Information_technology_in_India

The information technology (I.T.) industry in India comprises information technology services and business process outsourcing. The share of the IT-BPM sector in the GDP of India is 7.4% in FY 2022. The IT and BPM industries' revenue is estimated at US$ 245 billion in FY 2023. The domestic revenue of the IT industry is estimated at $51 billion, and export revenue is estimated at $194 billion in FY 2023. The IT?BPM sector overall employs 5.4 million people as of March 2023. In December 2022, Union Minister of State for Electronics and IT Rajeev Chandrasekhar, in a written reply to a question in Rajya Sabha informed that IT units registered with state-run Software Technology Parks of India (STPI) and Special Economic Zones have exported software worth Rs 11.59 lakh crore in 2021?22.

== History ==

The Electronics Committee also known as the "Bhabha Committee" created a 10-year (1966?1975) plan laying the foundation for India's IT Service Industries. The industry was born in Mumbai in 1967 with the establishment of Tata Consultancy Services who in 1977 partnered with Burroughs which began India's export of IT services. The first software export zone, SEEPZ ? the precursor to the modern-day IT park ? was established in Mumbai in 1973. More than 80 percent of the country's software exports were from SEEPZ in the 1980s.

Within 90 days of its establishment, the Task Force produced an extensive background report on the state of technology in India and an IT Action Plan with 108 recommendations. The Task Force could act quickly because it built upon the experience and frustrations of state governments, central government agencies, universities, and the software industry. Much of what it proposed was also consistent with the thinking and recommendations of international bodies like the World Trade

Organization (WTO), International Telecommunication Union (ITU), and World Bank. In addition, the Task Force incorporated the experiences of Singapore and other nations, which implemented similar programs. It was less a task of invention than of sparking action on a consensus that had already evolved within the networking community and government.

Regulated VSAT links became visible in 1994. Desai (2006) describes the steps taken to relax regulations on linking in 1991:

In 1991 the Department of Electronics broke this impasse, creating a corporation called Software Technology Parks of India (STPI) that, being owned by the government, could provide VSAT communications without breaching its monopoly. STPI set up software technology parks in different cities, each of which provided satellite links to be used by firms; the local link was a wireless radio link. In 1993 the government began to allow individual companies their own dedicated links, which allowed work done in India to be transmitted abroad directly. Indian firms soon convinced their American customers that a satellite link was as reliable as a team of programmers working in the clients' office.

A joint EU-India group of scholars was formed on 23 November 2001 to further promote joint research and development. On 25 June 2002, India and the European Union agreed to bilateral cooperation in the field of science and technology. From 2017, India holds an Associate Member State status at CERN, while a joint India-EU Software Education and Development Center will be located in Bangalore.

== Automation and layoffs ==

In the last decade most of the IT companies developed indigenous R&D and innovation capabilities

to develop home grown IT products. As the IT?BPM sector evolves, many are concerned that artificial intelligence (AI) will drive significant automation and destroy jobs in the coming years. Gedela Srinubabu underscored the importance of investing in education, envisioning a demand for 7 million AI engineers and data scientists to harness the $15 trillion global potential. Nevertheless, the ascent of AI carries a potential threat of replacing 50 million jobs globally by 2030, thus increasing the need for AI professionals and ethicists.

The rise of AI-powered code generation tools like ChatGPT, Gemini, and Copilot has sparked discussions about their potential impact on programming jobs. These tools can automate some coding tasks, potentially affecting the skillset required for certain programming roles. In 2024, the tech industry witnessed a significant increase in layoffs, with companies like Google, Amazon, Meta, and Cisco announcing job cuts. While AI is a contributing factor, economic downturns and cost-cutting measures often influence such decisions. Automation's role in the IT industry has been a topic of discussion. Industry leaders like Vineet Nayar, former CEO of HCL, have suggested that automation may lead to a decrease in workforce size needed for specific tasks. According to Layoffs', there have been over 500,000 layoffs from 2022 until April 2024.

According to Center for the Advanced Study of India (CASI) of the University of Pennsylvania, it is expected in India, which has 65 percent of global IT off-shore work and 40 percent of global business processing, will have 69 percent of its jobs in the formal employment automated by 2030. One report indicates that 640,000 low-skilled service jobs in the IT sector are at risk due to automation, while only 160,000 mid- to high-skilled positions will be created in the IT and BPO service sectors. Goldman Sachs has predicted that advances in artificial intelligence (AI) could potentially automate the equivalent of 300 million full-time jobs globally.

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specific tasks, particularly for repetitive or data entry-heavy IT jobs and skills of employees for coding, testing, maintenance, responding to trouble tickets, all that will be taken over by AI these skills will become obsolete.

=== Impact of AI-powered coding tools ===

The rise of AI-powered code generation tools like ChatGPT, Gemini, and Copilot has sparked discussions about their potential impact on programming jobs. These tools can automate some coding tasks, potentially affecting the skillset required for specific programming roles. Programmers may need to adapt to working alongside AI tools, focusing on areas that require human creativity, problem-solving, and strategic thinking.

== Attrition rate ==

The Indian IT-BPM industry has the highest employee attrition rate. In recent years, the industry has seen a surge in resignations at all levels. As a global outsourcing hub, the Indian IT industry benefits from a lower cost of living and the consequent cheaper labor.

Several factors contribute to the high attrition rate in the Indian IT sector. These include a lack of career growth opportunities, work-life balance issues, high workload and stress, and limited skill development opportunities. Additionally, competitive compensation packages offered by other companies (both domestic and international) can be a significant pull factor for employees.

The high attrition rate has several negative consequences for the IT-BPM industry. Companies incur increased costs associated with recruitment and training new employees. There's also a loss of institutional knowledge and expertise, leading to project delays and decreased productivity. Furthermore, damage can occur to client relationships due to frequent employee turnover

IT companies in India are taking steps to address the high attrition rate. Some initiatives include

implementing work-life balance policies like flexible work arrangements and increased paid time off. Companies are also focusing on providing opportunities for career development and skill enhancement through training programs and mentorship opportunities. Offering competitive compensation and benefits packages, creating a positive and engaging work culture, and investing in employee recognition and appreciation programs are other strategies being used.

== Indian IT revenues ==

In the contemporary world economy, India is the largest exporter of IT. The contribution of the IT sector in India's GDP rose from 1.2% in 1998 to 7% in 2019. Exports dominate the Indian IT industry and constitute about 79% of the industry's total revenue. However, the domestic market is also significant, with robust revenue growth.

The industry's share of total Indian exports (merchandise plus services) increased from less than 4% in FY1998 to about 25% in FY2012. The technologically inclined services sector in India accounts for 40% of the country's GDP and 30% of export earnings as of 2006, while employing only 25% of its workforce, according to Sharma (2006). According to Gartner, the "Top Five Indian IT Services Providers" are Tata Consultancy Services, Infosys, Wipro, Tech Mahindra, and HCL Technologies.

The IT and BPM industry's revenue is estimated at US$194 billion in FY 2021, an increase of 2.3% YoY. The domestic revenue of the IT industry is estimated at US$45 billion and export revenue is estimated at US$150 billion in FY 2021. The IT industry employed almost 2.8 million employees in FY 2021. The IT?BPM sector overall employs 5.4 million people as of March 2023.

In 2022, companies within the sector faced significant employee attrition and intense competition in hiring's. Indian IT revenues grow fastest in a decade to $227 billion in COVID-19 pandemic -hit FY22. NASSCOM in its Strategic Review predicted that the IT industry can achieve the ambitious

target of being a US$ 350 billion by FY26 growing at a rate of 11-14 per cent.

== India BPO and BPM ==

STPI envisaged under Digital India program launched the India BPO Promotion Scheme (IBPS). this scheme seek to incentivize est