COST OF SOFTWARE QUALITY (CoSQ) CONTRIBUTION TOWARDS, GAINING HIGHER RETURN ON INVESTMENT IN SOFTWARE DEVELOPMENT PROJECTS

By
O. W. W. De Silva

Supervised by
Dr L.L. Ekanayake

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Department of Civil Engineering
University of Moratuwa
Moratuwa

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Abstract

Information Technology plays a key and decisive role in the modern business world. Along with the ever increasing importance and the decisive role of Information Technology, Software Development has taken a prime place in the holistic context of Information Technology. Under the said circumstances, there arises the urgent need to have carefully planned, efficient quality assurances processes for these software systems. It is essential to put it place more accurate prediction of the potential costs and anticipated benefits of various quality assurances technically within a particular project as it facilitates for economically rational decision making.

The main goal of this research is to obtain an enhanced understanding pertaining to the examination of the impact of cost of software quality towards deciding the level of return on investment applicable to the software development projects.

The sample of this research was formed within Virtusa private limited in Sri Lanka who especially involved with IT project management responsibilities in organizations. Data was gathered from a corporate database and also through a structured questionnaire.

The main findings of the research shows once the company has identified its key processes and established adequate process control, quality can be easily linked to financial performance. It also reveals that the Software development project's ROI is a widely used approach for, measuring the value of a new and improved process or product technology, convincing managers to invest money and effort in improvement, and convincing them that the company can help solve structural problems, estimating how much effort to invest to solve a certain problem or estimating whether a certain intended benefit is worth its cost, deciding which process improvement to implement first as many organizations must prioritize these due to timing and resource constraints.

Limitation of this research was the small sample space. Although it was deemed that formal interviews and forum discussions would greatly benefit the purpose of this research, such research methodology could not be performed.

Declaration

"I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university to the best of my knowledge and belief and it does not contain any material previously published, written or orally communicated by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and summary to be made available to outside organizations"

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Signature of Candidate

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Date

The above particulars are correct to the best of my knowledge.

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Supervisor
Dr L.L. Ekanayake

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List of Abbreviations

BPR	Business Process Re-engineering
BS	British Standard
CMM	Capability Maturity Model for Software
COC	Cost of Conformance
CONC	Cost of Nonconformance
COQ	Cost of Quality
COSQ	Cost of Software Quality
GQM	Goal Question Metric paradigm
GUI	Graphical user interface
ISO	International Organization for Standardization
LSL	Lower Specification Limit
NPVCF	Net present value of the software quality revenues and costs or cash flows
NPVIC	Net present value of the initial investment and ongoing maintenance costs for the software quality initiative
PAF	Prevention – Appraisal – Failure -model
PQC	Poor quality costs
QC	Quality cost(s), quality costing
ROI	Return on Investment
ROSQ	Return on Software Quality
SQA	Software quality assurance
SQI	Software quality investment
SQM	Software quality maintenance
TCOQ	Total Cost of Quality
TQC	Total Quality Control
TQM	Total Quality Management
USL	Upper Specification Limit