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Performance of IT Industry in India : Strategic Review

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Abstract

For many years, there has been considerable debate over the technology revolution in every sector of the economy. Since then, a decade of studies at the firm and country level consistently reported that IT industry growth is momentous and constructive. This article develops a general framework on the performance parameters of information technology sector. It facilitates in identifying what researchers know and how well versed are they about the impact of technology and various government initiatives in this regard. IT is not simply a tool for automating existing processes, but more importantly an enabler of organizational and industrial changes that can lead to additional gains of the market. The present study has experienced boom and prosperity of the information technology sector in the Indian economy. The various regulations and policies formulated by the government have facilitated the information technology sector in greater aspects. But the success of initiatives and performance parameters would pivot relentless innovation, improving the IT structure and removing different bottlenecks to sustain IT industry.

Keywords*: Technology Sector, India, performance, parameters, regulatory framework.*

Introduction

In the era of computerization, the growth and development of the information technology sector have pushed emerging economies into established one. Over the period of time, the business has been tough and challenging with many uncertainties in the business, leaving behind many firms and their workforces on unsure footing (Gupta & Basole, 2020).As a result, many economies reframed their moves, formulated their tactics and goals as a way to stay in an equilibrium position (Kleibert & Mann, 2020). The ups and downs have been happening at both professional

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level (IT) and in the business level of technology in all the sectors such as channel firms, vendors,distributors etc.

Information Technology (IT) referred as the application of Hardware (computers, tablets, mobiles, printers, servers);software (productivity, network, security applications); services (integration, maintenance, repair, application development); infrastructure (Internet backbone, fiber optic networks, data centers); Information (data, documents, voice video and images)to create, alter, reframe and leverage the different resources in its various forms to accomplish business goals (Allad, 2015). It comprehends the work force directly and indirectly to develop, maintain and utilize information technology in its own way. Analyzing the position of India which is an emerging economy empowered by high tech human power and world-class information technology industry. In past many years, it can be observed that India had no driving strategy for computer technology. However, the government has taken many initiatives to instigate the design and expansion of computers in many institutions. The various policies and strategies of the Government of India has led to creation of Department of Electronics in 1970 to promote the progression of electronics and computers in India, Software scheme in 1972 enabling the import and export of software and hardware, and thus making a breakpoint in the fruition of the Indian IT industry.

Impact of Technology at workplace

The Companies have been facing issues relating to their workforce operations in the COVID pandemic. Therefore, with the passage of time the explanation of workplace has altered subject to time and circumstances. There is huge transformation from traditional ‘office-based work’ to full-time ‘work from home’ which has exposed upsides and downsides of the companies. Also, the considerations of employers and employees in recent years have also changed to the technological aspects from the psychological handling of operations (Singh, Kumar & Ahmad, 2020).Many companies have grabbed opportunities to hire the work force and fill in the vacancies that have held firms back from accomplishing number of quests. From a perspective of technology, there have been new options and priorities for remote work areas on IT departments.

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accustomed to their head-offices and branches. Both globally and at home-based areas the commercialization of internet and the growing demand for IT sectors have took advantage of the concurrent changes in the political and institutional arena (Parthasarathy, 2004).The staff working remotely period always wished to operate in flexible arrangement where technology enables them to work from anywhere and anytime. The situations aroused at the time pandemic have also led many companies to accelerate their digital transformation efforts. On a positive note, firms finding opportunities in selling their business in work-from-home mode. On the other hand, no doubt business travel has fastened the technology industry for decades. Also Mega-conferences, face to face meetings, discussion over the cup of tea, overseas trips, and visit to headquarters have effected in era of pandemic(Singh, Kumar & Ahmad, 2020). This literal grounding, mismanagement and lack of orientation have forced companies to find alternative solutions. It has resulted in collaboration, on line calls, online meetings to accelerate the business. To ensure continued industry relevance, competitive differentiation and innovation in the years ahead, the companies have been planning to continue with emerging technologies and have been embracing towards new business models (Johannessen, Olaisen, & Olsen, 1999).

Impact of Government Regulations

In the past few decades, the government has taken many initiatives to promote IT sector wherein various seminars, conferences and trade fairs organized regularly to facilitate networking to enhance the IT sector. Moreover, various trade and technology-related agreements have benefited the IT sector. Further, establishment infrastructure of computer-related, satellite links and international gateways has been major hands-on policy initiatives. To regulate this, various acts, policies have been hovering over the tech industry. For instance, 'Information Technology Act, 2000; National Broadband Policy, 2004 and Special Economic Zones Act, 2005' have put constructive effect on information technology sector (Schelin, 2007).

Many hi-tech firms have become unprecedented behemoths of industry, where expertise in technology sector has distorted society, they has been curbing monopolistic practices and protecting consumer privacy (Coglianese, 2004).The formulation of new rules and laws has

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become complicated. Moreover, the practices adopted by business differ from country to country (Charumathi & Padmaja, 2018). There have been issues related to technology, cultural and philosophical differences in different areas. Having a look on the digital economy, regulatory policies often faces various issues. With all the complications, regulatory reform remained vital for organizations to stay ahead of the curl so that they understand any potential impacts on operations (Charumathi & Padmaja, 2018).Having intent on all the approaches, the major challenge is to comprehend the unintended consequences of technology, especially at massive scale, and to build a framework accordingly. Tech firms regardless of size, understand the issues, practice transparency with clienteles and prudently examine their operations, to address their concerns(Weill,1992).

Research Methodology

The present study evaluates the performance of IT industry in the year 2021- 2022. The preceding section represents the brief introduction of information technology sector and its elements. Also it highlights the effect and changes of technology on the workplace along with impact of various regulatory framework devised on the technology aspects. The following section shed light various factors that lead to positive and negative growth of IT sector. For this purpose, the secondary data has been gathered through various online sources and websites. The data has been extracted from various journals and annual reports of the Ministry of Electronics and Information Technology, India budget, NASSCOM, Ministry of Commerce and Industry and Economic Survey of India 2020–21, Economic Forum etc. The graphical representation has been given to demonstrate the output and results. Followed by this, the study examined the various initiatives taken by the government for enhancing the success of technology sector. The study ends up with the conclusion by focusing on the points that road ahead towards the technology industry.

Magnitude of IT industry

The information technology industry is a significant economic player where it indirectly influences a wide range of other activities of the economy. The technological advancements have made the growth in various job creation and prospects (Brynjolfsson & Hitt, 2000). The

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adoption of updated technology has benefitted the companies in numerous ways. It helps companies in portfolio diversification as they are finding ways to augment their existing offerings to use technology. It also helps in upholding E-commerce as it has changed buying habits, physical retail practice, leading to a reimagining of supply chains. Besides this developments in IT has led to workforce diversity, where tech industry have been continuing fostering workforce diversity, so industries like retail, finance, manufacturing, healthcare have become welcoming places for tech-oriented workers (Dedrick, Gurbaxani, & Kraemer, 2003). Moreover, there has been development of the smart cities. The circumstances of smart cities have drawn themselves from traditional planning activities to account for new technology (Johannessen, Olaisen & Olsen, 1999).In addition, the technology solutions are making it easier in heath sector for people with deadly diseases to keep real-time track of their health status (Iansiti & Richards, 2006).The aspects of learning got a sharp wakeup call during COVID in the education sector. The new applications, devices and other tech solutions have make mark on different sectors bringing flexibility to world- wide economy (Singh, Kumar & Ahmad, 2020).

Performance Parameters of IT Sector

The position of India's IT industry has not only made significant progress in past centuries, but also has made an unprecedented pace with the start of the present century (Singh and Singh 2022). All the sub-sectors of IT industry have made remarkable performance in revenue growth in the last few decades (Singh and Kaur 2017), and hence fuelled the growth of Indian economy (Sirohi 2020). Analyzing the performance of IT industry has shown that it has contributed in the gross domestic product of India around 63 billion in the year 1994- 95 where it has augmented to 1,276 billion in year 2004–05 (Allad, 2015).

Over viewing the position of IT globally, the rank of India has improved in the Global Innovation Index and global sourcing market has continued to grow at a higher pace as compared to the IT-BPM (information technology and Business Process Management) industry. The statistics revealed that across the world, India has been the foremost sourcing destination, contribution approximately 55 per cent market share of the US$ 200-250 billion global services in year 2019-20 (Singh and Singh, 2022).As per reports drawn by 'Software Technology Park of

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India', software exports by the IT companies accounted for Rs. 1.20 lakh crore (US$ 16.29 billion) in the year 2022. If looking at the India's GDP in the year 2020, IT industry accounted for 8 per cent in economy. Furthermore, the revenue generated by the Indian IT industry has touched around US$ 227 billion in financial year 2022 as compared to US$ 196 billion in the year 2021 as per the reports by 'National Association of Software and Service Companies' (Nasscom). Analyzing the Indian software product industry, the business expected to touch US$ 100 billion by the year 2025. The position of market has been anticipated to reach US$ 7 billion by the year 2030 because of the fast-tracked domestic demand for market.

As per the estimates of 'Gartner' the spending of IT industry in India has expected to increase to US$ 101.8 billion in year 2022 as compared to US$ 81.89 billion in previous year 2021.It has been observed that Indian companies are focusing to invest internationally to expand global footprint in order to enhance their business globally.

The exports of IT services have been the major contributor, accounting for more than 51 per cent of total IT exports. It contributed US$ 149 billion in year 2021. The sectors like BPM and ER&D(Engineering and Research & Development) and exports of software products accounted for 20.78 per cent each of total IT exports during the year 2021. The position of ER&D market is expected to propagate towards US$ 42 billion by the year 2022. Overviewing the growth of employee's turnover, IT industry added 4.5 lakh new employees in year 2022 which has been the maximum accumulation in single year. It can be said that year2022 hasbeen remarkable year of India's technology industry as it has documented highest growth of 15.5 per cent to reach $227 Bn in revenue generation. As a result the combination of digital and innovation has been winning formula of IT industry in accelerating espousal of technology in every field in each aspect.

Another landmark of IT industry where it has crossed 5 Mn in total direct workforce and it has been recorded as the highest figure. The industry's tech firms adopted hybrid work approach to set up industry digital building programs. The share of digital revenue to total revenue accounted for 30 to 32 per cent being digitally skilled stamping India's position as the *Global Digital Talent Nation*. These parameters have pushed share of Indian economy in

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global sourcing market to 59 per cent(Singh and Singh, 2022). As a result, E-Commerce sector has shown considerable performance in both offline and online sectors in different approaches.

Overviewing the position both globally and at 'end-user enterprises' of India, technology has been found as the solution that enabled firms to keep their lights on in each sector, develop their business models, adopt innovative products and services, manage customer needs and enable collaboration in a distributed work structure (Kleibert & Mann 2020).

Factors contributing towards positive growth

Figure 1 shows various factor that have been contributed towards positive growth of IT sectors

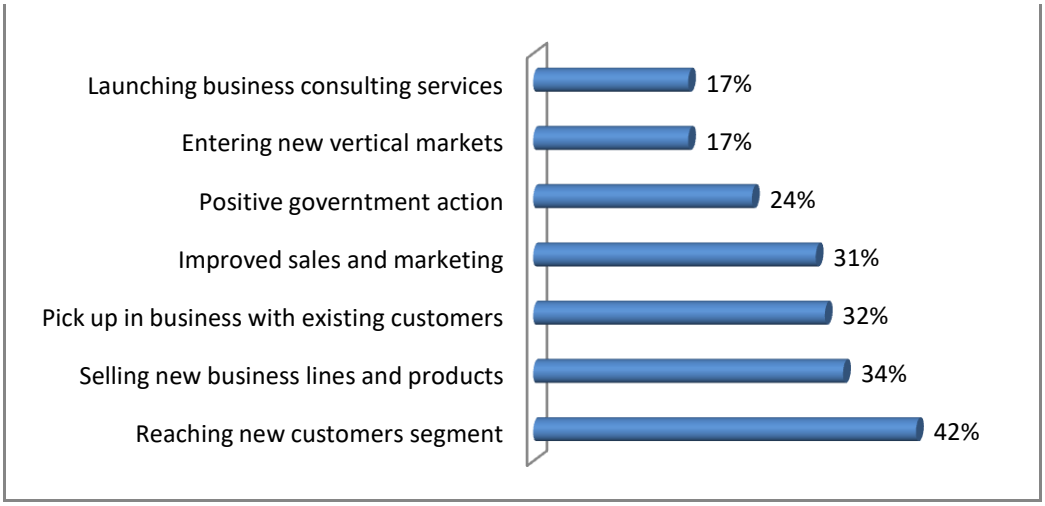

Figure 1 Factors contributing towards positive growth

There have been many parameters that have influenced India's share in global sourcing market hence contribute towards positive growth. It results in testament to India's new tech value proposition. The major factor in order to be successful in the challenging market environment is reaching the new customer segment (42%) followed by selling new business lines, ideas and products (34%). Another contributing factor that led towards positive growth is maintaining business with existing customers (32%). If the firm focuses on its improving sales and marketing (31%) it enhances its performances. Other areas respondents have been looking forward as growth drivers initiatives taken by government (24%), entering vertical markets with 17% and launching various consulting services with 17% response were some of the factors that lead towards positive growth.

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Factors leading towards negative growth

There have been few factors shown in Figure 2 that negatively impact the growth and performance of IT firms.

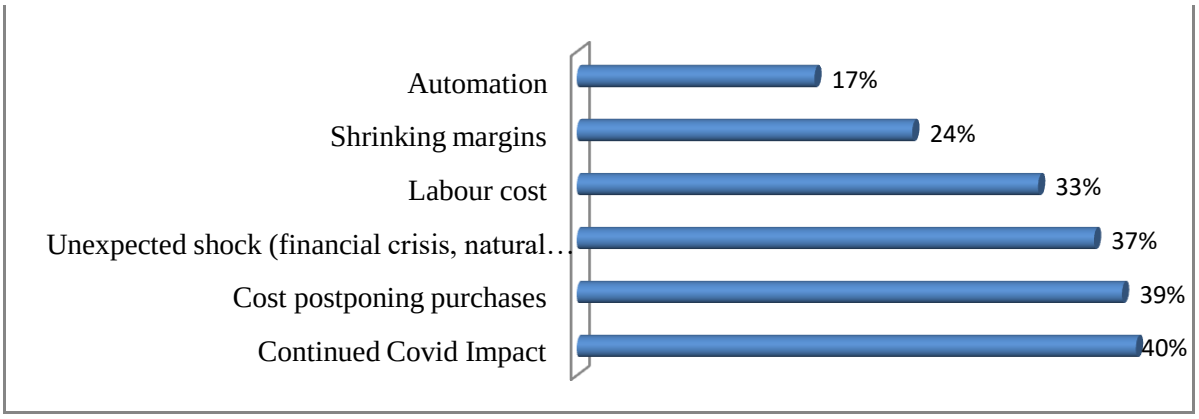

Figure 2Factors leading towards negative growth

The major factor has been the continued impact of COVID on the economy (40%). The impact of COVID scenario on businesses is regarded as undeniable, with one third of companies reporting negative impact in the past financial year. It has been followed by postponing purchases of the updated software and technology with 39 % of response. Since all the major industries including retail and financial services have adversely impacted the whole industry, there was reduced spending and impact on pricing. Thereafter various financial crises, natural disaster or any unexpected circumstances which accounted for 37% has contributed towards negative growth. Besides this labor cost with 33% response, shrinking margins with 24% and automation with 17% response are some of the contributing factors that lead to the negative growth of technology sector. It has led to the downfall of industry to a greater extent.

Figure 3 identified various factors that resulted due to criticism on the part of IT sector. There have been more government regulations and laws (41%) imposed on various sectors. The large tech firms have broken up (36%) due to downfall in technology. The greater examination from customers on each part with 36 % of response was major backlash for technology sector. The potential to restrain innovation has reported 32% response. Due to high tech firms and their

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interference, there has been a prolonged negative effect on small tech firms (31%). Moreover it has put down the morale and zeal of the employees working in IT sector reporting 22% of response.

Actions that resulted from Tech backlash

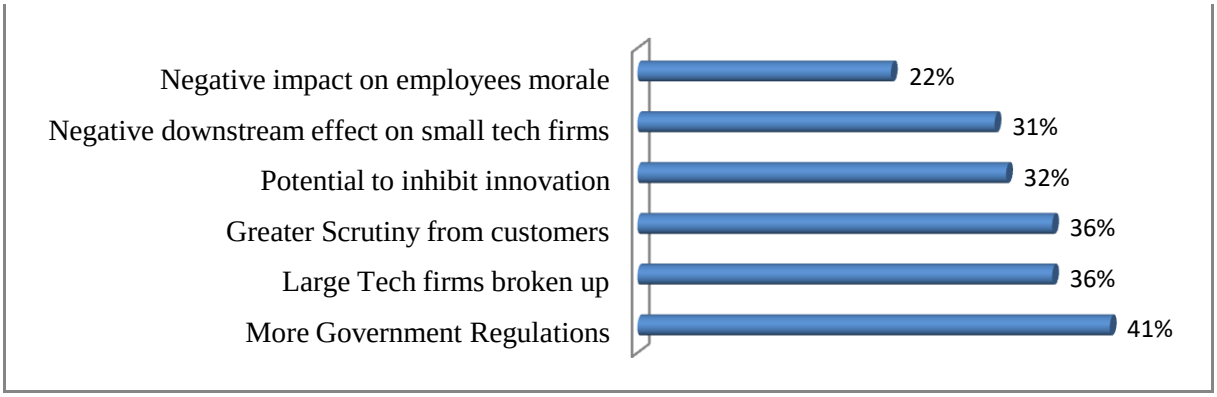

Figure 3 Factors that negatively impacted the IT sector

Government Initiatives

There are various initiatives taken by the government in the year 2021 which has led to the growth and development of technology industry in India and globally. The allocation for IT and telecom sector accounted for Rs. 88,567.57 crore i.e. US$ 11.58 billion as reported in the 'Union Budget 2022-23'. Firstly, the government for the development and export of computer software introduced 'STP Scheme' an export-oriented scheme, using various alternatives, links and media. Thereafter, government launched *Internet Exchange* in year 2021 in different states to enhance thequality of internet services in different areas. The government has signed three MoUs worth Rs.100.52 crore i.e. US$ 13.4 million to help the state's emerging technology sector. Besides this, theIndian government launched *Phase II of Visvesvaraya PhD Scheme*to encourage research in 42 emerging technologies in *Information Technology (IT); Electronics System Design and Manufacturing (ESDM)and Information Technology Enabled Services (ITES).*

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Similarly various policies and strategies have been formulated by the government for the development at various IT ventures. Moreover, the *Ministry of Heavy Industries and Public Enterprises* launched six technology innovation platforms *IIT Madras; Central Manufacturing Technology Institute (CMTI); International Centre for Automotive Technology (ICAT); Automotive Research Association of India (ARAI); Bharat heavy Electricals Limited (BHEL) and Hindustan Machine Tools (HMT)* to cultivate technologies for globally competitive manufacturing in India in year 2021. Furthermore, the Indian government inducted five *National Institute of Electronics & Information Technology* (NIELIT) Centre, in three North Eastern states to boost availability of training centers and employment opportunities. Also in order to enhance cooperation in areas of 5G technologies *Department of Telecom*; *Government of India; Ministry of Communications; Government of Japan* signed a MoU.

In addition, the central government has been focusing on the areas, namely cyber-security, artificial intelligence, hyper-scale computing, and block-chain model. Moreover, the Indian government announced a plan to build a cyber-lab for the *'Online Capacity Building Programme*' on Crime Investigation, *Cyber Law* and *Digital Forensics'* to strengthen cyber security capabilities. The other initiatives taken by the government to promote public and private stakeholders interest in the country and to expand internet access to all remote areas where *The Ministry of Electronics and Information Technology* organized a workshop under the theme of *'Connecting all Indians'*. Additionally the Indian government launched *Meghalaya Enterprise Architecture Project* to boost service delivery and governance in the state by leveraging digital technologies. It is need of an hour to produce jobs and achieve dynamic growth which is dire for the government to formulate well-organized strategies and tactics to promote their diversification in technology sector with continuous incentives.

Conclusion and Road Ahead

With the start of the present century, IT sector is one of the strongest segments of Indian industrial sector and has developed at an extraordinarily fast pace, contributing a significant portion to the country's development, in terms of its contribution towards foreign exchange earnings, GDP, and employment generation. Despite the global economic uncertainty, India's technology industry has gradually accelerated its growth. This industry consumes a wide pool of

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professional human capital, transforming India into a global IT centre. The IT industry has played a major role in shifting India's economic and governing environment. IT industry of India is gaining impetus in the up-and-upcoming technologies and played a key role in the global fourth industrial revolution to achieve new millennium goals of this century. By taking into consideration all various positive and negative factors discussed above the industry should administer its performance to another level. It has proved its competences in delivering all kind toglobal clients, emerging technologies now tender an entire new scope of opportunities for top IT firms in India. It has been observed that Indian technology sector and business services industry will propagate to US$ 19.93 billion by the year 2025. India is the topmost off shoring destination for IT companies worldwide. As above results and discussion, India's IT sector has slipped from its growth pace and this required a big push from government. The findings of the present study suggest that the government should boost the production and export of the hardware and software section to increase its contribution to the Indian economy. Additionally, IT industry is export-oriented and the government should keep a careful eye on the impact of currency appreciation or depreciation on its commerce industry.

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