

## **6. Recommendations**

### **6.1 Short term Recommendations**

#### **6.1.1 Micro level**

If a company does not follow a proper software processes and already experiencing schedule over runs and cost over runs, it is recommended to document the current way of performing tasks. Then try to align technical process flow with business model of the company and include any omitted verification and validation checks. This will help to identify root causes for the project failures and avoid any omissions, ambiguity of tasks and to improve the project monitoring and controlling mechanism. Further training and workshops need to be carried out for software engineering staff to increase awareness of software process and highlight benefits that can be realized from following processes. This is only a short-term way of addressing process related issues and the management team has to be committed for continuous improvement of processes to realize more comprehensive benefits from them.



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It is recommended that an external expert with particular business domain expertise and marketing contacts is recruited to the company senior management team. This will help to gain domain knowledge as well as new projects to the company in a particular business domain.

#### **6.1.2 Macro level**

Most of the offshore software service companies have less than 60 engineers working in their operations. Therefore these companies are not sizable enough to bid for large scale projects in their own. Therefore it is recommended to have intra industry consortium to bid for large scale projects. Further each player can learn new technologies, processes and domain knowledge from others in addition to the revenue they earn from the consortium.

SEA and ICTA have to organize IT exhibitions and trade promotions targeting US and European clients to promote Sri Lanka as an attractive offshore software destination. They should introduce overseas small and medium companies demanding software services to small and medium local players.

Also ICTA should conduct workshops and seminars targeting software engineers and senior management of software companies to increase awareness of software processes benefits derived from having them and value added services that can be provided for offshore clients. This will help to motivate software companies to climb up the value chain.

With collaboration of foreign technological partners, conduct workshops to increase awareness of latest technology and global trends in technology development.

Increase awareness of the senior management team of small and medium scale players about the demand for offshore IT services, who needs these services, what kind of services they need (E.g.: software quality assurance)

## **6.2 Long term Recommendations**

### **6.2.1 Micro level**

Offshore companies with product presence need to evaluate market share for each product and the market growth rate of service domains served by those products in current and potential markets. Also they should identify the phase of product in the product life cycle and identify where each product could be placed in the Boston Consultancy Group matrix. This will enable them to identify products in the quadrants where market growth rate is low and market share is low. The Company needs to get rid of spending on these products and needs to invest more resources on products placed in the quadrants where the market growth rate and market share of the company is high. However, discontinuation of any product is a strategic decision with a long term

implication. The suggested analysis will help to stop draining out company cash in products, which are not capable of generating positive cash flows in future.

It is recommended that offshore software development companies invest on R&D to develop products utilizing service domains and technical knowledge of providing offshore services. This is a good strategy to grow in both profitability and revenue with limited staff. For offshore software companies that are already with product presence should take necessary steps to improve these products, market them and generate enough cash flow in to the company. Therefore continuous maintenance and updates of the products to cope with changing customer needs, as it is very important for future profitability and survival.

Further good human resource strategy should be established to attract new recruits in the long run and to retain experienced workforce. Companies need to develop strategic partnership with IT educational institutes to capture best of the talent produced from these institutes.



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Proper HR planning should be made along with organizational strategic planning to stimulate the required level of staff growth. Management team needs to seek out strategic partners to develop partnership to access new service domains that have a good growth potential in emerging and developed markets. Further these partnerships can be used to develop technical capabilities of the company and its staff or to access the latest technology at low cost basis. Further training budgets need to address training requirements of staff to develop technical skills that required to be at the forefront in the technology market. Further building up strategic partnerships with existing clients and adding value to the deliverables and always delivering what promised to the clients are very important to get repetitive projects from existing clients. IT organizations need to allocate more funds on their training budgets to develop soft skills and process knowledge of software engineers.

Improvement in process maturity will result in more efficient billing utilization and high profit margins for the company. Therefore it is required to retain the experienced and qualified staff within the company for a longer period. The Senior management needs to allocate funds and set long term goals to achieve process maturity standards such as CMMi. Further a culture needs to be developed within the organization so that every software engineer is aware of the best practices followed by the company and adhere to the processes.

Together with improving process maturity and soft skills of software engineers companies need to think about further areas that can provide value addition to clients and earn higher revenue with good profit margins. Fields such as business analysts and software solution consultancy are examples of climbing up the value chain to improve the revenue generated per employee.

As stated earlier it is very important to develop a good HR strategy to retain the experienced and qualified staff within the company for a longer period. Culture and an environment conducive to working habits of a professional software engineering staff is essential in addition to an attractive compensation package.( e.g.: employee share option schemes, project bonuses etc.). Strategic focus on continuous process improvement can reduce cost and schedule overruns of projects.

Offshore software development companies with product presence need to build up intellectual property protection for their products. This will help to build the brand image of the company.

### **6.2.2 Macro level**

It is recommended that the country should develop a proper IT educational strategy to match the future demands for the IT offshore software services. Without this Sri Lanka cannot be developed as an attractive offshore software services destination. This will help to increase revenue from the IT sector and future revenue growth. Further IT regulatory framework needs to be established in the country to safeguard the intellectual properties

of Software Companies. Tax holidays and tax concessions can be provided for R&D expenditure on product developments to encourage offshore companies to leverage their existing knowledge to build software products.

One possible way for medium and small scale players to access US and Europe markets is to enter in to strategic alliances and partnerships with foreign clients. Therefore the Government of Sri Lanka needs to play a major role in promoting small and medium scale software development companies in US and Europe and facilitate them to enter in to alliances and partnerships with foreign partners and access new markets, new service domains and latest technology at affordable costs. Institutes such as SEA and ICTA need to play a major role in matching demand and supply for offshore software services in US and Europe countries and introduce these clients to small and medium scale software companies who are having difficulties in finding clients on their own.

Process maturity level in the offshore software development industry needs to be improved more than what it is today. Therefore institutions such as ICTA and SEA need to promote and provide grants to small and medium scale companies to obtain process certifications such as ISO 9001 and CMMi. This could be used as a strategy to develop Sri Lanka as the more attractive IT outsourcing destination. Software engineering process and process maturity standards need to be incorporated in to the curriculum of IT and related degree programs. Further non technical and soft skills of engineers need to be developed to make them ready to communicate with offshore clients. Educational policies need to consider this and add relevant subjects to the curriculum to improve communication and soft skills of software engineers.

Tax holidays and concessions need to be provided for small and medium scale companies during early stages of their life to promote growth and survival in a highly vulnerable industry.

National level proper policies need to be adopted to reduce the staff attrition rate. The staff attrition rate is very high in the industry and this will badly affect the profitability

and stability of the industry. Therefore wage control mechanism needs to be introduced and fair play regulation mechanism needs to be built in to the industry.

Career guidance and career fairs to promote IT industry among A/L students and parents need to be conducted more frequently. Student loan schemes need to be provided for IT education programs targeting students who score high marks but not selected for university. This will help to improve the supply of software engineers for future demands and facilitate growth of the offshore software development industry.

### **6.3 Future Research Areas**

The survey methodology has been used for this research. All the offshore software development companies registered in SEA of Sri Lanka and being in business for more than two fiscal years were used as the basic criteria of selecting target companies. It would be better to carry out a similar research for a larger population considering all the offshore software development companies registered under the companies Act (No. 17 of 1982).



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This research paper considers both offshore software development companies and offshore software development companies with product presence where product portion of revenue is less than 30% of the total revenue of the company. Therefore this research is limited towards determining the business value of offshore software services companies. There could be a possibility that findings in this research might vary from when it is applied for a product company or a company with higher portion of their revenue generated from product sales. It would be better to carry out a separate research on determining the business value of a software product company or companies with offshore software services with product presence where product sales contribute to a higher portion of the total sales.