

**TRACEABILITY AS A TOOL FOR THE COMPETITIVE ADVANTAGE OF
LOGISTICS FIRMS
(A SRI LANKAN LOGISTICS SERVICE PROVIDERS PERSPECTIVE)**

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Research submitted in partial fulfilment of the requirements for the degree of
Master of Business Administration in Supply Chain Management



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DECLARATION

I declare that this is my own work, and this thesis/dissertation 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. I retain the right to use this content in whole or part in future works (such as articles or books).

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The above candidate has carried out research for the Master's thesis under my supervision. I confirm that the declaration made above by the student is true and correct.

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Signature of the Supervisor:

Date:

DEDICATION

To **Mevni, Thisath & Kanchana**, who have been affected in every possible means by this pursuit.

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ABSTRACT

Logistics services is an imperative sector of Sri Lankan economy Contributing 2.5% to annual GDP & it provides nearly 50,000 direct Employment opportunities to the citizens.

According to the Global Container Port Performance Index (CPPI) 2021, Colombo port was moved to the 22nd among 370 ports globally and Supply chain management services in Sri Lanka inevitably attract many Local & global Service providers.

The possibility of traceability integration in a Logistics service providers operation is linked with IT adoption; And conceptual resource-based view (RBV) framework is pertinent to same, which can be led to enhance LSP's capabilities & firm performance.

This paper focus on evaluating the traceability application on a Sri Lankan LSP and its resultant possibilities of enhancing the LSP's competitive advantage over the Fierce competition.

Through the analysis of existing qualitative data, this study has identified the global Traceability solutions in practice, positive negative effects & suitability of them in Sri Lankan context. Recognized websites, journal articles, Previous studies, Publications of application developers, etc. were used as the secondary data sources.

This study selected Questionnaire-based survey and the Delphi method as primary data collection methods. The target population and sample include Sri Lankan logistics service providers and commercial customers related to multiple industries. Purposive sampling is used to select appropriate samples which are aligning with the purpose of the research. Primary data assist to determine the market requirement & the opportunity for traceability solutions as a VAS service for LSP's. Delphi method is conducted to identify & conclude new solutions based on expert opinion.

Multiple methods were used for data analysis including central tendency measures, descriptive analysis, Likert scale analysis and error identification and reliability analysis etc. In addition, EXCEL and SPSS software were used to generate outputs from the analyzed data.

Several research aspects and many industry attributes were identified through the analyzed data. It is learnt that Sri Lankan logistics service providers can benefit greatly from implementing traceability systems to optimize their operations and deliver better customer experiences as data shows that the market demand does exist for track & trace solutions. By providing real-time information on the movement of goods and materials, 3PL companies can optimize their operations, enhance customer service, and comply with regulatory requirements.

Paper suggests that Blockchain technology-based solutions would be effective as it gives comprehensive solution to the engrained problems of the traceability usage, such as contract execution.

The findings can inform logistics firms, policymakers, and industry stakeholders in Sri Lanka and other similar contexts about the importance of traceability and its potential benefits. Further research avenues, such as the impact of traceability on supply chain performance and customer satisfaction, could be explored to enhance the understanding of this emerging area.

Key words: Resource-based view; Traceability; Supply chain performance, Logistic Service Providers; competitive advantage.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ABSTRACT.....	v
LIST OF ACRONYMS	xii
LIST OF FIGURES	xiii
<i>LIST OF TABLES</i>	xiv
1 INTRODUCTION	1
1.1. Background of the research	1
1.2 Research Gap, Research problem and Questions.....	1
1.3 Importance of the study	4
1.4 Limitations	5
1.5 Research Layout.....	6
2 LITERATURE REVIEW	8
2.1 Supply Chain Management.....	8
2.2 Supply Chain Performance	9
2.2 Supply Chain Efficiency	11
2.3 New Trends and Technologies in Supply chain Management.....	12
2.4 Concept of Traceability in supply chain management.....	15
2.5 The importance of traceability in supply chain Management.....	19
2.5.1 Enhanced Visibility:.....	19
2.5.2 Supply Chain Efficiency:	20
2.5.3 Quality Control:	21
2.5.4 Compliance and Regulations:	21
2.5.5 Customer Satisfaction:	22
2.5.6 Sustainability and Ethical Practices:	22
2.6 Technical Fundamentals of Logistics Track & Trace Systems.....	22
2.6.1 Positioning technologies in logistics – Outdoor.....	23
2.6.2 Positioning technologies in logistics - Indoor.....	24
2.7 Logistics Track & Trace systems for supply chain stakeholders.....	26
2.7.1 3PL Online Tracking Portals:	27
2.7.2 Mobile Applications:	27
2.7.3 Carrier Tracking Systems:	28
2.7.4 Electronic Data Interchange (EDI) systems:.....	29

2.7.5	Integrated logistics Optimization Systems.....	30
2.7.6	Blockchain & IoT based Track & Trace Solutions.....	31
2.8	Outsourcing of 3PL services & Key criteria for the Selection of a 3PL Service provider.....	32
2.8.1	Quality of service & Standards	33
2.8.2	Amount and standard of fixed assets	34
2.8.3	Delivery performance	34
2.8.4	Operational performance.....	34
2.8.5	Compatibility & industry specialization	35
2.8.6	Financial stability.....	35
2.8.7	Geographical spread and range of services.....	35
2.8.8	The opportunity for long-term relationship	36
2.8.9	Reputation.....	36
2.8.10	Optimum cost.....	36
2.8.11	Flexibility in operation and delivery	37
2.8.12	The quality of management.....	37
2.8.13	Information sharing and trust.....	37
2.8.14	Information technology capability.....	38
2.9	Freight forwarder Competitiveness & Resource based view	38
2.10	Chapter Summary	41
3	METHODOLOGY	42
3.1	Research Problem	42
3.2	Research Problem and sub problems	42
3.2.1	Sub Problem 01.....	42
3.2.2	Sub Problem 02.....	42
3.3	Research Objectives.....	43
3.4	Research Framework Design	43
3.5	Data Collection	44
3.5.1	Primary Data	44
3.5.2	Secondary Data	44
3.5.3	Quantitative or Qualitative Data Collection.....	45
3.6	The Delphi Method.....	45
3.7	Questionnaire Survey.....	47
3.7.1	Population and Sample Selection.....	47

3.7.2	Questionnaire Development.....	48
3.7.3	Questionnaires Implementation	50
3.7.4	Important Research Challenges	50
3.8	Data Analysis	50
3.8.1	Identifying the potential of commercial customers and the logistics service providers	50
3.8.2	Analyzing Rating Scales	51
3.8.3	Reliability and validity analysis	51
3.8.4	Analyzing the use of tracking and tracing tools.....	52
3.9	Chapter Summary	52
4	RESEARCH FINDINGS.....	53
4.1	Introduction.....	53
4.2	The Delphi Method	53
4.3	Key Findings of the Delphi method	54
4.3.1	The current implementations of logistics tracking and tracing mechanisms in Sri Lanka	54
4.3.2	The 3PL operations that can be optimized through tracking and tracing mechanisms in Sri Lanka	54
4.3.3	The criteria's customers pay attention to, when choosing tracking and tracing mechanisms (Technical and financial) in Sri Lanka	55
4.3.4	The expert recommendations that are needed to generate logistics tracking and tracing solutions in Sri Lanka	56
4.3.5	Possible Challenges of tracking and tracing implementations.....	58
4.4	General Information Analysis- Descriptive Analysis	59
4.4.1	Profile Analysis of Respondents - Descriptive Analysis	60
4.4.2	Potential of commercial Customers - Descriptive Analysis	61
4.4.3	Potential of the logistics service providers - Descriptive Analysis.....	63
4.5	Commercial customer's logistics requirement analysis	65
4.5.1	Customer requirement identification	65
4.6	Analysis on Current practices and problems of Logistics Traceability	69
4.6.1	Current Use of QR, RFID, Barcode or EDI Systems:.....	71
4.6.2	Shipment Visibility information	72
4.6.3	Opinion and willingness on new technological systems to enhance tracking and traceability.....	73
4.7	Analysis of Recommendations and Suggestions:	74
4.7.1	Challenges related to tracking and tracing practices – Customer Perspective .	74

4.7.2	Suggestions and Current Solutions – Customer Perspective	75
4.8	Reliability Analysis for Likert Scale.....	76
4.9	Chapter Summary	76
5	DISCUSSION.....	78
5.1	Introduction	78
5.2	General Information Analysis - Descriptive Analysis	78
5.2.1	Profile Analysis of Respondents - Descriptive Analysis	78
5.2.2	Potential of Commercial Customers - Descriptive Analysis.....	78
5.2.3	Potential of the Logistics Service Providers - Descriptive Analysis.....	79
5.3	Commercial Customer’s Logistics Requirement Analysis	80
5.4	Analysis on Current Practices and Problems of Logistics Traceability	81
5.4.1	Accessibility to Shipment Information	81
5.4.2	Current Use of QR, RFID, Barcode, or EDI Systems.....	82
5.4.3	Shipment Visibility Information	82
5.5	Opinion and Willingness on New Technological Systems to Enhance Tracking and Traceability	82
5.6	Analysis of Recommendations and Suggestions.....	83
5.6.1	Current Challenges Related to Tracking and Tracing Practices – Customer Perspective	83
5.6.2	Suggestions and Current Solutions – Customer Perspective	83
5.7	Delphi Session Outcome.....	83
5.7.1	Current Logistics Tracking and Tracing practices in Sri Lanka	84
5.7.2	Areas for Optimization Through Tracking and Tracing in 3PL Operations in Sri Lanka	84
5.7.3	Criteria for Selecting Tracking and Tracing Mechanisms in Sri Lanka (Technical and Financial)	85
5.7.4	Expert Recommendations for Logistics Tracking and Tracing Solutions in Sri Lanka	85
5.7.5	Challenges of Tracking and Tracing Implementations	86
5.8	Reliability Analysis for Likert Scale.....	87
5.9	Chapter summary	87
6	CONCLUSION AND RESEARCH IMPLICATIONS.....	89
6.1	Introduction.....	89
6.2	Recommendations.....	89
6.2.1	Approaches and mechanisms for logistics tracking and traceability in Sri Lanka	90

6.2.2	The 3PL operations that can leverage through logistics tracking & traceability	90
6.3	Research implications	91
6.4	Research Limitations	91
6.5	Future Research Areas	92
6.6	Chapter Summary	93
7	REFERENCES	95

LIST OF ACRONYMS

3PL	Third-Party Logistics
4PL	Fourth-Party Logistics
CLM	Collaborative Logistics Management
CPFR	Collaborative Forecasting Planning and Replenishment
E2E	End-to-end
EDI	Electronic Data Interchange
FTMS	Field Task Management System
GPS	Global Positioning System
GS1	Global system of standards
KPI	Key Performance Indicators
LCT	Logistics Control Tower
LSI	Logistics Service Intermediary
LSP	Logistics Service Provider
OFSCT	Organic Food supply chain traceability
QTF	Quality Task Force
RFID	Radio Frequency Identification
SCOR	Supply-Chain Operations Reference Model
TEU	Twenty-foot Equivalent Unit
TMS	Transport Management System
WMS	Warehouse Management System
BCT	Blockchain technology
IoT	Internet of Things

LIST OF FIGURES

Figure 2-1 : <i>Adoption Rate of Supply chain Technologies</i>	14
Figure 2-2 : <i>Impact of technologies on supply chain</i>	19
Figure 2-3 : <i>Sri Lankan 3PL's Online Track & Trace Portal</i>	27
Figure 2-4 : <i>Navisphere® Mobile Application for Track & Trace</i>	28
Figure 2-5: <i>Maersk Tracking system</i>	29
Figure 2-6: <i>SAP Global Track and Trace Overview</i>	30
Figure 2-7 : <i>Blockchain Based TMS System in Sri Lanka</i>	32
Figure 2-8: <i>Resource based view & the Firm Competitiveness</i>	39
Figure 3-1 : <i>Research Framework – Methodology</i>	44
Figure 3-2 : <i>Procedure of the Delphi Method</i>	46
Figure 3-3: <i>Questionnaire Survey Procedure</i>	47
Figure 4-1: <i>Respondent's Position</i>	60
Figure 4-2: <i>Organization Size & Industry Experience</i>	61
Figure 4-3: <i>Business Operating Industry</i>	62
Figure 4-4: <i>Type of business operation & Service Distribution</i>	63
Figure 4-5 : <i>Industry Experience & the organization Size</i>	64
Figure 4-6 : <i>Client Classification & Service providing Capacity</i>	65
Figure 4-7 : <i>Customer Expectation Vs Current Experience</i>	69
Figure 4-8 : <i>Accessibility to Shipment information</i>	70
Figure 4-9 : <i>Current Use of QR, RFID, Barcode or EDI Systems</i>	71
Figure 4-10 : <i>Current Experience of Shipment Information</i>	72
Figure 4-11 : <i>Awareness and future plans on deploying new system & willingness to invest for a Track Tracing solution</i>	73

LIST OF TABLES

<i>Table 2-1 : The four major criteria of Supply Chain Management concept.....</i>	<i>9</i>
<i>Table 2-2 : Components of the Logistics Performance Index.....</i>	<i>16</i>
<i>Table 4-1 : Logistics Requirements</i>	<i>66</i>
<i>Table 4-2 : Customer Expectations & current Experience.....</i>	<i>67</i>
<i>Table 4-3 : Challenges to tracking and tracing practices</i>	<i>75</i>
<i>Table 4-4 : Reliability Analysis.....</i>	<i>76</i>