

DECLARATION OF THE CANDIDATE

COLLABORATION MODELING FRAMEWORK AND TRADING PORTAL FOR AGRICULTURAL PRODUCTS

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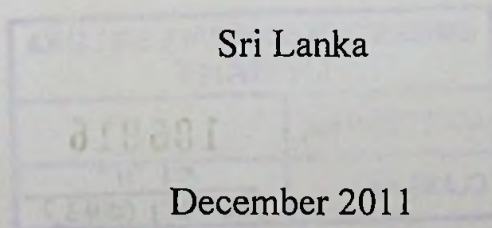
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To my loving **mother's** boundless **courage** and **commitment**...!

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ABSTRACT

In Sri Lanka, the agricultural sector is the main source of livelihood of the rural population, which accounts for 70% of the total population. Although, the agricultural supply chain of Sri Lanka is full of imperfections and hence inefficient.

Meanwhile, several studies observed that the clear majority of small and medium-sized enterprises in Sri Lanka accept the importance of information and communication technology and e-commerce in their businesses. By considering these facts, we recognized the necessity of using e-commerce applications in agriculture sector in Sri Lanka.

In this research we proposed trading portal environment to complete planning, identification and negotiation phases of an ISO open-edi business transaction in four agricultural product categories namely, vegetables, fish, spices and fruits for small and medium enterprises in Sri Lanka.

Small scale software has been developed to facilitate businesses to present their business capabilities, orders and demands to world with zero or minimum intervention of intermediaries. In addition, the system enables automatic partner matching by exact matches, counter offers and collective offers. After the selection of business partner by his business profile, uploaded trade lead or partner matching results, seller or buyer has ability to negotiate with that potential business partner through the system.

Finally, we demonstrated the connection between e-commerce system design concepts and our trading portal according to ISO/IEC 15944-1 conceptual business transaction events, UMM requirements meta-models and REA ontology.

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IMC	International Mechanical Community	
IPD	Intelligent Data Interchange	
UNCTAD	United Nations Centre for Trade Facilitation and Electronic Business	
UML	Unified Modeling Methodology	
IS	Information System	
RFP	Request For Proposal	
RQO	Request For Quotation	
WISIS	World Summit on the Information Society	
FAO	Food and Agriculture Organization	
SMS	Short Message Service	
GGS	Govt Ghana Sema	
ICTA	Information and Communication Technology Agency	
BOV	Business Operational View	
FSV	Functional Service View	
BDV	Business Domain View	
BRV	Business Requirements View	
BTV	Business Transaction View	
REA	Resource-Event-Agent	
UML	Unified Modeling Language	
RDBMS	Relational Database Management System	
ER	Entity-Relationship	

LIST OF ABBREVIATIONS

Abbreviation	Description
ICT	Information and Communication Technology
SME	Small and Medium-sized Enterprises
ISO	International Organization for Standardization
B2B	Business to Business
IEC	International Electrotechnical Commission
EDI	Electronic Data Interchange
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UMM	Uniform Modeling Methodology
IS	Information System
RFP	Request For Proposals
RFQ	Request For Quotation
WSIS	World Summit on the Information Society
FAO	Food and Agriculture Organization
SMS	Short Message Service
GGS	Govi Gnana Seva
ICTA	Information and Communication Technology Agency
BOV	Business Operational View
FSV	Functional Service View
BDV	Business Domain View
BRV	Business Requirements View
BTV	Business Transaction View
REA	Resource-Event-Agent
UML	Unified Modeling Language
RDBMS	Relational Database Management System
ER	Entity-Relationship

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