

## Future Work Challenges and Role of Education

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**Abstract:** We have the maximum inventory of talent pool as engineers, scientists and management graduates; we are unable to derive the optimum benefits from our knowledge economy. Proper utilization of these resources can be a driver of growth for the Indian economy. As per a survey by American Management Association, many employers are in an opinion that higher education system is failing in providing quality inputs in students as per their needs [1]. There is a mismatch in skills required by employers and the resources developed by our education system. We are at the entrance of Industry 4.0 and shortage of skilled human resources can be a concern in near future where most of the industrial practices will be done with a combination of real and virtual life. The purpose of this study is to identify the role of various stakeholders in developing our youth to be ready for future work challenges in terms of work revolution. The change in employment trends and work revolution is indicating that many job-relevant skills will be going to replace with advanced skills with a shift in technology.

**Keywords** -Education, Employability, 21<sup>st</sup> Century Skills, Future of Work

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### I. INTRODUCTION

The planet where we live has full of opportunities and enough resources to make them real but have challenges too. With latest technology and innovations we are able to make driverless cars and algorithms to respond customer queries. We no longer need matchmakers and its role is replaced by marriage portals like shaadi.com, Most of the jobs of the past have disappeared or replaced with new jobs. We are at the beginning of industrial 4.0; the era of the cyber-physical production system and experiencing a change in employment trends; it's not about job crisis rather work revolution. Most of the organizations will look for cognitive abilities along with IT skills over physical abilities as topmost priorities while framing the job requirements in future. When we discuss the future of works employment is not the key issue but unemployment. There is a paradigm shift in forms of work but a certain section of the population is still not equipped with the latest tools for getting employed.

### II. Employment Trends And Drivers Of Change

With the change in technology, employment trend is changing very rapidly and it's negative in case of manufacturing industry [2]; see Fig.1. It clearly indicates that people are more into technical assignments rather than physical assignments. Employment trend is rapidly changing in the educational sectors; it clearly indicates that scope of the job in the education sector is increasing day by day.

The future of production will be more into big data-driven quality control, robot-assisted production, smart supply network, self-driving logistics vehicles, predictive maintenance, machines as a service, self-organizing production. Big data analysis and its application in manufacturing will reduce the number of employees in quality control while increasing the need for more number of data scientists [3]. New trends in monitoring systems like sensor technology will foster the employment generation in IT sector.

With technology races ahead, around 47 percent of US employment is at risk [4]. Similar consequences shall be observed globally as the risk in employment will arise because of technology replacing work. Jobs including workers in logistics and transportation, administrative support workers, labor in production are at risk. There are many jobs those are non-susceptible to technology changes shall be demanding in recent years. So there will be a race among workers for the task requiring creative and social skills. The key drivers of workforce disruption include demographic upheaval, changing digital technology, the rise of new social contract and rate of change with business model innovation [5].

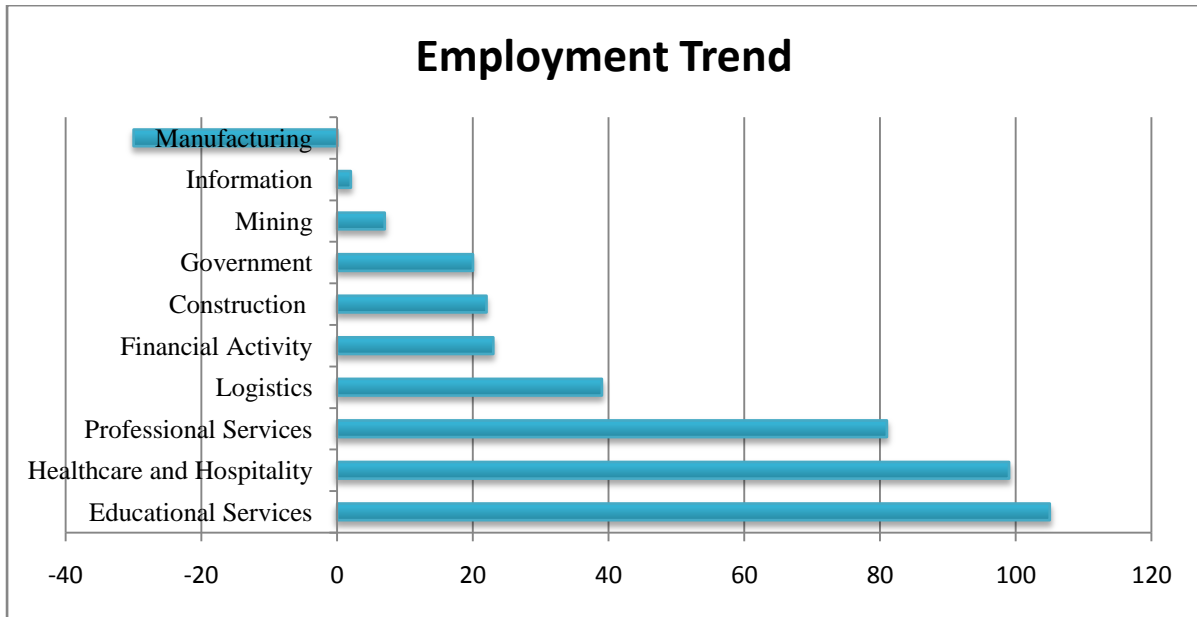


Fig. 1 Percentage change in industry employment, 1990-2015

Today’s human beings are keener to change with the advancement of technology rather susceptible as in past. The speed of technology adoption has increased in the recent years [6]; as illustrated in Fig. 2.

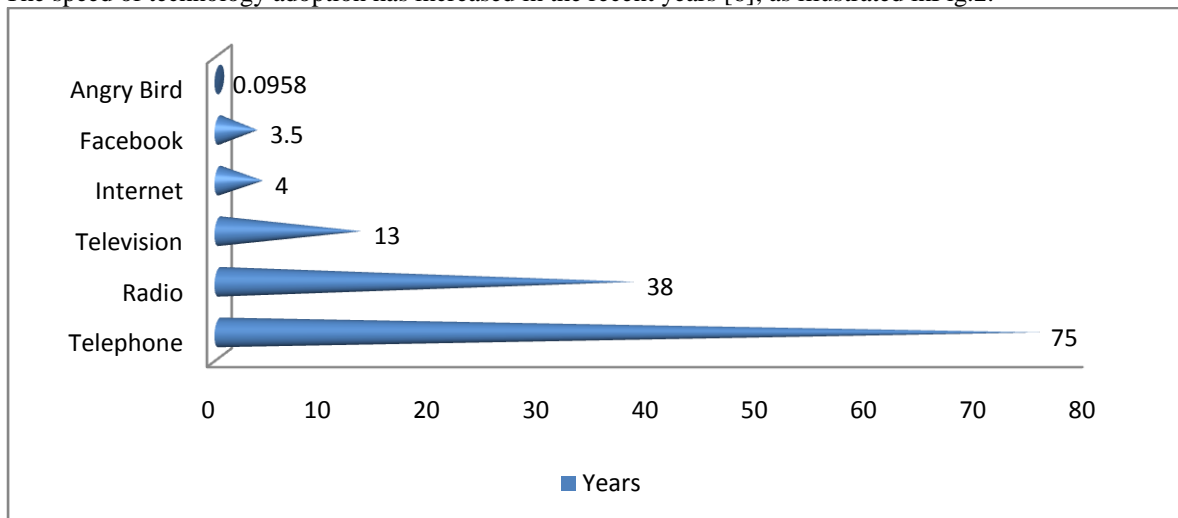


Fig. 2 Time to reach 50 million users

The trend highlights two paths of organization first one is featured by the community, creativity, and innovation, and secondly by automation, efficiency and disintegration [7]. It will be a critical strategy for the leaders of tomorrow to adopt the best path out of employee friendly organization or choosing efficiency with adopting automation.

### III. SKILL SETS FOR THE FUTURE

Beyond physical skills and formal qualifications, recruiters are equally concerned about the practical skills and competencies in order to perform various jobs successfully [8]. More than 60% engineering graduates in India are unemployed [9]. Ninety percent of jobs are skill-based, whereas only 2% of Indian population is currently enrolled for vocational training. Thirty-nine percent employers think that finding quality manpower with respect to desired skills is a challenge [10]. The only way to overcome this scenario is by building industry ready youth; by upgrading our education system as Indian.

We can’t deny the fact that education has a broader role than preparing youth for workplace skills. However, attention shall be paid to relate education and work. In a traditional context, skills referred to technical or job-specific abilities that enable a person to become proficient in a particular job. But today’s employers prefer people with “generic”, “personal”, “behavioral”, or “soft” and basic “IT” skills [11]. However, these generic skills shall be considered as job-relevant skills in some jobs like sales and administration. Generic skills

are very important for a prospective employee as most of the jobs are more related than we realize. When an employee works with a particular job, he/she acquires skills for thirteen other jobs [12].

Knowledge, skills, and abilities that will be of utmost priority with respect to changing roles in future of jobs will include Learning strategies, Active learning, Coordination, Complex problem solving, Originality, Critical thinking, Sociology and Anthropology, Psychology, Instructing, Systems analysis and evaluation, Judgment and Decision Making [13].

#### IV. THE CHALLENGES FOR INDIA'S EDUCATION SYSTEM

Indians education system is of great worth when we talk about IIM's and IIT's but the other side of the coin shows an altogether different picture. Since Independence we have experienced many reforms in Indian education system, with successive Governments spending on education and structural reforms is being a priority but the actual implementation in practice is not evidenced [14]. The major issues with Indian education systems includememory-based learning, teachers are not trained, education given is irreverent to the job market, missing innovation and creativity only following west, students are happy with placement offers rather learning outcomes [15]. The reforms in educational system can only be possible if all stakeholders understand their roles and ready for the future challenges.

#### V. CONCLUSION

For individuals: 21st-century jobs need more risk takers, so individuals need to understand that apart from formal learning they should prepare for experimental learning through accepting various responsibility for which they are not trained. They need to take advantage of their surrounding ecosystem as learning environment [16].

For educators: Today's educators play an important role in creating knowledge economy for the future job roles. For achieving the same it has to be ensured that each and every individual get access to education, poor and deserving students shall not be denied for getting an education. Quality education shall be provided by ensuring qualified and trained teachers, ethics in education and best infrastructure [17].

For Parents: Study of Indian households spending patterns reflects that they spend 57% of their earnings on food and entertainment while 11% on education [18]. Among 11% the same is scattered unevenly with the income level of peoples, as enrolment percentage in English medium schools is increasing in higher income segment and the same is declining in Government schools. People with higher income segment feels that cost of education has a relation to the skills of students. they have to understand that apart from spending patterns what is expected from students at school is to cultivate by the parents only, viz. Punctuality, Teamwork, Cooperation, Respect for authority, Follow through, Completing assignments and Dependability as money can't buy everything [19].

For policy-makers: The policymakers should understand the rise of new forms of work; expected skill gaps and how generic skills shall be given a priority in the traditional system of education; based on factual evidence with inputs from research inputs on the new reality of the world. Policymakers both at the national level as well as institutional levels need to understand the importance of the same and work together towards a strong structural support to fight with future skill gaps.

India has a favorable demographic market segment of human resources having varied skills with about fifty percent of the population are in the range of eighteen to twenty-five years. Indians are in the leading position in many international companies, viz. CEOs in companies like Master Card, Pepsi Co., Google, Nokia, and Microsoft to name a few. To capitalize the human resources fully and not face the possibility of a skills-shortage, it is essential to gear up the education system through innovative initiatives that can meet the 21<sup>st</sup>-century skills.

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