LB/DON/58/06

# IT READINESS OF INSURANCE ORGANISATIONS IN SRI LANKA FOR INFORMATION SYSTEMS AUDITING

LIBRARY
UNIVERSITY OF MORATUWA, SRI LANKA
MORATUWA

By

**P. U. C. Pathinagoda**

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

The Dissertation was submitted to the Department of Computer Science & Engineering of the University of Moratuwa in partial fulfillment of the requirement for the Degree of Master of Business Administration.

University of Moratuwa
86339

004"05"
004:65(043)

Department of Computer Science & Engineering
University of Moratuwa

December 2005

86339



86339

# 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 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"

P.U.C. Pathmagoal

Signature of the Candidate

Date: 29/12/2005

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

To the best of my knowledge, the above particulars are correct.

***UOM Verified Signature***

30/12/2005

Supervisor

# Abstract

The current trend in business world is to use IT wherever it's possible. So lots of manual systems and procedures have been replaced with Computer Systems over the years. There is no difference in the insurance industry also. Central Database, Data Warehousing, Online Fund Transferring and Corporate Websites or Intranet are no more strange terms in the insurance industry. But the controlling and detecting methods or in other words internal audit techniques have not been changed over the period accordingly. This is the area where traditional internal auditing lags and IS Auditing gains the lead. But in Sri Lanka where most of the CEOs are accountants who are not very familiar with IT still believe traditional Internal Auditing will do the job for them. As a result of it frauds, errors and mistakes have been increased in the insurance business during the last decade. This is a critical issue in an industry where a company has to look after customers' money for 20 to 30 years.

Insurance simply means sharing the risk among a large number of people in the society at a price. In Sri Lanka, there is a rapid growing interest about insurance is visible among people not only in Colombo & suburbs but also in remote areas. As a result of this trend, almost all the insurance companies invested heavily in the industry during last few years. At the same time all the insurance companies are in a heavy competition in order to increase their share in the market. Even though these companies use lot of tactics to improve the awareness about insurance, they have only captured less than 10% of the potential market or in other words less then 10% of the Sri Lankan population owns an insurance policy.

But as mentioned earlier if the tendency is to increase the number of frauds, errors and mistakes in the industry customers will loose their faith on insurance and it will hinder the growth of the industry. So the Information Systems Auditing in insurance industry can be recognized as an industry requirement under current circumstances. So in this research my objective was to develop a framework or a guideline to implement and practice IS Auditing in Sri Lankan Insurance organisations. So I think the two given guidelines in Chapter 6.2 will cater for an industry requirement in the Insurance industry in Sri Lanka.

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

# Acknowledgement

I would like to acknowledge my gratitude to Dr. Neranjan Gunawardane, Senior lecturer of Department of Civil Engineering of University of Moratuwa, for his useful advices, guidance and suggestions, which greatly contributed towards the success of this research.

I pay my gratitude to everyone who contributed their time for being interviewed and for sharing their perceptions, attitudes, ideas some time even their most private information.

I thank my family members and my colleagues and the management of my office Ceylinco Insurance Company Ltd. for the support they have given me over the time.

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

# Contents


**Acknowledgement** 1

**Contents** 2 - 6

**Chapter 1 – Introduction**

1.1 Background 7 - 8

1.2 Problems Identified 9 - 10

1.3 Research Objectives 10

1.4 The Method of Study Going to be adopted 10 - 11

1.5 Literature Review 11 - 12

1.6 Expected outcome of the research 12

**Chapter 2 – Literature review**

2.1 Previous researches on this Topic or similar Topics 13 - 15

2.2 Fundamentals of Theories and Concepts that are relevant to the Topic and the research problem

2.2.1 Fundamentals of Insurance 15 - 18

2.2.1.1 The Challenges for insurers today 18 - 21

2.2.1.2 The impact of e-business on the insurance industry 21 - 23

2.2.2 Fundamentals of Information Systems Audit 24

2.2.2.1 Scope of Information Systems Auditing 24 - 25

2.2.2.2 IS Audit and Control Association (ISACA) 25 - 26

2.2.2.3 Standards for Information Systems Control Professional 26 - 27

2.2.3 Risks associated with IT and E-business in Insurance

2.2.3.1 Risks associated with IT in Insurance 28 - 33

2.2.3.2 Risks associated with E-business in Insurance 34 - 35

2.3 The function of the IS Auditor in an Insurance Organization 36

2.4 Limitations of the Traditional Internal Auditors in Sri Lanka 37

2.5 Expected benefits of this research to the local insurance industry 37 - 39


Electronic Theses & Dissertations
lib.mrt.ac.lk

**Chapter 3 – Methodology**


3.1 Model for the research project 40

3.2 Research Methodology for assessment of IT Level and ISA Level in Insurance Organizations in Sri Lanka 41

3.2.1 Developing the survey plan to collect information 41

3.2.1.1 Assess the value of the research 42

3.2.1.2 Specify the data collection method 42 - 44

3.2.1.3 Sampling Plan 44 - 50

3.2.1.4 Data Collection 50 - 52

3.2.1.5 Specify the techniques of measurement 53

3.2.2 Implementation of the survey plan (Collecting and analyzing data) 54

3.2.2.1 Data Analysis 54 - 55

3.2.2.2 Tabulate Information 55 - 56

3.2.2.3 Facilitation to obtain required information 57

3.2.2 Interpreting and reporting of findings 57

3.3 Methodology to identify internationally recognised benchmark IS Audit Procedures

3.3.1 By studying industry recognized best practices by four big firms KPMG, E & Y, PriceWaterhouseCooper and Arthur Anderson 57 - 58

3.3.2 By Studying Information Systems Audit Standards set by the Information Systems Audit and control Association (ISACA) of USA 58

3.4 Methodology to identify the suitability of the internationally recognised benchmark IS Audit procedures to local insurance organizations 59


University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

**Chapter 4 – Findings**


4.1 Findings related to the evaluation of existing Information Technology Level of insurance organisations of Sri Lanka

4.1.1 General View of the Sri Lankan Insurance Industry 60 - 64

4.1.2 Information Technology decision making in Insurance Companies 65

4.1.3 A Separate department for handling and managing IT operations 65

4.1.4 Different divisions within the IT department 66

4.1.5 Information related to the systems development 66 -67

4.1.6 Information Technology Role in Process Planning and Support 67 - 68
4.1.7 Information Technology Role in Operations Support 68 - 69
4.1.8 Information Technology Role in Sales & Marketing 69 - 70
4.1.9 Online connectivity of the branches and the head office 70
4.1.10 Method of Connectivity 71
4.1.11 The Type of the System 71
4.1.12 Networking & Communication facilities available in branch level 72
4.1.13 Company Web site 72
4.1.14 Development and maintenance of the web site 73
4.1.15 When did The Insurance Company Built Its Web Site 73
4.1.16 Basic Contents Of The Web Site 74
4.1.17 Interactivity Of The Web Site 74 - 75
4.1.18 Online Need Analysis & Real Time Quotations From The Web Site 75
4.1.19 Services provide to Policyholders through Company website 75 - 76
4.1.20 Handling Customer Inquires & Complains 76 - 77
4.1.21 Mobile Commerce Applications (M-commerce for Policyholders) 77
4.1.22 Idea About Providing M-Commerce Applications To Policyholders 77 - 78
4.1.23 Any Insurance Products With Other Non-Insurance Companies 78
4.1.24 Idea about Integrated Insurance Products / Services 79
4.1.25 Method of Interacting With Business Partners 79 - 80
4.1.26 Future Investments in Information Technology 80 - 81
4.2 Findings related to the evaluation of existing Information Systems Audit Level of insurance organisations of Sri Lanka
4.2.1 General View of the Sri Lankan Insurance Industry 81 - 82
4.2.2 Information Systems Audit decision making in Insurance Companies 83
4.2.3 A Separate department for handling and managing ISA operations 83
4.2.4 No of Staff Members in the IS Audit Department 84
4.2.5 What is the capacity of the head of the IS Audit Department 84
4.2.6 To whom the IS Audit Department is reported in your organization 85
4.2.7 Information related to the IS Audit Process in your organization 85 - 86
4.2.8 If you don't have a separate IS Audit Department then who handles ISA operations in your organization 86

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

4.2.9 Information related to business Process Planning and Support by ISA 87
4.2.10 Information related to Operations Support by ISA 88
4.2.11 Technical Competence of ISA Staff in your organization 89
4.2.12 ISA Infrastructure and Investment 90
4.2.13 Annual expenditure on ISA as a percentage of expenditure on IT in the same year 91
4.2.14 Annual expenditure on ISA as a percentage of total revenue of the Organization 91
4.2.15 Frequency of IS Audit Assignments carried out in your organization 92
4.3 Findings related to the survey on internationally recognized benchmark IS Audit Procedures / Practices 93
4.3.1 Standards for Information Systems Auditing issued by the Standard Board of the Information Systems Audit and Control Association (ISACA) 93 - 96
4.3.2 The Information Systems Audit Practicing Manual of KPMG Ford Rhodes, Thornton & Company Limited (used in 2004) 96 - 103

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

**Chapter 5 – Discussion**

5.1 Analysis of results of existing IT Level & ISA Level Assessment of Sri Lankan Insurance Organisation and identified Benchmark IS Audit Procedures and their suitability to Sri Lanka 104
5.2 General View of the Sri Lankan Insurance Industry 104 - 105
5.3 Existing IT level in insurance organizations in Sri Lanka 106 - 107
5.3.1 Networking & Communication Facilities 107 - 108
5.3.2 Customer Relations & Information Technology 108 - 110
5.3.3 Business-to-Business Transactions & Information Technology 110
5.3.4 Investments in IT 110 - 111
5.3.5 The existing IT Level in insurance organizations in Sri Lanka 111
5.4 Existing IS Audit level in insurance organizations in Sri Lanka 112 - 115
5.4.1 Investments in IS Auditing 115 - 116
5.4.2 The existing IS Audit Level in insurance organizations in Sri Lanka 116 - 117

5.5 Evaluation of the suitability of identified benchmark IS Audit Standards / Procedures to insurance organizations in Sri Lanka 117 - 119

**Chapter 6 – Conclusions & Recommendations**

6.1 Conclusions 120 - 122

6.2 Recommendations 123 - 124

**Appendix A**

A.1 IT Level Evaluation questionnaire for Insurance Organisations in SL 125 - 135

A.2 ISA Level Evaluation questionnaire for Insurance Organisations in SL 136 - 142

**Appendix B**

IT Level Assessment and ISA Level Assessment Information Tables 143 - 145

**Appendix C**

References 146 - 147

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk