International Journal of Management Research and Business Strategy

INDIAN IT INDUSTRY TRANSITION FROM SERVICES TO PRODUCTS SPACE: AN ECOSYSTEM REVIEW

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The software product business is different from IT services and requires altogether a different thought processes unlike IT services. It requires product management and product entrepreneurship expertise and involves a long term journey which begins with assessing the market, the applicability, viability of the offering and ends with the product launch in the market. Getting the product idea off the drawing board and taking it from ideation and conceptualization to the market is a task that stretches a lot of resources. Above all it involves risk of failure at any stage of the product development cycle as well as marketing/sales cycle of the product. The researchers have analyzed the industry trends and have found that there is really a transition happening in the Indian IT sector towards software product space apart from providing the IT services to the western clients. Also, the adequate ecosystem for product development is present and improving in a rapid pace.

Keywords: IT industry, Asset management

INTRODUCTION

The growth of India's IT services in last 25 years is nothing less than remarkable achievement. You might say, what's remarkable in this achievement? The answer lies in looking at the environment in which it has been achieved. Look at the obstacles in terms of week infrastructure, gap in the industry requirements and the skills acquired by the students through their academics and the backlash against the outsourcing in the west in recent years. In spite of these obstacles,

Indian IT services now has grown to US $ 75 billion per year business.

But the software product business is different from IT services and requires altogether a different thought processes unlike IT services. It requires product management and product entrepreneurship expertise and involves a long term journey which begins with assessing the market, the applicability, viability of the offering and ends with the product launch in the market. Getting the product idea off the drawing board

and taking it from ideation and conceptualization to the market is a task that stretches a lot of resources. Above all it involves risk of failure at any stage of the product development cycle as well as marketing/sales cycle of the product.

The ecosystem required for software products is different from the one required for IT services. The risk of failure is more in case of product development due to lack of the adequate ecosystem.

This research paper analyses

• If there is really transition happening in the Indian IT sector towards software product space apart from providing the IT services to the western clients.

• Is the adequate ecosystem for product development present and improving?

BACKGROUND OF THE STUDY

There have been lots of discussions about slowing growth in IT industry in last couple of years and at the same time there are also talks about Indian IT industry entering a new era of software product space. Hence this research paper look at the transition of Indian IT industry's from services to product space.

Though Indian IT services have reached US$ 75 billion per year business, the growth has reduced from 40+% rates it had once and may never reach to those levels again. Firstly it's the smaller base effect due to which it was possible to achieve 40+% rates and now with bigger base it's more difficult to achieve that kind of growth. Secondly India just doesn't have the engineers to achieve such growth in services.

What it means for Indian IT sector? What is in store for it in future? And brings many questions to the fore listed below.

• Is the rosy period for Indian IT sector over?

• What kind of growth this sector will have in future?

• What's the future of students who have opted for the computer engineering or IT as a career option?

• Is Indian offshore model still the key factor in winning the projects from the west?

• Is it the competition got tougher?

• What's the real issue which is slowing down the growth? Is it the slowdown and hence the uncertainty in western countries or the Visa issues Indian companies are facing with USA or it's the slow decision making from the clients for the newer projects

• Is providing the IT services to western clients, the only way to grow? Or developing high-value products based on intellectual property to spur short term as well as long term growth is also an option? Are Indian IT companies as well as new entrepreneurs looking at investing into R&D to develop high value products to grow?

• Can these companies target emerging / developing countries apart from the developed ones for their growth through their software products apart from the services?

• Is the Indian IT sector ready for software product revolution?

• Is there a mindset change in Indian IT sector from services to IP based high value technology product development?

• What Indian IT services sector doing to overcome this issue?

The reason for slowing down in growth could be due combination of many factors and it's important to know what steps are taken by the Indian IT sector to arrest this slow down and at the same, plan for the future growth with the

advanced offerings and high value products in the value chain.

HOW CAN TRANSITION BE POSSIBLE?

Though the growth has reduced, there is wealth of knowledge in Indian IT sector gained over 20 years. It has hundreds of thousands of workers with 10 to 15 years of experience and ideas for innovative products. Leveraging this wealth of knowledge for R&D and software product development with many startups would yield very good results if the concerned institutions, bodies and the government can make appropriate funding available for the new entrepreneurs. The big Indian IT companies are also investing into R&D and product development to plan their long term growth apart from providing IT services the western clients. Many NRIs and other IT professionals with experience in Indian IT companies are starting their ventures in India.

LITERATURE REVIEW

There are three important aspects that are leading to Indian IT sector transition from services to product development. First, the big Indian IT outsourcing companies Infosys, Wipro, TCS and others have now around 20 years of experience in servicing western clients and recent performance of these companies is not like it to be 5 years back, due to the recession in the west. These companies need to find other ways to keep their growth momentum on track. One of the ways is to invest in R&D and product development based on own IP and get a base for the products locally in India and get into international markets. Second is about the new breed of entrepreneurs in India with startups in product development. They are well motivated to

do something of their own instead of working for others in Indian IT outsourcing companies or Silicon Valley companies. They have all the required IT expertise and experience of 10-15 years. Third is about the considerable improvements in other eco system aspects of product development in India like Business environment, funding etc.

Earlier the companies that were engaged in product development faced many issues and did not succeed much as selling the products was a difficult task. NASSCOM, the industry association for the IT-BPO sector in India has started 'NASSCOM Product Conclave FORUM' to facilitate the growth of emerging and startup companies in India. Product Conclave happens every years with the participation all the industry leaders not only from India, but also from Silicon Valley.

It is also important to note that Indian IT/ITeS industry have been at the receiving end of US President Barrack Obama's protectionist policies. Steady transition from service offerings to product development based on own IP is definitely the right way to move forward without affecting the ongoing service offerings to western clients.

NASSCOM Product Conclaves and Emerge Forums greatly leverages the cause of the startups. The Conclave brings various CIOs, capital partners, government and startups to one common platform, thereby allowing greater interaction and discussion among them. The Conclaves and emerge forums also brings to desk central and state government funding for the startups. To help the startups, NASSCOM has also started the 'Emerge Blog' which provides for electronic communication between the startups and allows for person to person communication.

It already has 3500 members to its credit. NASSCOM also brings the product startups and the CIO Association of India to meet periodically and discuss the trends in the industry.

Growing in the shadow of larger software services peers, Indian product firms are beginning to make a mark, as they shift focus to finding solutions for the domestic market instead of attempting to ape product ideas in the developed markets of the US.

More and more product companies are starting to emerge now. Karthik Ananth, Director of research firm Zinnov[1], thinks the ecosystem in India for product development is changing. He points out three key changes that have occurred in the Indian market place. First, there is a strong and growing demand for local products in the domestic market today. Right from banks to cab services like Meru make use of high-tech software and technology to reach their customers. This was non-existent even a decade back. The second aspect is the evolution of the entire IT industry in the back of IT services model that focused on providing people (services) for solving customer problems. As Indian companies spent more time with global customers, they gained deeper understanding of the end customers' business and the ability to develop end-to-end capabilities to build products around it. Third, MNCs have been increasingly using India as a base to build global products, which is creating a culture of innovation within the Indian companies.

The emergence of disruptive technologies such as cloud, mobility, sustainability and social networking are all adding up in making the ecosystem conducive for product development. The number of engineering graduates passing out of India is growing at more than 20 percent, which provides the required talent pool.

Vivek Wadhwa[2], vice president of Academics and Innovation at Singularity University, has met 100s of new entrepreneurs in India who are developing the software products for the local market to solve the problems of villagers. Indians are building micro-marketplaces and news services for villagers; medical technologies that make health-care services more accessible and affordable; systems that help solve public transport problems; and earth-friendly inks and battery technologies. He further mentions that highly paid workers in an industry that does lucrative contract work for multinationals jumping ship. It's the same dynamic which was observed in the United States in the mid 90's. Entrepreneurs start their companies when they have 10 to 15 years of work experience and ideas for products that solve real customer problems; they get tired of working for jerk bosses; and they want to build wealth before they retire. So they defy their fear of failure and take the plunge into entrepreneur-ship. There is an entrepreneurial boom in progress, and start-ups are building sophisticated medical devices, web technologies, cleantech products, and mobile applications. But these companies are in their infancy, and Indian entrepreneurs need the same mentoring and support that American entrepreneurs get. India needs to take a crash course in how to nurture these start-ups from Indians who achieved success in Silicon Valley.

Sanjay Purohit, Senior Vice President and Global head of Products in Infosys[3] mentions, our products deliver business capabilities and

[1] From an article By Ayushman Baruah , InformationWeek, December 14, 2011 http://www.informationweek.in/Software/11-12-14/ Software_products_%E2%80%94_the_next_wave_in_the_Indian_IT_industry.aspx

[2] Articles by Vivek Wadhwa in TechCrunch and BusinessWeek http://techcrunch.com/2010/11/13/the-future-of-indian-technology/ and http://www.businessweek.com/technology/content/dec2010/tc2010128_116888.htm

[3] Infosys Annual Report 2011-12 http://www.infosys.com/investors/reports-filings/annual-report/annual/Documents/Infosys-AR-12.pdf

differentiated functionalities. We invest in both industry specific and cross industry product offerings. Clients use these products as standalone or customized solutions or as building blocks in their large enterprise business process. Infosys product Finacle helps clients improve customer retention through cross channel integration, increases efficiency by leveraging technology and processes, enhances revenue from new product innovation and manages regulation and compliance. Over 150 banks across the world use Finacle across 45000 branches. Sanjay further says, clients are adopting our suite of product offerings such Customer Self-Service Energy Manager which ensures customer delight through sustainable energy management and revitalizes customer service.

Infosys is doubling their investments in Product Research and Development Center (PRDC) to develop intellectual property design and development. Supply chain management suite is one of the outcomes of these investments. The Product Research and Development Center of Infosys has mandate to

• Develop products and platforms to cater to next generation market needs driven by global mega trends including digital consumers, emerging economies, new commerce and healthcare.

• Create intellectual properties around Infosys products and platforms, leveraging technologies in the areas of cloud computing, mobility, analytics and social media.

• Pioneer unique approaches to accelerate innovation, enhance product architecture and shorten release cycles.

TCS[4] has innovation initiatives of systematically converting the domain knowledge garnered through the Company's extensive experience in select industries, into packaged software products and solutions. TCS has been very successful in this strategy in the BFSI space, where the BáNCS suite of products has been rated as among the best in the field by leading industry analysts globally. TCS is also investing in creating similar intellectual property in other key vertical industries like Retail.

TCS R&D also spent time and effort in the "invention" aspect with good results. Over 600 research papers were published in peer reviewed journals or were presented in national or international academic conferences by the Company's researchers. TCS increased its Intellectual Property Rights (IPR) significantly. 460 patents were filed in several countries in the year 2011-12. Until now, cumulatively, TCS has filed 855 patent applications of which 72 have been granted. In the year 2011-12, 4 patents have been granted. The intellectual assets created by the TCS R&D group are deployed and monetized in different business units and internal functions, resulting in substantial savings on license costs. Over 850 person-years of productivity savings were measured in different engagements.

In the coming years, the R&D TCS will invest in several softwares, systems and application research projects. Supply chain frameworks, Integrated Computational Materials Engineering and Human Centered Systems are some examples. TCS is also integrating various enterprise applications on new age devices, to keep TCSers' work environment vibrant and agile. R&D centers have been set up at various locations all over the world. Out of these, the R&D centers at Pune, Chennai, Bengaluru, Delhi-NCR,

Hyderabad, Kolkata and Mumbai have been recognised by the Department of Scientific & Industrial Research (DSIR). In addition to the R&D centers, the Company has set up innovation labs, product engineering groups and groups engaged in path breaking technologies at multiple locations all over the world.

RESEARCH METHODOLOGY

The secondary data has been used for this research paper. Data on software product companies has been taken from their annual reports, press releases, articles published in news papers, business journals. The data on the Indian software product sector has been taken from the various articles and the reports of NASSCOM and the reports, presentations and the interview contents of the conclaves and conferences conducted by NASSCOM and NASSCOM partner Zinnov. Articles covering the interviews of IT leaders, analysts have also been considered while writing this paper. The annual reports, press releases and articles from the Indian IT companies have also been taken from respective website of the companies. The data is also taken from the news papers and business journals.

1. Target companies: Indian software product companies.

2. Data collection: Secondary data used for this research project. Data from IT annual reports, press releases, NASSCOM and Zinnov reports on Indian IT sector, Articles and presentations from NASSCOM conclaves and the conferences, articles from business analysts, scholars.

3. Data Analysis: The data collated has been thoroughly studied, analyzed and the findings were included in this report.

4. Conclusion: Conclusions and the recommendations have been given based on the analysis.

ANALYSIS AND FINDINGS

Analysis of Ecosystem for Indian Software Product Space

Let's review the components of the eco-system required for a successful software product in India and how is Indian IT sector placed to take on the software product development. Below are the components of the eco system required for a successful R&D and software product development based on own IP.

- Human resource availability

- Funds availability for R&D and software product development

- Local market for sustenance

- Business Environment

- Execution Experience

AVAILABILITY OF HUMAN RESOURCES

The Indian technology industry got started with running call centers and doing low-level IT work for western firms in the 80's. After 2000's got started with higher-level IT projects offering, R&D (but still for western clients), management consulting services. It got opportunities from low level IT work to R&D step by step to and kept on climbing the value chain and as a result now has hundreds of thousands engineers with 10-15 years of experience. This is leading to another significant transition to development of innovative technology products. The big outsourcing Indian IT companies have started investing into R&D and innovative technology product development

along with the IT services being provided to western clients. This apart many experienced professionals beginning with their own startups instead of working for big companies and are developing high-value products based on intellectual property. Additionally more and more world class Product management and product entrepreneurship expertise is available from returning NRI's, as well as from the product software R&D work being executed by multi-nationals in India.

Pallav Nadhani co-founder of Fusion charts[5] in 2002 feels that lot of our talent was wasted in the services sector. Product development especially on the internet is the future and it is location agnostic and will bring us recognition, credibility and unlimited non-linear growth.

FUND AVAILABILITY

The big Indian IT outsourcing companies like Infosys, Wipro, TCS, etc., have enough cash at disposal to invest in R&D and product development initiatives and infact are also trying to acquire small product companies. Funding use to be a major problem for startups, but the funding ecosystem has seen significant improvement today feels Karthik Ananth, Director of research firm Zinnov[6]. The investment community largely comprises of venture capitalists (VCs), angel investors and state/national government schemes. Entrepreneurs are also looking at new ways of getting money. Indian success stories such as MakeMyTrip, Flipkart, and inMobi have increased the confidence levels of global VCs to invest in Indian product startups. Industry veterans and leaders are increasingly willing to invest time, mentor and champion the cause of startups in

their chosen areas. Infosys co-founder NR Narayana Murthy has started Catamaran Ventures, a VC fund for incubating Indian startups. It was aimed at encouraging and supporting young entrepreneurs with brilliant business ideas. Ventureast, one of India's oldest VC firms has a dedicated fund—BYST growth fund specifically for the SMBs. Global MNCs such as Citrix have also started incubators and seed funds to attract product startups.

M R Rangaswami of Sand Hill Group, software executive, investor, entrepreneur, corporate eco-strategy expert in Silicon Valley feels the new entrepreneurs should get into S-a-a-s model, if they have necessary funding. Entrepreneurs with hardly any capital but wants to get into business, then S-a-a-s may not be a prudent choice. S-a-a-s markets are, quite obviously, lucrative markets but demand more capital than Cloud-based markets. It's just a different cost model. it just takes more investment – both in terms of time and money.

In the recent past Indian start-ups are getting larger support system to grow new companies. Risk capital flow into the country has been increasing. Incubation centers and new models of start-up funding, including entrepreneur-in-residence programmes, and a growing number of angel investors are helping to kick start new models of entrepreneurship.

LOCAL MARKET FOR SUSTENANCE

Whenever anything new is designed and developed, local market support in the beginning is very crucial for sustenance so that product can later enter into international market with further

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[5]   Article by Padmini Copparapu/TNN, Times of India http://epaper.timesofindia.com/Default/Scripting/ArticleWin.asp?From= Search&Source=Find&Key=TOIH/2010/10/09/4/Ar00400.xml&CollName= TOI_HYDERABAD_DAILY_2009&DOCID=212515& Keyword=%28%3Cmany%3E%3Cstem%3Enasscom%29&skin=TOINEW&AppName=1&PageLabel=4%20&ViewMode=HTML&GZ=T
[6]   Article by Ayushman Baruah , InformationWeek, December 14, 2011, http://www.informationweek.in/Software/11-12-14/ Software_products_%E2%80%94_the_next_wave_in_the_Indian_IT_industry.aspx

investments into marketing of the product. This is possible when the product can sustain through support from local market and earnings from the local market can support foray into other markets. This is very much applicable for software products too. What it means is success of products internationally depends on the availability of a home market. In general the Indian market was too small to companies to get a base. Most of the larger companies purchase multinational products and smaller companies go with very low cost software or point solutions from the local provider. The international market is too expensive to get into. But this situation changing fast with Indian economy growing at 7 to 9% every year and companies are willing to spend more for value. At the same time international markets are accessible via the internet and the cloud which companies have started to leverage. Indian products and solutions are being considered and respected now after the success of the outsourcing model.

M.R. Rangaswami of Sand Hill Group feels[7] that Indian startups should first focus on the Indian market as a potential source of revenue as opposed to international markets. As connectivity increases in India, and a large number of cell phones, smart phones, tablets, and similar devices come into play, India offers diverse opportunities. He further adds that it is understandable to be enamored of the size of global markets. But, it may do entrepreneurs good to concentrate on the domestic market first and subsequently pursue global markets.

Chennai start-up Zoho Corp, whose applications are today rated on par, if not better, than some of Google and Microsofts and is poised to upend market leader salesforce.com in CRM solutions.

Even though Zoho has offices across the world, it still operates with a 1500-strong team out of Chennai. Raju Vegnesa, product evangelist at Zoho[8] says: "The talent pool in India is maturing. It's now looking towards the future in product development for both the growing local market and the global market. We want to show the world that we, from India, can compete with the best and hold our own".

BUSINESS ENVIRONMENT

The business environment for products is much more difficult unlike software services. Service Tax, VAT, FBT, Professional Taxes are applicable when a product is sold and makes any chance of success very difficult. In addition software piracy, Payment delays and worries about longevity by buyers made matters very difficult. While the tax regime has not improved (apart from the removal of the FBT), there are improvements in the environment for doing business. There is increasing appreciation of the vital nature of software to business productivity and scalability.

Execution Experience

Software product development and software service offerings are not the same and require different skills in execution and management. In the beginning many Indian software product development initiatives faced many problems due to lack of focus, overestimation of market potential, underestimation of the effort and time to build and mature products. But there have improvements in this area

• With the return of many NRI's with expertise in Product management and product entrepreneurship, Indian companies are fast learning the art of successfully managing the product development.

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[7] Interview by Ramya Rajesh from Prayag Consulting. http://emerge.nasscom.in/2010/10/indian-it-product-space-opportunities-to-explore-lessons-to-ponder-upon/ and http://www.prayag.com/

[8] Article by Padmini Copparapu, Times of India http://epaper.timesofindia.com/Default/Scripting/ArticleWin.asp?From=Search&Source=Find&Key=TOIH/2010/10/09/4/Ar00400.xml&CollName=TOIHYDERABADDAILY2009&DOCID=212515&Keyword=%28%3Cmany%3E%3Cstem%3Enasscom%29&skin=TOINEW&AppName=1&PageLabel=4%20&ViewMode=HTML&GZ=T and http://emerge.nasscom.in/2010/10/the-great-indian-start-up-story/

• With many foreign MNCs opening up their R&D units in India to capitalize the talent available and the ever improving education system is creating large R&D talent pool.

• With the wealth of experience of more than 20 years with Indian IT outsourcing companies being utilized slowly in product space.

FINDINGS

As explained in the ecosystem review, there are positive signs and trends in the Indian software product space. The software product space is picking up slowly and will pick up the pace with continuous improvements in the ecosystem and can lead to unlimited growth in the long term. Below are the trends in Indian software product space.

A. Indian Software Product Domestic Business is Growing

Indian economy growth at 7-8 % is providing good opportunities for Indian software product companies and there are many startup and emerging companies targeting the domestic market before jumping into the global race. Indian software product domestic business has grown 15% CAGR in last 5 years to 0.6 Billion US$ (Figure 1) (NASSCOM software product conclave and emerge forum reports and NASSCOM-Zinnov presentation and reports[9]).

B. Indian Software Product Export Business is Growing

Indian software product export business has grown 27% CAGR in last 5 years to 1.3 Billion (Figure 2)

Figure 1: Domestic Revenue of Indian Software Products in Billion US$

Figure 2: Export Revenue of Indian Software Products in Billion US$

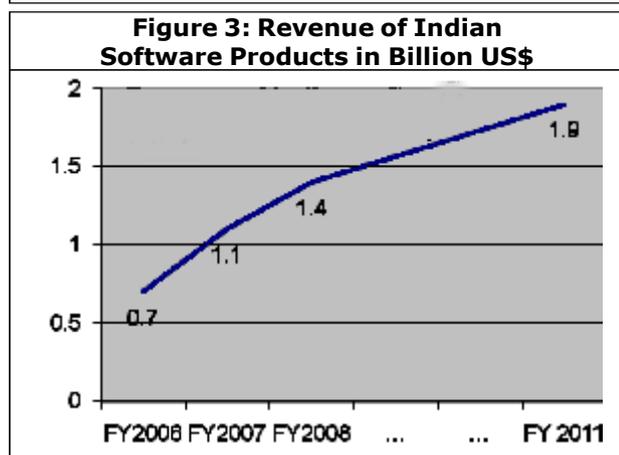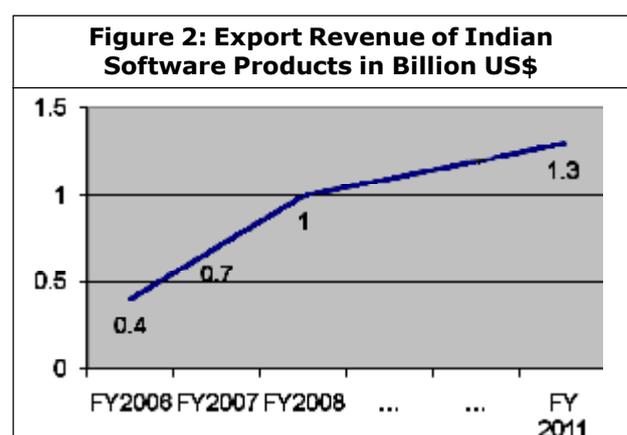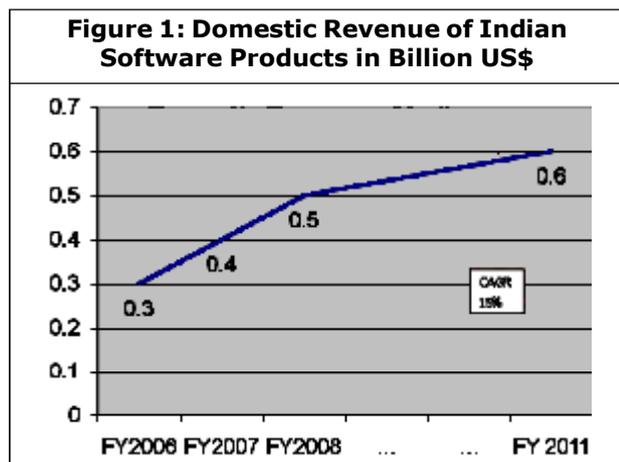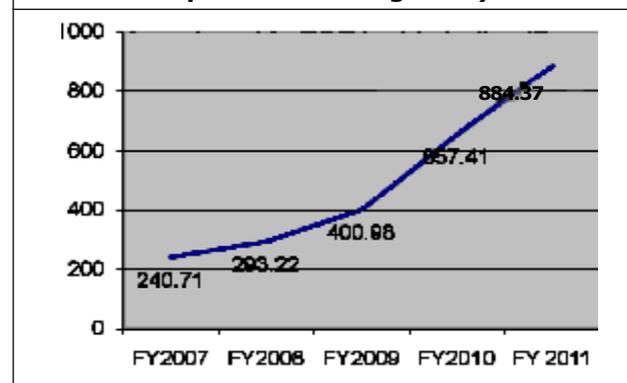Figure 3: Revenue of Indian Software Products in Billion US$

Figure 4: Investment in R&D by Big Indian IT Companies in Crore Rupees (Infosys, TCS, Wipro and HCL Together)

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9   Reports and Presentations from NASSCOM http://emerge.nasscom.in/2011/08/indian-it-beyond-services/comment-page-1/ and http://www.slideshare.net/avinash.raghava

(NASSCOM software product conclave and emerge forum reports and NASSCOM-Zinnov presentation and reports).

C. Indian Software Product Business is Growing

Indian software product business has grown 22% CAGR in last 5 years to 1.9 Billion US$ (Figure 3) and is expected to grow 12 Billion US$ in next 5 years. It's important to note here that Indian software product companies are innovating for both domestic as well as global markets (NASSCOM software product conclave and emerge forum reports and NASSCOM-Zinnov presentation and reports).

D. Investment in R&D by Big Indian IT Outsourcing Companies is Growing

Big Indian IT outsourcing companies are continuously investing in R&D to plan for the future growth. Below are the details of the investment[10] in R&D by Infosys, TCS, Wipro and HCL (Figure 4). There has been continuous increase in the year on year investment. These investments will help these companies in the software product space.

E. Growth in Number of Indian Software Product Companies

The number of software product companies in

Figure 5: Number of Software Product Companies in India
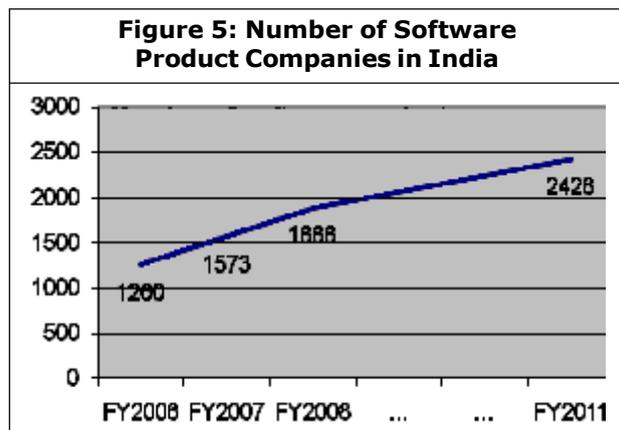
India is increasing. This is due to the fact that India has hundreds of thousands of software professionals with 10-15 years of experience in IT sector. Many professionals want to build something on their own instead of working for others and are starting with their own start ups in the product space. This is not specific people having experience in Indian IT outsourcing companies and even NRIs from Silicon valley are also jumping into this startup boom in India. Below graph shows the growth in the number of product companies in India (Figure 5). This data has been taken from the report and presentations of NASSCOM product conclaves of 2010 and 2011 (NASSCOM software product conclave and emerge forum reports and NASSCOM-Zinnov presentation and reports).

F. Indian Product Companies and Domain Concentration

Around 76% of the product companies in India are in the space of digital, business and productivity software. Business and productivity softwares account for 36% and digital software 40% of the total (NASSCOM software product conclave and emerge forum reports and NASSCOM-Zinnov presentation and reports).

CONCLUSION

• Indian IT industry has great potential to succeed as a high value software product development giant. Though it may not reach the 40%+ growth it had once, product development is the avenue which would help sector's unlimited non-linear growth in the long term.

• Indian software product business has grown at a good rate of 22% in last 5 years in the existing ecosystem. With the continued ecosystem improvements which are prevalent

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[10] Annual reports from Infosys, TCS, Wipro and HCL http://www.infosys.com/investors/reports-filings/Pages/index.aspx, http:/,www.tcs.com/ investors/financial_info/Pages/default.aspx, http://www.wipro.com/investors/annual-reports.aspx and http://hcl.com/about-investor.asp

now days, has great opportunities to grow and compete with Silicon Valley.

• The local Indian market for Indian software products is also improving with 15% growth in last 5 years. There are huge opportunities in India for the grab and even foreign MNCs are jumping into the race to grab the opportunities by investing and starting startups in India. The niche Smartphone / tablet market is expanding dramatically in India and offers scope for entrepreneurs to invest in application development for such devices.

• Indian software product companies are innovating and targeting domestic market as well as global market.

• There is a boom in Indian software product start ups arena. More and more people with experience of 10-15 years and good business ideas are starting their own start ups. This is not limited to people who had their stint at Indian outsourcing companies, but also who are working in Silicon Valley.

• The ecosystem for Indian software product is improving, but still lot need to be done.

• NASSCOM is doing a fantastic job as a catalyst, coordinator and mentor for emerging and startup companies. It has started the platforms like NASSCOM Product Conclave which greatly helps the startups. It brings various CIOs and startups to one common platform facilitating greater interaction and discussions. The Conclave also brings central and state government representatives to the platform leading to funding for the startups.

• Big Indian IT outsourcing companies are steadily increasing the investment in R&D and IP based product development apart from increasing the service offerings for the existing western clients.

• Only few successful first generations IT company founders are starting venture funds to encourage new entrepreneurs.

• Technology disruptions like S-a-a-s, mobile, cloud computing are have significantly reduced the cost of starting a software product startup.

RECOMMENDATIONS

• Indian software product startups should first focus on the Indian market as a potential source of revenue as opposed to international markets. It could be difficult to tap the international market to begin with, due to the investments required in terms of marketing and the product branding require time. Instead it would be good for the startups to concentrate on the domestic market and subsequently get into the global market step by step.

• Innovation/R&D and software product development should become a must for Indian IT industry irrespective however good or moderate or slow growth the companies might have. This is important from the long term sustenance and growth point of view as the services will not be able to help grow like the past.

• Building a software product company is not 2-3 years game. Entrepreneurs should aim to build the company over 10-12 years should not make the mistake of expecting quick returns in product business.

• Cloud based applications could be the right approach for the startup entrepreneurs as the investment for this avenue will be much lesser as compared to S-a-a-s application. The infrastructure required for Cloud startups is very low. Entrepreneurs need minimal hardware or infrastructure. One can write and store applications in the Cloud, and you can

provision applications from the Cloud to your company.

- Tier 2 or Tier 3 cities would be the right place for the startups as the costs of living and running a business are less and still develop a world-class application.

- Indian IT companies could increase collaborations with other IT companies, research institutes, IITs, Universities to mitigate risk, share investment and reduce time-to-market.

- Indian Government should provide specific support for IP creation, with tax breaks for software product companies who patent and/or copyright their technology and encourage State governments to provide similar support for more local smaller companies that focus on local and remote markets. Additionally can also think on the lines of grants and aid for R&D efforts by software product companies with the stated goal of commercializing the results in the Indian market.

-· Government can think of taxation for software product companies inline with software services. Applicability of Service Tax, VAT, TDS, Professional Taxes and other minor taxes made any chance of success very difficult.

- Government should establish high quality physical infrastructure across the country in Tier 2 and Tier 3 cities for startup and emerging entrepreneurs to use free of charge till specific business milestones are hit or for a specified period.

- More and more successful first generation IT founders should start venture funds to encourage new entrepreneurs.

- Indian IT/BPO industry association NASSCOM can think on coming up with venture fund in encouraging new entrepreneurs in a big way.

- Indian government and NASSCOM together can come up with programmes where in big Indian IT companies outsource some part of work to the startups and emerging companies in India leading to inclusive growth of the sector. This will tremendously help the startups in the initial phase in sustaining the business.

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