

**Comparative Analysis of Development and Implementation of  
Commercial 'Off The shelf' (COTS) software solutions and  
Customized Solutions**

By

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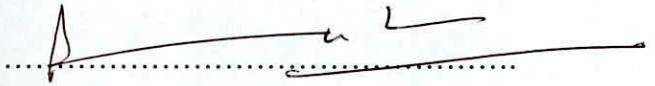
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Signature of Academic Advisor

Dr. Saman Yapa

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## **ABSTRACT**

As a developing country IT industry of Sri Lanka have shown remarkable growth in last decade. As a third world country, software development companies in Sri Lanka are unable to spend huge cost and time for new development of software system. Therefore, they are looking forward to implement cost wise and timely feasible solution.

Commercial Off The Shelf (COTS) and Customized solution developments are commonly used approaches in IT Industry. Out of these two, Commercial off the Shelf (COTS) development has become an emerging trend in the global context. The study focused on identifying the suitability of COTS system development in Sri Lanka. Thus, this COTS implementations are suitable as a solution for the contemporary problem which faced by most of the software development companies i.e. software development companies are unable to deliver the software system to the end user according to the agreed time line. One of the reason for this is that end customers tend to change their business requirement time to time than what they requested initial stage.

In order to identify the suitability of this type of development, comprehensive comparative analysis has been conducted based on the comparative variables identified during the literature review.

The questionnaires and the Observation have been chosen as the research methodologies and convenient sampling method has been chosen. There were two questionnaires

developed and host them online and distributed among the sixty(60) software engineers and sixty(60) corporate customers. The software engineers comprised with thirty (30) software engineers who developed COTS system and another thirty (30) software engineers who developed customized system. The corporate customers comprised from thirty (30) COTS system used customers and another thirty (30) from customized system used customers.

The data analysis was mainly performed using SPSS 16 and t test have conducted during the comparative analysis.

The research finding will recommend that COTS system developments approach is most suitable approach to Sri Lanka's IT industry.

## **1. INTRODUCTION**

This chapter provides an introduction to the field of research presented in this thesis. It contains the problem statement and the justification. Thus, the objective, significance and limitation of the study. After discussing the limitation, chapter will wind up with the brief summary.

### **1.1 Introduction to the Study**

The global IT industry has become a vital necessity in the world today and it has been shown a rapid expansion over past two decades. Though, the US financial and economic crisis of 2008 has causes to dwindle the progress and the development of the industry, currently it has shown the sign of recovery.

Software is considered as one of the three main segments of the Information technology (IT) industry. Hardware education & training are considered as other two (Infoline, 2000). Thus, software industry is further segmented to services and products. Programme development, information processing, provision of programmer, provision of consultancy services, IT enabled services and data entry operations are considered as the activities compromised in Services. System software or application software are compromised in Products. Application software can be custom made or made for the mass market.

Sri Lankan IT industry even though small, has shown a remarkable growth during last ten years. As a developing country, Sri Lanka's contribution was estimated as US\$ 386 million in the year 2011 and will grow up to US\$742 million in the next five years (The ICT Industry Cluster, 2002). IT industry of Sri Lanka comprises of hardware, software and services. The hardware segment dominates the IT industry, which consist of 70 percent of total IT spending in 2010 in Sri Lanka. The software market of Sri Lanka is relatively low (consisting 12% of total IT spending) and according to the statistics, the estimated addressable market was US\$47 million in 2011 (The ICT Industry Cluster, 2002).

Sri Lankan IT/Software Industry is segregated into three segments Application Product Market, Software Services and off-the shore Development Services. Currently there are over 175 software development companies established in Sri Lanka involved in the development of software products, and providing services for both export and domestic markets. Export earnings from software and IT-enabled services have shown US\$ 5.0 million in 1996 rose up to US\$ 275 million in 2009. According to ICT industry Cluster (2002) it is stated that though, Software Exporters' Association (SEA) targeted to achieve US\$ 1 billion from software development by 2012, but due to the global economy crisis it has been crippled and this date is likely to be deferred to 2016.

At present, there is a demand for the development of IT products in financial and capital markets, leasing and financial services, insurance, stock-broking, telecom, healthcare, hotels, banking and airline industries. The software market is mainly dominated by government software, bank, finance and telecom sector that accountable for half of the total IT spending. Most of the software development companies were established to response the emerging needs of the end users. This demand resulted for the emergence of large, medium and small enterprises in the Sri Lankan IT industry which enables to offer a wide range of services including software development, IT consultancy services and IT support services to IT enabled industries. In order to meet the end user's variety of needs, all the software development companies tried to produce innovative concepts in their products. Thus, created the competitiveness in the industry.

Customer specific applications have utilized in many companies that are developed by own staff or external software companies, which is known as Custom solution or customized solution. The system features are tailored according to the customer's need. Since the solution is customized it cannot be market for another company. One of the disadvantages of application is to integrate with other systems. The long development process spends for the development and rising maintenance cost has reasoned for inability to react for the market need on time. It drastically affect to competitive position in the market. Hence, competitive position

gets dropped. (Hofmann,O., 2008). Today most of the organizations are moving to Commercial off the Shelf solutions (COTS) developments because modern information systems are becoming increasingly expensive to build and maintain. The major intention behind this movement is to reduce the software development and maintenance cost. In fact it enables to bring the system to the market as early as possible. Therefore, these software developments have a higher potential to benefits for the software development companies by increasing the customer satisfaction compare to the other systems. (Kunda, D., 2001)

The research finding of various scholars evident that today it has seen a tendency of moving to the development of COTS (Commercial Off the Shelf solution), which is known as Standard Software Solutions as well Implementation of COTS is widely adopted by most of the market leaders and especially popular among the government and commercial sectors including telecom and financial services.

The intention of this study is to conduct the comparative analysis of development and implementation of Commercial Off the Shelf (COTS) and customized solution.