



**SRI LANKA SOFTWARE EXPORT INDUSTRY:
AN EVALUATION USING
THE SOFTWARE EXPORT SUCCESS MODEL**

By

H M SN Dharmawardhana

Supervised by

Dr. R. Halwathura

Department of Civil Engineering

University of Moratuwa

2010

94814



Abstract

The last twenty-five years have seen an explosive growth in the software industry. Annual growth in the global software industry has been above 15 per cent since the early 1990s and remains on rising trend. Many countries world-wide are becoming active or interested in software exports. The major software industries of the world are located in the world's richest economies; countries such as the USA, Japan, UK, France, Germany, Italy that have been building those industries since in the late 1960s. Those which developed a software industry after the 1970s were called 'followers' and the three largest software 'followers' are 3Is - India, Ireland & Israel. The local software export industry also elapses a period of steady growth. The key factor which contributes for the development of the software industry is the expansion of the outsourcing opportunities received from developed countries. The Software Exporters Association (SEA) of Sri Lanka has targeted to achieve total exports of US\$ 1.0 billion in 2012. To achieve this target Sri Lanka need to compete with \ industry giant such as first-tier countries - India, Ireland, Israel, etc and the countries in the second-tier China, Russia etc.

The rationale of this research, is to focus on the first-tier follower countries that successfully built export-oriented software industries, to gain knowledge from their experiences and to then examine the status of 'second-tier' follower - 'Sri Lanka' in the light of those experiences. Further to identify strengths and weaknesses of the Sri Lankan Software Export Industry using Software Export Success Model. Even though the scope of this research is limited to the particular model, the methodology and the findings intend to broaden the Sri Lankan software export industry while enlightening the future research works.

l.astly. in the thesis, accepting the research findings as baseline, it recommends various strategies clutched by analysing '3Is' using the success model.

DECLARATION

I confirm that, except where indicated through the proper use of citations and references, this is my own original work. I also confirm that my work included in this dissertation in part or whole has not been submitted for any other academic qualification at any institution. Further, I confirm that subject to final approval by the Board of Examiners of University of Moratuwa, a copy of this dissertation may be placed upon the shelves of the library of the University of Moratuwa and may be circulated as required.



Dharmawardhana H M S N (08/9770)

14/02/2010
Date

To best of my knowledge the above particulars are correct.

UOM Verified Signature

Dr. R. Halwathura (Supervisor)

Department of Civil Engineering

University of Moratuwa

University of Moratuwa, Sri Lanka

Electronic Theses & Dissertations

www.lib.mrt.ac.lk

Date

Approved by the Examination Committee:

MBA in Project Management

Department of Civil Engineering

University of Moratuwa, Sri Lanka

January, 2010.

Acknowledgement

This dissertation is an outcome of a constant effort of a research for nearly ten months. During this period I have been able to obtain support and cooperation from many who helped me in numerous ways to make this academic venture a success.

Firstly, I would like to extend my sincere gratitude to my supervisor, Dr. Rangika Halwathura, Department of Civil Engineering, University of Moratuwa, whose advice and guidance were invaluable.

My deepest gratitude goes to Dr. Ashoka Perera and Dr. Lesly Ekanayake, Department of Civil Engineering, University of Moratuwa, who were in the panel to check the progress of the research and providing valuable advices.

I further extend my deepest gratitude to all academic and non-academic staff of Department of Civil Engineering, University of Moratuwa and library staff of University of Moratuwa for their support in numerous ways.

Next, I deeply cherish the management of Informatics International Limited, my employer, for providing required leave to work on this research.

My deepest appreciation goes to all IT professionals who participated and contributed their views, which lead to comprehend my research results. I also would like to thank all my friends who are in the IT field for greatly supporting me. Special thanks extend to Ms. Dushanthi Perera for her immense support and guidance provided throughout the research.

Lastly and most importantly I would like thank my wife Tharindra, my brother Heshan, my parents, wife's parents and sister in law. Without their help and support this endeavour would have been impossible.

Dharmawardhana H M S N

08/9770

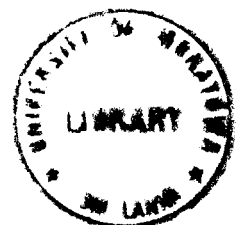
Table of Contents

Declaration.....	ii
Abstract	iii
Acknowledgement	iv
Table of Contents.....	v
List of Figures	vii
List of Tables.....	viii
List of Abbreviations.....	ix
Chapter 1 Introduction	1
1.1 Research Background	1
1.2 Problem Statement.....	6
1.3 Research Objective	6
1.4 Scope of the Research	6
1.5 The Significance of the Research.....	7
1.6 Guide to the Report.....	8
Chapter 2 Literature Review.....	9
2.1 Chapter Overview	9
2.2 Software Export Models and Success Factors	9
2.2.1 Porter’s Diamond Model.....	9
2.2.2 Oval Model	11
2.2.3 Software Export Success Models.....	12
2.2.4 Conclusion of the Success Models.....	14
2.2.5 Other Success Factors.....	15
2.3 Software Export Development Strategies	15
2.4 Three Tiers of Software Exporting Countries.....	16
2.5 First-Tier Software Followers: The ‘3Is’	17
2.5.1 India	19
2.5.2 Ireland	20
2.5.3 Israel.....	22
2.5.4 The Concise of the ‘3I’ Nations.....	23
2.6 Factors in Successful Software-Export Followers	24
2.7 Summary	26
Chapter 3 Methodology	27
3.1 Chapter Overview	27
3.2 Data Sources for Sri Lankan Context	27
3.3 Summary	28
Chapter 4 Analysis and Discussion.....	29
4.1 Chapter Overview	29
4.2 Analysis.....	29
4.2.1 International Demand.....	30
4.2.2 National Vision and Strategy	31
4.2.3 International Linkages and Trust	32
4.2.4 Software Industry Characteristics	33

4.2.5 Supply Factors and Infrastructure	33
4.3 Strengths and Weaknesses	34
4.4 Chapter Summary	35
Chapter 5 Conclusion and Recommendations.....	36
5.1 Chapter Overview	36
5.2 Conclusion	36
5.3 Recommendations.....	37
5.4 Enhancement to the Research	38
5.5 Chapter Summary	39
References & Bibliography.....	40
Appendices	45



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



List of Figures

Figure 1-1 Export income by 2012 for major commodities	5
Figure 2-1 Determinants of National Competitive Advantage	10
Figure 2-2 The “Oval model” depicting national software export success factors	12
Figure 2-3 The Software Export Success Model.....	13
Figure 4-1 Growth of Software Exports (\$US million)	30
Figure 5-1 Sample frame work with weights assigned	40



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

List of Tables

Table 1-1 Chapter Outline	8
Table 2-1 Thresholds between the tiers.....	17
Table 2-2 Software Export from the 3Is (\$US million)	18
Table 2-3 National Software Strategies.....	23
Table 2-4 First-tier country success factor summary	25
Table 3-1 Data Sources on the Research.....	28
Table 4-1 Growth of Software Exports (\$US million).....	29
Table 4-2 Other software indicators for developing/transitional second-tier followers ...	30
Table 4-3 Sri Lanka's Software Export Industry, Strengths and Weakness	34
Table 5-1 National Government Activities to Support the Industry	38



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

List of Abbreviations

3I	India, Israel, Ireland
CEO	Chief Executive Officer
CMM	Capability Maturity Model
CMMI	Capability Maturity Model Integration
GCE	General Certificate of Education
GDP	Gross domestic product
GM	General Manager
GOSL	Government of Sri Lanka
ICT	Information and Communication Technologies
ICTA	Information and Communication Technology Agency
ISO	International Organization for Standardization
IT	Information Technology
MNC	Multinational Company
OECD	Economic Co-operation and Development
R&D	Research and Development
SEA	Software Exporters Association
SLASI	Sri Lanka Association for Software Industry
SLASSCOM	Sri Lanka Association of Software and Service Companies
SLICTA	Sri Lanka Information and Communication Technology Association
UK	United Kingdom
USA	United States of America