ADOPTION ANALYSIS ON CMMi IN SRI LANKAN SOFTWARE DEVELOPMENT COMPANIES

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Declaration

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Abstract

Most of the IT firms use IT processes & standards as a key marketing strategy to win IT projects. Since IT processes and standards are playing the key role of delivery quality outputs to their vendors, there is a high demand for companies who have adopted to a well-established maturity model. Capability Maturity Model Integration (CMMi) is considered as one of the well-known and established maturity models all over the world.

There were lot of other maturity models that came in to the picture, but only few were strong enough to retain and become flexible to the rhythm of the fast moving IT industry. CMMi is one of the maturity models which can cater the changes in the IT industry. Even though CMMi is a well-established maturity model around the world, in Sri Lanka the growth rate is low when compared with other markets, especially when comparing with Indian and Chinese markets. Hence understanding the barriers and the effectiveness of CMMi adoption is yet to be investigated in Sri Lankan IT firms. This research intends to fill the gap of the effectiveness of CMMi adoption in Sri Lanka as there is an on-going research to validate the barriers of CMMi adoption.

The "E-government evaluation: A framework and case study" (Gupta & Jana, 2003) was used as the base for this analysis. This framework provides the evaluation methods to measure the performance/ effectiveness of e- government adoption and those evaluation methods can be used to evaluate the performance of any other adoptions as well. The conceptual framework was developed further by focusing on one evaluation method and CMMi benefits and the measurements of benefits which indicate the effectiveness of CMMi adoption. During this research two surveys were done to derive the effectiveness of CMMi adoption in Sri Lankan context. The preliminary study was conducted to filter out the key benefits of CMMi that Sri Lankan companies are seeking for and along with the benefits and their measurements for each benefit were captured respectively. With the output of preliminary study, the main survey was conducted to analyse the effectiveness of CMMi adoption. The influencing factors to adopt CMMi and the recommendations for potentially interested companies were gathered from the adopted companies.

The research analysis was based on the company type (product base or service oriented) and the level of CMMi. As per the research finding of those categories, the CMMi adoption will be effective when some important criteria are met and those are stated under section 4.2.2.1. Further, this research reveals that future adoptions can be more effective if the recommendations are considered by potential interested companies. Thus the findings of this research analysis will be useful for both future and current adopters, in order to ensure the efficient usage of CMMi standard as the company's prime IT process.

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Table of Contents

List of Figures

List of Tables

List of Abbreviations

Abbreviation	Description
AR	Attrition rate
CMMi	Capability Maturity Model Integration
CDI	Client delight index
COPQ	Cost of Poor Quality
COQ	Cost of Quality
CPI	Cost Performance Index
DD	Defect Density
DRR	Defect Detection Rate
DR	Defect Rate
DRE	Defect removal efficiency
DSR	Defects Slippage Rate
DSI	Defect severity Index
DRR	Defect to remark ratio
EMM	E-learning Maturity Model
FP	Function points
ICTA	Information and Communication Technology Agency
ITIL	Information Technology Infrastructure Library
ISO	International Organization for standardization
OTD	On time delivery
OPM3	Organizational Project Management Maturity Model
PCMM	People capability maturity model
P3M3	Portfolio, Program and Project Management Maturity Model
P2MM	PRINCE2
ROI	Return in Investment
RCA	Root-Cause Analysis
SEI – CMU	Software Engineering Institute - Carnegie Mellon University
SPI	Schedule Performance Index
SV	Schedule Variance