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INDUSTRY OUTLOOK

INFORMATION TECHNOLOGY INDUSTRY: EMERGING CONTOURS

10 July 2021

Introduction

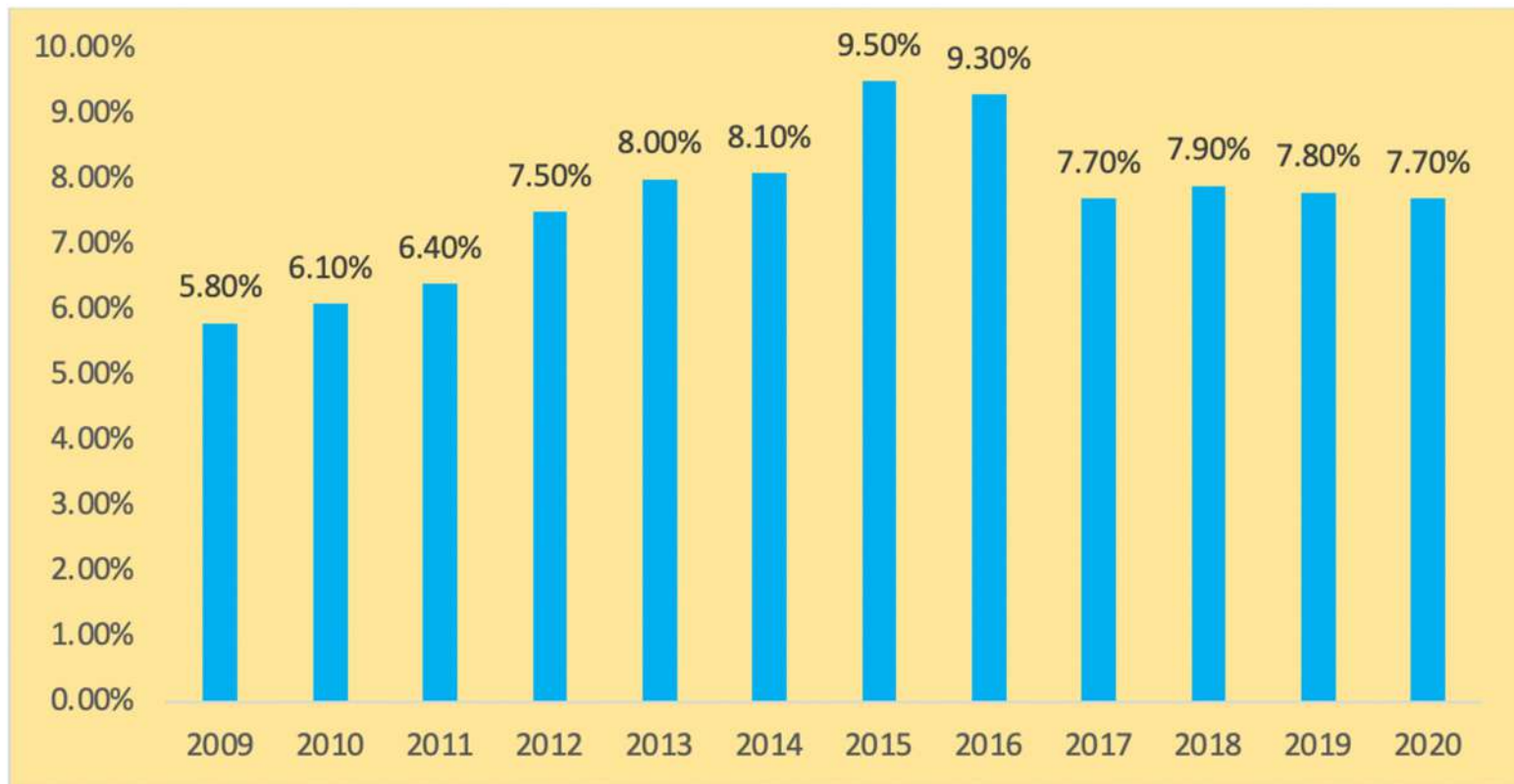
Of late, the Information Technology (IT) industry has emerged as a major contributor to the industry revenue as well as employment opportunity provider in the country. The sector currently employs around 45 lakh people and contributes about 8 per cent to the GDP of the country [1]. While the Indian IT industry has been driven by software development services in the beginning [2], the trend is changing. The country has become a Research & Development (R&D) hub of multinational IT companies with several India-based multinational IT giants established their R&D and innovation centres. The Government considers R&D as a pre-requisite to the implementation of the new initiatives such as Digital India, Make in India and Start-up India and has launched new schemes in R&D such as IMPRINT, etc [3]. The government has earmarked ₹53,108 crore for IT and telecom sector in the Union Budget 2021-22 [4].



Contribution to GDP

The contribution of the IT & Business Process Management (BPM) sector towards the GDP of the country for the past decade is given below (Figure 1). As can be seen, the IT-BPM sector has been contributing more than 7.5 per cent on average to the GDP of the country for the past decade.

Figure 1: Contribution of Indian IT-BPM industry in GDP of India FY 2009-2020 (in Per Cent)



Source: Statista. Available at <https://www.statista.com/statistics/320776/contribution-of-indian-it-industry-to-india-s-gdp/>

Market Share of Leading Players



The IT industry is marked by large to medium players with foremost players like Tata Consultancy Services, Infosys, Wipro and HCL Technologies dominates major market share of the industry. The graph below (Figure 2) gives the market size of major IT companies based on market capitalization.

Figure 2: Leading IT services and consulting companies in India as of 2020, based on market capitalization (in billion INR)



Source: Statista. Available at <https://www.statista.com/statistics/944948/india-leading-software-companies-based-on-market-capitalization/>

Major Deals and Developments in IT Industry

Some recent developments, which are crucial to understand the industry, are listed below:

- In March 2021, Tech Mahindra announced its partnership with Enate, a UK-based robotic process orchestration solutions company, to offer Enate's proprietary 'robotic process orchestration (RPO) technology', which offers a BPM, workflow and workforce management platform to help increase efficiencies and streamline operations between human employees and technologies, such as, RPA bots, OCR platforms and NLP/AI/ML technologies. [5]
- In February 2021, [6] Microsoft India announced its partnership with Intel to introduce Azure Stack HCI (a new hyper-converged infrastructure (HCI) solution) to the Indian market to empower organisations with advanced hybrid cloud capabilities. Part of the Azure Stack portfolio, Azure Stack HCI provides organisations access to Microsoft Azure for hybrid cloud scenarios across data centres, remote offices, cloud and edge locations.
- In February 2020, TCS bagged a contract worth ₹10,560 crore from pharma company, Walgreen Boots Alliance. According to the contract, TCS will provide managed services including application maintenance and support, required infrastructure and security operations. [7] Further, in October 2020, TCS was selected as a strategic partner for manage IT services by AG insurance to help enhance the latter's digital channel and modernize IT systems.
- In July 2020 [8], Infosys won a multi-year deal worth US \$1.5 billion, from investment management company vanguard. This Digital Transformation project work can go up to 10 years, including design, development, deployment, and support, with the contract value growing over \$2 Billion.
- In July 2020, HCL technologies signed a five-year deal worth US \$600 million with Swedish telecom equipment maker Ericsson. HCL under this agreement will provide infrastructure management, cloud and application services to Ericsson. [9]

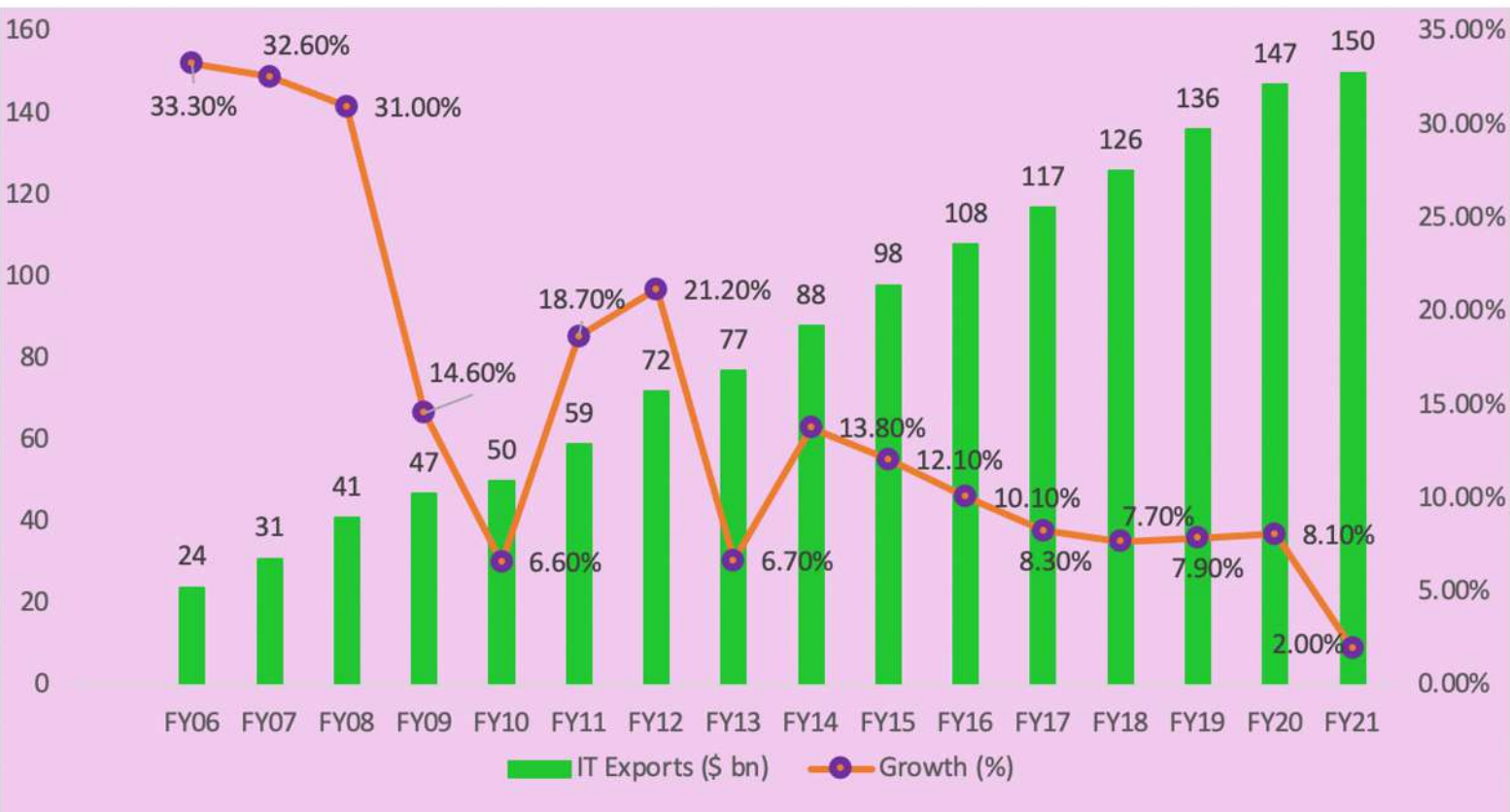
- In November 2020, WIPRO partnered with Cisco to deliver manage software-defined wide area network (SD-WAN) transformation services to Olympus, a medical devices and systems company headquartered in Tokyo, Japan.

- In February 2021, HCL Technologies (HCL), announced a five-year ‘Digital Workplace Services’ agreement with Airbus. HCL will create a modernized digital workspace for Airbus employees worldwide to improve customer experience and service quality.

Potential for the IT Industry

Given the right kind of the eco-system, policy support at various levels and coordinated and concerted attempts with a sense of urgency by all participants, including the National Association of Software and Service Companies (NASSCOM) to accelerate the pace of transformation of the industry to emerge as the preferred enablers for global digital transformation, the industry could continue to contribute around eight per cent towards the GDP and may well achieve the target of ten per cent. The graph below (Figure 3) shows the exports for the sector for roughly last fifteen years. As can be seen, IT exports have increased by more than six times from \$24 billion in FY06 to \$150 billion in FY21. But it is disconcerting to note that the export growth has been volatile ranging from roughly 33 per cent to 2 per cent (its CAGR has been approximately 13 per cent). While this could justifiably be attributed to various reasons, some of the major reasons could be identified and isolated as the computer/internet revolution in the early 2000s, global financial meltdown of October 2008, or the more recent COVID pandemic, apart from the peaks and troughs that characterises this industry.

Figure 3: IT Exports (\$ bn) in recent years



Source: Edelweiss (March 2021), Techolution: The Cloud Fission.
 Available at <https://www.edelweissresearch.com/Research/Download/9702>

While the industry has been hit by the COVID pandemic (like other industries), there has been some signs that stakeholders have not lost confidence in the industry. This is because the Computer Software & Hardware has emerged as the top sector during the first ten months of FY21 with 45.81 per cent of the total FDI Equity inflow. [10] As per the trends shown during the month of January 2021, the consultancy services emerged as the top sector with 21.80 per cent of the total FDI Equity inflow followed by Computer Software & Hardware (15.96 per cent) and Service Sector (13.64 per cent).

As per the NASSCOM press release (31 March 2021) [11], "with the ongoing pandemic and the pace at which almost every sector has accelerated their digital transformation journeys, the increasing cloud consumption and other digital services like Artificial Learning (AI) and Machine Learning (ML) are making way for the digital and cloud services, with an opportunity to reach USD 600-700 bn by 2025. Coupled with cybersecurity and IoT digital spending, the technology services are expected to reach USD 300-350 bn in revenue by 2025."

Changing Landscape

The prospect for the industry seems promising going forward given rapid developments on various fronts, like artificial intelligence (AI), machine learning (ML), etc;. Biotechnology, for example, was used to identify the virus and test for infection. Likewise, the internet has helped mankind in diverse ways during the pandemic times-be it making people aware of the new COVID strains, its available treatment, vaccines, etc.

Delving deeper in the health domain, the overall global digital tech spend in healthcare is expected to reach more than \$534 billion by 2025, from a \$180 billion in 2017, [12] with a majority chunk led by Artificial Intelligence (AI), Internet of Medical Things (IoMT), and Automation. The effects of these would also be seen in India as currently around 31 per cent of the patients use digital tools in India to search and schedule appointments and 27 per cent use online booking for diagnostic services. Also, more than 80 per cent of the doctors in India claim that patients value convenience more and expect the doctors to answer queries through mobile. [13]

India is also expected to contribute to this digital health domain as the 'Digital India' mission is expected to bring about huge investments in the IT sector. A glimpse of the expected spending in 2021 is provided in the table (Table 1) below, which shows that overall spending in IT is expected to be robust at 6 per cent growth rate in 2021 as contrasted with a negative growth rate of 8.6 registered in 2020 mainly attributed to COVID-19 pandemic. Given the current scenario, it seems that the health sector as well as the overall IT sector is well poised for sustained development and structural transformation to move into a new and higher orbit.

Table 1: IT Spending in India

Items/Category	2019		2020		2021	
	Spending (\$ million)	Growth (%)	Spending (\$ million)	Growth (%)	Spending (\$ million)	Growth (%)
Data Centre Systems	3738	4.8	3475	-1.2	3670	8.3
Enterprise Software	6647	17.1	6693	7.0	7415	13.6
Devices	38279	15.5	26460	-26.5	26780	3.8
IT Services	15410	12.6	15043	3.7	15838	8.0
Communication Services	27943	1.0	27592	4.9	28193	4.8
Overall IT	92017	9.9	79263	-8.4	81896	6.0

Source: "Gartner Forecasts IT Spending in India to Grow 6% in 2021", Gartner Press Release (23rd November 2020). Available at <https://www.gartner.com/en/newsroom/press-releases/2020-11-23-gartner-forecasts-it-spending-in-india-to-grow-6--in->

Government Initiatives

The Government of India (GoI) has taken many initiatives. Some such initiatives include:

- Atal Innovation Mission (AIM) – It was set up by the NITI Aayog with an objective to create and encourage an environment of innovation and entrepreneurship across schools, educational organisations, research institutes and industries including MSMEs. It is supported by Atal Tinkering Labs and Atal Incubation Centres. [14]
- AI driven detection of COVID via WhatsApp – ARTPARK (AI & Robotics Technology Park), a not-for-profit foundation established by the Indian Institute of Science (IISc), Bengaluru, with support from the Department of Science & Technology (DST), Govt. of India, in collaboration with Bangalore based HealthTech start-up Niramai and the Indian Institute of Science (IISc), has developed XraySetu specifically designed to identify COVID positive patients even from low-resolution Chest X-Ray images sent over WhatsApp. [15]
- Production Linked Incentive (PLI) for IT Hardware – PLI for IT Hardware was notified on 3rd March 2021. The PLI Scheme extends an incentive of four per cent to two per cent/ one per cent on net incremental sales (over base year of FY 2019-20) of goods under target segments that are manufactured in India to eligible companies, for a period of four years (FY 2021-22 to FY 2024-25) over which the scheme is expected to lead to total production of about ₹1,60,000 crore of which IT Hardware companies have proposed a production of over ₹1,35,000 crore, and domestic companies have proposed a production of over ₹25,000 crore. [16]
- MyGov Corona Helpdesk - With misinformation and fake news being circulated on social media about the Covid pandemic, MyGov-the country's citizen engagement platform, along with the Ministry of Health in collaboration with Haptik launched MyGov Corona Helpdesk chatbot. The goal of this chatbot is to bring awareness and get the nation prepared to combat Covid 19. The AI-enabled 'MyGov Corona Helpdesk' has also bagged two awards under two categories "Best Innovation for Covid-19 – Society" and "People's Choice Covid-19 Overall Winner", at the CogX 2020, which is a prestigious Global Leadership Summit and Festival of AI & Emerging Technology held annually in London. [17]



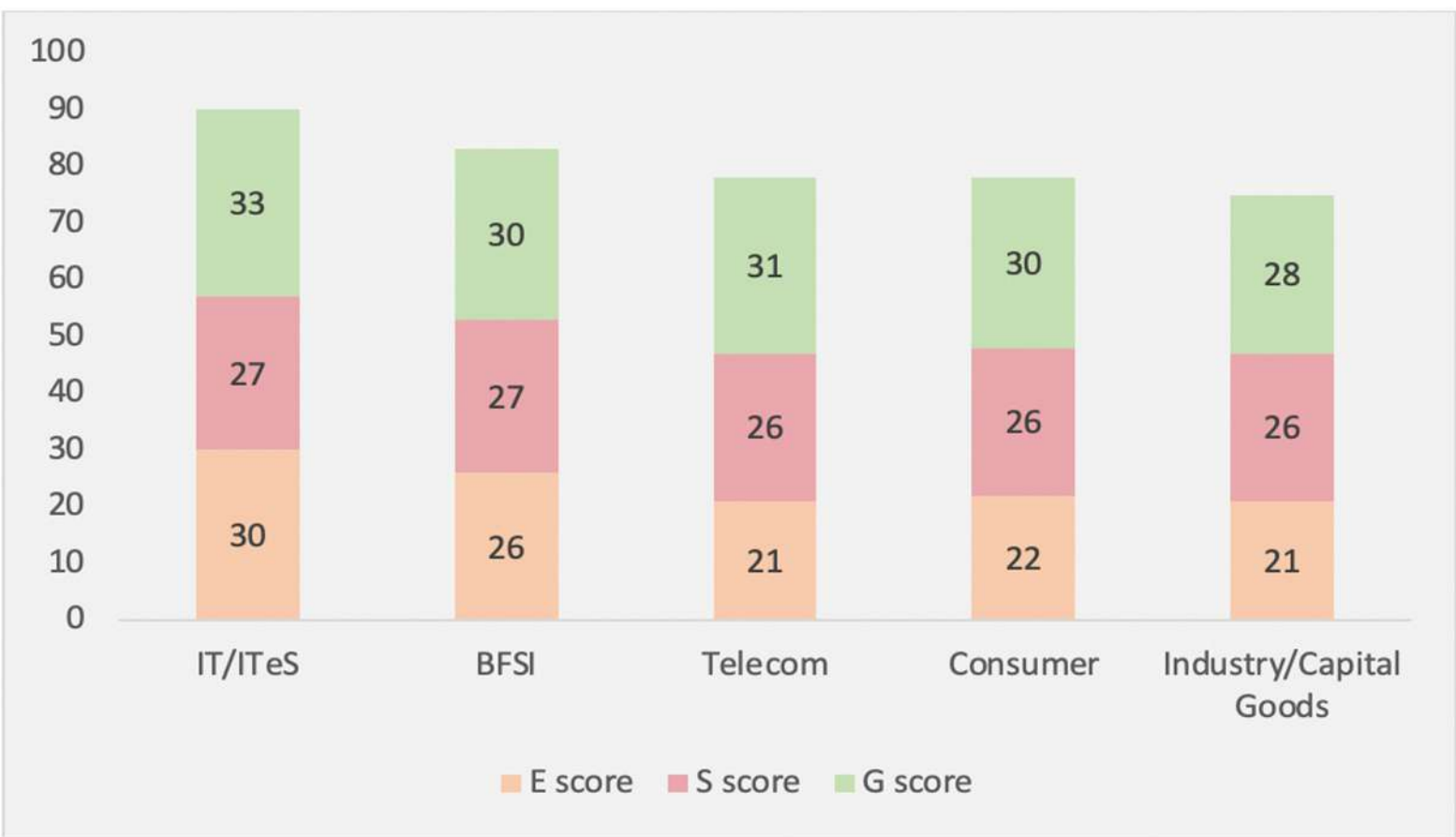
- Responsible AI for Youth - National e-Governance Division, Ministry of Electronics and Information Technology, Government of India, and Intel India have designed a National Program - Responsible AI for Youth. This program aims to empower youth to become 'AI-ready' and help reduce the AI skill gap in India. The program is designed to reach out to students from the government schools pan India and provide them with an opportunity to become a part of the skilled workforce in an inclusive manner. [18]

Industry Risk

With loss of incremental new clients in FY21 [19], the IT firms are planning to change their trajectory especially with context to work from home model. This strategy also entails consolidating vendors to reduce cost. However, this does not necessarily mean more attrition rates, as big companies are looking forward to add more than one lakh employee strength in FY22 as markets are looking optimistic after re-opening outside Indian subcontinent. [20]. NASSCOM Foundation in partnership with CGI consultancy took inputs from 548 organizations, of which 119 were established companies, 124 were social enterprises/start-ups, and 305 were NGOs. The results showed that the brunt of COVID-19 was faced by NGOs – over 50 per cent had to temporarily shut down and around 57 per cent found it difficult to monitor their programs. But with established companies, the issues were slightly different – almost 42 per cent saw increased administrative bottlenecks to perform their day-to-day operations and around 39 per cent even had issues with basic infrastructure setup like the internet. [21]

However, as far as the overall industry is concerned, it performed much better than many other industries adversely impacted by the Covid-19 pandemic. This thesis can be substantiated by a study by Edelweiss Securities Limited in its report titled “ESG 100: A Sophisticated Scorecard”. This report shows that the IT/ITeS sector invariably tops the chart (see Figure 4 below). [22]

Figure 4: ESG Score



Source: Edelweiss (May 2021), ESG 100: A Sophisticated Scorecard.
Available at <https://www.edelweissresearch.com/Research/Download/11082>

Way Forward

With the COVID pandemic arguably bringing more opportunities to the IT industry, the time is now apposite for the industry to seize the rapidly unfolding opportunities. The adoption-and adaptation- of new technologies is expected to accelerate growth of BFSI vertical. The need for undertaking investment in IT will also be required for gaining competitive advantage instead of solely reducing operational costs. This should be the driving force of all public and private investments.

Further, the role of new technologies like artificial intelligence (AI), machine learning (ML), cloud, etc. cannot be ignored. As per a study, 78 per cent of IT professionals in India report that it is critical to their company to build and run AI projects wherever the data resides and 72 per cent of IT professionals in India are confident that their company has the right tools in place to do so and turn data into insights. [23] All these developments place the industry on a sound and robust footing. But the realisation of the humongous potential of this industry is contingent on a judicious and optimum use of varied resources properly. This would also help to consolidate IT industry and India could emerge as an even stronger IT hub.

ENDNOTES

1. This contribution is expected to rise to about 10 per cent by 2025. IT & BPM (March 2021), India Brand Equity Foundation (IBEF). Available at <https://www.ibef.org/industry/indian-it-and-ites-industry-analysis-presentation>
2. The computer software and hardware sector in India attracted cumulative foreign direct investment (FDI) inflow worth US \$62.47 billion between April 2000 and September 2020 as per IBEF report.
3. For more details visit <https://www.meity.gov.in/content/r-d-information-technology>
4. IT & BPM (March 2021), India Brand Equity Foundation (IBEF). Available at <https://www.ibef.org/industry/indian-it-and-ites-industry-analysis-presentation>
5. "Enate and Tech Mahindra announce key strategic partnership to deliver Intelligent Automation at scale to customers" (30 March 2021) CISION, PR Newswire <https://www.prnewswire.com/in/news-releases/enate-and-tech-mahindra-announce-key-strategic-partnership-to-deliver-intelligent-automation-at-scale-to-customers-868563615.html>
6. "Microsoft focuses on hybrid cloud, announces availability of Azure Stack HCI solution in India"(11 February 2021) The HinduBusinessLine <https://www.thehindubusinessline.com/info-tech/microsoft-focuses-on-hybrid-cloud-announces-availability-of-azure-stack-hci-solution-in-india/article33810423.ece>
7. "TCS bags \$1.5-bn contract from US drug firm Walgreens Boots Alliance"(3 February 2020) Business Standard https://www.business-standard.com/article/pti-stories/tcs-bags-usd-1-5-bn-contract-from-walgreens-boots-alliance-120020301610_1.html
8. "Infosys' Vanguard deal value pegged at \$1.5 billion"(20th July 2020) Times of India <https://timesofindia.indiatimes.com/business/india-business/infosys-vanguard-deal-value-pegged-at-1-5-billion/articleshow/77057344.cms>
9. "HCL Technologies signs five-year deal with Ericsson for \$600 million" (31 July 2020) Business Today <https://www.businesstoday.in/sectors/telecom/hcl-technologies-bags-600-million-dollar-deal-from-swedish-telecom-equipment-maker-ericsson/story/411621.html>
10. This was followed by Construction (Infrastructure) Activities (13.37%) and Services Sector (7.80%) respectively. DPIIT, Press Release, 5th April 2021. Available at <https://dipp.gov.in/sites/default/files/pressRelease-FDI-05April2021.pdf>
11. Indian technology services expected to reach USD 300-350 bn in revenues by 2025: NASSCOM. Press Release (31st March 2021). Available at https://nasscom.in/sites/default/files/media_pdf/NASSCOM-Press-Release-Indian-technology-services-expected-to-reach-USD-300-350-bn-in-revenues-by-2025-NASSCOM.pdf
12. NASSCOM Tech Bytes: Monthly Technology Industry Bulletin (May 2021). Available at <https://nasscom.in/knowledge-center/publications/tech-bytes-%E2%80%93-monthly-tech-industry-bulletin-%E2%80%93-may-2021>
13. Ibid
14. For more information see <https://indiaai.gov.in/missions/atal-innovation-mission>
15. Tested and validated with over 1,25,000 X-ray images from National Institute of Health, UK, as well as over 1000+ Indian COVID patients from XraySetu, has shown excellent performance with Sensitivity: 98.86%, and Specificity: 74.74%. For more information see <https://pib.gov.in/PressReleasePage.aspx?PRID=1723592>
16. For more information see <https://pib.gov.in/PressReleasePage.aspx?PRID=1715871>
17. One Year of INDIAai, A MEITY, NEGD & NASSCOM Initiative (May 2021). Available at <https://indiaai.s3.ap-south-1.amazonaws.com/docs/one-year-of-indiaai-27+may.pdf>
18. Ibid.
19. "Top IT firms faced a drought of new clients in FY21", (10th May 2021), The Hindu Business Line. Available at <https://www.thehindubusinessline.com/info-tech/top-it-firms-faced-a-drought-of-new-clients-in-fy21/article34521400.ece>
20. "India's top four IT firms to hire over 1 lakh employees in FY22 despite raging pandemic" (3rd May 2021), The New Indian Express. Available at <https://www.newindianexpress.com/business/2021/may/03/indias-top-four-it-firms-to-hire-over-1-lakh-employees-in-fy22-despite-raging-pandemic-2297971.html>
21. Tech for Good Report (2021). Available at <https://nasscom.in/knowledge-center/publications/nasscom-foundation-tech-good-report-2021>
22. Environmental, Social and Governance (ESG) scorecard includes parameters such as emissions, waste disposal, effluent discharge, employee relationship, diversity, equality, capital allocation, minority shareholders, accounting quality, etc. Available at <https://www.edelweissresearch.com/Research/Download/11082>

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