# A STUDY ON FACTORS ENDEMIC TO SOFTWARE PROJECT LIFECYCLE MANAGEMENT IN SRILANKA

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Degree of

Master of Business Administration

Department of Computer Science and Engineering

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Thesis submitted in partial fulfillment of the requirements for the degree Master of Business Administration in Information Technology

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## DECLARATION

"I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text. Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my thesis/dissertation, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or partion future works (such as articles or books).

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## ABSTRACT

In the software industry, the project manager faces a challenge to control the software development life cycle (SDLC) while looking into project management activities, which implies that the management of the project life cycle needs close attention. If project managers can identify the important factors that have a serious impact on the Sri Lankan software industry, it will be very helpful in managing the SDLC. Main research problem is "how the software development life cycle can be managed while considering the endemic factors specific to the Sri Lankan software context."

There are different kinds of software development life cycle models being used in the Sri Lankan software industry. Due to the number of models it is difficult to directly identify the endemic factors for management effectiveness in the models. Therefore, the approach the research has taken is to develop a common framework encompassing all the SDLC models to manage the endemic factors in the Sri Lankan software industry. This common framework is identified from the literature survey and a preliminary survey.





Based on the initial preliminary survey and literature survey, this research identifies the most important categories related to the SDLC management, such as consideration of the suitable life cycle, consideration of IT project factors, applicability of organizational context and customer satisfaction. Based on these categories the research focused on identifying the endemic factors related to the Sri Lankan software industry. Accordingly, the theoretical framework was built considering the main factors related to the SDLC. Based on the survey, the research identifies the factors which have an impact on the effectiveness of the SDLC management. Then the analysis phase filters out the endemic factors via statistical tests. Finally, this research proposes a software development lifecycle management framework based on the endemic factors specific to the Sri Lankan software industry. Based on this framework, project managers can consider the important factors related to managing the SDLC on endemic factors. In the future, researchers can consider related elements of endemic factors such as quality comparison.

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| | |
|---|---|
| CMMI | : Capability Maturity Model Integration |
| IT | : Information Technology |
| ISO | : International Organization for Standardization |
| ICTA | : Information and Communication Agency |
| ITIL | : Information Technology Infrastructure Library |
| MS | : Microsoft |
| MSF | : Microsoft Solutions Framework |
| PM | : Project Management |
| PMBOK | : Project Management Body of Knowledge |
| QA | : Quality Assurance |
| RAD | : Rapid Application Development |
| RUP | : Rational Unified Process |
| SDLC | : Software Development Life cycle |
| XML | : Extendible Markup Language |