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Title of the Thesis: Application of Sizing Estimation Techniques for  
Business Critical Software Project Management

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## **ABSTRACT**

Purpose of this study was to investigate the role of the application of sizing estimation techniques in the wide-spread poor performance of business critical software projects (particularly fixed-price projects) in the real world software projects and propose possible solutions to minimize the problems caused. Another aim of this study was to thoroughly examine three specific project delivery factors (viz. the best-fit SDLC-model section, effective quality assurance and proactive risk manager) on business critical software projects from the perspective of project performance and make useful contributions to help improvements in the existing knowledge-base and practices. Finally, the study also aimed to examine the impact of recent global recession and economic slowdown of 2008 on software industry with a view to identify the directions going forward, and possible actions that may be taken by software development organizations to minimize the impact of global recession.

Key contributions to the domain of business critical software project management, accomplished from this study are:

1. Proposed a simple, pragmatic and easy to deploy solution of sizing estimation stage-gates, to mitigate inherent risks associated with application of any of the

currently available sizing estimation techniques, for early size estimations on fixed-price, business critical software development projects.

2. Proposed a standard template for a basic PMO-charter that can be used as a starting point for new PMO initiatives in small and medium size software businesses, for real world deployment. This can be tailored further as per organizational needs and expectations from PMO.
3. Developed a decision support matrix for adding objectivity to SDLC-selection process.
4. Proposed a simple “Risk Register” that can be easily deployed on software development projects to kick-start risk management process, pending the availability any expensive software or tools for risk management on business critical software projects.