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An Investigation of System Integrations and XML Applications within a NZ Government Agency

A thesis submitted in partial fulfillment of
the requirements for the degree of

Master of Information Systems

at

Massey University, New Zealand

by

Steven Li

2009

ABSTRACT

With the evolution of Information Technology, especially the Internet, system integration is becoming a common way to expand IT systems within and beyond an enterprise network. Although system integration is becoming more and more common within large organizations, however, the literature review had found IS research in this area had not been sufficient, especially for the development of integration solutions within large organizations. It has made research like this one conducted within a large NZ government agency necessary. Four system integration projects were selected and studied using case study research methodology. The case study was designed and conducted using guidelines mainly from the well-known R. K. Yin's (2002) "Case Study Research" book.

The research was set to seek answers for a series of research questions, which were related to requirements of system integration and challenges for solution development. Special attention had been given to XML applications, as system integration and XML were found to be coupled in many system integrations and frameworks during the literature review. Data were first gathered from all four projects one by one, and then the bulk of analysis was done on the summarized data. Various analysis methods including chain-of-evidence, root-cause-analysis and pattern-matching were adopted. The principles of interpretive research proposed by Klein and Myers (1999) and triangulation were observed.

In conclusions, a set of models have been derived from the research, namely a model for clarifying integration requirements; a model for integration solution architecture; a model for integration development life cycle and a model of critical success factor for integration projects. A development framework for small to medium size integration projects has also been proposed based on the models. The research also found XML application indeed would play an important role for system integration; the critical success factors for XML application included suitable development tools, development skills and methodologies.

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to my supervisors, Dr. Alexei Tretiakov and Dr. Dick Whiddett, for the invaluable guidance and generous help given throughout this research project. This research would never have been possible without their guidance and support.

I am deeply grateful to my employer, a New Zealand government agency, for supporting me during my entire study in Massey University. I am especially grateful to the people from the IT team of the agency for allowing and assisting me to conduct this research project. Special thanks also go to people who have provided comment and feedback for the draft report. Without the generous help from all these people, this research would not have been possible to complete.

I am as ever, especially indebted to my family for their love and support throughout my study. They are the ultimate source for my energy and study effort. I wish to express my wholehearted appreciation and gratitude to them all.

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