Automation in Information Technology: Implication on Job Market In India

V.Hemanth Kumar
Senior Executive –HR, Sidhi InfoTech, Bangalore, Karnataka.
hemanth.von@gmail.com

Abstract

The world is growing very fast from recent decades. This growth is strongly assisted by technological advancements. From the past few years the technology has taken various forms to aid the people and the companies. Both companies and the people are getting mammoth benefits out of these technological advancements. The changes in technology have created numerous jobs all over the world. And the companies are expecting to create more millions of jobs in the coming future. The technology has made the life easy and comfortable. The companies are investing huge money on research and development. Result of this research and development is automation, which is a latest trend in Information Technology sector. Slowly this has taken more sophisticated form of technology. The development is paced up with this automation. The automation is fast absorbed by IT Companies. The IT companies are deploying automation technologies all over the world in order to reduce maintenance and labour costs. My study tries to focus on the concept of automation in IT, forms of automation and its implication on job market in Indian Information Technology sector.

KEY WORDS: Automation, IT sector, Technological unemployment, Cloud Computing, Niche skills

Introduction

The term automation is inspired by the term automatic. This term is widely used from 1947, when General Motors established automation department [1]. Automation has been achieved by various methods including mechanical, hydraulic, electronic, electrical devices and computers, usually in combination. Complex systems such as airplanes, ships and modern factories use all of these combined techniques. Now a day service providers are also using these methods. The automation application is serving in the fields of banking, telecommunications, information technology, information technology enabled services and health and environment. Many companies are opting for automation in order to reduce the maintenance cost and the labour cost. This automation is facilitating the companies to deliver the goods and services to the customers fast and timely. The customers are also happy with the automation as they are getting the quality services from the providers. Automation has taken its strong position in the information technology sector, as this is facilitating the company's deliverables faster.

These deliverables are also done with reduced cost and time with the help of automation. The biggest benefit of automation is that it saves labour and it is also used to save materials, energy and to improve quality, precision and accuracy.
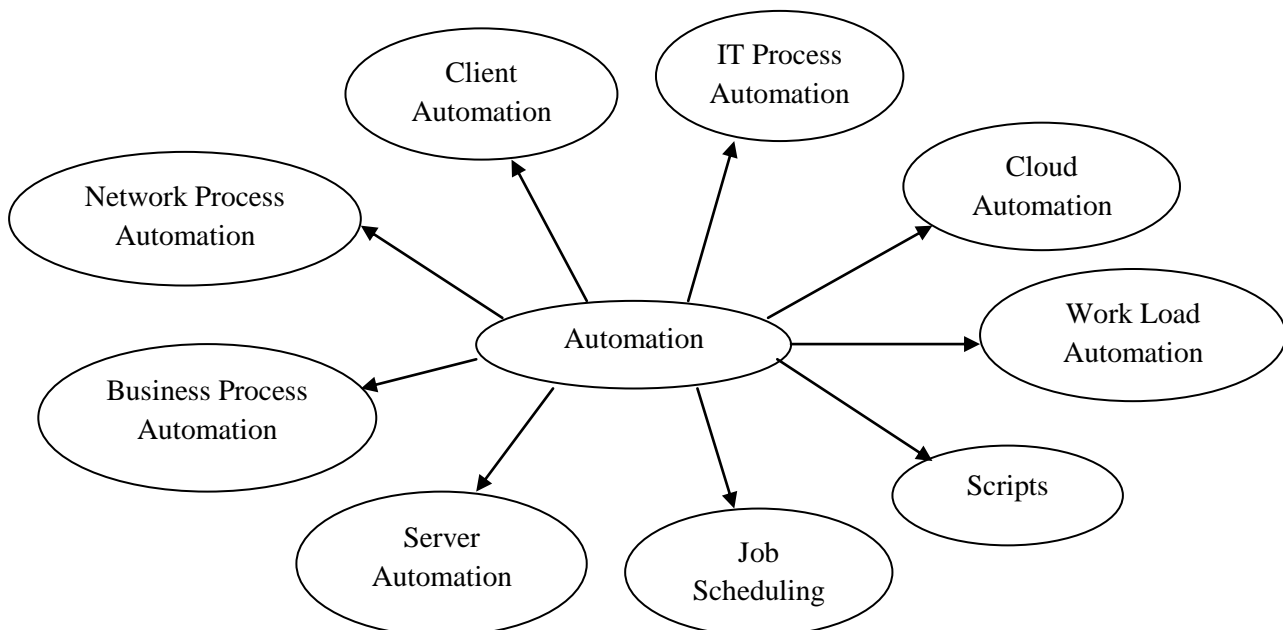
Review of Literature

Automation

Automation is the introduction of automatic equipment in a manufacturing or process or facility. It is the technique or a method of operating or controlling a process by highly automatic means, as by electronic devises. It reduces human intervention to a minimum. The term takes on different meanings based on situation and context. In common, automation refers to anon manual way of completing a task. It applies to information technology as well.

Automation in IT

Information Technology uses programmes, scripts, jobs and various other means to achieve automation. Information Technology is benefiting from automation in the form of creating new infrastructure, modifying existing infrastructure, reporting and gathering metrics. The below figure showcases how automation is used in IT

Figure 1: Forms of Automation Information Technology

Source: NETENRICH MARKETINN

As automation takes on routine tasks like planning, optimization and scheduling, managers are freed to focus on strategic and more creative work.

Information Technology Sector

Information Technology in India consists of two major components

1. Information Technology Services

2. Business Process Outsourcing

The sector is contributing 7.5% to India's GDP in 2012, from 1.2% in 1998.Today Information Technology is playing important role in India. Information Technology is transforming India's image from a slow moving bureaucratic economy to a land of innovative. The information technology sector in India is generating 2.5 million direct employments making India one of the biggest IT capitals of the modern world. All the major players in the world IT sector are present in India.

Bangalore is known as the "Silicon Valley of India" contributing 38% of Indian IT exports. The information technology has also created massive employment generation. The IT sector has added 2,30,000 jobs in fiscal year 2012, thus providing about 2.8 million in direct employment and indirectly employing 8.9 million people. Information Technology is a dominant player in the global outsourcing sector. The research and development in the IT industry was earlier concentrating towards programming technologies. Now, the present times the research focus changed towards Cloud computing, automation and mobile computing etc…

Technological Unemployment

Technological Unemployment is the loss of jobs caused by change in technology. Such change may include the introduction of labour-saving machines or more efficient processes. The technological change in short term may lead to job losses. But according to few experts there is never a long term negative impact on jobs. The phrase "Technological Unemployment" was popularized by Lord Keynes in 1930s. In the 21st century number of studies has been released suggesting that technological unemployment increase world wide.

Niche Skills:

Niche Skills are expert skills an employee possesses which include hands on multiple technologies or multiple business functions. Now a day people with niche skills are having great demand in the information technology sector. Experts say that in the coming years demand for people with niche skills is going to double. Niche skills are also related to the people who own or having experience in rare skills such as cloud computing and artificial intelligence.

Cloud Computing

Cloud computing is the process of using a network of remote servers hosted on the internet to store, manage and process the data rather than a local server or a personal computer. It is type of internet based computing that provides shared computer processing resources and data to computers and other devices on demand.

Research Methodology

The automation is playing important role in the Indian information technology sector. I have used descriptive research and have conducted an in depth literature review in order to study the various experts views and to understand the theme of the concept and its implication on Indian job market. Data for the study has been collected from secondary sources such as journals, books, magazines on the subject and the internet sources.

Implication of Automation on Indian IT Job Market

"The industry is taking steps to decouple revenue from headcount growth with more automation and platform based revenue growth" R.Chandrasekharan, chairman of NASSCOM and executive vice chairman of Cognizant India. These words clearly indicate how importance IT companies are giving to automaton in order to reduce costs. The information technology companies adapting automation to do repetitive and low level jobs. The companies are focusing on niche areas such as cloud computing and artificial intelligence. This is sometimes leading to technological unemployment. Especially fresh graduates may find it difficult to fin the jobs. The pace of hiring in the information technology industry may slow down in the coming years according to NASSCOM. The sector is set to create 13% less jobs in the fiscal year 2016. There is scope for employees with niche skills.

According to HFS research by 2021, IT industry world wide may see a net decrease of 9% in headcount or about 1.4 million jobs due to automation. In India IT sector may lose 6.4 lack low skilled jobs to automation by 2021. At present IT-BPO industry is employing 3.7 million. The impact of automation will mainly fall on the employees working in the BPO and infrastructure management space. According to HFS research low skilled jobs or repetitive activity jobs will fall by 30%. Medium skilled jobs require some amount of human judgement in the process or some times dealing with more challenging problems. This type of jobs increase by 8%. High skilled jobs may rise by 56% since they require creative problem solving, critical thinking and analytics. Where as majority of the people are employed in low skilled market. It is been observed from few years that automation is raising Indian IT industry's productivity. In 2016, firms like Infosys, TCS likely to see lower hiring.

According to NASSCOM data – the industry is estimated to require 16055 engineers to generate every additional $ 1 billion of export revenue in 2016-16, as compared with 31,846 engineers in 2009-10. According to Mc Kinsey – Kotak data industry needs 1 million engineers to generate next $ 100 billion of revenue compared with 3 million engineers for the first $ 100 billion. Top CEO such as Vishal Sikka feel pace of hiring will continue to slowdown. According to experts, software firms require very fewer employees to generate revenue from newer and high paying services such as cloud computing and data analytics. The reduced work force means cost advantage for IT companies. About 260 million jobs including those of industrial and service positions as well as knowledge workers will be replaced by technology worldwide. As per the NASSCOM data the IT industry added 2,00,000 employees in fiscal year 2016, compared with 2,30,000 in fiscal year2015 because of automation, technology interventions and digitalization.

Advantages of Automation

- Increased productivity
- Improved quality
- Improved consistency of process
- Reduced direct human labour costs and expenses
- Increased consistency of output
- Reduced project cycle time
- Reduced operation time and work handling time

Disadvantages of Automation

- Security threats
- Excessive development costs
- High initial costs
- Loss of jobs
- Increase in unemployment rate

Findings and Suggestions

1. The automation in the initial stage leads to loss of jobs
2. Information technology sector is likely to concentrate more on automation of their services
3. There is direct impact on low skilled labour with IT automation
4. With automation the IT companies get a chance to cut their operating and labour expenses
5. Indian information technology sector is losing millions of jobs to automation by 2025

6. As a result of automation in information technology the IT exports will increase dramatically in the future

7. In the globalised environment adapting automation and newer technologies will give the indian IT companies a competitive advantage

8. It is better for the employees to learn new technologies and update themselves timely as per the industry requirements

9. In the automation environment, the niche skills are into limelight

10. It is better aspect for the employees of IT sector to focus on niche skills such as cloud computing, artificial intelligence and data analytics to sustain in their jobs for longer period without any threat

Conclusion

Information technology is the India's largest job creator. The pace of hiring in this sector is setting to slowdown in the coming years. As the clients are expecting more, all the information technology firms in India are augmenting automation. This will facilitate the companies to reduce labour costs and delivery cycle time. The majority jobs in IT sector have been replaced with newer technologies. At this facet developing niche skills keep the employees competitive in the market. Traditionally Indian IT companies billed their clients on the basis of employees working on their projects. They were linking revenue directly to headcount. This is changing with the industry now a day. The industry is adapting automation to do repetitive and low level jobs. The IT companies are trying to make their existing employees more productive. It is now up to those employees to meet the expectations of their companies and the information technology industry.

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