the amalgamation of different technologies in re-designing existing systems and services. Librarianship in the era of industrial revolution 4.0 requires a strategy for conforming PEPGI. This article analyses the philosophy of PEPGI and identifies the influence of PEPGI in materializing 4IR. Finally, this article recommends a strategy called SUPFRA approach in conforming PEPGI of 4IR. SUPFRA is an acronym for Subject, Users, Platform, Format, Resource, Accessibility (SUPFRA) is recommended in this article as a strategy for library fraternity to conform 4IR conveniently.

2. INDUSTRIAL REVOLUTIONS

The nomenclature of the present industrial revolution i.e., 4th industrial revolution is self-explanatory about the existence of its three predecessors namely industrial revolution 1.0, revolution 2.0 and revolution 3.0.

In the first industrial revolution, society became capable of mechanizing processes through the conversion of water into steam power. Such a revolution was significant to industries for mechanizing their processes while it might not have a direct impact on general purpose regular jobs of common people. Most importantly general people were at the recipient stage of the revolution without any investment.

The industrial revolution 2.0 used electric power to create mass production. The impact reached the mass directly. This revolution succeeded in playing a central role in the socio-economic environment of human activity. People could avail the benefits of 2nd industrial revolution by paying of cost per unit of their desired products.

The third industrial revolution used electronics and information technology to automate production. The circumference of automation became endless. The ever-exceeding boundary of electronics and information technology reached the mass for their general-purpose regular jobs. The expensive information infrastructure necessitated financial cooperation from the citizens. Moreover, the recipients are required to invest in different gadgets to access the benefits of the revolution.

The current industrial revolution 4.0 is rooted into the third i.e., the digital revolution. It is characterized by a fusion of technologies into advanced digital production (ADP) technologies, human-machine interfaces (HMIs), artificial intelligence, etc. Beneficiaries of industrial revolution 4.0 are required to be users of smart technologies and therefore the revolution necessitates funding from the government for implementation of infrastructure as well as expenses by the users in the form of their personal interface installation.

3. PEPGI OF INDUSTRIAL REVOLUTION 4.0

Any revolution that changes human society radically in terms of livelihood is dependent on five core components namely - Politics, Economics, Policy, Governance, and Internationalization (PEPGI). This article identifies PEPGI

as an underlying synchronized system responsible for the success of 4IR as a sustainable revolution in human society. Importance of five core components in the materialization of 4IR

Politics – Global politics is moving around exploring those innovative ideas which are the potential to rule over others. The evolution of digital technology facilitates a political edge to tech-savvy nations. The growth of 4IR across societies became possible only because it fulfills political aspirations.

Economics – The inventors of industrial revolutions aim to rule the world economics. Economically viable inventions are required to be capable of transforming the civilization radically should have political patronage to undergo subsequent three phases namely policy, governance and internationalization. The industrial revolution 4.0 is an economically viable package of technological innovations which is used as an instrument of world polity.

Policy – Industrial revolution 4.0 contains expensive packages of several innovations which requires huge funding to be implemented. The 4IR necessitates formulation of policies for its implementation to overcome legal and ethical intricacies.

Governance –The success of 4th industrial revolution was determined by the facilitation of the government for its widespread implementation. Inter-government treaties and agreements facilitate the implementation of required infrastructure, tax structure, provision for penalties, etc.

Internationalization – Industrial revolution 4.0 reaches out to every corner of the globe and beyond the globe. Internationalization of the 4IR has been achieved through platform-dependent global services with local objectives, cloud computing, etc.

4. IMPACT OF INDUSTRIAL 4.0

The industrial revolution 4.0 is characterized by its ever-increasing appeal to the masses. The phenomena of 4IR are motivated towards integrating common people to interact in its human-machine interface. The digital revolution based 4IR is more personalized in its appeal and people find it more convenient to interact.

The dichotomy of 4th industrial revolution provides platforms to every user on the one hand while facilitating the scope of personalization on the other. The multidimensional features of the technology of 4IR created an unprecedented advantage over existing systems and libraries are no exception. Hussain (2020) has identified the susceptible LIS jobs to be redundant in the era of 4IR. The nature of personalized services directly to the users by a non-library entity may be a threat to the existing library system. Park (2018) reported statements of different personalities where this has been reflected that the libraries should more focused on the personalized service design for their users.

5. CONFORMING PEPGI BY LIS FRATERNITY

LIS fraternity has already started feeling the negative impact of 4IR. The impact is negative because some of the existing services may be provided by non-library entities or may be available directly from the publishers. The users will be empowered to interact with the sources of information directly and thereby circulation services of future libraries may lose their significance. Industrial revolution 4.0 is a group of multidimensional innovation packages

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where the digital revolution plays a key role in each of the groups. Contemporary librarianship is in a dilemma of combating IR4.0 because of its variety in manifestations. This article recommends SUPFRA approach not to combat 4IR but to conform to the PEPGI system. SUPFRA approach is an acronym for Subject, Users, Platform, Format, Resource, Accessibility (SUPFRA).

Subject – The libraries should identify their subject domains for their target user groups. The types of information of those subject domains also need to be identified.

Users – The libraries are required to know their users more comprehensively on the basis of their educational qualification, occupation, types of jobs, types of responsibilities etc.

Platform – The libraries are required to be transformed into a platform to its users for their multidimensional activities. The platform will facilitate the users to interact with the author of documents.

Format – The interactions may be audio or video with audio or both. Libraries should pre-determine the format of information communication, information storage and information dissemination.

Resource – Transforming the library into a platform for two-way interactive information communication will create resources on a variety of minute subject domains which will be unique for every other library.

Accessibility – The resources created by an individual library should be made accessible to the user. Designing of user-friendly interface, following network protocols, etc. are key accessibility issues to be resolved.

CONCLUSION

The Fourth Industrial Revolution is yet to exhibit its fullest form. Librarianship should be proactive in envisioning the future trajectory of information services by commercial information providers. The libraries should pre-determine the impact of 4IR and its resultant domains and LIS jobs to be abolished. Although library services may be replaced by cloud-based full-text online content the traditional libraries will stay with innovative service designs. The SUPFRA approach recommended in the present article has the potential to re-design sustainable library services.

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