

STUDY FOREIGN DIRECT INVESTMENT (FDI) IN INFORMATION & TECHNOLOGY (IT) AND ITeS SECTOR IN INDIA

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Abstract

Foreign Direct Investment (FDI) serves as a crucial driver for India's economic development. This paper explores the transformative impact of Foreign Direct Investment (FDI) on the Information Technology (IT) and Information technology-enabled services (ITeS) sector in India, focusing on growth, expansion, and key indicators that have shaped the sector's evolution. With a comprehensive analysis of statistical evidence, the study highlights how the IT and ITeS sector has become one of the top recipients of FDI, attracting significant investments that have propelled the sector's global presence and contributions to India's economic landscape. The liberalization of FDI policies and government initiatives, such as 'Digital India,' has further enhanced the sector's attractiveness, facilitating a vibrant startup ecosystem and driving technological advancements and R&D. The paper underscores the sector's critical role in employment generation, with FDI inflows creating vast opportunities within and beyond the sector. The study concludes that FDI has been pivotal in enabling the IT and ITeS sector's growth trajectory, contributing significantly to India's GDP, export earnings, and global IT standing while fostering innovation and strategic global integration.

Keywords: IT, ITeS, GDP, liberalization

Introduction

In the era of globalization, Information Technology (IT) has emerged as a key driver of economic growth, productivity enhancement, and societal development. India, with its burgeoning IT industry, has become a global hub for software services, IT outsourcing,

and innovation. The role of Foreign Direct Investment (FDI) in shaping the trajectory of India's IT sector has been pivotal. This essay delves into the significance of FDI in India's IT industry, examining its impact on economic development, technological advancement, and international competitiveness.

India's IT industry has witnessed exponential growth since the 1990s, fueled by various factors including a large pool of skilled workforce, favorable government policies, and robust infrastructure. FDI has played a crucial role in catalyzing this growth by infusing capital, technology, and managerial expertise. According to the Department for Promotion of Industry and Internal Trade (DPIIT), India attracted USD 9.49 billion in FDI inflows in the computer software and hardware sector between April 2000 and June 2021 (DPIIT, 2021).

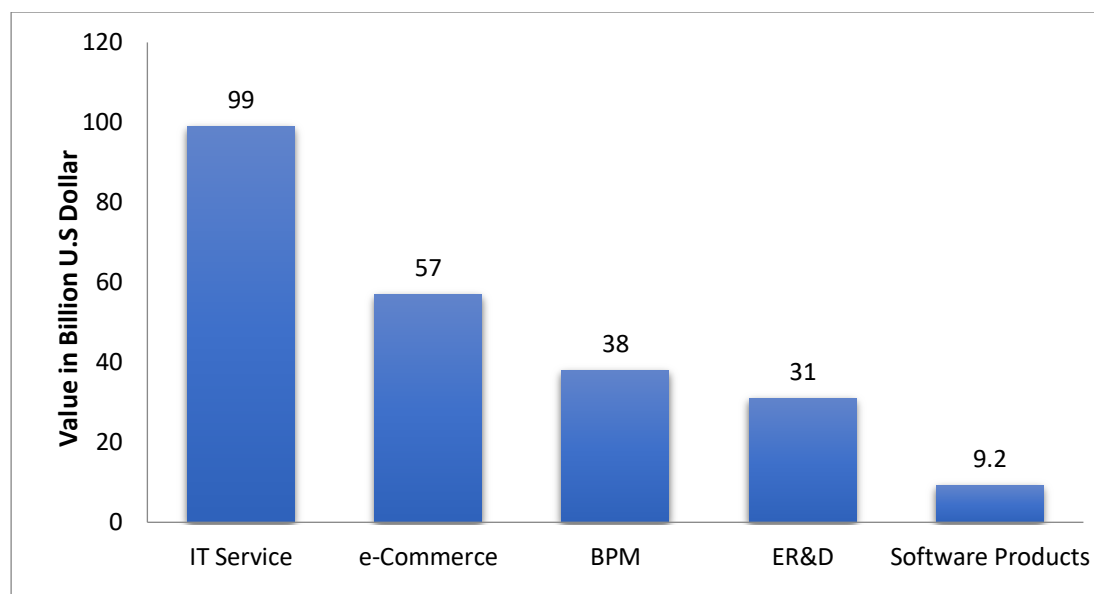
One of the primary drivers of FDI in India's IT sector is the country's competitive advantage in providing cost-effective IT solutions and services. Multinational corporations (MNCs) view India as an attractive destination for outsourcing software development, IT support, and business process outsourcing (BPO) due to its skilled workforce and lower operational costs compared to developed nations. Companies like IBM, Accenture, and Microsoft have established their presence in India, leveraging the abundant talent pool and conducive business environment.

The role of government policies in attracting and facilitating FDI in the IT sector cannot be overstated. India has implemented several reforms to liberalize FDI regulations, streamline approval processes, and create a conducive business environment. The introduction of initiatives such as 'Make in India', 'Digital India', and 'Startup India' has further incentivized foreign investment in IT and related sectors. Additionally, measures like tax incentives simplified regulatory frameworks, and infrastructure development have bolstered investor confidence and encouraged long-term commitments.

Despite the positive contributions of FDI, challenges persist in harnessing its full potential for India's IT sector. Issues such as infrastructure gaps, regulatory bottlenecks, and skill shortages need to be addressed to sustain the momentum of growth and innovation. Moreover, concerns regarding data security, intellectual

property rights (IPR) protection, and geopolitical uncertainties pose risks to foreign investors, necessitating proactive measures by policymakers.

Market Size of IT Industry in India in Financial Year 2021, by Sector



Source: Statista

IT services with 99 billion U.S. dollars had the largest market size among the various sectors of the Indian IT market in fiscal year 2021. The total market size of the Indian IT market, including eCommerce, is 235 billion U.S. dollars. This did not include the hardware sector. On a year-over-year basis, the market grew by over two percent in fiscal year 2021.

Literature Review

(Lal, 2000) investigated how the institutional environment influences the growth of India's IT industry, highlighting that FDI policies have not effectively drawn the anticipated levels of foreign investment critical for sectors like IT hardware manufacturing. Transitional economies like India seek FDI for capital, technology, international market access, and managerial expertise. Foreign direct investment (FDI) is attracted into transitional economies like India for reasons like capital, technology, international markets, and managerial skills. (Kuntluru et. al., 2008) analyzed the effect of foreign ownership on the financial performance of Indian firms over time. (Goel et. al., 2012) provide information about the growth of the retailing industry

in India and the need for FDI. Information technology and business process outsourcing are among the fastest-growing sectors in terms of services export. FDI is widely viewed as being one of the principal vehicles for the international transfer of technology. FDI increases productive capital stock, and technological growth, and facilitates the transfer of managerial skills, besides improving global market access. **(Kumar et. al., 2013)** the paper examines empirically the role of FDI on services export using econometric tools. The Service sector has emerged as the largest and fastest growing sector in the global economy in the last two decades, providing more than 60 percent of global output and, in many countries, an even larger share of employment. **(Khachoo et. al., 2016)** explored how FDI influences innovation within India's manufacturing sector, utilizing industry-specific FDI data and national input-output tables to assess intra- and inter-industry spillover effects on innovation. By employing data on FDI by industry and merging it with information on time-variant buyer-supplier linkages obtained from a series of national input–outputs tables **(Khachoo et. al., 2016)** develop intra-industry and inter-industry measures to capture the effects of FDI on innovation performance of the incumbent firms' active in the same sector as the MNC and in upstream and downstream sectors. **(Irfan et. al. 2021)** examined the influence of macroeconomic variables on the Islamic stock markets of India and Indonesia, suggesting that enhanced bilateral trade and investment could significantly benefit sectors like health, automotive, IT, agriculture, and tourism. **(Nayak et. al. 2021)** assessed the combined impact of FDI inflow and ICT on India's economic performance from 1991 to 2019, finding significant positive effects of ICT infrastructure on leveraging FDI benefits. Additional noteworthy contributions include research by **Baral (2013)**, **Adhikari (2018)**, and **(Kishore et. al. 2020)** each providing insights into various aspects of FDI's role in India's economic landscape.

Objective

The objective of the paper is to study the growth, expansion, and key indicators that have shaped the evolution of the IT and ITeS sector of India

Growth of FDI Inflows in IT and ITeS Sector

The IT and ITeS (Information Technology Enabled Services) sector in India has consistently been one of the top recipients of FDI. According to the Department of

Industrial Policy and Promotion (DIPP), the computer software and hardware sector attracted significant FDI, amounting to billions of USD over the years. For instance, the period from April 2000 to March 2020 saw the sector receiving approximately \$44.91 billion in FDI, marking it as one of the top sectors.

In the fiscal year 2023, the Information Technology and IT-enabled Services (IT and ITeS) sector in India witnessed substantial Foreign Direct Investment (FDI) inflows, underscoring the sector's vital role in attracting foreign investments. The computer software and hardware segment emerged as the top recipient within this sector, securing investments worth approximately \$9.39 billion. This figure is part of the broader FDI inflows to India, which amounted to \$70.97 billion during the same fiscal year, showcasing a slight decrease from the \$84.83 billion recorded in FY 2022. Despite this, the sustained interest from foreign investors in multiple sectors, particularly IT and ITeS, highlights the sector's continued attractiveness and potential for growth.

The FDI reforms and liberalization efforts by the Indian government have been pivotal in making the country one of the most attractive destinations for FDI globally. Notably, the financial year 2021-22 saw the highest-ever annual FDI inflow to India, reaching \$85 billion, with the IT and ITeS sectors playing a significant role in this achievement. This reflects the government's success in creating an investor-friendly environment, contributing to a substantial increase in FDI inflow over the years. By the financial year 2023-24, India had reported FDI worth \$33 billion up to September 2023, continuing to signal strong investor confidence in the Indian market.

FDI equity inflow in IT & ITeS Sector from April 2000 to December 2023

S.No.	Sector	Amount of FDI		% out of Total FDI Equity inflow (in USD terms)
		(In INR Crore)	(In UDS Million)	
1	Computer Software & Hardware	681028.76	98328.76	14.75
2	Telecommunications	234751.93	39315.20	5.9
3	Information & Broadcasting (including print media)	68961.57	10917.94	1.64

Source: DPIIT

From April 2000 to December 2023, The Computer Software & Hardware sector leads with a significant FDI of 681,028.76 crore INR (98,328.76 million USD), accounting for 14.75% of the total FDI equity inflow, marking it as the top recipient. The Telecommunications sector follows with an FDI inflow of 234,751.93 crore INR (39,315.20 million USD), making up 5.9% of the total. The Information & Broadcasting sector, which includes Print Media, received the least FDI among the three, with 68,961.57 crore INR (10,917.94 million USD), contributing to 1.64% of the total FDI equity inflow.

Expansion and Global Footprint

The expansion and global footprint of the IT and IT-enabled Services (ITeS) sector in India, bolstered by Foreign Direct Investment (FDI) inflows, reflects India's growing significance as a global IT hub. This expansion is characterized by several key developments:

- **Enhanced Global Presence of Indian IT Firms:** Indian IT companies have significantly expanded their global presence, establishing subsidiaries and delivery centers across the world. This global expansion has been facilitated by FDI, enabling these companies to acquire foreign firms, access new markets, and tap into a global talent pool. The strategic global footprint of Indian IT firms has not only diversified their market reach but also enhanced their service offerings.
- **Attracting Global IT Giants to India:** The liberalized FDI regime has made India an attractive destination for multinational IT corporations to set up their operations, including R&D centers, innovation labs, and service delivery units. Companies from the USA, Europe, and other parts of Asia have significantly invested in India, drawn by its large pool of skilled IT professionals, competitive cost advantages, and supportive government policies.
- **Growth in Exports:** The IT and ITeS sector is one of India's largest export earners. FDI has played a crucial role in this context by enabling the sector to scale up its operations and deliver IT services and software solutions globally. The availability of foreign capital has also helped Indian companies invest in cutting-edge technologies, thereby improving their competitiveness on the global stage.

- **Contribution to India's Economy:** The IT and ITeS sector's expansion has had a significant positive impact on India's GDP and employment. It has contributed to creating millions of jobs, both directly and indirectly, and has spurred growth in ancillary industries such as real estate, hospitality, and transportation.
- **Startup Ecosystem and Innovation:** India's startup ecosystem, particularly in tech and digital sectors, has thrived with FDI inflows. Many startups have grown to become unicorns (startups valued at over \$1 billion), thanks to access to foreign capital, mentorship, and markets. This has not only fostered innovation within India but has also positioned Indian startups on the global map.
- **Policy Initiatives:** The Indian government's proactive policy measures, such as the 'Digital India' initiative and the simplification of FDI norms, have further encouraged foreign investors. Special Economic Zones (SEZs) and technology parks offer various incentives and state-of-the-art infrastructure, making India an even more attractive destination for FDI in IT and ITeS.

Employment Generation

The IT sector has been a major employment generator in India. By 2020, the sector employed around 4.36 million people directly, with indirect employment impacting a significantly larger number. Foreign Direct Investment (FDI) inflows in the Information Technology (IT) and IT-enabled Services (ITeS) sector in India have been significant contributors to employment generation in the country. Here's how FDI in the IT and ITeS sector has fueled job creation:

- **Direct Employment Opportunities:** FDI inflows have directly led to the creation of a vast number of job opportunities within the IT and ITeS sector itself. Multinational corporations (MNCs) and Indian IT companies alike have expanded their operations in India, setting up offices, development centers, and service delivery units. These expansions require a skilled workforce, leading to the hiring of software engineers, developers, analysts, project managers, and various other IT professionals.
- **Supporting the Gig Economy:** FDI-driven growth in the IT sector has also fostered the gig economy by creating opportunities for freelancers, consultants,

and independent contractors. Platforms for freelance work, such as software development, graphic design, and digital marketing, have flourished, providing flexible employment options for individuals with specialized skills.

- **Stimulating Entrepreneurship:** The influx of FDI into the IT and ITeS sector has stimulated entrepreneurship in India. As the sector grows, it creates a conducive ecosystem for startups and innovation. Many IT professionals, inspired by the industry's growth and supported by access to funding and mentorship, have ventured into entrepreneurship, creating new companies and job opportunities.
- **Regional Development:** FDI inflows in the IT sector have not been confined to metropolitan cities but have also spread to tier-II and tier-III cities across India. This decentralization of IT hubs has contributed to regional development and employment generation in smaller urban centers and rural areas, reducing regional disparities.
- **Skill Development and Training:** To meet the demands of the growing IT sector, there has been a focus on skill development and training initiatives. FDI-backed IT companies often invest in training programs to upskill and reskill their workforce, thereby enhancing employability and contributing to human capital development in India.
- **Government Initiatives:** The Indian government has introduced various initiatives to promote employment in the IT sector, including skill development programs, incentives for job creation, and policies to attract foreign investment. These initiatives complement FDI inflows, further boosting employment opportunities in the IT and ITeS sectors.

Start-up Ecosystem Boost

India has emerged as a vibrant start-up ecosystem, supported by both domestic and foreign investments. With over 50,000 startups in India by 2020, the country has seen a steady rise in tech start-ups, including a significant number of unicorns, especially in sectors like e-commerce, fintech, and SaaS (Software as a Service). FDI reforms have facilitated this by easing investment flows into innovative ventures. The boost to the start-up ecosystem in India, particularly in the Information Technology (IT) and IT-enabled Services (ITeS) sectors, driven by Foreign Direct Investment (FDI) inflows, is

a testament to the country's evolving innovation and entrepreneurship landscape. The impact of FDI on the start-up ecosystem in these sectors can be dissected into several key areas:

Foreign Direct Investment (FDI) has significantly impacted the startup ecosystem in sectors such as IT and ITeS in India by facilitating access to capital, which enables startups to scale operations, enhance technology, and expand market reach. This infusion of capital not only accelerates growth but also attracts domestic investments, fostering a cycle of investment and expansion. FDI also provides startups with global exposure and networks, essential for competing internationally. Moreover, foreign investments support technology transfer and innovation, boosting competitiveness within the startup ecosystem. Association with reputable foreign investors boosts a startup's credibility, which is crucial for attracting talent, securing further funding, and forming partnerships. Additionally, the Indian government supports this dynamic through initiatives like the 'Start-up India' campaign, which simplifies FDI norms and offers tax benefits, thus enhancing the business environment for startups. Ultimately, FDI contributes to job creation and economic growth, reinforcing India's position as a global leader in technology and innovation.

Infrastructure Development

The infrastructure development in the IT and ITeS (Information Technology Enabled Services) sector in India, spurred by Foreign Direct Investment (FDI) inflows, has been a cornerstone of the sector's global competitiveness and rapid growth. The development and expansion of physical and digital infrastructure have enabled India to position itself as a leading destination for IT and ITeS, attracting significant foreign investments. Here's how FDI has contributed to infrastructure development in this sector:

- **Special Economic Zones (SEZs) and IT Parks**

One of the most significant impacts of FDI has been the development of Special Economic Zones (SEZs) and dedicated IT parks across India. These zones are designed to offer a conducive business environment with state-of-the-art infrastructure, tax incentives, streamlined regulations, and high-speed internet connectivity. SEZs and IT parks have not only attracted foreign IT companies to set up their operations in India but have also encouraged domestic companies

to expand their facilities, thereby boosting the overall infrastructure development in the sector.

- **High-Speed Internet and Connectivity**

FDI has also played a crucial role in enhancing India's digital infrastructure, particularly in improving internet speed and connectivity. Investments in telecommunications and broadband services have been crucial for the IT and ITeS sectors, enabling seamless global communication, data exchange, and remote services delivery. The expansion of 4G networks and the ongoing rollout of 5G technology are expected to further revolutionize the sector, opening up new avenues for innovation and service delivery.

- **Data Centers and Cloud Infrastructure**

With the increasing reliance on cloud computing and data storage, there has been a surge in the development of data centers in India. Foreign investments have been instrumental in setting up state-of-the-art data centers and cloud infrastructure, providing secure and scalable solutions for IT and ITeS companies. These facilities not only support the sector's growing data storage needs but also enhance data security and operational efficiency.

- **Research and Development (R&D) Centers**

FDI has encouraged the establishment of R&D centers by multinational corporations in India. These centers focus on innovation and development of new technologies, software solutions, and IT services. The presence of R&D centers contributes to the sector's infrastructure by fostering a culture of innovation, skill development, and knowledge exchange.

- **Skill Development and Training Centers**

Investments in the IT and ITeS sector have also led to the establishment of skill development and training centers. These centers aim to enhance the workforce's skills in emerging technologies, software development, and service delivery standards. By focusing on skill development, the sector ensures a steady supply of skilled professionals, supporting its growth and sustainability.

- **Sustainable and Green Infrastructure**

There is a growing emphasis on sustainable development within the IT and ITeS sectors, with FDI supporting the creation of green buildings, energy-efficient offices, and sustainable IT parks. These initiatives not only contribute to

reducing the sector's carbon footprint but also align with global standards for environmental sustainability.

Technological Advancements and R&D

Many global IT companies have set up their R&D centers in India, attracted by the talent pool and supportive FDI policies. Foreign Direct Investment (FDI) inflows into India's Information Technology (IT) and IT-enabled Services (ITeS) sector have been pivotal in driving technological advancements and research and development (R&D) activities. Here's an overview of how FDI has fostered innovation and technological progress in this sector:

- **Enhanced Technological Capabilities**

FDI has enabled the IT and ITeS sector in India to access cutting-edge technologies and best practices from around the globe. This access is crucial for staying competitive in the rapidly evolving tech landscape. Investments from multinational corporations (MNCs) have brought sophisticated software tools, platforms, and methodologies, which have been instrumental in developing advanced IT solutions and services.

- **Investment in Research and Development**

The presence of foreign companies has significantly contributed to the R&D landscape in the IT sector. Many MNCs have set up their R&D centers in India, taking advantage of the large pool of skilled engineers and researchers, along with the supportive policy environment. These centers are focused on innovation in software development, artificial intelligence (AI), machine learning (ML), blockchain, and other emerging technologies, contributing to India's growing reputation as an R&D hub.

- **Collaboration and Knowledge Exchange**

FDI facilitates collaboration between Indian companies and their global counterparts, leading to an exchange of knowledge and expertise. These collaborations often result in joint development projects, patents, and innovations that can have a significant impact on the global IT landscape. Moreover, exposure to global R&D practices helps Indian companies and

professionals to adopt and adapt new technologies and methodologies more efficiently.

- **Encouraging Startups and Innovation Ecosystem**

The flow of foreign investments into India's IT and ITeS sector has had a ripple effect on the startup ecosystem, encouraging innovation and entrepreneurship. Startups have become key players in introducing disruptive technologies and business models, often supported by foreign capital. This ecosystem fosters an environment of innovation, with many startups focusing on solving complex problems using technology, from fintech and health tech to tech and beyond.

- **Policy Initiatives and Government Support**

The Indian government has implemented several initiatives to attract FDI in the IT and ITeS sector, focusing on innovation and R&D. Policies such as the 'Digital India' campaign, and incentives for setting up R&D centers, have made India an attractive destination for foreign investment in technology. These initiatives not only boost foreign investment but also emphasize the importance of technological advancements and R&D in the country's growth strategy.

- **Upgradation of Infrastructure and Skills**

FDI in IT and ITeS has also led to the upgradation of infrastructure and skills required for advanced technology adoption. This includes investments in high-speed internet infrastructure, data centers, and cloud services, as well as training and development programs for upskilling the workforce in new technologies.

Evolution of the IT and ITeS Sector in India

Year/Period	Milestone/Development
1960s-1970s	Early foundations of the IT sector with the establishment of Tata Consultancy Services (TCS) and the Indian Institutes of Technology (IITs).
1980s	The establishment of the National Association of Software and Service Companies (NASSCOM) to promote the software industry. Introduction of computerization policies.
1991	Economic liberalization including reforms in the IT sector; beginning of FDI inflow into the sector.
1990s	Rapid growth in software exports and IT services. Establishment of Software Technology Parks of India (STPIs).

The early 2000s	India emerges as a global IT and outsourcing hub. Boom in IT-enabled services (ITeS) and Business Process Outsourcing (BPO).
2005	Introduction of the Special Economic Zones (SEZ) Act to further boost IT exports and FDI.
2010s	Growth in e-commerce and digital startups. Expansion in IT services including cloud computing, big data, and analytics.
2015 onwards	Digital India initiative launched. Focus on digital infrastructure, e-governance, and digital empowerment.
2020s	Rise in remote work and digital services due to the COVID-19 pandemic. Increased focus on cybersecurity, Artificial Intelligence (AI), Machine Learning (ML), and the Internet of Things (IoT).
Present & Future	Continuation of digital transformation across sectors. Emphasis on innovation, R&D, and enhancing India's global IT footprint.

Conclusion

The evolution of the IT and ITeS sector in India, marked by significant Foreign Direct Investment (FDI) inflows, underscores the sector's pivotal role in the country's economic and technological advancements. FDI has been instrumental in driving the expansion and global presence of Indian IT firms, making the sector one of the top recipients of foreign investment. This influx has not only facilitated access to new markets and a global talent pool but also attracted multinational IT giants to establish operations in India. The period from April 2000 to March 2020 alone saw the sector receiving approximately \$44.91 billion in FDI, with the fiscal year 2023 witnessing substantial inflows worth \$9.39 billion into the computer software and hardware segment. Such investments have bolstered India's export earnings, contributing significantly to the GDP and creating millions of jobs. Moreover, the liberalized FDI regime and government initiatives like 'Digital India' have further fuelled the growth of a vibrant startup ecosystem, emphasizing innovation and positioning India as a global IT hub. The continuous support for infrastructure development, technological advancements, and R&D, coupled with India's strategic advantage in IT and digital services, point towards an optimistic future for the sector. This narrative not only

illustrates the transformative impact of FDI on the IT and ITeS sector but also highlights the sector's substantial contributions to India's global standing and economic resilience.

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