

**THE INFULENCE OF COMPLEXITIES OF ERP
FOR EFFECTIVE IMPLEMENTATION AT MEDIUM
SIZED COMPANIES IN SRI LANKA**

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Department of Civil Engineering

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Sri Lanka

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The Dissertation submitted to the Department of Civil Engineering of University of Moratuwa in partial fulfillment of the requirement for the Degree of Master of Business Administration in Project Management.

Department of Civil Engineering

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Sri Lanka

February 2012

Declaration

I hereby certify that this dissertation does not incorporate any unacknowledged or previously submitted material for a degree or diploma in any university, to the best of my knowledge and it does not contain any material previously published, written or orally communicated by another person except where due reference is made in the text.

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This is to certify that this thesis submitted by L S Ratnayake is a record of the candidate's own work carried out by her, under my supervision. The matter embodied in this thesis is original and has not been submitted for award of any other degree.

Prof. A.A.D.A.J. Perera
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Abstract

Enterprise resource planning (ERP) software plays a critical role in today's cutting-edge business world. By bringing a company's different functions together into one large integrated system, an ERP system creates a plethora of opportunities for growth and increased productivity. Medium sized enterprises in the developed world are well ahead in their usage of ERP systems. However, the available studies pertaining to the use of ERP systems in developing countries reveal that, the medium scaled businesses in Sri Lanka are far behind in adaptation of ERP systems. Literature reveals that there are many significant factors contributing towards the said low level of adaptation. Out of the many factors identified, the complexity of ERP systems is one of a key contributing factor for the low adaptation of ERP systems in medium scaled enterprises in Sri Lanka.

The main objectives of this research are to identify the influencing factors that contribute towards the complexity of ERP for effective implementation, and to establish an ERP complexity index for the advancement of mid-sized companies in Sri Lanka. Further this research established some important recommendations for the acquisition and implementation of ERP systems for medium sized enterprises.

The research methodology used was quantitative data gathered via questionnaire surveys of ERP users in medium scaled enterprises in Sri Lanka. Secondary data was gathered from trusted internet sources and from previous researches carried out for information systems applications in Sri Lanka. For the survey 120 ERP users were selected from medium scaled enterprises and from IT experts who possess ERP knowledge and experience. Primary data constituted 91 responses gathered via the online survey published, face to face interviews, telephone interviews and printed copies of the survey, which was used for the sample validation.

Outcome of the research identified that the key contributing factors for the complexity of ERP systems are product dimension, people factor, project dimension and company business processes and there is a strong correlation among variables. Complexity analysis survey results revealed that SAP and Oracle records higher complexity index and Microsoft Dynamics and Web ERP records lower complexity indexes. Further secondary data revealed that SAP and Oracle records highest ERP per user cost. ERP's such as IFS Applications, Dynamics GP, and Sage Accpacc, Web ERP records less ERP per user cost compared to SAP and Oracle. As per the research analysis, customization of ERP system is another key concern apart from the above mentioned complexity and cost analysis in the ERP selection process for medium scaled businesses.

Key Words: Enterprise Resource Planning, Medium Scale Business, Complexity Index, SAP, Oracle, IFS Application, Dynamics GP, Sage Accpac, Cost Analysis.

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List of Abbreviations

ACM	:	Association for Computing Machinery
EDB	:	Export Development Board
ERP	:	Enterprise Resource Planning
FDCCI	:	Federation of Chambers of Commerce and Industry
IDB	:	Industrial Development Board
IS	:	Information Systems
IT	:	Information Technology
JIT	:	Just- in-Time
LOC	:	Lines of Code
MRP	:	Material Requirement Planning
NDB	:	National Development Bank
ROI	:	Return on Investment
SME	:	Small and Medium sized Enterprises
TCF	:	Technical Correction Factors
TCO	:	Total Cost of Ownership
UFP	:	Unadjusted Function Points