IDENTIFYING PROBLEMS OF COST ESTIMATION FOR SMALL PROJECT IN INDIAN COMPANIES

T. N. Sharma

Vipin Jain

Meenakshi Gaur

Abstract

In India there are lots of small companies who are having human resources strength in between 10 to 50. Most of these companies are having small project with limited budget. Indian software industry has been experiencing a phenomenal expansion for the last few years. The software industry is likely to play a vital role in the growth of Indian Economy. Small sized IT companies have played an important role in the development of the domestic IT industry. The marked reliance on access to low cost human capital has prompted considerable scepticism about the ability of the Indian software industry to sustain its performance, given the quick growth in the requirement for engineers and the relatively inelastic supply of engineers. The leading Indian firms are making tough efforts to move up the value chain by acquiring superior software cost estimation capability and deeper knowledge of business domains, and reducing costs and increasing quality by developing superior methodologies and tools.

This paper discusses some of the main issues that are most problematic for most of the small Indian companies. The paper discusses mostly those issues which are related to costing and economies of projects which affects the whole business.

Introduction :

The Indian software industry is having a phenomenal compounded expansion of about 60 % per annum. Indian Prime Minister's National Task Force on Information Technology and Software Development has set a target of US $50 billion of annual software exports by the 2008 year. During the 2001-02 year, the software industry in India would be close to Rs. 60,000 crore or 14 billion US$. Due to increased Government spending towards IT in the domestic market, the domestic software market has fetched record revenue of approximately Rs. 8,200 crore in 1999-2000 according to NASSCOM- 1999. Government of India has decided that 1-3 % of the budget of every

Government department would be towards IT hardware and software industries. According to a PwC report, as many as 16 Indian companies have made it to the list of top 100 software vendors in the emerging markets, commanding combined revenue of $ 797 million. The newest PwC global 100 software leaders report also says that in terms of revenue, India was ranked 5th among the rising marketplace in 2011.

The IT industry's contribution to the Indian GDP has increased from around 1.4 % in 1998-99 to more than 3 % in 2003-04 Even from an industry point of view, the interest on the domestic front is relatively limited with the domestic IT software services market constituting around US$ 3.4 billion in 2003-04 compared to the US$ 12.5 billion software and service exports marketplace. In fact, revenues from the domestic marketplace account for only 10-30 percent of revenues for players in all segments. However, the domestic market will become significantly more important, particularly for smaller players who will need to tap the domestic market to build scale.

The task of "Defining" a small organization tends to be highly subjective. The 1998 SEPG Conference Panel defined "small" as 3-4 months duration and 5 or lower staff . Brodman and Johnson define a "small" organization as fewer than 50 developers and a "small" project as fewer than 20 developers . The European Committee (EC) subdivides small organizations as eXtra eXtra Small Organizations (XXS) that have 1 or 2 employees, eXtra Small Organizations (XS) that have 3-15employees and Small Organizations (S) with 16-50 employees.

General issues related to small IT companies

- **Small budget: -** The marketplace is vast, but it also tends to work with smaller margins and the people over there spend less money. Each one of us can have and do have multiple expectations from the job and career that we desire. However, in case of software professionals, the hope from the job appears to be too many and many times these expectations are in conflict with each other. Chief Executive of a small software company employing about 20 employees and owned by a NRI said that software professionals when interviewed for job invariably say that they want to learn and be technical leaders in their respective chosen fields. However, after joining the association, they tend to use yard sticks to evaluate their success that tend to be different from their stated objectives of learning and be technical leaders in their chosen field. These yardsticks tend to be physical and habitually are derived from the expectations experienced by software professionals from their family members and their peers. In addition, organizations have their own expectations from software professionals. These several expectations produce pulls and pressures on software professionals because of the small budget of the product being developed by the company.

- **Requirements are not clear: -** Projects on the lower end of value chain require many times working on legacy systems and technologies of the past. Indian software professionals desire to work on the latest technology and platforms. It is leading to circumstances whereby software organizations exclusively working on lower levels of value chain increasingly find it difficult to attract and retain competent software professionals. Sometimes even requirements of the product are not clear to software professionals. Software professionals enjoy being with their computers and in turn computers tended to be highly addictive. Particularly, software professionals when they are working on a project, they tend to and they are expected to work extended hours. Working for 12-14 hours per day for extended period of time seems to be quite common in software organizations. Long working hours is valued by organizations, but more importantly software professionals tend to believe that they matter for the organization when they work extended hours. However, over time, the procedure of working long hours disturbs the balance between work and non-work life and software professionals tend to experience burnout.

- **Late release of payments: -** Software professionals tend to be high achievers and hence they expect periodical and tangible feed back and recognition for performance. Since reward system is perceived, as a part of the feed back organism, linking performance with reward and experiencing equity in reward becomes very important issues with them. In small companies sometimes the development cost of product is received late, so release of payments of software professionals might be late also.

- **No work: -** Software professionals are able to move from their existing organizations to new organizations in India or abroad rather fast. They want to work on new technologies, new platforms and with new organizations to improve their learning and curriculum vitae. Due to Internet and e-mail services, Indian IT professionals are in touch with their peers in India and abroad on a continuous basis. They are aware of the kind of projects and technologies their peers in India as well as abroad are working with. This awareness creates pressures on software professionals to aspire to work on similar platforms and technologies. In the casual settings, peers tend to ask each other about salary, benefits and about their foreign trip. All this awareness generates hope and pressures to expect all these in one's own organization. Software professionals further increase pressure on themselves and their organization by selectively picking up what are best salary, benefit and other services in different software organizations. Interestingly, the benchmarking organizations do not remain same for long and software professionals keep suggesting new organizations for benchmarking to their top management and HR professionals. Sometimes in small companies, there is no work situation till they get a new project, so this situation is also suffered by software professionals working in those companies.

- **Costly manpower: -** Historically there has been a very big price differential between Eastern Europe and India. A decade ago companies could hire very senior engineers for $1-2k per month in India. Those days are long gone. Norm in India today is up to 20% pay increases every 6 months – that translates into 45% wage escalation per year!! Today only the most junior engineers are less expensive than Poland. Midrange today is roughly about the same and specialized senior people are more expensive in India than in Poland today. I trust that India will be more costly across the board within 2-3 years. Although the dollar has suffered a significant retreat over the last couple of years against the Polish zloty it has not resulted in price escalation

anywhere near what is happening in India today. As a result neubloc has not increased the price of developers over the last year – we have actually decreased the price as our customer relationships have expanded. Although Software Professionals demands high according to their capability. Many software organizations spend about five percent of their manpower budget on training. Every software professional is expected to spend a minimum of five days per year in classroom setting to learn what is relevant for him/her and often these targets are exceeded.

- **Government interferes: -** The profit from special economic zones (SEZs) now attracts minimum choice tax or MAT. A tax waiver in the 2013-Union Budget will help small and medium IT companies to move their businesses to SEZs swiftly. Furthermore, the authorization of software attracts both value added tax (VAT) as well as service tax. The sector supposes the government to eliminate the anomaly and thereby reducing the duty burden on software end users. With a majority of central and state government processes yet to be computerized, there has been an overall apathy from the government with the exception of a few state governments.

- **Infra structure: -** The Indian work approach requires very detailed specifications with no room for interpretation. Indian teams commonly will stop work while waiting for a clarification to a question versus making their best approximation and continuing on. Productivity is therefore surprisingly low. Seeing the widespread need for energy preservation, The Weidt Group become skilled at how to do energy modeling, which is a way of calculate how much money and energy a building can save depending on things like what kinds of lights it uses or which kind of HVAC scheme it installs. While it used to get weeks to do just one predictive study, over time the company figured out how to create its unique marriage of energy and software work to its benefit—in ways others weren't able to do. Small software organizations seem to have higher attrition rates as compared to medium or large associations. Many of them are owned by NRI's and they have been operating in the lower segments of value chain.

- **High Individual Dependence** – In Small organizations, owing to the small number of staff, individuals appointed to develop software for a particular problem domain become experts and the success of the project largely rests on the competency of that individual. As an example In the case of a single worker, the person is both the executive in the role SM and a Software

Engineer SE. In case of 2 employees, one is both SM and SE, and the other is SE.Because generally in such organizations subcontracting is not possible.

- **Overloaded Persons** – Owing to the small number of employees, individuals are vested with multiple tasks requiring different skill sets and expertise leading to a sub-optimal performance of some activities. As in small organizations there is not as such a team to develop a project. There is only 2 or 3 people to make any project so Only they need to perform Software Development Life Cycle steps, There is not as such different teams to perform requirement analysis, designing, coding, testing, maintenance. So the software professionals needs to work in all these phases of SWDLC.

- **Human Factors** – When the growth of a small software organization with 1 or 2 persons to one having 10-15 employees is not supported by establishment of appropriate organizational structures, problems may creep in. One has to create a work place full of enjoyment, pleasure and enthusiasm. Otherwise software professionals tend to get bored very soon. Many Indian software organizations have designed their work place that resembles very much like a college environment. Sports activities such as tennis, table tennis, swimming pool, badminton courts, gym and open cafeteria are very much part of many software organizations. A number of fun activities such as debate, fancy dress and quiz competitions are organized for organizational members and their families. One needs to be innovative in organizing these fun activities so that these fun activities are not perceived to be repetitious and bore. Young software professionals like informal environment. Many of the organizations have moved towards informal dress code. Many house hold chores like payment of telephone and water bills, arranging for travel for professionals as well as for their families and purchase of tickets for films and theaters are being taken care of by the organizations. It is a small way of saying to software professionals that we care for you and your families. So small organizations should also need to think on human factors of the Software Professionals. The Small Companies should try to provide some of these type of activities in their office environment.

- **Importance of Customer Communication** – In Software Development undertaken by small organizations for known customers, communication with customers becomes intensive. As for a

Good Software project to be developed, the developing company should need to understand all the requirements of project in the beginning by the customer communication and by this only the developer should know any changes if required in between the development. So this is very much important to communicate time to time, But in Small Companies it is not so easy to make this communication possible because there are a very less people's team to develop any project.

Conclusion

Because of the given issues, small software development companies are facing lots of problems in survival. For Indian small companies a lot of issues related to the infrastructure and other local issues also matters. Some of the problems presently being experienced by the Small Indian software organizations are discussed in the paper. However, Small Indian software industry is aspiring to get integrated in a big way with the global software industry. It has many worldwide clients and the number is increasing at a real fast pace. Indian software business is considered to be a success story till date and its future success will depend upon its ability to understand and adopt what is being valued by customers. However, it is feared that many of the values of the customers are in conflict with the traditional values of Indian society. Evidences suggest that software organizations and software professionals are adopting values of the customers. However, they also experience stress, tension and many times guilt because of the new adopted values and the changed life style obtained by them. Leaders of the business and of the Indian society should consciously work on these issues in a proactive way. That is how we would make sure success of the Small Indian software industry without affecting the prosperity and peace of the Indian society. For their survival, it is essential to provide a good environment and good strategies, tools and support.

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories
Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gage as well as in Cabell's Directories of Publishing Opportunities, U.S.A.
International Journal of Management, IT and Engineering
http://www.ijmra.us

137

References

Ashish Arora, et al (2001), The Indian software services industry, Research Policy, p.p. 1267–1287

Narendra M. Agrawal (April, 2000), Human Issues and Challenges in Indian Software Industry, IIM Bangalore, p.p. 1-19

Saranya, et al (January 2013), SPI Challenges Of Small And Medium Sized Software Companies –Problems And Prospects ,International Journal of Engineering Research & Technology (IJERT), ISSN: 2278-0181, Vol. 2 Issue 1

NASSCOM (2003-04) INDIAN DOMESTIC MARKET: ANALYSIS