Study on the Challenges of Implementing Single Window Concept to Facilitate Trade in Sri Lanka: A Freight Forwarder Perspective

M. H. Abeywickrama and W. A. D. N. Wickramaarachchi

Abstract—Ports, airports and customs procedures are one of the major bottlenecks in product supply chains of Sri Lanka. Delays at border crossings and ports caused by lengthy, complex procedures and excessive paperwork have created a negative impact on trade mainly in terms of time and cost. A Single Window is a one-stop facility that allows exchange of information between all parties involved in trade, to reduce the complexity, time and costs. This research was conducted to identify the challenges that hinder the development of a single window system in Sri Lanka. Qualitative approach was adopted with a structured questionnaire distributed to 30 freight forwarding companies in Sri Lanka. It was found that the Sri Lankan system is not compatible with the single window concept definitions. According to the Sri Lankan freight forwarders, the most critical challenges of single window implementation are "Lack of government support", "Inadequate coordination between Stakeholders", "Organization and human resistance to change". The top two critical challenges are strategic level challenges, which require government and high-level strategic decision makers to actively take their parts in the creation of political will and inter agency collaboration.

Index Terms—Freight forwarders, single window concept, Sri Lanka customs, trade community.

I. INTRODUCTION

Sri Lanka has many opportunities in the field of international trade because of its natural resources and favorable geographic position in the Indian Ocean. Natural resources and strategic position are advantageous but not enough to thrive in the world market. Supply chains of the traded products should be as competitive as other countries to win orders in a situation where the businesses are very much concerned about the shorter lead times and cost effectiveness.

The macroeconomic plan of the current government expects the country becoming a logistics hub in the region, which will help attract more investors to the country. According to the 2012 Logistics Performance Index global rankings, Sri Lanka has climbed up to the 81st position out of 155 countries. It is a better position than most of the other South Asian countries, but indicates a wide gap between front-runners Singapore, Hong Kong, and New Zealand and the rest of the Asia Pacific region. Ranking at number 46,

India still leads the South Asian region.

Therefore, it implies that Sri Lanka has a long way to go to achieve its logistics hub status. Sri Lanka must bring more trade facilitating measures to overcome this issue. The single window concept is one such good trade facilitative measure due to its successful applications among many front-runners in the trade world. As far as the definition of a single window with respect to trade is concerned, UN/CEFACT Recommendation number 33 defines Single Window as "A facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements [1]."

Sri Lanka had made an attempt to establish a Single Window type system in the late 90s. Since then, two attempts Sri Lanka has made to set up Single Window type system had not been successful [2]. However relevant authorities are continuously making efforts to fully automate the system and bring all the agencies under a one roof. But it is apparent that the development of the single window happens at a slow pace.

The objectives of this research are to:
1) Study about implementing the single window concept in an international trade environment.
2) Analyze the compatibility of the Sri Lankan system with the single window definitions.
3) Identify the challenges of implementing a single window system to facilitate trade in Sri Lanka.

II. LITERATURE REVIEW

A. Single Window Concept

In most countries, companies engaged in international trade regularly have to submit large volumes of information and documents to governmental authorities. This information and documentation often have to be submitted through several different agencies, each with its own specific system and paper forms. These requirements constitute a burden both to Governments and to the business community particularly in developing countries. Establishing a Single Window facility is one means of addressing this problem.

It has been described that, 'In a theoretical sense, a single window can be described as a system that allows traders to lodge information with a single body to fulfill all import or export related regulatory requirements. In practical terms single window environment provides one entrance, either physical or electronic, for the submission and handling of all data and documents related to the release and clearance of an

international transaction. This entrance is managed by one agency, which informs the appropriate agencies and direct combined controls' [1].

B. Costs of Implementing a Single Window

The costs associated with setting up a Single Window facility vary depending on the approach taken. In case of government-financed Single Windows, these costs often are part of the costs of a larger nationwide trade development policy. Total implementation costs range from less than one million US dollars to 50 million dollars.

According to [3], Establishment of (electronic) single windows system is perceived as the most costly of the 12 Trade Facilitation measures which also takes the most time to implement. Experts indicated that the least developed and low-income developing countries would need at least three to five years to implement a single window system, provided they had adequate resources to do so (three to five years) [4], [5].

C. Key Features of a Single Window

The UN / CEFACT brochure outlines the basic concepts and elements of a single window which can be summarized as follows [1]. Following features can be considered as standards for any single window system.

1) A single authority

An entity that coordinates between all relevant agencies and enforces all border related controls. For example, in Sweden and the Netherlands, customs officers perform many tasks based on assignments from other governmental authorities.

2) A single system

The system serves as transaction hub and is integrated to all authorities. Declarations and permits are received electronically in a single application. It allows traders to submit standard data only once and the system distributes the data to the agencies that have an interest in the transaction.

3) An automated system

Through which a trader can submit electronic trade declarations to the various authorities for processing and approval of a single application. In this approach the approved permits are transmitted electronically to the sender's computer.

D. Operational Models

There is no unique model for a Single Window, as operators adopt their systems to specific national/regional conditions and requirements. In general, it has been noted that countries, due to their priorities and readiness, and their ability to engage key stakeholders, have implemented very different forms of Single Windows.

E. An Evolutionary Development Model in Establishing Single Window

It can be found a stage wise approach to implement single window by [6]. This model can be used by policy makers to, Assess the current development status of the country by comparing two different stages in the model, and decide the next stage as the future target for the stepwise implementation.

Some economies choose to establish a limited form of Single Window (SW), e.g. An integrated "Customs SW" to streamline all Customs related transactions (Stage A). Some countries went further and integrated the logistics service providers within a major sea port or airport with the CustomsSW thus creating an electronic exchange platform called a "Port Community System" (Stage B). Stage D normally includes the collaboration processes as of Stage B (regulations) and C (port). Stage "E" is the most advanced and describes about the integration of systems in a particular region.

F. Challenges of Implementing a Single Window

According to [6], there are 10 challenges that must be carefully addressed as following. They have classified these challenges into 4 categories as stated below:
1) At the strategic level.
2) Single Window Vision Articulation and Political Will Creating.
3) Stakeholder Collaborative Platform Establishment.
4) Business and Financial Models Formulation.
5) At the management & technical level.
6) Business Process Analysis and Improvement.
7) Data Harmonization and Document Simplification.
8) Service Functions (Applications Architecture) Design.
9) Technology Architecture Design including Technical Standards and Interoperability.
10) Legal Infrastructure Institution.
11) Implementation level.
12) Information Technology Infrastructure and Solutions Implementation.
13) Operation level.
14) Change Adoption and Operations.

G. The Sri Lankan System

According to [7], most of the large scale companies of Sri Lanka were dissatisfied with the automation process at that time as the automation process had not been fully implemented and that many of the important agencies were not linked to the system. Many companies agreed with the fact that automation of document submission process was good if fully implemented. Even today the condition is not very different from that of 2009 where some traders still submit documents manually.

It has been emphasized that, 'Having an import/export clearance process with proper connectivity is a major need of the country today. The existing automated system in Sri Lanka is a piecemeal system providing the capacity to only lodge the CUSDECs (Customs Declarations) electronically. Of over 30 agencies that are involved in the import/export process, only the Tea Board is linked while Customs, BOI and ports are partly linked. Measures need to be taken to link all relevant agencies with EDI. Legislation should be introduced in order to bring everyone under a single protocol. Sri Lanka must take concrete steps towards reaching a single window' [8].

III. RESEARCH METHODOLOGY

A. Data Collection

The qualitative approach was adopted to conduct this

research. To achieve the first objective, a background study was done using secondary data sources such as internet articles, researches, and journals. The key secondary sources of this research were the United Nations Centre for Trade Facilitation and Electronic Business reports.

To achieve the second objective, both the primary and secondary data sources were used. A pilot survey was done using operational level and managerial level employees of a freight forwarding company. Semi structured interviews were conducted with three senior level managers of three different freight forwarding companies and two directors of the Board of Investments (BOI) and Sri Lanka customs, in order to clarify the status of automation of import/export procedures in the country.

To achieve the third objective, a questionnaire was prepared and the survey was conducted among 30 SLFFA (Sri Lanka Freight Forwarders Association) registered freight forwarding companies. Sampling was done using Simple Random Sampling technique. A questionnaire was only given to managerial level employees.

TABLE I: SAMPLING INFORMATION

Confidence interval	95%
Population size	91
Confidence interval	0.088
Standard error	0.044
Sample size	30

B. Data Analysis

Key features of a single window identified during the background study were compared to the Sri Lankan context. Further the evolution model identified during the background survey was used to assess the current status of Sri Lanka.

Descriptive statistics were used to analyze data in order to achieve the research objective "3". SPSS (Statistical Product and Service Solutions) was used to perform descriptivestatistics functions. Nine critical challenges were ranked according to the mean and standard deviation using SPSS.

Finally 9 critical challenges were categorized according to the UNNExT (United Nations Network of Experts for Paperless Trade) model and interpreted.

IV. RESULTS AND DISCUSSION

A. Analysis of the Sri Lanka's Current Operating Model as against the Single Window Concept

This analysis was conducted to achieve objective 2, based on the information collected through interviews with senior managers/directors of Sri Lanka Customs, BOI and freight forwarding companies. As for the definition, a single window system should have a facility for lodging standardized information and documents with a single entry point [1]. The current operating model does not integrate all the agencies into a single system. Sri Lanka Customs, BOI, and Sri Lanka tea board are the agencies that are connected to the current EDI system. Currently, the Ceylon Tea Board is the only regulatory agency linked to the EDI system, which allows tea exporters to submit online documentation of blend sheets and purchase statements together with CUSDECs, and obtain online approval from the Tea Board. This eliminates the need for tea exporters to visit the Tea Board to process the required documents. But there are more than thirty agencies that are not connected to the current system.

Therefore, it is clear that Sri Lanka still does not have a single entry point to fulfill all import/export related documentation activities.

"Single authority" perspective describes about an entity that coordinates between all relevant agencies and enforces all border related controls [1]. Even Sri Lanka customs possess the authority of enforcing border control activities; it does not act as a coordinator between traders and regulatory agencies. Instead, each of them acts as separate entities in providing services.

"Single system" allow traders to submit standard data electronically and only once and the system distribute the data to the agencies that have an interest in the transaction [1]. Sri Lanka has an EDI platform which allows traders to submit data electronically. But only a limited number of agencies are connected to this system such as customs, BOI and Sri Lanka tea board.

In a "single automated system" trader can submit electronic trade declarations to the various controlling authorities for processing and approval of a single application [1]. In this approach the approved permits are transmitted electronically to the sender's computer. Compared to the other features of the single window system, the Sri Lankan system is more compatible with this feature "single automated system".

The current automated system "ASYCUDA World" is a web based system and allows traders to log into the system using the internet. Once the trader input data into the system fees, taxes and duties are computed automatically. However, traders/agents still have to visit customs or BOI to submit the documents physically for reprocessing, and to obtain approvals. Thereafter, processing and procedures are the same as the manual process, involving physical movement of paper from one location to another. Another problem of the automation is that all traders are not using the system, instead some of them still use manual processes. Among them majority are small scale companies.

Introduction of the Automated Cargo management System is another automated system which is used by the port authority. It tracks bill payments and online submission of documents. The current system available covers online acceptance of shipping notes and cargo dispatch notes by shipping lines and Sri Lanka Ports Authority (SLPA), online bill payments, and online submission of export bills by SLPA to exporters or freight forwarders. This has resulted in a reduced turnaround time, reduced lead times and an accelerated cargo dispatch related to the import/export trade. In addition, SLPA uses a terminal management system called "NAVIS" which is also a web-based system. NAVIS enables the exchange of information between SLPA and the agents, including: container gate movements, loading/discharge information, terminal performance, vessel departures, and container loading/discharging orders, storage instructions and bay plans. Bank of Ceylon and Peoples' bank has connected with the customs/BOI and SLPA systems, allowing traders to make e-payments. This is part of trade

automation initiatives and they have plans to link private banks to this system in the near future.

In addition to the Government initiative to automate the trading process, the private sector, in the form of the Ceylon Chamber of Commerce, has taken measures to facilitate trade in the country by introducing "e-CO", a web-based certificate of origin (CO) application system. With this system, exporters can submit applications for COs electronically. This eliminates the need for exporters to physically collect the application form, complete it and bring it to various chambers for endorsement. Now, exporters/agents can access and download a form and apply for a CO electronically, reducing the time and money required to send in the application form and supporting documents required for CO authentication.

When considering the "inter agency collaboration" Sri Lankan trade community is still lagging behind. Communication gaps, hierarchical organization structures, especially in government agencies are the major barriers to build up inter agency collaboration. However, some government agencies have integrated certain functions and shared certain resources with each other. As an example, customs and the Inland Revenue Department (IRD) share a common database of (Value Added Tax) VAT payment activities.

B. Analysis of the Sri Lanka's Current Operating Model As Against "Evolutionary Development Model in Establishing Single Window"

United Nations Network of Experts for Paperless Trade (UNNExT) in their report by [6] has proposed an evolutionary model for developing a Single Window. The model has been used to assess the current stage of Single Window implementation and to decide on the next stage of development in Sri Lanka (Fig. 1).
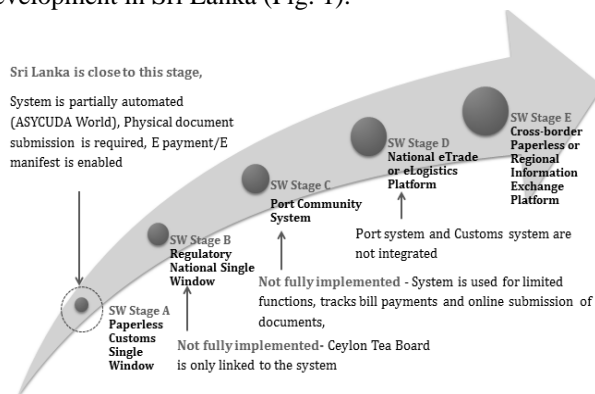

Fig. 1. Comparison with "evolutionary development model of single window".

The stages of this model can be implemented parallel or sequentially. When analyzing the Sri Lankan system, it shows a parallel approach than a sequential approach. The Sri Lankan system is closed to "Stage A", but it is not fully compatible with its features. Because the system is not 100% automated and still requires physical document submission. Stage "B" is not fully implemented as only the Sri Lanka tea board is linked to the system. Stage "C" requires more sophisticated IT infrastructure than the existing system. The current port automation system has limited applications and most of the documentation procedures are still done manually. Stage "D" and "E" will be impossible to achieve until the

country develops its system according to the requirements of stage "A", "B" and "C".

Above analysis regarding the current system revealed that even now the single window has not fully implemented in Sri Lanka. The single window project is complicated due to the many challenges. Some of them were identified through literature survey [9], [10].

Three senior level managers of three different freight forwarding companies were interviewed to sort out the most critical challenges in the Sri Lankan context. The critical challenges selected by those experts are mentioned below.

1) Lack of government support.
2) Complicated procedures and document requirements.
3) Budget and human resource constraints.
4) Organization and human resistance to change.
5) Inadequate coordination between Sri Lanka Customs, other Regulatory Institutions and the Trade Community.
6) Laws and legal challenges, inadequate legal framework.
7) Lack of leading agency.
8) Lack of information and communication technology (ICT).
9) Security issues (Due to centralized information sharing and electronic documents).

Aforementioned 9 challenges can be noted as the most critical challenges of implementing the single window concept in Sri Lanka. With the ideas and explanations which were raised during interviews and literature survey, above critical challenges can be briefly explained as follows.

C. Lack of Government Support

Single window implementation is a national level project which requires massive changes to the existing system and huge investments. Therefore, it urges the government intervention, especially in the areas of policy formulation and financial investments. Most of the experts accept the lack of government support as a critical challenge. According to them, Sri Lankan government has mostly focused on physical infrastructure development (ports, highways and airports) than soft infrastructure development projects such as a single window.

They emphasized that the government is the only party who can change this system overnight by bringing an Act of Parliament or making amendments to the existing rules. We not only need the government permission, but also need the government support to implement single window.

D. Complicated Procedures and Document Requirements

The current documentation procedures are complex and require a large number of documents. Different agencies use different formats in issuing licenses/permits. But the single window system requires standard documents. Therefore, all parties should agree to use a common format for a permit / license and use only the data elements included in the WCO (World Customs Organization) Data Model. Further, the documentation procedures are very much complex. A single document requires many approvals and it passes through multiple channels before getting approved. To implement a single window the procedures should be definitely simplified. This has remained a greatest challenge.

E. Budget and Human Resource Constraints

Single window project needs huge investments and experts

to implement and maintain the system. There are handfuls of single window experts available in government agencies. We may need to hire the foreign experts regarding this matter. It's a great challenge to implement a system without experienced human resources. On the other hand, most of the employees in the trading community are not familiar with the sophisticated IT tools. Particularly, small companies have this problem. Budget will be a greatest challenge if the government does not intervene.

F. Organization and Human Resistance to Change

This is common for both the regulatory agencies and traders. Automation and single window systems can eliminate unethical practices such as bribing and wastage. Most of the government agencies are corrupted and employees are sticking to those unethical practices. Today the bribing has become an industrial norm. These people are really against the single window system and will show a huge resistance to change. On the other hand, some traders are also not willing to change current practices. This is mostly valid for small scale companies, where their resources are limited and changes to the system can cause additional costs.

G. Inadequate Coordination between Sri Lanka Customs, other Regulatory Institutions and the Trade Community

The single window system brings different organizations under a one roof. Therefore, inter organizational coordination is vital in a single window system. But it does not exist among Sri Lankan trade community. Bureaucratic attitude and mind-set of the government officials, hierarchical organization structures and political agendas prevent the development of collaborative approaches.

H. Laws and Legal Challenges, Inadequate Legal Framework

Implementation of single window requires new policy formulation which in turn urges for amendments to the existing regulations or formulating new regulations. Sri Lanka customs is still governed by the customs ordinance which was set even prior to the independence. It does not permit to implement several functions required by a single window system. There are different agencies involved in trade, which are governed by different ministers. Bringing them under a single authority requires significant changes to the existing laws.

I. Lack of Leading Agency

The leading agency is responsible for the management of the single window implementation program. It is crucial that the single window project includes a strong lead agency. There is no agreement between government agencies as to who should take up the lead role. Past two attempts of single window implementation failed due to the private sector representation as the lead role. Some argue that the Sri Lanka customs should take up the lead role. But it has been accepted among all stakeholders that is not proper for one stakeholder to take the lead role in the process.

J. Lack of Information and Communication Technology (ICT)

Even the Sri Lanka customs tried to fully automate the current system, it has not succeeded. Because majority of

small scale traders still uses manual procedures. They are not armed with IT (Information technology) facilities or employees who are capable of work with IT systems.

K. Security Issues

Some organizations are not willing to exchange information through a centralized system. Most of the organizations are not satisfied with electronic documents and their minds have set to approve physical documents. Information submitted by traders may include commercially-sensitive information, trade- sensitive information, financially sensitive information, etc. Legal protections and constraints on use of such information are necessary to prevent misuse. There is a higher risk of misuse and abuse of information submitted and maintained in electronic form.

The above mentioned 9 critical challenges were presented to respondents who represented 30 freight forwarding companies. They were given a five point Likert scale to rank the importance of each challenge to implement single window.

TABLE II: PRIORITIZATION OF CHALLENGES

Rank	Challenge	Category	Mean	SD
1	Lack of government support	Strategic Level	4.20	0.85
2	Inadequate coordination between stakeholders	Strategic Level	4.13	1.01
3	Organization and human resistance to change	Operation level	4.00	0.79
4	Complicated procedures and document requirements	Management & Technical level	3.80	1.06
5	Laws and legal challenges, Inadequate legal framework	Management & Technical level	3.77	0.86
6	Lack of leading agency	Strategic Level	3.70	1.24
7	Budget and Human resource constraints	Strategic Level	3.57	0.86
8	Security issues	Management & Technical level	3.20	0.89
9	Lack of information and communication technology	Implementation level	3.20	1.27

According to the freight forwarders, The most critical challenges of which the mean is above 4 are "Lack of government support" , "Inadequate coordination between Sri Lanka customs, other regulatory institutions and the trade community" and "Organization and human resistance to change". Finally 9 critical challenges were categorized according to the UNNExT model (Table II). It was found that, the top two critical challenges are strategic level challenges, which require government and high-level strategic decision makers to actively take their parts in creation of political will and inter agency collaboration. Management and technical level challenges are also noticeable among critical challenges and need active participations from middle management/technical personnel especially in business process reform, document simplification and harmonization, and interoperability. However operational and implementation level challenges are less among the critical challenges.

V. CONCLUSIONS AND RECOMMENDATIONS

The Sri Lankan system is not compatible with the single window concept definitions, especially in aspects of Single entry point, Single data submission, Single authority, and single system. But it shows similarities to a single window system in the aspect of "Automated system". But all the automated systems are not integrated into a single system. Further, there are many agencies that do not connect to these systems. Therefore the system lacks connectivity, integration and centralization compared to an ideal single window.
It was revealed that,

The most critical challenges of which the mean is above 4.0 are Lack of government support (4.2), Inadequate coordination between Sri Lanka customs, other regulatory institutions and the trade community(4.13) and Organization and human resistance to change(4). According to the UNNExT (United Nations Network of Experts for Paperless Trade) model, it was found that,

The top two critical challenges are strategic level challenges, which require government and top management attention.

Management and technical level challenges are also need to be addressed with a special attention.

Operational and implementation level challenges are less among the 9 critical challenges.

As revealed by this study, Sri Lanka has not fully implemented the single window system. The current system is lagging in aspects such as connectivity and integration. Government should take necessary steps to rectify these issues and accelerate the single window implementation project. Political will creation, Inter agency collaboration and change management could be the initial steps of such approach. Actions should be taken to connect all the other regulatory agencies to the customs automated system. Linking all the government and private agencies simultaneously might be difficult at the beginning. Therefore, selected important stakeholders can be linked to the system at the start. Others can also be linked with the system at a later stage. Creation of a public private partnership entity to initiate single window project may accelerate the implementation process. Furthermore, the government should take measures to introduce a clear trade policy and changes to existing ones in order to improve trade facilitation. Customs Ordinance is over 100 years old, having been revised about 26 times since 1978; it is obviously inadequate to accommodate the requirements of a single window. Therefore, measures should be taken to make the necessary amendments to customs ordinance.

The majority of the traders are not aware of the single window concept and its benefits. Therefore, all the levels of companies (small, medium, large) should be invited to participate in the single window implementation related discussion/conference at the national level. Further, Data simplification/harmonization should be done based on international standards (e.g. WCO Data Model).

ACKNOWLEDGMENT

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