ACADÉMIQUE JOURNAL OF QUALITY

Vol. I, Issue III: 26-35

OCTOBER – DECEMBER 2025

Growth of IT Industry in India: Emerging Trends, Sectoral Divergence

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Received: 20 September 2025

Accepted: 29 October 2025

Published: 30 November 2025

Abstract

This study analyses the recent growth dynamics and structural trends of India's Information Technology–Business Process Management (IT–BPM) sector using data from the IT-and-BPM-PPT-August-2025 report. The analysis examines revenue expansion, export patterns, workforce trends, firm-level performance, and digital infrastructure development to assess the sector's evolving role in the global digital economy. Findings indicate sustained growth in IT and BPM services, rising demand for advanced digital skills, and rapid expansion of cloud and data centre infrastructure, underscoring India's continued strength in technology-enabled services. However, the study identifies persistent challenges, including volatility in software products and ER&D, overdependence on the United States and Europe for export revenues, and cost pressures for hardware- and R&D-intensive operations. The results suggest that while the sector has achieved considerable digital maturity, long-term competitiveness requires enhanced R&D investment, technological innovation, and diversification into emerging global markets. The study contributes insights for policymakers, industry leaders, and future research.

Keywords: IT–BPM sector; Digital economy; Software services; Export concentration; Technological innovation

Introduction

The Information Technology (IT) industry has emerged as one of the most transformative sectors of the global economy, reshaping production structures, communication systems, and knowledge networks. In India, the evolution of the IT sector has been particularly significant, positioning the country as a global hub for software services, digital innovation, and business process management. Over the last three decades, rapid advancements in computing, networking, cloud technologies, and artificial intelligence have accelerated India's integration with the global digital economy (NASSCOM, 2023). Information Technology today encompasses a broad spectrum of activities involving the creation, management, processing, and dissemination of information through technological systems, making it central to economic competitiveness and national development strategies (, 2024).

India's IT sector has played a pivotal role in transforming the nation from a resource-dependent economy to a knowledge-driven one. Scholars argue that the digital revolution has effectively "compressed geography," enabling countries like India to participate in global work systems irrespective of physical distance (Castells, 2010). This shift has catalysed massive growth in exports, innovation, and employment generation. For instance, India's IT and IT-enabled Services (ITeS) sector crossed USD 250 billion in revenue in 2023–24, driven by digital transformation across banking, retail, manufacturing, and public services (NASSCOM, 2024). The sector's contribution to India's GDP has risen steadily, supported by a

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large pool of skilled engineers, proactive government policies, and robust digital infrastructure (World Bank, 2023).

The fourth industrial revolution-characterized by artificial intelligence, cloud computing, data analytics, Internet of Things (IoT), and robotics-has further enhanced the strategic importance of IT in India's socio-economic development. Recent government initiatives such as *Digital India*, *Startup India*, and the *National Strategy on Artificial Intelligence* have strengthened the ecosystem for domestic innovation, digital entrepreneurship, and global competitiveness (MEITY, 2024). At the same time, India faces challenges related to digital skill gaps, cybersecurity vulnerabilities, global protectionist trends, and the need to strengthen software product innovation (OECD, 2023).

Given these dynamics, examining the growth trajectory of India's IT industry, its emerging opportunities, and the contemporary challenges it confronts is critical for understanding the sector's future role in national development. This paper therefore analyses the evolution of India's IT sector, highlights the opportunities emerging from technological innovations, and assesses the strategic challenges that must be addressed to sustain global leadership in the digital economy.

The primary objective of this study is to analyse the contemporary growth trajectory of the Indian IT industry and assess its evolving role in the national and global digital economy. It seeks to identify the major opportunities generated by emerging technologies such as AI, cloud computing, and data analytics, while also examining structural challenges related to skills, infrastructure, and global market dynamics. The study further aims to provide evidence-based insights that can support policy formulation and strategic planning for sustaining India's competitiveness in the IT sector. Overall, the objective is to develop a holistic understanding of the sector's current position and future potential within the rapidly changing technological landscape.

IT Industry in India

The IT industry in India has evolved into one of the most dynamic pillars of the national economy, driven by a strong talent base, robust digital infrastructure, and sustained global demand for technology-enabled services. Broadly, the sector comprises IT services, Business Process Management (BPM), software products, engineering and R&D services, and emerging digital technologies including artificial intelligence (AI), cloud computing, cybersecurity, and Internet of Things (IoT) solutions (NASSCOM, 2024). Over the years, India has transitioned from being primarily a destination for low-cost software services to a global leader in high-value digital transformation and innovation-led services (MEITY, 2024).

India's IT sector continues to demonstrate strong economic significance. As of FY 2023–24, the industry crossed USD 254 billion in total revenue, with exports constituting nearly USD 200 billion, reflecting the sector's deep integration with international markets (NASSCOM, 2024). Major IT hubs-such as Bengaluru, Hyderabad, Chennai, Pune, Gurugram, and Mumbai-collectively account for the bulk of exports and serve as preferred destinations for global capability centres (GCCs) of multinational corporations. Bengaluru, in particular, maintains its reputation as the "Silicon Valley of India" due to its concentration of IT firms, research institutions, and start-ups (World Bank, 2023).

The sector's domestic market has also expanded significantly, driven by digital adoption across government services, health, education, retail, manufacturing, and financial services. Rising investment in cloud infrastructure, fintech, and e-governance has contributed to a steady increase in domestic IT spending, which reached USD 60 billion in 2023 (IDC, 2023). This shift signals India's transition toward a more balanced IT ecosystem, where domestic innovation complements export-led growth.

A defining feature of the Indian IT industry is its contribution to employment generation and skill development. The sector employs over 5.4 million professionals, making it one of the largest employers in the formal private sector (NASSCOM, 2024). Additionally, India continues to be a global hub for digital skills, producing millions of STEM graduates every year and nurturing a vibrant start-up ecosystem. The country hosts more than 26,000 tech start-ups and ranks as the world's third-largest start-up ecosystem, with strong growth in software-as-a-service (SaaS) and deep-tech ventures (Startup India, 2024).

India's prominence in the IT landscape is further reinforced by its strategic partnerships with global markets, including the United States, European Union, and Asia-Pacific economies. These collaborations have enabled knowledge exchange, R&D investments, and the expansion of multinational delivery centres across India (OECD, 2023). At the same time, the increasing presence of Indian firms such as Tata Consultancy Services (TCS), Infosys, Wipro, HCLTech, and Tech Mahindra in global markets highlights the sector's shift toward value-added innovation and leadership in digital transformation.

Overall, the IT industry in India today represents a sophisticated, innovation-driven, and globally competitive ecosystem, positioned at the forefront of technological advancement and economic transformation.

Literature Review

The growth and transformation of India's IT industry has attracted substantial academic attention, with researchers analysing its economic impact, structural evolution, and emerging challenges. Early literature emphasized India's comparative advantage in skilled labour and cost efficiency. Heeks (1996) argued that India's abundance of technically trained professionals, combined with favourable government policies, laid the foundation for the country's competitive position in global software exports. Similarly, Arora and Athreye (2002) found that labour arbitrage, English proficiency, and institutional support enabled India to emerge as a key player in the global IT services market during the 1990s and early 2000s.

Subsequent studies explored the sector's export-driven growth dynamics. D'Costa (2003) highlighted that India's IT expansion was shaped by global outsourcing trends and the rise of transnational corporations seeking cost-effective software development solutions. These findings align with Kuruvilla and Ranganathan (2013), who argued that India's export-oriented IT and BPO sectors benefited significantly from global demand for offshoring, yet continued to face internal pressures such as labour shortages, rising wages, and skill mismatches. In contrast, Bhatnagar (2006) emphasized the role of government initiatives, including software technology parks (STPs) and tax incentives, in attracting foreign investment and strengthening India's IT infrastructure.

A substantial body of literature focuses on the sector's contribution to economic development. Kapur and Ramamurti (2001) showed that India's IT industry played a critical role in enhancing productivity, foreign exchange earnings, and economic modernization. More recent empirical analyses by Nandi and Nandi (2021) suggest that the IT sector's multiplier effects extend beyond direct employment generation, influencing innovation capabilities, entrepreneurship, and digital transformation across industries. These studies highlight the shift of Indian IT firms from simple service delivery to more complex, knowledge-intensive activities.

Research also highlights the changing structure of the Indian IT industry in the context of new digital technologies. Choudhury, Sabherwal and Bharadwaj (2019) underscored that cloud computing, artificial intelligence, and data analytics are reshaping competition in the industry, pushing firms to move beyond labour-based delivery models toward platform-based and automation-driven services. This evolution is also

documented by Joseph (2020), who notes that Indian IT firms are increasingly investing in intellectual property, R&D centres, and digital consulting capabilities to sustain global competitiveness.

Challenges confronting the Indian IT sector have also been well documented. Several studies identify skill shortages and talent mismatches as critical bottlenecks. Ramaswamy and Babu (2017) found that demand for advanced digital skills far exceeds current supply, particularly in areas such as machine learning, cybersecurity, and data science. Additionally, scholars such as D'Costa (2011) note that the sector remains vulnerable to global economic fluctuations, protectionist trade policies, and currency volatility, which affect export revenues. Wage inflation and high employee attrition rates are recurring concerns highlighted in multiple workforce-related studies (Budhwar, Luthar, & Bhatnagar, 2006).

Another important strand of literature centres on the need for India to transition from a service-dominated ecosystem to a product-oriented innovation model. Athreye (2005) argues that India's limited success in software product development stems from structural constraints, including low R&D investment, limited venture capital, and insufficient intellectual property protection. More recent analyses, such as those of Chandra and Yang (2020), highlight improvements driven by India's expanding start-up ecosystem, yet stress that significant policy and capability gaps persist.

Finally, research highlights the socio-economic dimensions of IT sector growth. Madon (2000) earlier documented how the diffusion of IT-enabled services can strengthen governance capacity and social development. Recent studies, including Misra and Sahoo (2022), demonstrate that the expansion of digital infrastructure and government digital initiatives has contributed to financial inclusion, improved public service delivery, and increased digital participation.

Overall, the literature reveals that while India's IT industry has achieved remarkable global success, its sustained growth will depend on innovation, skill development, policy support, and adaptation to emerging digital technologies.

Data and Methodology

This study employs a mixed-method research design that integrates secondary quantitative data with qualitative interpretive analysis to examine the structural evolution, growth patterns, and emerging challenges of the Indian IT industry. The research relies on high-quality secondary data sourced from authoritative national and international institutions to ensure analytical validity and reliability. Quantitative indicators related to sectoral revenues, export performance, employment generation, foreign investment, domestic digital adoption, and technological advancement were collected from NASSCOM Strategic Review Reports (2015–2024), annual publications of the Ministry of Electronics and Information Technology (MEITY), Reserve Bank of India reports, and market analyses produced by Gartner and the International Data Corporation. Complementary macroeconomic and digital economy indicators were drawn from the World Bank, OECD, and UNCTAD datasets. To strengthen the interpretive dimension of the analysis, qualitative information was gathered from peer-reviewed journal articles, policy documents, and industry white papers that explore issues such as innovation capacity, skills development, global competitiveness, and policy reforms within the IT sector.

The analytical framework combines descriptive statistical analysis, trend analysis, comparative assessments, and qualitative thematic interpretation. Descriptive statistics, including growth rates and sectoral composition analysis, were used to capture the structure and performance of the industry. Time-series data for the period 2010–2024 were examined to identify long-term trends in revenue expansion, employment patterns, and digital adoption, with compound annual growth rates calculated to measure the pace of change. India's performance was compared with that of major global IT economies—such as the

United States, China, the Philippines, and Ireland—using global competitiveness indicators to assess relative positioning. In parallel, a qualitative thematic analysis of academic and policy literature was undertaken to identify recurring themes including digital transformation, automation, the rise of artificial intelligence, skill shortages, cybersecurity vulnerabilities, and evolving policy frameworks. This interpretive method provides a deeper understanding of the structural forces shaping the industry beyond what quantitative indicators alone can reveal.

The scope of this study is confined to the period from 2010 to 2024, a timeframe that captures both the consolidation of India's IT-services dominance and the transformative impact of recent digital technologies. However, several limitations must be acknowledged. Certain sub-sectors-particularly deep-tech start-ups and software product innovation-lack consistent longitudinal data, which may restrict the granularity of analysis. Additionally, discrepancies in data definitions and reporting methodologies across institutional sources may introduce minor inconsistencies. The exclusive reliance on secondary data also limits insights into firm-level heterogeneity. Nevertheless, the triangulation of multiple reputable data sources, combined with rigorous analytical methods, strengthens the credibility and comprehensiveness of the findings.

Results and Discussion

The results derived from the extracted industry data illustrate the sustained expansion and structural transformation of India's IT–BPM sector over the past decade. The empirical evidence reveals uneven growth dynamics across segments, regions, and firms, suggesting both consolidation and diversification trends within the industry. The following tables summarise key indicators and serve as the basis for interpretative analysis.

Table 1. IT and BPM Industry Growth Overview, FY2018–FY2025

Year	Total Industry Revenue (US$ bn)	Export Revenue (US$ bn)	YoY Growth (%)
2018-19	167	126	-
2019-20	181	136	8.38
2020-21	191	147	5.52
2021-22	196	150	2.62
2022-23	227	170	15.82
2023-24	246	193	8.37
2024-25	221	204	-10.16

Source: NASSCOM, 2025 & IT-and-BPM-PPT-August-2025

The data in Table 1 demonstrates a clear upward trajectory in overall industry revenue—rising from US$118 billion in FY2015 to a projected US$283 billion in FY2025. This represents a 140% increase over ten years, marking India as one of the world's fastest-growing digital service economies. However, the growth pattern is not linear. Rates slowed during FY2020–FY2022 due to pandemic-related disruptions but rebounded in FY2023–FY2024. The sharp projected rise for FY2025 reflects accelerated investments in cloud modernisation, AI services, cybersecurity, and Global Capability Centres (GCCs). Thus, while the

sector remains export-driven, its composition is increasingly shaped by digital transformation rather than traditional outsourcing.

Table 2. Segment-wise Export Performance, FY2016–FY2024

Year	IT Services (US$ bn)	BPM (US$ bn)	Software Products & ER&D (US$ bn)	CAGR
2016-17	61	24.4	22.4	
2017-18	66	26.0	25.0	
2018-19	70	28.0	28.0	15.33
2019-20	74	31.0	31.0	
2023-24	103.7	42.3	47.0	
2024-25	125.5	50.1	15.1*	

Source: NASSCOM, 2025 & IT-and-BPM-PPT-August-2025

As shown in Table 2, a comparative assessment of segment-wise export performance reveals substantial divergence in growth trajectories across the IT–BPM industry. IT services demonstrate a strong and sustained upward trend, expanding by more than 105 percent between FY2016 and FY2024, thereby reaffirming their position as the principal driver of India's technology export economy. BPM services exhibit steady progress as well, though their rate of increase is comparatively moderate, reflecting the segment's relative maturity and slower structural transformation. In contrast, software products and engineering research and development (ER&D) display considerable volatility, marked most notably by a pronounced contraction in FY2024. This pattern highlights a critical structural imbalance in the industry: although India has consolidated its global leadership in IT and BPM services, its evolution toward a product-led, innovation-intensive ecosystem remains incomplete. The underperformance of the software products segment-typically associated with intellectual property (IP) creation, higher margins, and greater value capture-suggests that India continues to lag behind advanced product-innovation economies such as the United States, Israel, and South Korea.

As shown in Table 3, the geographic distribution of India's software service exports in FY2024 reveals a pronounced concentration in Western markets. The United States alone accounts for 54.1 percent of total exports, while Europe contributes an additional 30.8 percent, resulting in over 85 percent of export earnings originating from these two regions (RBI; *IT-and-BPM-PPT-August-2025*).

Table 3: Geographic Distribution of Software Service Exports, FY2024

Region	Export Value (US$ bn)	Share (%)
United States	103.2	54.1
Europe (incl. UK)	58.8	30.8
Asia	12.8	6.7
Australia & New Zealand	4.6	2.4
Canada	2.6	1.4

Source: NASSCOM, 2025 & IT-and-BPM-PPT-August-2025

In contrast, emerging markets in the Asia–Pacific region constitute only 6.7 percent of the export basket, with Australia–New Zealand and Canada together contributing less than 4 percent. This asymmetrical distribution indicates a long-standing pattern of reliance on mature Western economies, which has historically ensured stable demand due to established outsourcing partnerships and sustained enterprise spending. However, such concentration simultaneously exposes the sector to external macroeconomic risks, including recessionary cycles in the United States, geopolitical tensions, and evolving data governance and digital sovereignty regulations in Europe. Unlike more diversified export economies such as China or Ireland, India's limited penetration in Asia, Africa, and Latin America underscores a strategic vulnerability. Consequently, future industry expansion requires deliberate market diversification to mitigate concentration risks and to leverage the digital growth trajectories of emerging economies.

Table 4: Employment Trends, FY2019–FY2025

Year	Direct Employment (million)
2019-20	4.14
2023-24	5.4
2024-25	5.4

Source: NASSCOM, 2025 & IT-and-BPM-PPT-August-2025

Employment dynamics within the Indian IT–BPM sector present a notable contrast to global labour market trends. Whereas major technology firms in the United States and Europe undertook substantial workforce reductions during 2022–2023, employment in the Indian IT–BPM industry remained stable at approximately 5.4 million workers, reflecting the sector's resilience and sustained demand for digital competencies. The projected increase to 5.8 million employees in FY2025 indicates a continued expansionary trajectory, driven primarily by the rapid growth of Global Capability Centres (GCCs) and escalating requirements for advanced digital roles such as AI engineering, cloud architecture, and cybersecurity. This shift suggests a broader structural transition within the industry-from reliance on traditional IT support and transactional services toward an emphasis on high-value, knowledge-intensive digital capabilities. As such, India's labour market evolution within the IT–BPM sector aligns with global digital transformation imperatives while simultaneously diverging from the contractionary patterns observed in Western technology markets.

As shown in Table 5, the distribution of market capitalisation among the top Indian IT firms in 2025 reflects a distinctly tiered industry structure (Forbes; *IT-and-BPM-PPT-August-2025*). Tier-I firms-comprising Tata Consultancy Services, Infosys, HCL Technologies, and Wipro-command overwhelmingly large market capitalisation levels and employ workforces in the hundreds of thousands, underscoring their extensive global delivery networks and diversified service portfolios.

Table 5. Top 10 Indian IT Companies by Market Capitalisation, 2025

Rank	Company	Market Cap (Rs lakh crore)	Employees
1	Tata Consultancy Services	11.15	6,13,069
2	Infosys	6.1	3,23,578
3	HCL Technologies	3.94	2,23,420
4	Wipro	2.61	2,34,054
5	LTIMindtree	1.51	84,000

6	Tech Mahindra	1.45	1,54,273
7	Persistent Systems	0.83	23,500
8	Oracle Financial Services	0.72	8,868
9	Coforge	0.57	33,497
10	Mphasis	0.52	31,601

Note: Data as of August 2025

Source: Forbes, 2025 & IT-and-BPM-PPT-August-2025

In contrast, Tier-II firms such as LTIMindtree, Persistent Systems, Coforge, and Mphasis, though considerably smaller in absolute scale, demonstrate strong growth momentum in niche and high-value digital domains, including engineering research and development (ER&D), cloud-native architecture, advanced analytics, and fintech-oriented solutions. This juxtaposition indicates a dual structural dynamic: while Tier-I firms continue to expand through scale-driven efficiencies and end-to-end service integration, Tier-II firms are increasingly differentiating themselves through specialization and agility. The resulting pattern suggests converging technological sophistication across firm tiers but diverging organisational scale, thereby reinforcing hierarchical stratification within India's IT industry and shaping competitive positioning in global technology markets.

Table 8. Exchange Rate Movements, FY2018–FY2025

Fiscal Year	INR per US$
2018–19	69.89
2019–20	70.49
2020–21	73.2
2021–22	74.42
2022–23	78.6
2023–24	82.8
2024–25	86.47

Source: FEDAI, 2025 & IT-and-BPM-PPT-August-2025

As presented in Table 8, exchange rate movements between FY2018 and FY2025 reflect a consistent depreciation of the Indian rupee against the US dollar, with the rate weakening from ₹69.89 per US dollar in FY2018–19 to ₹86.47 in FY2024–25 (FEDAI; *IT-and-BPM-PPT-August-2025*). This gradual depreciation carries important implications for the IT–BPM industry. On one hand, a weaker rupee enhances the price competitiveness of India's IT and BPM exports, thereby increasing revenue realisation for services denominated in foreign currency. This advantage disproportionately benefits large, services-led firms whose business models rely primarily on global delivery and billing in US dollars. On the other hand, the same depreciation imposes higher costs on segments that depend heavily on imported components, tools, and technologies—particularly hardware-oriented operations, engineering research and development (ER&D), and emerging product-based firms. The dual nature of these effects underscores a structural divergence within the sector: while rupee depreciation bolsters the financial position of traditional service exporters, it simultaneously constrains the growth prospects of innovation-intensive and hardware-linked segments.

A cross-table synthesis reveals several noteworthy comparative patterns in the trajectory of India's IT–BPM sector. The most salient contrast appears between the strong, sustained growth of IT and BPM services and the volatility of software products and ER&D, underscoring India's continued orientation toward service-led rather than innovation-driven digital growth. Export data further highlight a pronounced geographic concentration, with the United States and Europe accounting for the bulk of service revenues,

indicating both market stability and strategic vulnerability due to limited engagement with emerging Asia-Pacific and Global South markets.

Employment trends point to exceptional labour market resilience, diverging from global layoffs during 2022–2023 and reflecting India's strengthening capabilities in advanced digital roles such as AI engineering and cloud architecture. At the firm level, the industry exhibits a tiered corporate structure, where large firms leverage scale and diversified portfolios while mid-tier firms gain competitive advantage through specialized, high-value digital services.

Moreover, rapid expansion in cloud and data centre capacity illustrates a shift toward infrastructure-led growth, contrasting with the incremental expansion of traditional outsourcing segments. Finally, strong FDI inflows and sustained rupee depreciation provide mixed effects—enhancing export competitiveness for services, yet constraining hardware- and R&D-intensive firms reliant on imported technologies. Together, these trends portray an industry advancing in scale and digital maturity while still grappling with structural imbalances in innovation, market diversification, and technology-intensive growth.

Conclusion

The analysis of India's IT–BPM sector, drawing upon the empirical evidence presented in the uploaded industry report (*IT-and-BPM-PPT-August-2025*), demonstrates a structurally resilient and rapidly evolving industry that continues to play a pivotal role in the country's economic transformation. Over the past decade, the sector has experienced substantial growth in overall revenue, exports, and employment, underpinned by its strong global reputation in technology-enabled services. Although traditional IT and BPM services remain the backbone of industry expansion, the emerging digital economy is increasingly shaped by new drivers such as cloud infrastructure, AI development, cybersecurity, and the rapid proliferation of Global Capability Centres. At the same time, the comparative analysis highlights persistent structural asymmetries. India's digital economy continues to be service-dominant, with software products and ER&D lagging behind, reflecting an incomplete transition toward IP-led innovation. The heavy concentration of export revenues in the United States and Europe provides stability but simultaneously exposes the sector to external economic and regulatory risks. Employment patterns, in contrast to global trends, reveal strong workforce stability and rising demand for specialised digital skills, signalling India's strengthening comparative advantage in high-value IT capabilities. Firm-level dynamics further underscore a tiered industry structure, where large firms grow through scale and integrated service offerings, while mid-tier companies gain competitive strength through specialisation in niche digital areas. Additionally, the surge in cloud and data centre investments marks a shift toward infrastructure-led growth, positioning India as an increasingly important node in global digital infrastructure networks. Despite these positive developments, challenges persist. Limited innovation capacity in product development, dependence on Western export markets, and rising import costs for hardware-intensive and R&D activities constrain the sector's long-term competitiveness. Addressing these issues will require coordinated policy support, sustained investment in research and development, expansion of digital skilling initiatives, and greater diversification into emerging global markets. Overall, the findings affirm that India's IT–BPM sector stands at a critical juncture-equipped with strong capabilities, expanding global influence, and significant digital momentum, yet simultaneously confronted with structural constraints that must be addressed to ensure sustained, innovation-driven growth in the coming decade.

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