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A STUDY ON IMPACT OF TECHNOLOGY ABSORPTION AND OUTCOMES IN INDIA: A DESCRIPTIVE REVIEW

E.SYLVIA JOHN

Assistant Professor & Head, Department of Computer Science
Nirmala College for Women, Coimbatore

A.JANSIRANI

Assistant Professor & Head, Department of Information Technology
Nirmala College for Women, Coimbatore

Abstract

Changes are a permanent phase and mandatory phenomenon in every spheres of the creation. Changes exhibits events right from the space, universe, solar system, inevitably in this world, the nature. In the context of change, it becomes a challenge to a state of being, when it encounters the change and it becomes the challenge, until it embraces those challenges and adopts them in the system. Challenges have been faced by the human race dated back from its world civilization to the present that have gone through its mutation of complexities of culture, habitation, and so and so forth in its survival process. When it comes to the context of challenges in technology, it has faced many changes, such as technology transfer, absorption for initiation of betterment in the areas of commerce and trade. The process development synonym with change perceived as challenge at its initial stage of adaption, which in course of time any field human life, education, biosciences, defense, agriculture, comprehensively in commerce and trade, the new technology or innovation, transferred from one source to the other, being adapted and transcript in its area of usage.

Keywords: *Inevitability of changes, Technology transfer, Absorption.*

Introduction

India has undergone many swings of technologies and has embraced the new technology in the sphere of Industrial growth that has contributed to the economic growth of India. In comparison to the past and contemporarily, and for around 300 years, it was of bad-mutation under the shackles of chain of British rule for India. Despite it suffocation, it has absorbed the technology transfer that have been spilled to her by the British rulers who have applied their

technologies in India for their survival here. That inequitable technology transfer does have had the goodness of effect in different sectors like construction of roads, spread of education, medicine and so on. In the post freedom, the embracement of Industrialization with technology impact was so massive that took India to soar heights, with short span of time to startling surprise of the developed countries. In course of technology absorption from the technology transferors to India, India has to face many challenges in lieu of imparting

those technologies, where India have had an somewhat narrowed look, in concentrating in upgradation of technology but not haven't prepared well in facing and maneuvering those challenges, until it had come across those barriers.

Importance of Industrialization & Technical Adaption

The first Indian Prime minister, Jawaharlal Nehru, Premier from 1947 to 1964, visualized India with industrialization which will be the core point in alleviating poverty. It has been perceived that the Industrialization will give potency of self-sufficiency for India political sovereignty, but also offered external economies accruing from technical progress. Acknowledging the potency of agriculture and exports to be limited, Indian governments taxed agriculture by skewing the terms of trade against it and by giving importance to the heavy industry.

The Industries (Development and Regulation) Act (IDRA) in 1951 laid the foundations for this administrative control on industrial capacity. But, over time, the licensing requirements became increasingly stringent and were accompanied by a gamut of procedures.

With changes in technology that have happened in worldwide, and evidently it does had a impact in India, with her tread of adapting the technological advancement in all the fields that have led freedom India to grow faster, that have taken to the altitude of the global standards at par with the developed countries like USA, BRITAIN, and other European countries.

Impact of Technology Upgradation

The need of technology and its application is mandatory irrespective of the field for a sustainable sizable growth for a country. In order to compete with the world, India has adsorbed herself with inventions of technology or by absorbing technology from the transferors, from developed countries. It is inevitable for India to keep herself in the track of race in the era of technology with the world market with emerging new markets with new trends in day-today competitions, which would enable to open new avenues to its citizens. In this process, India has upgraded herself with technology, such as automations, in field of Agriculture, Electronic sector, Information technology, Space science, Biological and life sciences, Nanosciences, Pharmaceutical

sectors, manufacturing sectors, application of IT in education, commerce and trade comprehensively.

1. TECHNOLOGY TRANSFER

Impact of Technology upgradation and its

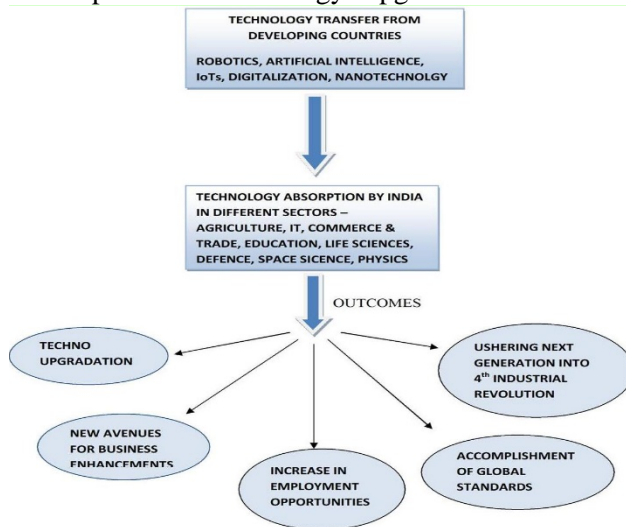


Fig 1.0 IMPACT OF TECHNOLOGY UPGRADATION

The transfer of new technology from the originator to a secondary user, especially from developed to developing countries in an attempt to boost their economies.

Technology transfer, also called transfer of technology, is the process of transferring technology from the places and in groups of its origination to wider distribution among more people and places.

History of Technology Transfer And Absorption & Timelines

STAGE I (1760- 1840): In the process of technology transferring and technology absorption, **the transition took place with nexus of Industrial revolution**, that have started from 1760, marking its presence particularly in manufacturing process. The new invention of technologies, for instance from manual methods to machines, for instance, in the areas of iron steel industries, textiles, utilization of steam power, and inventions of machine and tools.

In the context of techno upgradation, textile industries was the pioneer industry, where the upgradation and industrial revolution have took place, because textile industries was the dominant industry in terms of huge capital investment, contribution of developing economy, employment, where the modern methods where utilized modern machines. This have lead to the contemporary status of modernization, for instance Power

looms. These modern machines has had contributed massive output, but at the same time increased the hectic competition, and with the blend of unemployment. In the area of looming industry, it was considered a skilled crafting job, where it was done in succession from generation to generation.

Demerits: In this purview, it have been found that due to upgradation, and those that have not accessed to the new modernization have pushed to the extinction of these skilled job. Those that have financial background have embraced the power looms where as the middle class job takers, have lost their jobs.

STAGE II (1870 and 1914) :At this stage massive expansion ,growth and automation was witnessed in the industries like Iron and steel, electricity, oil rigging sectors, with increased use of steam power, primarily in Britain, Germany ,United States France, and also in Italy and Japan. This transition and advancement took place before world war. In this period electric power was utilized in a sizeable measure for mass production. The major advancement took place in this period was telephone, light bulb, internal combustion engines, phonographs, paper making machines. A great tread is with start of Petroleum industry production and refining in Scotland.

STAGE III (1950 -1970s): This period is referred as Digital era with revolutionizing with mark of advancement of technology from electronic analogy, mechanization to Digitalization. The digital revolution was at the peak of 1980's and is in continuum. Advancements during the Third Industrial Revolution include the personal computer, the internet, and information and communications technology (ICT). The application was widespread in industries like IT, Commerce and trade, Healthcare, business establishments, education sectors etc.

STAGE III (1970-1990s): The third Industrial revolution was marked by the era **Sectors of Technology AdaptionBy India**

Name of the Industry	Name of the Technology Adaption	Application
Banking Industry	ATM (Automated Teller Machine)	Plastic card transaction, replacing banking hassles in public and Private sector banks. Ex: Credit cards, Debit Card
Banking Industry	e-banking systems	Demat accounts systems. Mobile

adapting the technology like, how the Internet, Green Electricity, and 3-D Printing are Ushering in a Sustainable Era of Distributed Capitalism. Some economists say that the major impact of the Industrial Revolution was that the standard of living for the general population began to increase consistently for the first time in history.

The five pillars of the Third Industrial Revolution are (1) shifting to renewable energy; (2) transforming the building stock of every continent into micro-power plants to collect renewable energies on-site; (3) deploying hydrogen and other storage technologies in every building and throughout the infrastructure to store intermittent energies; (4) using Internet technology to transform the power grid of every continent into an energy internet that acts just like the Internet (5) transitioning the transport fleet to electric plug-in and fuel cell vehicles that can buy and sell green electricity on a smart, continental, interactive power grid.

The Apex of the Techno IntelligenceWorld's First Robot Citizen makes India Debut at IIT Bombay, Techfest



Sofia, the humanoid robot, made its first appearance in India at Indian Institute of Technology Bombay (IIT-B) on Saturday, during its cultural ... Describing its peculiar appearance, Sophia, in its mechanical voice, said, "I have been created on a human scale so that I can adapt to human society.

		transactions.
Retail Sectors	In warehouse management cash management, inventory & stock, sales, data management.	E-tailing system: Web and app design, system integration, customer service, big data and machine learning. Off-line retailing,
Manufacturing Industries	Automotive & Engineering	Additive Manufacturing Advanced Robotics, Industrial Internet of Things (IIOT).
Agriculture	Digital technology, Hydroponics, Aquaponic Gardening etc	In maintaining Live stock, Machineries, Agronomy, Home gardening, etc.
Space technology	Space weather, electromagnetic radiation emitted by the sun and other celestial bodies, fills space with noise that can interrupt certain frequencies.	NASA explores Cognitive radio, the infusion of artificial intelligence for space communications
Robotic Engineering	Entails the design, operation and maintenance of robots and automated systems used in industry and high-risk activities.	Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.
Bio-sciences	Genetic Engineering,	Cloning technology for curing diseases like Alzheimer’s diseases, and other ailments.
Defense	Homeland securities and protective measures, drones, missiles,	communications or infrastructures, war equipments, transports, and electronic equipments, such RFIDs, etc.
Medical Sciences	regenerative medicine	silicone prosthetic ears, or rib-cartilage reconstruction
Pharmaceutical Sectors	Discovery of new products such as medicines, health services.	Applied in areas of drug discovery, new product development to clinical trials to full-scale commercialization.

Conclusions

According to the report, In India, the future of jobs in 2022 would be determined by the country’s response to 12 megatrends captured by the EY (Early years foundations) framework, which includes, the level of exports of India based companies, rapid adoption of exponential technologies in the advanced markets and its impact on off-shoring, increasing/shrinking overseas job market for Indian workforce and level of FDI flows among other.

The new business models such as ecommerce and mobile based e-tailing is increasingly becoming popular in India across tier I, II and III cities. The impact of this growth is already visible on the job market. Ecommerce companies are creating

new job profiles in logistics, warehousing, web and app design, system integration, customer service, big data and machine learning. Hence, the need of the hour is to acquire new skill set through training, learning and development, adopt technology and be market ready for the changing job roles in the retail sector,” said Anurag Malik, partner - People & Organization, Advisory Services, EY.

Also, as per the report by 2022, 20%-25% of Indian workforce in the retail sector would be deployed in jobs that have radically changed skill sets. More than 76% of the industry experts believe rising middle-class and business innovation would drive growth in the retail sector in the next five years, it further said. EY prepared the ‘Future of jobs in India: A 2022 perspective’ report through primary

and secondary research and analysis.

During the primary research, EY said it has interacted with more than 130 business leaders, academicians and representative of industry associations across sectors including automotive, retail, textiles and apparel among other in India UPSKILLING WORK FORCE: forging industry-academia connect and upskilling workforce

Less Utilization Of Renewable Resources:We generally go on complaining about the heat of the sun, but we don't use this heat as the solution to our problem of unavailability of resources. We have exploited our energy resources to the extent that they are on the verge of exhaustion. Therefore more techniques should be developed to utilize solar energy.

Space Technology:Cognitive radio, the infusion of artificial intelligence into space communications networks, could meet demand and increase efficiency.**Illiteracy:** Our country is still struggling to achieve 100% literacy rate, to understand technology and to get the exposed to it, we need to educate people; and we live in country wherein people are denied access to education. So for them, getting exposure and access to new technology is quiet difficult.

Bio Sciences – Genetic Engineering: For the first time, researchers have used the cloning technique that produced. Dolly the

sheep to create healthy monkeys. The animals could then be used to study such diseases and test treatments. The researchers said their initial targets will be Alzheimer's and Parkinson's.

Imitation Game:Indian government thinks that the best way to develop our economy is to imitate American economy which is capitalist in nature, and capitalist economy is ruthless and profit-oriented, and this profit is only oriented towards the rich and the powerful who rule the social pyramid of India; and enjoy all the technological benefits to the fullest. So our government should immediately stop this imitation game policy.

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