

Indian IT Industry: Future Challenges

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Abstract: The Indian IT industry is a leader in the global IT outsourcing market garnering more than 50% of the market share continuously over a period of time. According to the National Policy on Information Technology 2012 (NPIT 2012) released by the Department of Electronics and Information Technology, Government of India, the Indian IT sector became a USD 100 billion industry in 2011-12. In the IT services sector, Indian companies have been steadily moving up the value chain. The beginning of the Indian IT industry can be traced back to the 1970s when Indian companies started providing skilled manpower as part of staff augmentation. From those days, the Indian IT industry has evolved into a one stop shop for end-to-end IT services. When the Indian IT Industry started providing export-oriented services in the 1990s, it had the advantage of cost arbitrage and English-speaking engineers. With the cost of operations having gone up and competitors having come up, Indian IT industry is facing a challenging time. This paper looks at the preparedness and capability of the Indian IT industry to face the future challenges.

Keywords: Indian IT industry, Indian software industry, Indian IT Futures.

I. INTRODUCTION

Indian IT industry is the primary player in the global IT sourcing market. The Indian IT industry started growing in the early 1990s. In a short time period of two decades, the Indian IT industry has started commencing more than 50% of the global IT sourcing market. For a third world country to be considered as the preferred destination for IT development and allied services is nothing short of remarkable. The Indian IT industry's contribution to the Indian economy has also been increasing on an annual basis – not just in terms of its contribution to the nation's GDP, but also in terms of the employment opportunities it offers. According to NASSCOM's Strategic Review 2015, the Indian IT industry is the largest private sector employment provider in India. All these factors point to the healthy state of the Indian IT industry. The importance of the IT industry to the development of India cannot be overstated. It is necessary that the healthy state of the Indian IT industry continues in to the future too. This paper studies the birth and growth of the Indian IT industry and its future prospects.

II. BIRTH OF THE INDIAN IT INDUSTRY

IT was ushered into India at a very early stage of her development when the first computer was installed in the Indian Statistical Institute in 1956 [7]. This computer was bought from UK. Tata Institute of Fundamental Research began designing a computer around the same time. By the 1960s Indian railways, government departments such as statistics departments, and many companies were using refurbished computers which IBM rented out. IBM and ICL, a British company controlled the whole computer market in India.

One of the first Indian IT companies to be setup was TCS in 1968. In 1978, IBM closed shop in India after differences with the Indian government. ICL too left India. This paved the way for Indian companies to fill the gap.

The prevailing economic environment in the country in 1970s was restrictive. It was difficult for IT companies to stay afloat with projects executed for the domestic market. Tata Consultancy Service started providing their own engineers to work as part of software development teams in US companies. This was the much maligned bodyshopping model. This was the pattern till the 1980s. The 80s saw the birth of the offshore development model in which portions of software development work began to be outsourced to companies in India [1].

The real potential of the Indian IT sector began to be unlocked in 1991 when the then government implemented economic reforms thereby opening up the economy. This created an environment where it made economic sense to execute software projects in India. Many Indian IT companies began sprouting up. This kick-started the growth of the Indian IT industry.

III. EVOLUTION OF THE INDIAN IT INDUSTRY

The Indian IT companies have been steadily moving up the value chain. The IT services industry started with Indian companies providing skilled resources as part of staff augmentation. The next step in the evolution was taking up maintenance projects. But over the last two decades, the evolution has been almost complete with Indian IT services companies providing the full spectrum of end-to-end software development project services covering the entire range of requirements engineering, design, application development, independent testing services, and system integration. For the last two decades and more, India and Indian IT companies have steadily grown to become the top choice for software development outsourcing [4].

IV. ROLE OF THE GOVERNMENT

The importance of the IT sector has not been lost on successive governments irrespective of their political standings. In 1991, the government set up the Software Technology Parks India (STPI) to promote development and export of software. STPI provided infrastructural facilities such as High Speed Data Communication (HSDC) links, data centers and data hosting facilities, and also financial and tax benefits. This proved a game changer and encouraged the setting up of export oriented software units. In 2013-14, there were 53 STPI centers operational across the country with 3676 software export units operating out of them. The overall exports from the STP units stood at USD 42.13 billion as of 2013-14 [6].

V. CURRENT STATE OF THE INDIAN IT INDUSTRY

The Indian IT sector became a USD 100 billion industry in 2011-12 [8]. Considering that the total revenues of the IT sector in 1996 was USD 1.25 billion, the growth of the IT sector has been nothing short of remarkable.

The total revenue of the Indian IT industry in 2015 is estimated to be USD 132 billion. It jumps to USD 146 billion when the ecommerce revenue is included. The phenomenal growth of the sector can be gauged from the fact that the total revenues in 1996 was USD 1.25 billion.

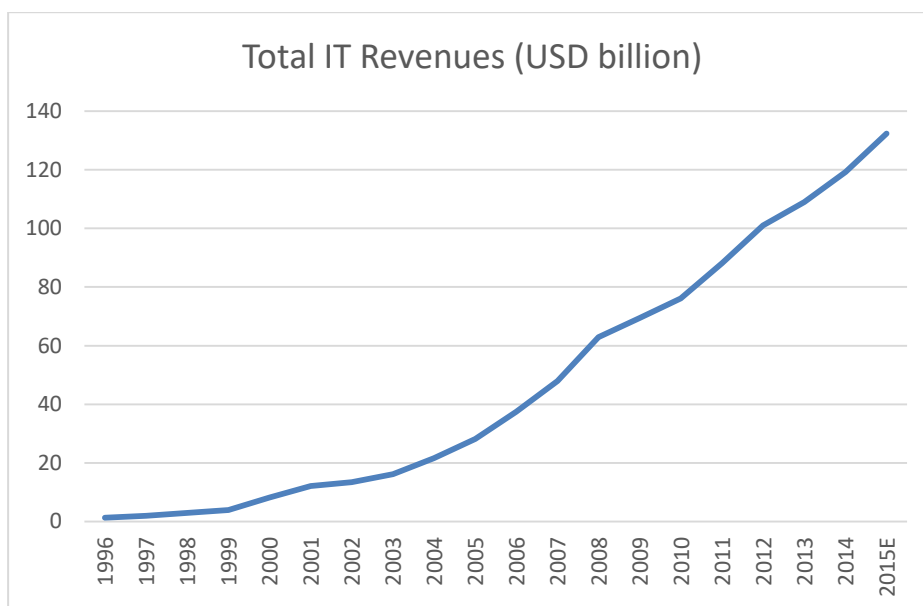


Figure 1: Indian IT industry - Total revenues (USD billion)

The IT exports revenue alone is estimated to be USD 98.5 billion in 2015. The IT exports revenue in 1996 was USD 0.75 billion.

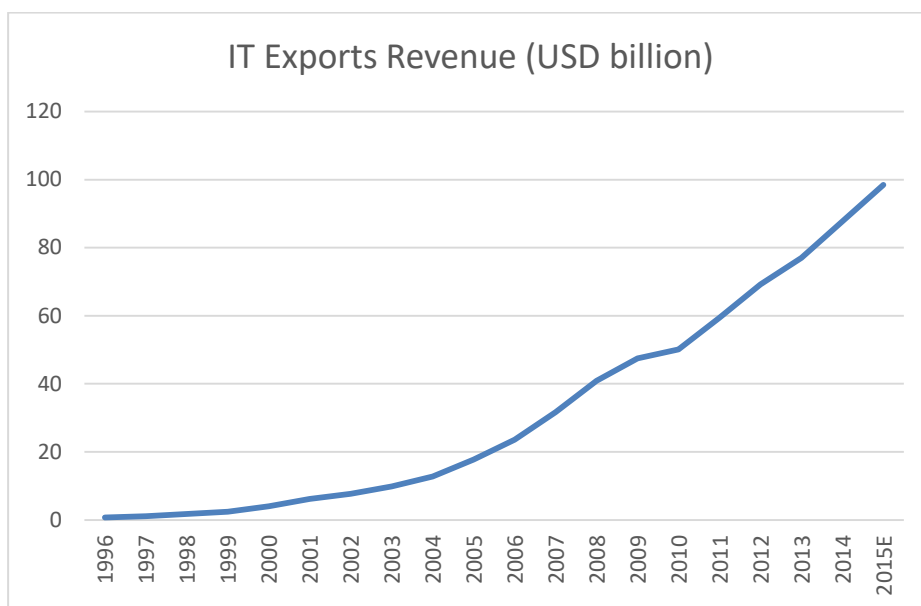


Figure 2: Indian IT Industry - Total exports revenue (USD billion)

According to NASSCOM’s 2015 Strategic Review of the Indian IT industry, the IT sector is the largest employment provider in the private sector. As of 2014-15, 3.5 million persons were employed directly by the Indian IT industry.

The economic reforms unveiled in 1991 by the then government triggered the economic growth of India. The Indian IT industry has been contributing handsomely to the growth of the Indian economy. From 4.8% share in the GDP in 2006, the IT sector’s share in the GDP stands at 9.5% [3, 4].

India has maintained its leadership position in the global It sourcing market garnering more than 50% of the market share for the last few years. In 2014, India’s share in the global IT sourcing market was 55% [3, 4].

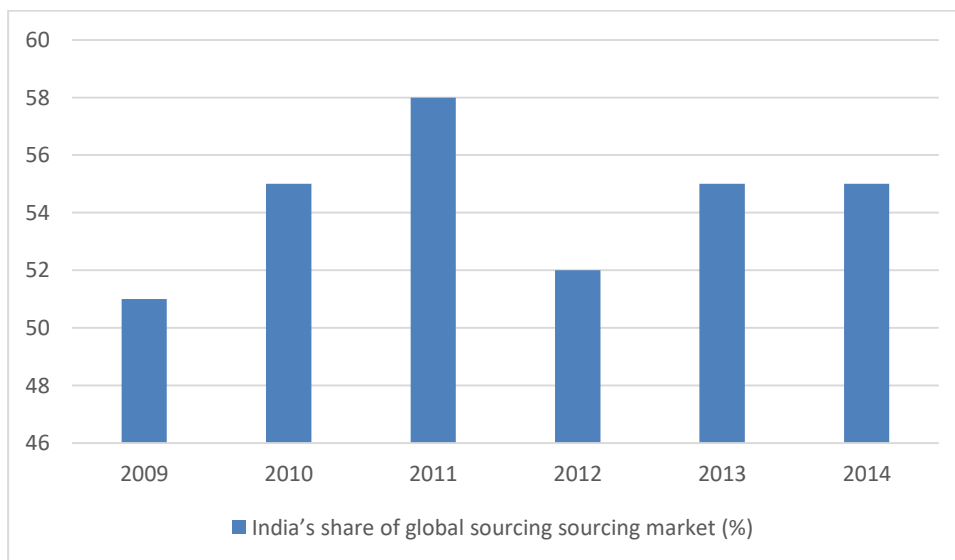


Figure 3: India's share of global IT sourcing market

VI. CURRENT TRENDS – SOME SNIPPETS

According to NASSCOM’s Strategic Report 2015, ecommerce is the largest growing segment. The e-commerce segment registered a year on year growth of 33%.

The major technological segments that will be powering the Indian IT industry will be SMAC – Social Media, Mobile applications, Analytics, and Cloud computing [4].

While Business intelligence and Data Analytics remain the most wanted skills, Social Media, cloud, and mobile technology are expected to grow at 10-15% .

Currently, the number of SMAC Skills employees in India is estimated to be 1,50,000. The approximate break up is 50,000 in analytics, 30,000 in enterprise mobility, and the rest in cloud and social media and collaboration.

VII. FUTURE CHALLENGES AND PROSPECTS

Has the Indian IT industry hit a saturation level? What are the future prospects and challenges that the Indian IT industry is likely to face?

Software development services constitute the major chunk of the Indian IT sector. In 2015, the IT services export revenue is estimated to be USD 55.4 billion. In 2004, when the total IT exports was USD 12.8, the IT services export revenue was USD 7.3 billion.

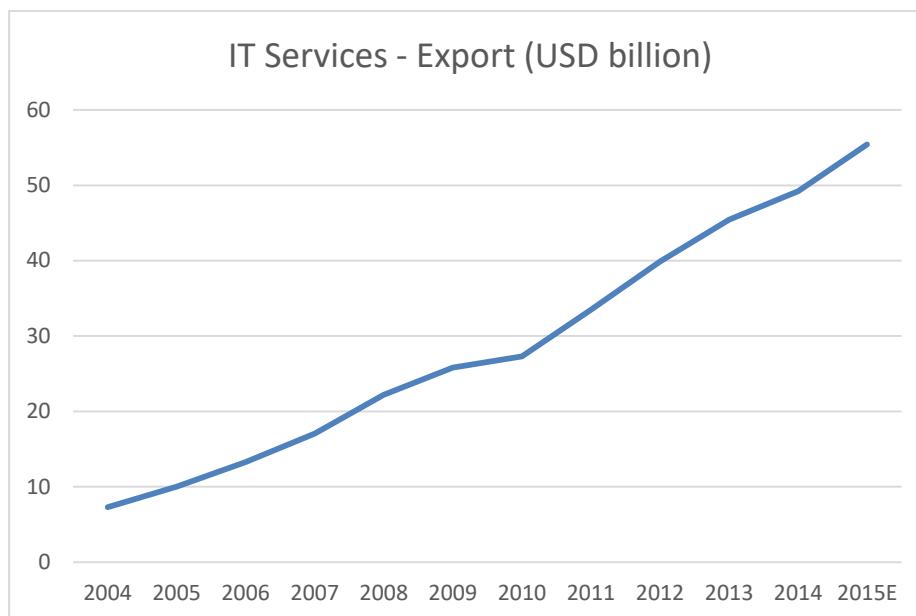


Figure 4: Total IT Services export revenues (USD billion)

There are still large geographical markets which remain untapped for IT sourcing [8]. And aligned with the large workforce that India has got, the software services sector will continue to grow.

When the Indian IT industry took birth, the most important factor in its favor was cost arbitrage. Over the last two decades the cost of operations in India has steadily increased. The increasing salaries as well as increasing infrastructural costs have contributed to this. The wages per employee have increased only by 6% from 2009 [4]. Though the costs are still lower compared to other IT services destinations and the cost arbitrage factors still apply, the initial huge advantage seems to have decreased.

While India continues to be the premier destination for software development services, factors such as increasing costs and increasing competition seems to present major challenges. The increasing costs have been noticed by the government and the industry. One of the objectives of National Policy on Information Technology (NPIT 2012) is to diversify the industry to Tier II and Tier III cities to overcome the cost escalation and infrastructural challenges that have started to plague the major IT hubs such as Bengaluru, Chennai, Hyderabad, Mumbai, Pune, and Delhi [8].

A huge, as yet fairly untapped, sector is the products development sector. While India has taken huge strides in the IT services sector, the growth in the products development has been fairly low.

The software product exports revenue in 2015 is expected to touch USD 18 billion. In 2005, the corresponding figure was USD 3.1 billion. In the same period the revenue of software products for the domestic market increased from USD 0.4 billion in 2004 to an estimated USD 1.3 billion in 2015.



Figure 5: Product Revenue figures

Source: The IT-BPM Sector in India: Strategic Review 2015

The revenue figures of the product development are quite small compared to the software services sector. Even within the product development pie, huge opportunities exist in the domestic product development sector. Most of the product development is executed for overseas clients. A pertinent question to be asked is: Can the IT industry move from a services focus to a product development focus?

D. C. Sharma [5] argues that it will be difficult for the Indian IT industry to move from a services orientation to a product development focus. But the fact that the Indian IT industry has evolved well from a bodyshopping destination through maintenance projects outsourcing destination to an end-to-end software development services provider points to a mature sector which is capable of adapting to face such challenges. According to S. Bhattacharjee and D. Chakrabarti [2], the prime drivers for product development will be security solutions, vertical specific solutions, and business intelligence. They also cite products such as Finnacle, EX, and Sonata as examples of improving product development culture in India. NASSCOM's Perspective 2020 study conducted in partnership with McKinsey & company, the next wave of Indian IT sector development will be driven by a product development revolution.

Another area of concern is the quality of engineering graduates in India decreasing due to the increasing number of graduates being churned out each year. S. Bhattacharjee and D. Chakrabarti argue that the quality of the graduates has not deteriorated because of the increase in quantity. For all the complaints about the quality of education in India, the fact that India has the second largest number of graduates behind China is a huge advantage [3]. The number of IITs, NITs, and IIMs have also increased. This is a major step to restore any drop in quality of graduates. The fairly good English speaking skills of the Indian engineering graduates is a huge advantage compared to the competing destinations offering software development services. The above two factors combine to give India a huge advantage as a preferred software services destination. A major concern is the lacking in the area of soft skills. But this issue has been noticed by the Indian IT industry. The government as well as the various industry bodies have taken steps to set up finishing schools.

VIII. CONCLUSION

As is true with any successful entity, the Indian IT industry too cannot sit on its laurels. There is a need to evolve constantly. The Indian IT industry has been maintaining its leadership position in the global sourcing market with more than 50% market share over the last few years. This paper looked at the current state of the Indian IT industry based on the data culled from NASSCOM's annual reports and established the fine state of health of the Indian IT industry. This paper also discussed the future challenges that the Indian IT industry will face because of various factors such as increased costs leading to the decline of cost arbitration advantages, and emergence of competitors. The first mission statement of the National Policy on Information Technology states: To consolidate India's position as the global IT &

ITeS hub and leverage IT to contribute significantly to GDP and employment. For this to happen the Indian IT industry needs to evolve and shift its predominant focus on services orientation to a more product development orientation. The Indian IT industry has evolved and matured over the last two decades. It has weathered two global financial crises – 1999-2000 and 2007-2009 – and has emerged stronger. The Indian IT industry has the maturity to face future challenges and to sail through troubled times.

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