PRACTICAL IMPLEMENTATION GUIDE OF SINGLE WINDOWS FOR FOREIGN TRADE

AACE
AFRICAN ALLIANCE FOR E-COMMERCE

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LEXICON

AAEC	African Alliance for Electronic Commerce
ATPC	African Trade Policy Center
BI	Business Intelligence
BOT	Build Operate Transfer
DMZ	Demilitarized Zone
DNS	Domain Name System
EAI	Enterprise Application Integration
FC	Fibre Channel
FTP	File Transfer Protocol
GU	Guichet Unique - Single Window
GUR	Guichet Unique Régional - Regional Single Window
IP	Internet Protocol
ISCSI	Internet Small Computer System Interface
LTO	Linear Tape Open
MSMQ	Microsoft Message Queuing
NTIC	Nouvelles Technologies de l'Information et de la Communication - NICTs
WCO	World Customs Organization
PKI	Public Key Infrastructure
PPP	Public Private Partnership
SAN	Storage Area Network
IS	Information System
Sponsor	Etymologically, the sponsor is the one who pays. In the case of a project, the sponsors are the initiators of the project and oversee the subject matter experts and saction the decisions, adjudications, and .options taken
TIP	Trade Information Portal
UEMOA	West African Economic and Monetary Union
UNCEFACT	United Nations Center for Trade Facilitation and Electronic Business
VPN	Virtual Private Network
VTL	Virtual Tape Library
XML	eXtensible Markup Protocol

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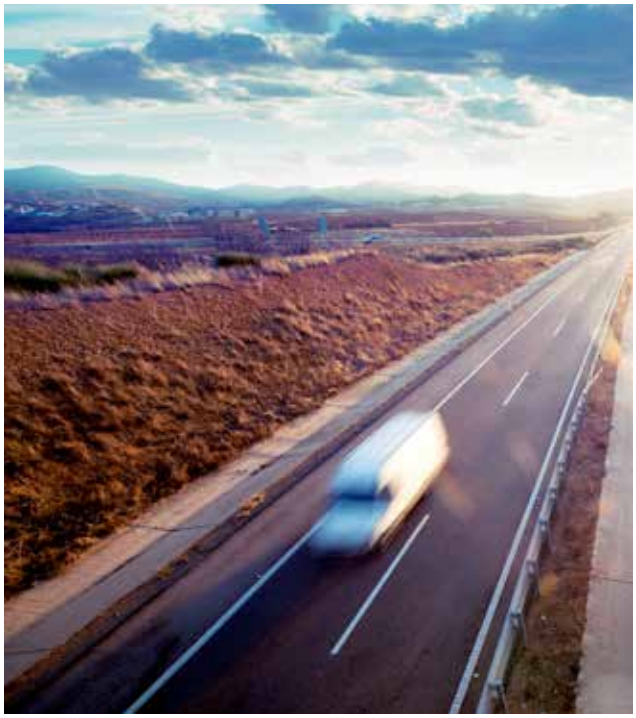
EXECUTIVE SUMMARY



Paradoxically, Africa has a noticeable growth rate that stays firm over the years, even improving at a sustainable pace. This reality, noted in all international for a, means that Africa is a promising continent, endowed with real potential that only needs to be judiciously exploited for the continent to take off and join the group of emerging economies. Therefore, no effort should be spared to preserve and enhance this growth dynamics as long as possible.

However, for Africa to really and definitely position itself as a true hub of the global economy, it would be necessary to radically initiate some structuring and innovative measures. This is why highly appreciable initiatives like those taken by the African Alliance for Electronic Commerce (AAEC) should be commended and supported with vigor and steadfastness.

The conclusion of the Bali Agreements on trade facilitation, aimed at positively impacting cross-border trade, gives even more relevance to the AAEC's initiatives for the promotion of Single Window for Foreign Trade s in Africa. This transpires notably in Article 10.4 "Single Window", which encourages "the setting up of a single window by members..." and the use "as much as possible and achievable, of Information Technologies to support the single window" .

In conclusion, it appears clearly that AAEC has understood that (i) trade has become a real development tool, (ii) regional integration through dynamic intra-African trade is a must and, above all, (iii) the implementation of high value added solutions through the mastery of Information and Communication Technologies, backed up by efficient technology transfer, is now one of the pillars of development.

All these initiatives and beliefs are widely shared by UNECA and ATPC, which advocate them and continuously promote their extension across the continent.

Thes are the reasons why UNECA and ATPC reaffirm their commitment to accompanying and supporting AAEC in all its activities, and plan to provide an exemplary framework for intense and broad collaboration, to the legitimate benefit of all categories of stakeholders in African trade.

UNECA/ATPC

[1] *Trade facilitation agreements, article 10, paragraph 4.1 and 4.4*

FOREWORD



Ibrahima Nour Eddine DIAGNE
President of the African Alliance for Electronic Commerce

Dear readers,

I am pleased to share with you the second edition of the Single Window for Foreign Trade implementation guide. After the first edition launched in 2013 with a resounding success, experts at the African Alliance for Electronic Commerce (AAEC) worked hard to deepen and simplify the content of the first version.

As this edition is being published, global trade has just recorded the coming into force of a new agreement aimed at facilitating international trade. The role of single windows in that perspective is pivotal. In fact, this is a tool that enables all stakeholders in the logistics chain to trade and share information through information technology to reduce the cost and time of transactions and formalities.

This updated guide is therefore timely, as all countries are now aware of the need to facilitate trade in order to increase prosperity and thus appease relations among peoples and among States.

Undoubtedly, 2017 will be a very promising year, as global fears and hopes are rife, politically and economically. Consequently, resources earmarked for official development assistance will no doubt become fewer and fewer, and their access more and more difficult.

Naturally, this situation calls on States to exercise more responsibility in their choices. For that to happen, there needs to be a clear understanding and perfect consideration of the stakes. This guide highlights the fact that a single window is meaningless if it does not lead to measure reduction of the cost time of foreign trade transactions. Thus, whether a country opts for a foreign operator under a Public Private Partnership or a sovereign national initiative, performance is a must.

This guide, with a universal scope, is aimed at serving as a working base for governments, technical and financial partners, and private operators interested in successfully implementing Single Window for Foreign Trade s and achieving good performance levels.

As President of AAEC at the time of printing, I wish to warmly thank all those who took part in its production. I would also like to says special thanks to the UNECA's African Trade Policy Center (ATPC) for its permanent support for the dissemination of this guide.

I wish you a good read.

SUMMARY

This guide is mainly centered around 5 complementary parts:

The first part entitled "Background" is an overview of the economic, regulatory, institutional and technological framework for the implementation of Single Windows. It also deals with the guide's objective to enable Governments, donors and stakeholders to have practical idea of the conditions for the implementation and operation of a Single Window serving its intrinsic purpose of reducing the cost and time of Foreign Trade transactions.

The second part covers the definitions, typology and review of best practices in the area of Single Windows. It gives an opportunity to propose another definition that complements that of Recommendation 33 of UNCEFACT. This AAEC definition is worded as follows: "The Single Window for Foreign Trade is **national** or **regional facility** mainly built around an IT platform, initiated by a Government or ad hoc authority to facilitate import, export and transit formalities, by offering a single point for the submission of standardized information and documents, in order to meet all official demands and facilitate logistics". The three main Single Window models are also highlighted. They are the Single Window for Foreign Trade Formalities (cf. 2.1.1), the logistics coordination Single Window (cf. 2.1.2) and the national integral single window (cf. 2.1.3).

The third part deals with prior strategic choices, at institutional, organizational, legal, regulatory and technological levels, but also with the various types of business models, of which Public Private Partnership is the most broadly used. At the legal level, two models stand out :

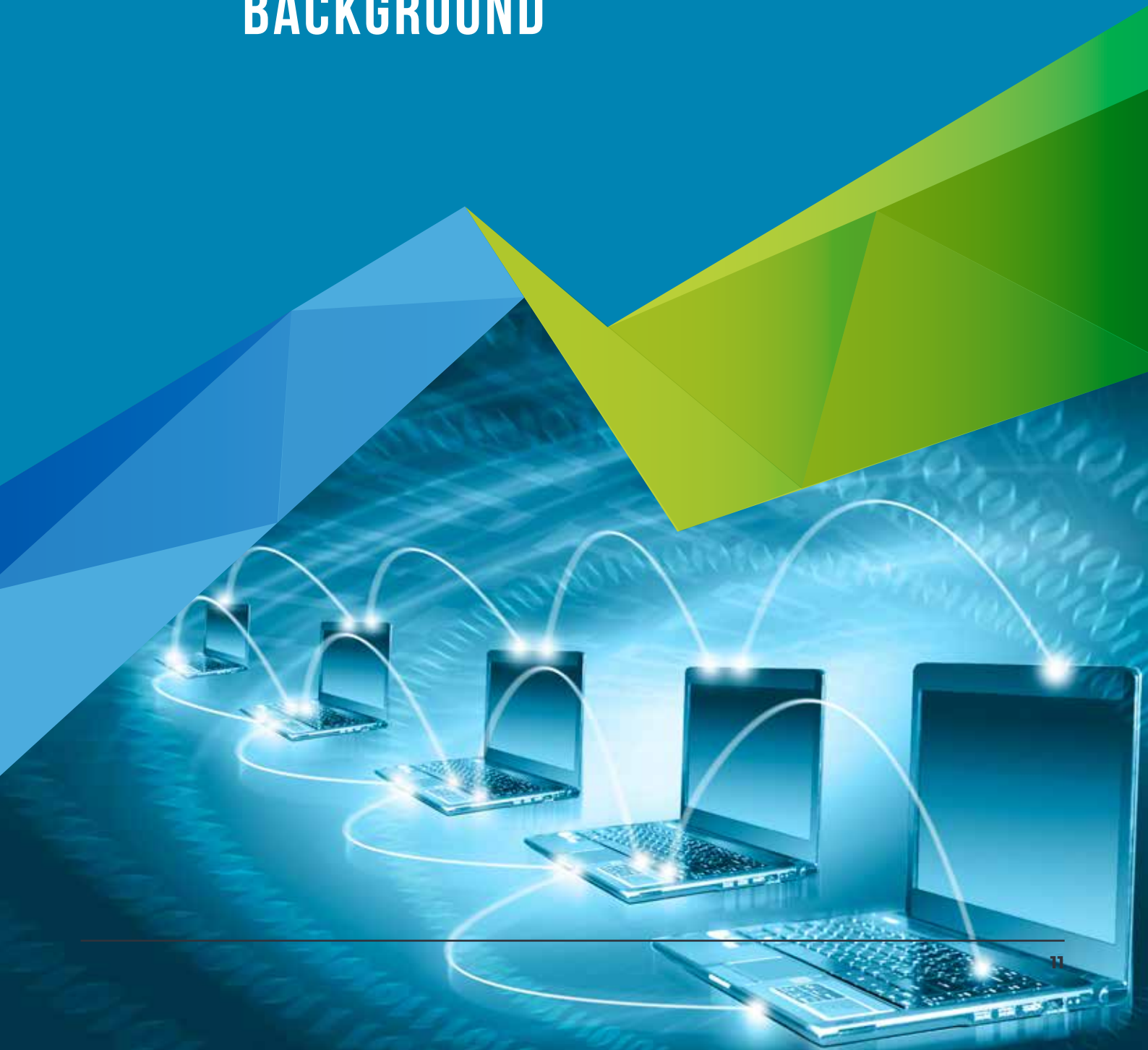
- The Single Window without obligatory recognition of electronic documents: this Single Window is a platform for the automation of data exchange processes. Changing the legal framework is not a precondition for the start of the project;
- The Single Window with obligatory recognition of electronic documents: this Single Window enables the digitization of all procedures. The electronic document replaces the paper document and it is therefore necessary to have a legal system that governs this new document format. Electronique signature will thus be a necessary technical element to reassure stakeholders.

The last two parts focus respectively on the various practical steps of implementing performance evaluation and consolidation of the Single Window. Building the broadest possible consensus around the Single Window project with the mobilization of all stakeholders is a critical step. The model for evaluating the stakeholders' level of commitment to the success of the project helps work out all possible cases. Beyond the consensus, the contribution of public authorities at the highest level is vital. A set of tools and indicators should also be developed to enable permanent monitoring of the Single Window's performance and propose areas of improvement for its consolidation.

The dynamic nature of the analysis in this guide, the multiplicity and diversity of experiences that it was inspired from, as well as the international scope of the standards which form the basis of its development, make it a precious tool for any decision maker, especially African decision makers, who wish to set up a Single Window in the optimum conditions of success.

SECTION 1

BACKGROUND



1. ECONOMIC CONTEXT

International trade is still truly the engine of the global economic. Its growth follows the trends of economic indicators. Behind this quasi-linear alignment, there is a thorough change giving an increasingly predominant role to emerging economies.

The emergence of new international trade hubs is mainly explained by the cost cutting rationale. However, the countries of the South are experiencing exponential growth in demand and are characterized by an increasingly effective capacity for technological ownership and innovation. Concretely, prosperous crossborder trade requires the following major factors:

- **The market:** finding outlets;
- **Technology and labor:** producing quality at lower cost;
- **Logistics and formalities:** rapid, reliable and lower cost transit.

The concept of Single Window of Foreign Trade finds its importance in the search for optimization of the logistics and formalities of the Foreign Trade. It is not insignificant that the development of this modality is now the major concern of the economies that place their hopes in the exponential growth of their Foreign Trade.

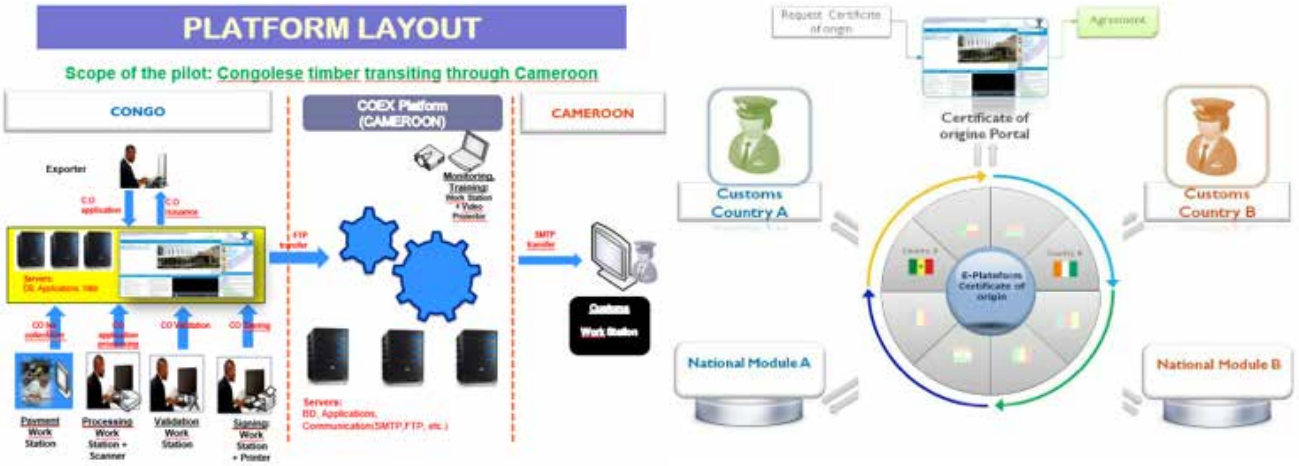
In addition, with the conclusion of the Trade Facilitation Agreement, Single Windows will now have pride of place in the facilitation of trade flows. In fact, it is explicitly recommended to member countries of the World Trade Organization (WTO) to establish or maintain a Single Window, enabling traders to submit the documents and/or data required for import, export or transit of goods at a single point of entry to participating authorities or bodies.

2. REGULATORY AND INSTITUTIONAL CONTEXT

Strictly speaking, there is no universal regulatory and institutional framework governing the operation of Single Windows. Provisions are national, sometimes bilateral or regional. In fact, the prime purpose of a Single Window for Foreign Trade is to provide a framework for foreign trade facilitation and efficacy of logistics within national borders.

However, the international nature of trade rapidly revealed functional demands beyond the national context. To take care of these demands, Single Windows first owned preexisting standardization instruments and tools. These are mainly the works of UNCEFACT and WCO that structured international logistics and customs practice over the past 4 decades. But needs specific to Single Window for Foreign Trade s were given increased consideration. These include notably the notion of technological interoperability between platforms and the recognition, by the country of destination, of the electronic documents or data created or generated in the country of origin.

Illustration 1 : *AAEC Pilot Projects (CEMAC and UEMOA) for data exchange on certificates of origin*



Nowadays, there is no universal approach in terms of practice. This is partly due to the mapping of Foreign Trade electronic Single Windows, which does not match the mapping of intense international trade flows and, on the other hand, to the inexistence of a formal institutional framework to structure and standardize the practice of Single Windows. The ambition to build this institutional environment is strong, notably in Asia and Africa, but there are challenges related to the diverse types of Single Windows and modes of governance.

The African Alliance for Electronic Commerce (AACE) *is a framework of exchange and sharing in Trade facilitation. It comprises 12 member countries and aims at promoting the concept of Single Window, in compliance with recommendations from international institutions. On of AACE's flagship projects is the setting up of a Regional Single Window to interconnect all national platforms (GUN) with a view to improve trade flows and enable African countries to be more competitive on the global marketsur.*
http://www.african-alliance.org/

The Pan Asian for Electronic Commerce (PAA) was founded in July 200. It comprises 12 members and aims at setting up and promoting a secured, reliable technological infrastructure with added value to facilitate global trade.
http://www.paa.net/PaaPortal/PaaContent/About.htm

However, it should be noted that the major issues, such as recognition of electronic signature and standard formats of document and data exchange are well taken care of and technical and operational recommendations are regularly published.

In summary, it could be said that the international regulatory and institutional environment is still being developed, but there is a good reference base to enable a country to build its Single Window environment by taking ownership of emerging practices.

The UEMOA Regional Single Window (GUR)

The various international institutions have not given a specific definition of the concept of Regional Single Window. It may be defined as the umbrella single window of national single windows in a given region, to facilitate cross-border and international transactions and pool resources and skills. The Regional Single Window should not be regarded as an entity but rather as data exchange facility and a framework for the adoption and implementation of international standards in this area.

The UEMOA's Regional Single Window project was mooted at the meeting of the Council of Minister of Trade held in 2006 in Dakar, which recognized that "the establishment of single window systems can effectively contribute to removing barriers to trade".

It will be built on a simple organizational model. National single windows exchange through the GUR. Then each national single window is responsible for exchanges within its territory with its local users. Thus, it will not be possible for a customs department or a business operator to directly connect to the Regional Single Window, except if expressly authorized by their national single window. Besides, the Regional Single Window may be built or hosted ad hoc or merely come from one of its members with the technical capacity to provide the service to others.

The UEMOA GUR may be schematized as follows:



3. TECHNOLOGICAL CONTEXT

The development of Information and Communication Technologies (ICT), notably network infrastructures (Intranet/Extranet, Internet, Mobile), and paperless solutions, storage and archiving fostered the development of interconnection, pooling and consolidation of information systems.

In several countries, telecommunication operators have invested in innovative technologies in order to offer services to enterprises with ever growing capacities at continuously lower prices and with exceptional levels of performance and security.

Besides, recent years have been marked by the emergence of a new concept called "Cloud Computing". For many stakeholders, it implies a complete change of business model. Instead of paying prohibitive prices for equipment (servers, softwar, etc.) that are not used at 100% and are very costly to operate, it is more and more frequent to see offers for outsourcing IT services to third party companies, accessible through high speed telecommunication links. However, this kind of solution should be thoroughly analyzed, notably taking into account regulatory demands and technological reliance.

These innovations have gradually permeated the domain of Foreign Trade with an internationalization of solutions leading to the facilitation of procedures in some countries. Whether in the modernization of Customs, technical administrations or stakeholders in the logistics chain, it is not uncommon to find in the market IT solutions that cover all or par of the issues facing stakeholders. However, performance will always be related to the conditions of implementation for these solutions and the mobilization of stakeholders to achieved the targeted levels of performance.

Nowadays, the implementation of Single Windows is more a matter of strategy and organization than of technology.

4. OBJECTIVES

The objective of this Guide is to enable Governments, technical and financial partners as well as all stakeholders to have a practical idea on the conditions of the implementation and operations of a Single Window for Foreign Trade that serves its intrinsic purpose to reduce the cost and time of formalities, contribute to improving the business climate and corporate competitiveness.

There are a series of publications and recommendations on Single Windows, including the famous Recommendation 33, published by UNCEFACT and used by several Governments as reference framework in the projects to set up a Single Window. After more than a decade of Single Window development, especially in Africa and Asia, there is a new knowledge base that enables better appreciation of the factors of success and failure.

This guide, designed under the aegis of AAEC with support from ATPC for its publication, is aimed at being an effective and universal tool for the setting up of Single Window for Foreign Trade s. It essentially refers to African experiences but is generally inspired by all Single Window practices across the world.

The Guide aims at facilitating the construction of a vision by Governments and stakeholders by providing guiding elements for its implementation. The recommendations formulated herein are not applicable in all contexts and in one go.

Its ambition is to be practical and not dogmatic. Its implementation often brings out elements of complexity that require contextual adaptations that this guide would not be able to anticipate.

The traditional project management approaches, starting from the identification phase to the evaluation, are not developed in this Guide.



SECTION 2

DEFINITIONS, TYPOLOGY AND CATEGORIZATION OF SINGLE WINDOWS AND REVIEW OF BEST PRACTICES



1. DEFINITIONS

It is important to return to the primary definition of Recommendation 33 and other subsequent definitions, and then see what needs to be complemented or better specified in the context of current reality.

According to Recommendation 33 published in 2005 "***The Single Window is 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***". This now canonical definition is strong through its openness and tendency to take care of all aspects of the subject matter.

For the World Customs Organization, the Single Window is a facilitation measure that enables all the parties involved in trade and transport to lodge information and documents with a single point of entry to fulfill all import, export and transit (...) (UNCEFACT, 2005)

The definition, proposed by AAEC in 2013, strove to provide the following precisions:

- What is a Single Window?
- What is the scope of a Single Window in terms of process?
- Who operates the Single Window and for whom?

In trying to give practical answers to these questions and better specify the concept, the Alliance offered the following formulation to define a Single Window:

"THE Single Window for Foreign Trade is a national or regional system, mainly built around an IT platform initiated by a Government or ad hoc authority, to enable the facilitation of import, export and transit-related formalities, by providing a single point for lodging standardized information and documents, in order to meet all official demands and facilitate logistics". AAEC 2013

This definition repeats the broad lines of that made through Recommendation 33, but asserts that it is mainly a system around an IT platform and indicates that the initiator is the Government authority or an ad hoc authority in a national or regional context.

This formulation is the basic definition recommended by AAEC. It was proposed and discussed with all international institutions to be considered among the reference definitions of the Single Window concept.

2. TYPOLOGY OF SINGLE WINDOWS: MODELS, CATEGORIES AND ARCHITECTURES

There are several types of Single Windows serving distinct, related and complementary functions. It is not uncommon to see, in one country, several entities claiming to be Single Windows, acting in a coherent framework, notably when this stems from a strategic approach by the authorities. But most often, Single Window initiatives are implemented in an uncoordinated manner, against a background of hidden rivalries among administrations, with totally unproductive results for the country.

At the level of architectures, power relations may also impose sometimes cumbersome, costly and ineffective operational architectures.

2.1 Models of Single Windows

This guide deals with the issue of Single Window typology by insisting on the need for each country to make sure that there is always coherence and coordination. Based on the observation and analysis of existing Single Windows across the world, Single Windows can be grouped in the following three (3) major categories:

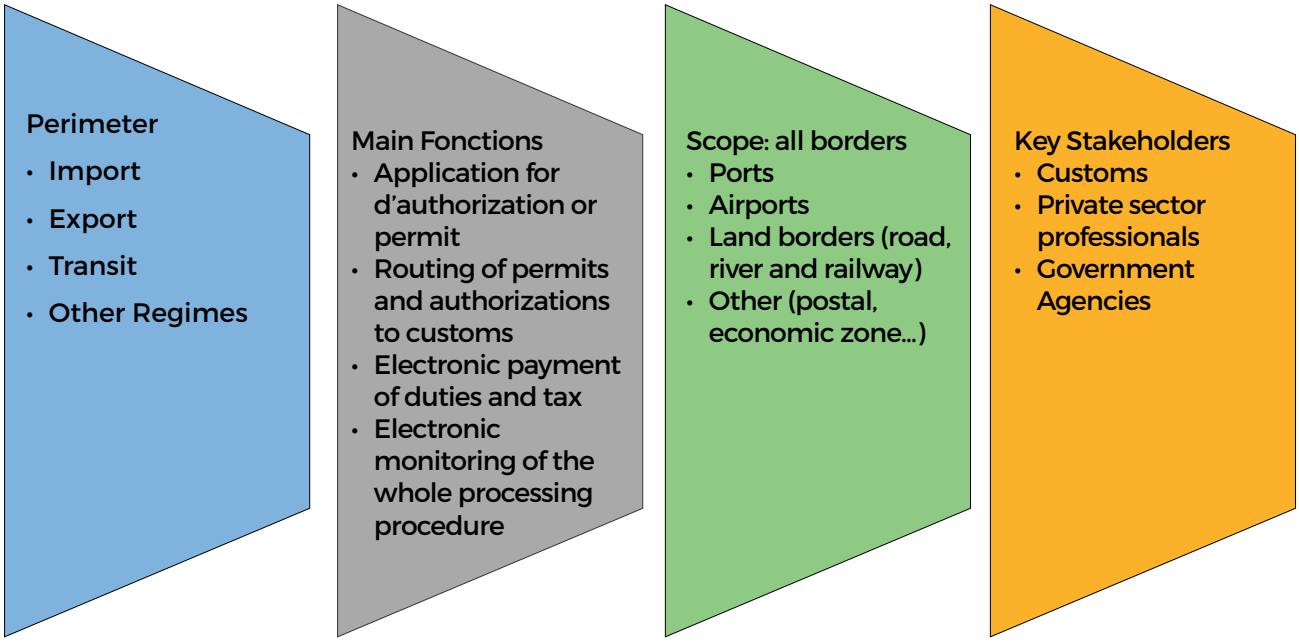
- Single Window for Foreign Trade Formalities (this Single Window takes care of all administrative formalities (public and private) required for Foreign Trade operations);
- Logistics Coordination Single Window (this Single Window is often located in a port and is aimed at processing the flow of information related to shipment and mainly involving logistics and customs stakeholders);
- National Integral Single Window (this is the combination of the previous 2 around the same technical platform and governance framework).

The first two categories seem different but they perfectly integrate. They can set up by the same authority, as they may be by separate authorities. At any rate, coordination is vital. If it is a single authority, it is highly recommended to put in place a gradual approach, with a maturing time to foster thorough ownership of the components.

2.1.1 Single Window for Foreign Trade Formalities

Description : *LThe Single Window for Foreign Trade Formalities interconnects, around a centralized platform or through interconnection mechanisms, all the stakeholders in pre-clearance, clearance and post-clearance formalities, with a view to facilitating formalities relating to goods removal operations. Logistics stakeholders may be integrated into this type of Single Window.*

Illustration 2 : *Single Window for Foreign Trade Formalities*

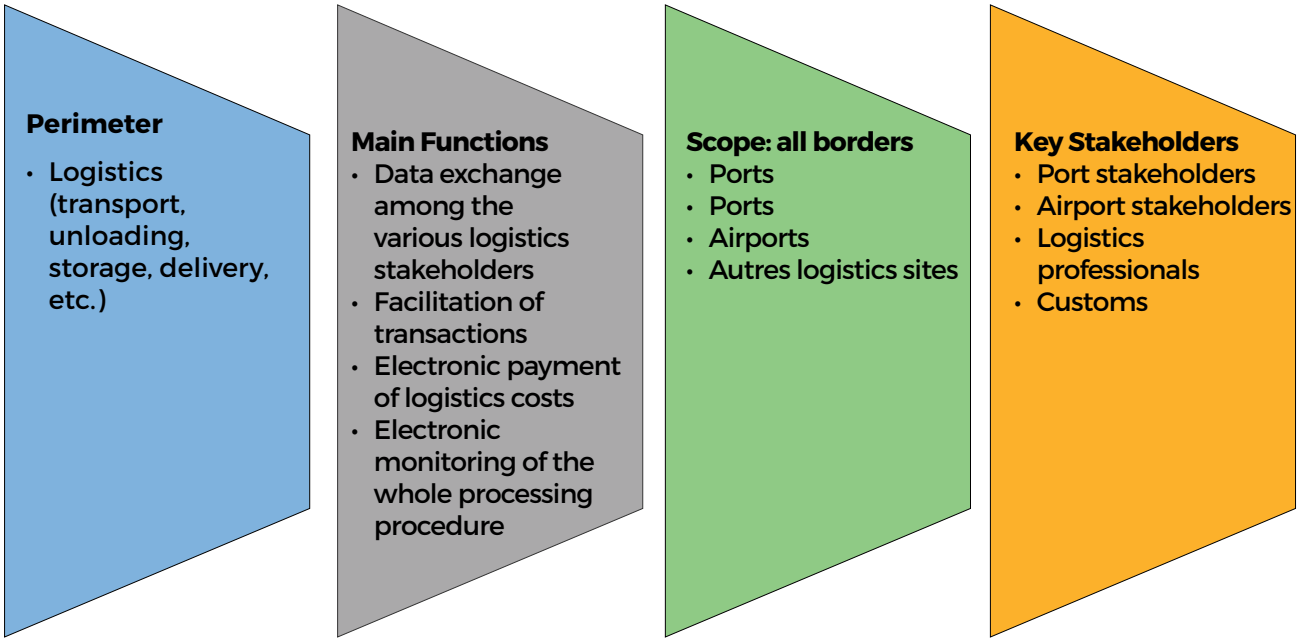


Results	Conditions of success	Risks to be managed
• Significant reduction of formality time; • Significant reduction of indirect formality costs.	• High level government leadership; • Consensus based approach; • Strong customs involvement; • User ownership.	• Leadership squabble; • Cost of services is too high; • Low impact on processing time (notion of involvement or commitment); • Ineffective change management; • Duality between manual and electronic systems.

2.1.2 Single Window for Logistics Coordination

Description : *This type of Single Window exclusively deals with logistics, notably in the port facilities. It focuses on the speed and reliability of logistics from the announcement of a vessel until the delivery of the goods to their owners. Several European ports entered the realm of Single Windows through that system also called Cargo Community System (CCS) or Port Community System (PCS). Its impact on logistics is all the stronger as volumes are high, infrastructures available and stakeholders equipped. Therefore, this tool is rather meant for large port facilities. However, some of its components may have a positive impact in smaller ports.*

Illustration 3 : *Logistics Coordination Single Window*

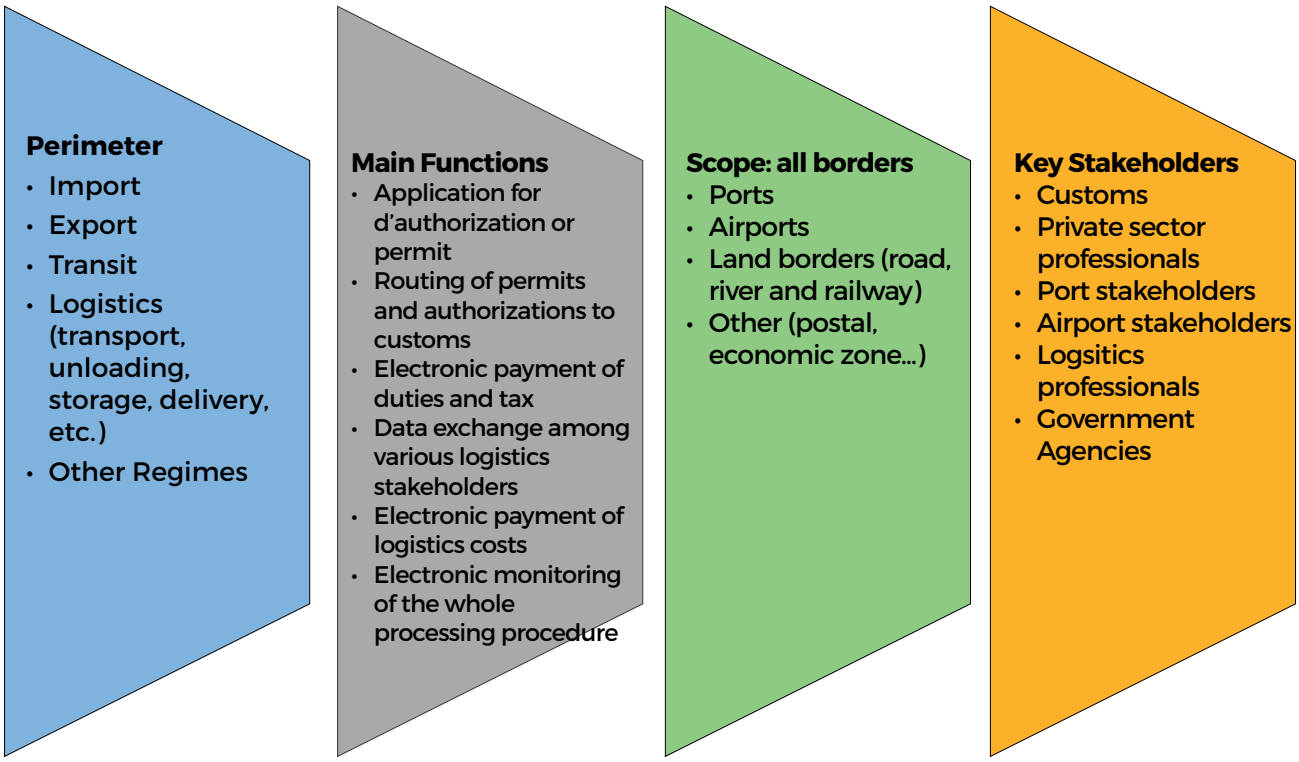


Results	Conditions of success	Risks to be managed
• Improves logistics performance in terms of feasibility time • Significant reduction of indirect costs	• Consensus based appraoch • Logistics stakeholders are favourably disposed • Upgrading the environment to maximize the potential • User ownership	• Cost of services too high • Low impact on processing time (notion of involvememtn or commitment) • Ineffective change management • Duality between manual and electronic systems

2.1.3 National Integral Single Window

Description : *The National Integral Single Window is the form that corresponds most to the definition of Recommendation 33 and AAEC. It is also the most complex in its implementation, since it implies trust and collaboration among several entities that do not depend on the same authority, do not do the same job and may even sometimes have conflicting interests. It is the Single Window that interconnects, around a single platform or interconnection mechanisms, all the stakeholders in administrative, customs, port and logistics formalities. It is present across the national territory and in all modes of transport.*

Illustration 4 : *National Integral Single Window*



Results	Conditions of success	Risks to be managed
• Significant reduction of formality time; • Improved logistics performance in terms of time and feasibility • Significant reduction of indirect formality costs.	• High level government leadership; • Consensus based approach; • Strong customs involvement; • Logistics stakeholders are favourably disposed • Upgrading the environment to maximize potential • User ownership.	• Leadership squabble; • Cost of services is too high; • Low impact on processing time (notion of involvement or commitment); • Ineffective change management; • Duality between manual and electronic systems.

BOX 1: Systemic Risks in Single Windows

In addition to the typology of single windows, this guide introduces for the first time the notion of "systemic importance" in the qualification of single windows.
Single windows of systemic importance are systems that could trigger or transmit systemic disruptions in the sphere of foreign trade at national level, due to the dimension or nature of individual transactions that they process or due to the total value of such transactions.

Given their importance and the risks arising from their implementation, national goverance bodies should establish a general oversight framework, notably through the development of basic principles that the single windows should comply with in the setting up and operation phases.

A single window of systemic importance does not necessarily only manage international trade transactions of a particular nature or high amount. The phrase may also refer to a single window that processes international trade transactionsof various kinds and amounts, but capable of triggering or transmitting systemic disruptions, due to certain segments of its traffic or the concentration of procedures and formalities carried out at its level.

In practice, the line between single windows of systemic importance and others is not always clear and national regulatory bodies should be careful to clearly draw that line. The principles to be laid down by national governance bodies may also be useful to evaluate and understand the features of single windows that involve relatively low systemic risk. I may be advisable that such systems comply with some or all the basic principles.

2.3 Architecture of Single Windows

Due to the rapid evolution of technologies over tha past decade and the exponential growth of exchange and storage possibilities, it is not recommended to built a Single Window architecture on the basis of constraints in an existing environment or constraints in a preexisting solution. It is strongly recommended to have an architectural vision open to the future. The major questions we should ask ourselves are the following:

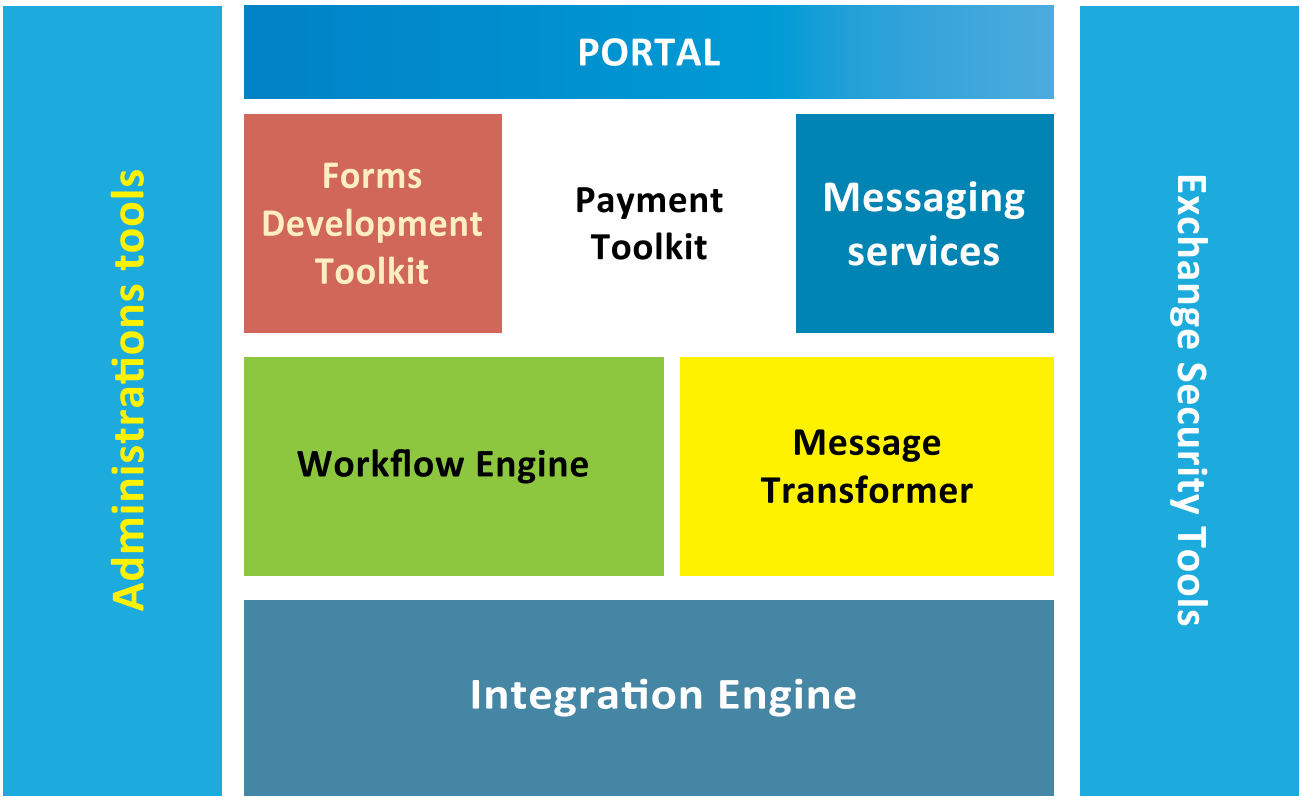
- How do we ensure the interconnection with Customs and institutions with an autonomous IT system?
- How do we exchange with the partners who do not have computerized systems?
- How far should we take the computerization of trade to achieve results?
- How do we compensate for the absence, poor quality or high cost of telecommunication links?
- How do we ensure service continuity?

There are no universally relevant answers to any of these questions. In each country, the technological and legal context, financial means and power relations determine the most adequate type of architecture.

EXAMPLE: Single Window for Foreign Trade of Cameroon

The functional components of a Single Window platform dedicated to the dematerialization of Foreign Trade procedures.

Illustration 5 : *Architecture of Single Windows*



Portal: the platform has access through a portal not enabling the management of formalities, but also providing connected stakeholders with a certain amount of value added information and services.

Messaging Tools: the major role is to ensure reception and emission of messages in compliance with standard protocols (SMTP, POP, JMS, etc.).

Message Translator: it enables the conversion of various standard electronic data exchange formats (EDIFACT, XML, EBXML, JSON, etc.) and provision of corresponding data to each recipient.

Orchestration Engine: it enables the management of all data exchange rules to guarantee effective flow of messages among Foreign Trade stakeholders in a specific order.

Integration Engine: it has standard connectors (ODBC, JDBC, HTTP, WEBSERVCIES, etc.) enabling the injection and retrieval of messages. These can be based notably on messaging tools for the integration mechanisms using them. This tool is the basis of interoperability and should therefore take into account as many standards as possible to avoid specific developments that affect the core of the system.

Administration Tools: in short, these are all the tools necessary to calibrate, manage and supervise the other operational modules of the Single Window platform.

Reporting and Business Intelligence: the reporting tools and dashboards enable the monitoring of common indicators and the production of various statistics.

Tradee securing tools: A single Window Platform should absolutely have all the tools guaranteeing security by ensuring tracability, confidentiality, non-repudiation of messages exchanged. Electronic signature mechanisms should be taken into account as well as the archiving of the data exchanged. Electronic signature mechanisms should be taken into account, as well as archiving of the data exchanged.

Form development tools: in many cases, the Single Window system is put in place in an environment where a few stakeholders in the chain do not have an information system. To avoid the continuous use of a manual process some stakeholders, it is important to provide for minimum forms for interaction with the platform and other expecting players.

Electronic payment toolkit: this tool enables online payment of services, duties, taxes and fees by various Foreign Trade stakeholders. It is compatible with the country's banking systems.

3. CONNECTING SINGLE WINDOWS WITH CRITICAL IT SYSTEMS

The Single Window is a data exchange platform that interacts with the various systems used by the stakeholders in the Foreign Trade community with mainly 3 flows:

- The physical movement of goods from the country of origin to the country of destination;
- The transmission of related information and documents;
- The financial flows.

Interconnection with critical systems enables to ensure the best monitoring of these flows.

Since the Single Window is at the heart of all these systems, it is important to have a robust, resilient and flexible base of IT infrastructure to guarantee the management of critical flows listed above.

There are various forms of interaction between the Single Window and other systems whose major features are:

a. The Single Window may be centralized in a CLOUD or dedicated data center, with a Web portal that enables various stakeholders to connect at any time, wherever they may be in the world. In this configuration, everyone connects to the Single Window and all operations are processed there.

b. The Single window enables to harmonize and standardize the various types of electronic messages such as EDI or XML among the various operators and authorities. It is important to carry out a feasibility study beforehand to check the compatibility of the Single Window system with the various systems in place and provide for possible upgrading.

Choosing one of these 2 options will depend on the IT situation of stakeholders and timeline.

In general, since the Single Window is indispensable, it is important to have a fallback solution in case of major problems, such as:

(i) Real time replication on a distant site;
(ii) Asynchrone replication;
(iii) Data recovery through backup.

The backup solution should be operational, but not just in case of a Single Windows system breakdoThe backup solution should be operational, not just in case of a Single Windows system breakdown, but also in case any other partner's system breaks down. In fact, Activity Continuity Plan (PCA) is valid for all systems, since they are interdependent.

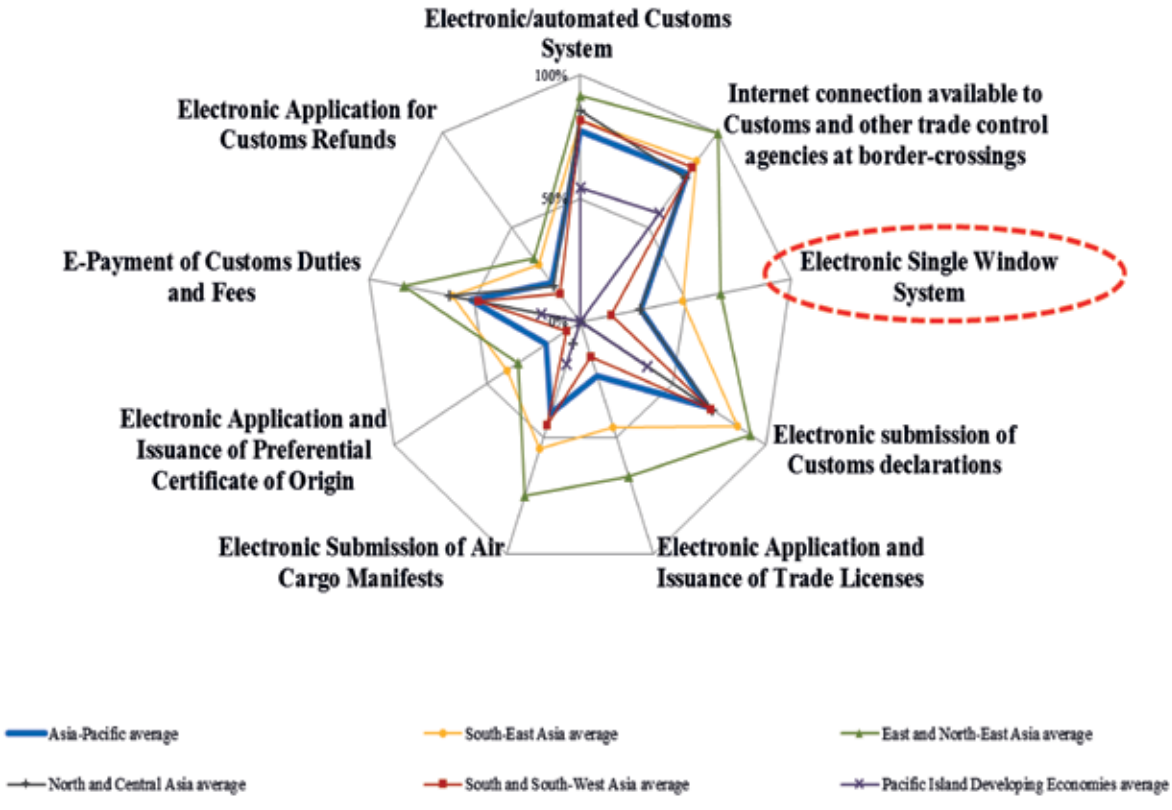
4. NEW EMERGING TRENDS

Due to the rapid evolution of information technologies, Single Windows are increasingly becoming technical bridges for communication and information exchange, notably in European and North American countries. With the IT autonomy of stakeholders, the exchange of information and structured messages is given priority in these environments. However, in developing countries, the situation is rather conducive to the setting up of centralized and national Single Windows, due to the low IT autonomy of stakeholders. This is even a certain asset, as the competitive Single Windows in the world are often found in emerging or developing countries.

4.1 Global expansion of Single Windows

In recent years, there has been a proliferation of Single Window projects across the world. In Asia for instance, the setting up of electronic Single Windows has an increasingly important place in programs to modernize international trade activities.

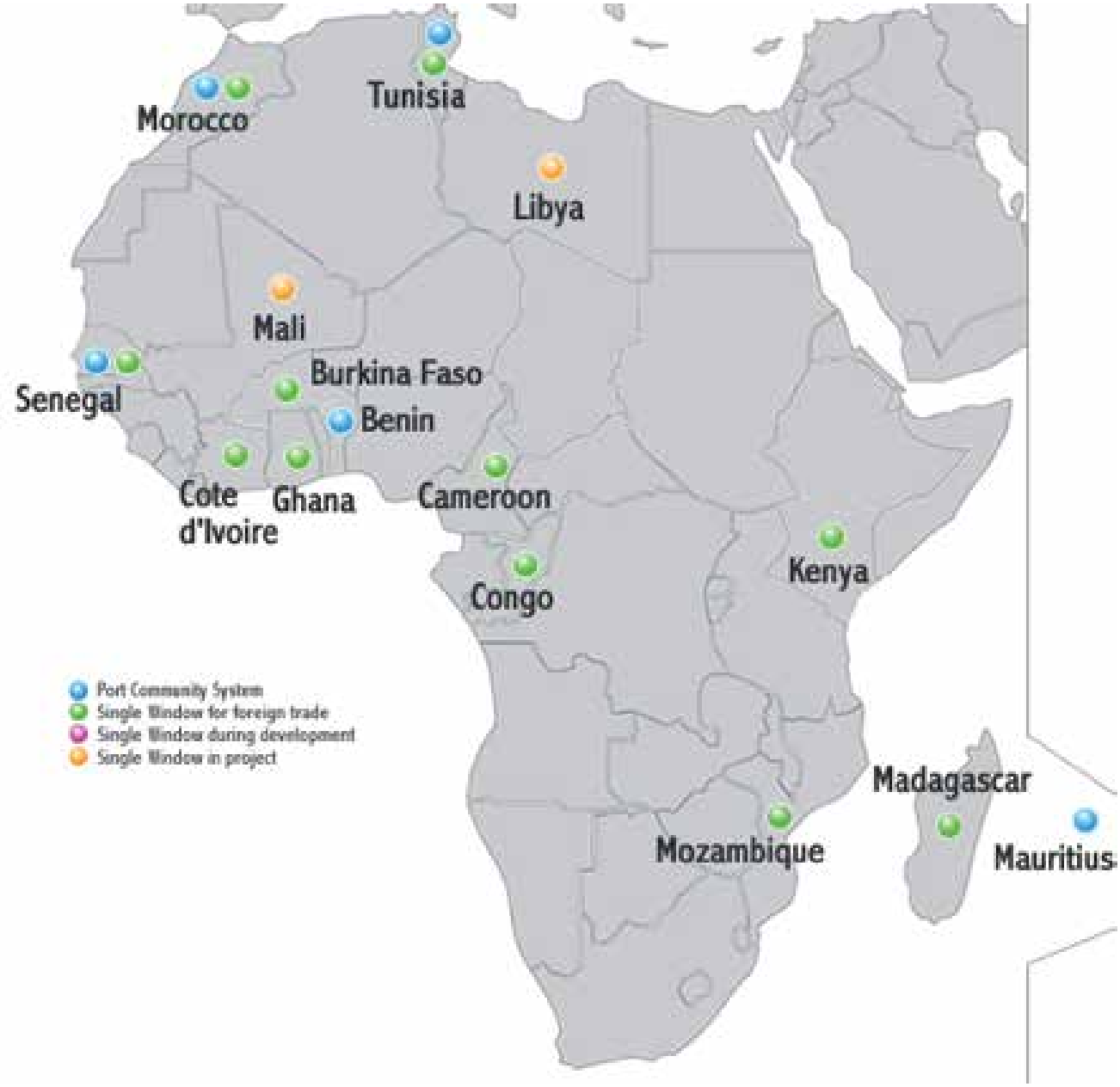
Illustration 6 : *Global expansion of Single Windows*



Source : ESCAP, UNRCs TF Survey 2015

Among members of the African Alliance for Electronic Commerce, the number of new members recorded shows the interest of African Governments in the issue. However, Africa remains the least competitive region in terms of crossborder trade, probably due to inadequacy between policy decisions and the technical capacity to implement them without being hampered by country specificities.

Illustration 7 : *Expansion of Single Windows in Africa*



Source : http://www.swguide.org

In Europe, Single Windows systems had difficulty taking shape due to systems that had already been around for a few decades and whose performance was appreciable. However, there are a few cases, notably the Maritime Single Window (DG MOVE), the tax Single Window (DG TAXUD), health and veterinary control Single Windows (TRACES System).

4.2 Emergence of the Regional Single Window concept faced with inter-country data exchange needs

The proliferation of national Single Windows opened an opportunity for anticipated data management by countries involved in commercial transactions. To facilitate Foreign Trade operations in the sub-regions between Regional Economic Communities, a few Single Windows found it necessary to set up data exchange mechanisms between them, leading to the concept of Regional Single Windows. For instance, the Pan Asian Alliance for e-Commerce (PAA) initiated and operates a regional Single Window. The UEMOA also has a project to set up a regional Single Window in its zone.

Besides, AAEC members initiated a project to set up a pan African platform for Foreign Trade data exchange in Africa and with the rest of the world. Pilot project for the exchange of certificates of origin are under way in the CEMAC and UEMOA zones, and will enable "proof of concept".

Other international organizations, notably the African Union and the Organization of Islamic Cooperation (OIC), are initiating regional Single Window projects to facilitate trade among their member countries.

These new developments led the United Nations, through UNCEFACT, to develop Recommendation 36, relating to interoperability of Single Windows. It provides a reference framework for the standardized implementation of interconnectivity at regional level.



SECTION 3

PRIOR STRATEGIC COICHES



Setting up a Single Window requires the validation of significant strategic choices. Such choices will be the key elements that determine the success of the project. They will be dealt with in this section, without losing sight of the fact that each country is a specific case.

1. INSTITUTIONAL AND ORGANIZATIONAL PRECONDITIONS

The search for a consensus is a necessary condition to the success of the project. Achieving such consensus is sometimes difficult, given the multiplicity of stakeholders and their dependence on different authorities or ministries.

1.1 Pilot phase of setting up a Single Window

In general, the following situations arise in terms of leadership in setting up a Single Window project:

NR	STEERING LEVEL	SINGLE WINDOW LEADER	COMMENTS
1	Senior Governement Level	President or Prime Minister's Office	When a Single Window Project is piloted under the leadership of the President or Prime Minister, buy-in by public institutions is virtually guaranteed.
2	Ministerial Level	Ministry of Finance	The Ministry of Finance, which oversees Customs, has the most assets to pilot a Single Window
		Ministry of Trade	The vision of effective trade without barriers is most often built at the Ministry in charge of Trade.
		Ministry of Transport	When the Single Window's focus is port logistics, this Ministry can take the lead in Single Window implementation.
3	Ad hoc department or body	**Customs, Port, Department** in charge of trade, other ad hoc institutions	When a department is in a leading position, there is a high risk of other departments not buying in.
		Public private partnership	When the Single Window is implemented under a PPP it is important that leadership for the project is left to soverign entities to facilitate its ownership by the stakeholders.

Experience shows that these authorities level of involvement is very important and often determines the success of the implementation.

A Single Window requires close and intelligent cooperation among all public and private authorities, departments and Government agencies, taking part in the improvement of the customs clearance chain, in order to provide facilitation in business circles.

1.2 Management and Operation Phase of Single Window Services

At organizational and operational levels, a Single Window requires the existence of an entity in charge of operating the platform and providing services. This responsibility should be entrusted to an autonomous management entity with clearly defined missions.

The management of a Single Window by an autonomous entity enables better focus on actual activities and the operation of the platform, at operational as well as technological level. It also makes it possible to demand contractual level of service quality.

The best time to set up or select the management structure (if it already exists) varies based on the context and capacity of the Single Window implementation champion. The following table shows the pros and cons of each approach:

	Pros	Cons
Case I: Setting up the management entity at the start of the project phase.	· Very early on, resources are linked to the project implementation activities. · Gradual stakeholder involvement.	· Poor planning of activities could lead to wavering of resources. Thus, skills profiles may not be precise enough.
Case II : Setting up the management entity during the project rollout.	· The Single Window operator starts by defining the modus operating modes. · Resources have an operational implication in the setting up of the activities.	· A too premature recruitment of the management team may lead to significant costs without any operation.
Case III : Setting up the management entity at the end of the project phase and at the start of operations.	· Sure to have the right profiles and limit starting costs.	· The operating teams do not have a good understanding of Single Window operations. · Longer learning period for operation and assistance staff.

2. LEGAL AND REGULATORY PRECONDITIONS

The legal and regulatory framework refers to all the laws, decrees, regulations, conventions and memoranda wich may govern the procedures to be applied in Foreign Trade operations.

According to induced operational changes, the demands of the regulatory framework will be more or less high. Basically, the Single Window may follow two different legal models:

- **Model 1 :** Single Window without recognition of electronic documents (in this model, the Single Window is a platform for the automation of data exchange processes. It does not lead to the production of any legally valid electronic document);

- **Modele 2 :** Single Window with recognition of electronic documents (the Single Window ensures the dematerialization of all the procedures. All the documents and all the authorizations are electronically signed and replace paperwork 100%).

Under **Model 1**, it is not imperative to change the legal framework at the start of the project. For instance, most customs IT systems were set up in countries without any need to change the law. In this case, what is necessary is for the stakeholders to agree to receive electronic requests and electronically process them. The Customs may be connected to the Single Window platform and receive the electronic authorizations without signature.

However, under **Model 2**, the electronic document replaces the paper document. It is therefore necessary to have legal provisions governing this new document format. It is also necessary to have an infrastructure capable of taking care of electronic signatures and electronic archiving. Such laws may exist because they are not specific to Single Windows, but to all electronic transactions.

Still under **Model 2**, the following laws are examples that may be necessary for the regulation of new operational procedures. These laws mainly deal with the following issues:

- Law on the protection of personal data;
- Law on electronic transactions;
- Law on cybercrime;
- Law on cryptography.

Moreover, a country's membership of an Economic Community may also lead to challenges in the implementation of some regulations.

Thus, with regard to international documents, their validity outside borders may be questioned due to non-recognition of electronic documents or electronic signature.

Finally, strong involvement at the highest level of the State, as mentioned above, is a vital condition for the enactment of the laws, regulations and memoranda that will accompany the new Single Window procedures.



3. TECHNOLOGICAL PRECONDITIONS

In terms of technology, there is no pre-established standard. In fact, every major publisher of customs and Single Window software has their own technological orientation, which hinges on the company's technical strategy.

However, there is a need for **interoperability**[2] of applications but also standardization of the information to be exchanged. It is essential to ensure interoperability with all existing systems among partners on the one hand, but also with IT systems of the countries with which the host country has trade transactions. This interoperability should be sufficiently standardized to take into account the new trade flows that could follow the implementation of Single Windows. Technologies should therefore be open and evolutive and avoid fixed approaches.

When the various administrations issue their authorizations and permits, these should integrate essential IT security components.

[2] *Capacity to exchange data or information between two heterogenous applications.*

A well-run feasibility study will help identify the strengths and weaknesses of the country's technological environment. The various Single Window experiences show that there is often a significant gap between initially identified infrastructure needs and the demands of implementation in the field.

There is need for a rigorous financial evaluation before setting up the technological preconditions. In fact, technological upgrade absorbs a significant part of the project's budget. I will also enable an evaluation of the automation level of each administration.

"Ideally", administrations and stakeholders could have minimum automation level to electronically receive and process the requests for authorization lodged with them. However, it should be well noted that this is by no means a curb on the project.



In its development, the Single Window could accommodate all the necessary functions of these administrations as well as technical equipments to ensure comprehensive performance of the system and better technological integration among stakeholders.

As in the case of legal and regulatory preconditions, when the Single Window integrates dematerialization, the following technological components are important:

- Electronic signature;
- Electronic archiving of documents;
- Accommodation of certain standards (UNCEFACT, OMD Data Model).

In a context of dematerialization, we talk about "***natively conceived electronic document***". Electronic documents should integrate the following features:

- Permanence;
- Integrity;
- Security;
- Tracability;
- Ledgibility;
- Accountability or author authentication.

4. INTERNATIONAL NORMS AND STANDARDS

Ilt is important to note that the integration of standards is a strong recommendation but not a technological prerequisite. Throughout the lifecycle of a Single Window project, it is recommended to use recognized benchmarks, norms and standards to guarantee permanence and future challenges.

Several documents and guides took inspiration from Recommendation 33 of UNCEFACT to take into account the specificities of international organizations promoting it. Thus, the WCO Compendium How to Build a Single Window Environment published the World Customs Organization (WCO) attaches great importance to the Single Window.

Reengineering processus is a permanent exercice in implementing Single Windows. The simplification and standardization of procedures is inspired from the following tools:

- **Recommendation 12 of UNCEFACT on measures aimed at facilitating procedures relating to maritime transport documents;**
- **Recommendation 34 of UNCEFACT on the simplification and standardization of data for international trade;**
- **Version 3 of the WCO data model;**
- **UNNExT Guide for the analysis of business processes notably based on UMM;**
- **UNNExT Guide for data harmonization and modeling;**
- **UNNExT Guide on document alignment.**

For the management of implementation phases of IT solutions, tools such as the Agile method and SCRUM are highly recommended. In fact, such methods make it possible to guarantee that the IT solutions implemented actually correspond to the needs of partners and stakeholders involved in the procedures to be dematerialized.

As for the operation phase of a Single Window, tools such as ITIL and COBIT may prove effective in ensuring good servie quality.

5. SINGLE WINDOW BUSINESS MODELS

5.1. The business model issue

The Single Window project is aimed at introducing a major innovation in the Foreign Trade environment, which will be turned into economic value. The Single Window covers a complex ecosystem, made of public and private administrations, often with different economic rationales. Therefore, from the outset of the project, a decision should be made on the business model option, whose acceptance by all stakeholders could serve as a common basis to resolutely move towards the achievement of the objectives assigned to the project. This decision will then determine the choices on financing the project, the strategy to meet the

costs related to the operation, and finally the transformation of the added value created into income to ensure the permanent operation.

In other words, the following aspects should be clearly defined and balanced:

- The value created by the project: the Single Window should enable to meet the needs expressed or provide innovations, in order to improve the Foreign Trade environment. At any rate, added value should be generated for stakeholders and users of Foreign Trade formalities;
- The project's funding sources: they may be donors, private sector, Government or PPP;
- The project's implementation budget: it should be well estimated to avoid lack of resources for the project implementation and start of operation;
- The prices charged to access the services: they should enable to cover all the costs related to operation and guarantee the evolution of the system.



5.2. Various Single Windows business models

The business models of Single Windows are highly dependent on the initial conditions in the environment (political, economic, social and technological), but also on a good identification and management of preconditions to the start of the project.

Consequently, a detailed estimate of Single Window implementation costs remains imperative. It will be buit around an inclusive approach targeting all stakeholders for good identification of needs in terms of infrastructure, equipment, human resources, training, communication, etc.

The aim is also to have a model capable of guaranteeing the balance of the three levels of funding, which are the setting up, operation and future evolution of the Single Window. Overall, three Single Window business models are listed:

- The public financing model;
- The Public Private Partnership (PPP) model;
- The concession model.

5.2.1. The public financing model

This model is used in cases where funding for setting up, operation and evolution of the Single Window is fully provided by Government or with donor support.

What moves a Government to finance the various stages of the life of a Single Window is the desire to improve the Foreign Trade environment, notably through the facilitation of trade formalities and good administration of the Single Window (e.g. Finland, Republic of Korea, Sweden, the USA, Macedonia FYRM, Azerbaijan, Philippines, Tunisia[3]).

The major risk of a strong Government involvement in financing all the stages of the Single Window lifecycle lies in the absence of resources to ensure its evolutiveness, especially in development countries and least developed countries (LDCs). This situation could negatively impact the performances of the Single Window and, where appropriate, the option of coupling private sector and donors may be envisaged.

Very often, a donor intervenes in the setting up of the Single Window, and the State takes over to ensure its financing and operation. However, donors may intervene later in financing the evolution needs of the Single Window.

5.2.2. The PPP model

This model mainly relates to Single Windows set up as part of a PPP between the State and the private sector. The PPP is limited to the governance and management of the project. The rationale of improving the competitive environment of Foreign Trade is at the heart of this mutually beneficial partnership (e.g.: Ghana, Hong Kong, Japon, Malaysia, Mauritius, Senegal, Singapore, Cameroon, Morocco, Congo, etc.).

In general, Single Window services set up under PPP charge fees. But these are often negotiated or approved rates (Senegal) aimed at balancing the operation. In some cases, the use of the Single Window is optional (Germany, Hong Kong, Japan, Malaysia, Sweden, United States, Republic of Korea) while in others it is mandatory (Finland, Ghana, Guatemala, Mauritius, Republic of Korea, Senegal).

The advantage with PPP is that its complementarity with other types of funding available, as it gives the possibility, if the need should arise, to call on the Government as a stakeholder, or on donors depending on the opportunities or context.

5.2.3 The concession model

Following a public service concession, the private sector may finance the investment necessary for the setting up of the Single Window as well as its maintenance and operation (e.g. Germany, Guatemala). In this process, profitability of operation is a must. Thus, the facility provides paid services.

[3] The examples in italics in this table are drawn from "Part 1: UN/CEFACT Single Window Repository" 2009

In principle, the concessionaire should directly be paid by the users on the basis of fees predetermined in the terms of the contract with the concessioning authority. In actual fact, administrations have limited competence on this type of contract. Concessionaires then take the opportunity to extend the concession time as well as the schedule of charges.

Thus, profit rationale may lead to high costs of services provided by the Single Window concessionaire. To avoid that, the Government should see to the cost effectiveness of the Single Window, by providing subsidies if needed, but also by mobilizing donors to finance the Single Window's investment and evolution program.

5.2.4 Synthesis of business models

The various Single Window business models may be summarized as follows:

Business Models	Set up Financing	Operation Financing	Evolution Financing
Public financed model	Donors/Gov.	Gov.	Donors/Gov.
Concession model	Concessionaire	Concessionaire	Concessionaire
PPP model	Donor/Gov.	Ad hoc entity	Ad hoc entity



6. BEST GOVERNANCE PRACTICES

Among the key success factors conditioning the successful implementation of a Single Window, there is the governance aspect, which is the combination of a number of strategic elements throughout the project implementation.

Governance is not a set of principles a priori but – like any architecture – a set of practices borne out of concrete challenges that organizations should meet and which, little by little, become a benchmark leading to the formulation of general principles. Legal, economic, social and cultural specificities vary from one environment to the other. However, and given the best practices identified, the following aspects should be taken into consideration:

- Setting up an inclusive governance body for the Single Window;
- Involving all stakeholders at all stages;
- Transparent pricing of services;
- Regular publication of reliable and relevant performance indicators;
- Sustained relations with government authorities.

The supreme governing body of the entity in charge of the Single Window should be representative of the whole Foreign Trade chain, notably in the case of a PPP model, so as to avoid interest being oriented towards a single organization. For instance, actions taken by a Single Window governed by a community of shipping agents will mostly and primarily serve shipping agents.

This is why, to be able to provide adequate services accessible to all stakeholders, the pool of the Single Window governing body should include all stakeholders in the Foreign Trade community (all public and private entities concernced by the Single Window).

The relevance of the services provided by the Single Window depends on the integration and involvement of the partners - public and private – in Foreign Trade. The Single Window should be designed as a comprehensive community platform, integrating all processes related to international transactions.

7. TRANSPARENCY OF SERVICE PRICING

Admittedly, the services provided by the Single Window for Foreign Trade Formalities are often priced to ensure balanced operation and permanent activities. However, its strategic position in the environment of foreign trade formalities makes the level of charges extremely sensitive, hence the importance of a perfect balance between the added value created by the Single Window and the counterpart paid by users, in order to avoid any risk of inflation induced by the Single Window. To ensure transparency, it is recommended that the charges applied by discussed among the various stakeholders of the Single Window, validated before publication and implementation.

8. REGULAR PUBLICATION OF RELIABLE AND RELEVANT PERFORMANCE INDICATORS

The objectives to cut the cost and time of formalities are a core concern in setting up Single Windows in the various countries that have initiated the experiment. Monitoring and evaluation of these objectives require the identification, management and regular publication of performance indicators. The credibility of these indicators depends on their reliability and relevance. Their publication should follow a certain periodicity and be accessible to all the Single Window stakeholders. The broadest possible dissemination requires the availability of publications, in print as well as electronic (website, mailing list, etc.).

Government support is important in implementing a Single Window, notably for the introduction of an adequate regulatory and legal framework for the application of facilitation and dematerialization actions.

Government may be a facilitator to ensure the involvement of all stakeholders of the Foreign Trade community in the development of the Single Window and also enable adequation between the Single Window action plan with national directives and guidelines. It also plays a convening role for the mobilization of teams and efforts in a situation of buildup and/or crisis.



SECTION 4

PRACTICAL IMPLEMENTATION STAGES



1. STAKEHOLDER MOBILIZATION

Any evolution of operational procedures is difficult to accept by the stakeholders, in particular in the public sphere, event if it enables to enhance the efficacy of daily operations. In general, private stakeholders (Banks, Insurance) do not resist because they rapidly identify the operational and economic advantages related to the setting up of a Single Window. The difficulty lies with public stakeholders and it is recommended to well explain the stakes of the Single Window project, which must be shared with all stakeholders to build a strong consensus and good ownership.

To do so, it is important to carry out an objective analysis of the stakeholders' commitment throughout the project in order to chart a strategy to mobilize all stakeholders.

Table 1 : *Evaluation model of stakeholder commitment for a successful project*

LEVEL OF COMMITMENT	PROJECT SPONSORS	PROJECT TEAM	STAKEHOLDER FOCAL POINT	USERS AS STAKEHOLDERS
4- Total Commitment	Optimum	Optimum	Optimum	Optimum
3- Support for the project with a constructive attitude	Satisfactory	Satisfactory	Satisfactory	Satisfactory
2- Understanding of the project, but low mobilization	Acceptable	Insufficient	Acceptable	Satisfactory
1- Awareness of the project's stakes, without further interest	Insufficient	Critical	Insufficient	Acceptable
0- Rejection of the project	Critical	Critical	Critical	Insufficient

Caption:

4- Total commitment: total ownership of the project and proactive participation in proceedings.

3- Support for the project with a constructive attituded: belief in the interest of the project and willingness to contribute to proceedings.

2- Understanding ot the project, but with low mobilization: understanding the interest of the project, with low level of involvement.

1- Awarenes of the project's stakes, without further interest: Knowledged of the project and its impact with refusal to be involved.

0- Rection of the project: Refusal to take part in the Single Window and cooperate with the project team.

To have all the guarantees of success in a Single Window project, it is important to always be aware of the stakeholders' level of commitment. Throughout the project cycle, this commitment should be in the green upper part of the table below, for all the conditions of success to be met. In fact, the usual perception of a Single Window by stakeholders is a loss of influence and control in their work to the benefit of other entities.

To increase their mobilization level, it is important to regularly communicate on the projet, by highlighting the tangible and quantifiable gains as well as the future roles of each stakeholder in the new system.

Furthermore, the integration of stakeholders in the life of the project is a good practice, for the perceived risks and problems identified to be resolved as they appear and for the level of commitment to remain high.

However, if this approach proves insufficient after several attempts, it may be necessary to resort to Government authority for arbitration.

2. COMMITMENT OF PUBLIC AUTHORITIES

The commitment of decision makers at the highest level of the State is a key success factor in a Single Window project. In fact, it is preferable for the main sponsor of the Single Window project to be a high-ranking authority in the public administration.

To ensure good ownership of the project and total commitment of public authorities, the added value of the Single Window should be proven. The following benefits may strengthen that line of argument:

- Improved interactions among the administrations involved;
- Enhanced reliability of the information disseminated by aministrations;
- Speedy delivery of public services;
- Lower human and financial costs of commercial procedures;
- Reassignment of human resources gained from the cost cutting, and their redeployment to activities with higher value added;
- Lower level of corruption thanks to transparency in transactions;
- Securing revenue, if a payment system is integrated;
- Overall improvement of the business climate, its impact for the country in international ratings and resulting political gains.

In fact, the contribution of public authorities at the highest level is paramount. During the rollout phase, it may be decisive to:

- Provide the highest qualified human resources to join the project team;
- Mitigate, or even overcome, resistance to change among some stakeholders;
- Communicate at large scale during the rollout phase;
- Manage the pressure related to critical technical incidents which will no doubt occur in the Single Window.



3. MOBILIZING AND SECURING FINANCIAL RESOURCES

Implementing a Single Window requires, from the part of the initiators, prior and precise indication on the financial resources necessary for its financing. Hence the importance of carrying out a feasibility study to have a clear idea of the solutions possible, evaluate them in order to find a solution to be implemented and estimate the resources to be raised as well as the expected benefits.

Mobilizing financial resources involves various stakeholders who may be donors, Government and/or private sector, notably in the case of a PPP.

It is important to carry out a feasibility study, but also to complement it with a business plan formalizing the forecast evolution of the project. It is also an effective tool for fundraising with institutional or private donors.

The business plan should be of good quality, with rigorously evaluated figures to give the document utmost credibility and provide a framework of trust between donors and the Single Window project.

In the final analysis, securing financial resources requires good management of the cost/timeline/deliverable triptyque, so as to minimize gaps between what is planned and what is achieved. This is all the more important as the implementation of a Single Window implies huge stakes and mobilizes significant amounts.

Possible funding may come from institutional donors (World Bank, AfDB, etc.) or States, either through Government equity funding (Tunisia) or a PPP (Ghana, Senegal, etc.).

4. SETTING UP THE PROJECT TEAM

The skills and experience of members of the project team are vital for the design and successful implementation of a Single Window. It is recommended that the members be fully dedicated to the project and have a good understanding of the stakes. Besides, the decision tree, the reporting line and the responsibilities of each member, as well as the communication modalities, should be clearly defined.

In fact, the major challenge for a Single Windo project is more organizational that technical. The project team should therefore be able to manage not only the technical dimension, but also the business processes of all the stakeholders involved, take part in the drafting of functional specificities, carry out acceptance tests and provide training to the end users. On this business aspect, it is recommended to develop close relations with each stakeholder by identifying a focal point who is an expert in their area.

However, one of the essential roles of the project team is to make sure that the project manager understands the business needs and to always prompt him to comply with the implementation schedule of the Single Window solution with the expected quality and budget, while meeting the users' expectations. In the absence of a point of contact in the project team, the chances of successfully implementing the Single Window could solely hinge on the project manager's capacity and good will. If necessary, capacity building may be useful in the form of training sessions (project management, reengineering of processes, functional studies...) or induction in countries with a similar context, with significant experience in Single Windows. For more assurance, the recruitment of a consultant to support the project team at methodological and business levels may increase the chances of success. However, the project team must not solely rely on the consultant's work and reduce their level of involvement. To do so, it is important:

- At individual level, to regularly measure the contribution of each project team member and evaluate their level of commitment;
- At general level, that the project sponsors evaluate, based on specific predetermined criteria, the performance of the project team as well as their capacity to achieve the set objectives.

Depending on their involvement in the project and their motivation, it is a good practice to recruit after the deployment, the members of the project team to build the core of the entity in charge of operating the Single Window.

5. SETTING UP THE STEERING AND PROJECT MANAGEMENT BODIES

A Project Champion should be clearly identified and approved by all stakeholders.

The project should be structured through steering and bodies that monitor the deliverables throughout the implementing phase.

1. A Steering Committee to serve as the decision making body;
2. A Project Committee in charge of implementing the project's activities.

• The Steering Commitee is the validation body for decisions related to the project and the monitoring of the various phases. Its meetings produce minutes with the guidelines to be implemented by the Project Committee. The committee mainly groups the management of structures that are stakeholders in the project.

• The Project Committee is the project implementing body. It submits an action plan to the Steering Committee and ensures its implementation once it is validated. Under the Project Manager, the project committee should meet frequently to consider all the issues as soon as possible, thus avoiding any deviation from the initially defined operating program.

Other committees could also be set up, but will only intervene in technical activities: Technical Committee (technical aspects of the solution) or Administrative Committee (evaluation of service proposals and financial bids for equipment).

6. ANALYSIS OF BUSINESS PROCESSES AND REENGINEERING

The processes are at the basis of the system's operation and performances. This is why it is important to well analyse them and chart out the possible area of improvement.

Thus, it should be specified that the purpose of a Single Window is essentially the migration from manual procedures to a more omptimized and secured information channel, which is not aimed at putting into question the prerogatives of any institutional stakeholder.

The analysis of business processes is a study of existing processes within the targeted organizations. The creation of a Single Window without analyzing and reengineering these processes will merely reproduce the existing flaws and possibly minimize the expected gains. The analysis of processes consists in understanding the features of business processes and their interconnections, and also clearly identifying the role of any stakeholder in the system.

The modeling of processes is a technique to document business processes where every element is represented by graphic notations to illustrate the points listed below:

- Activities that come in a specific order and decision points;
- Stakeholders carrying out those activities;
- Inputs and outputs set for each activity, related criteria and rules;
- Interconnection among stakeholders;
- Information flow throughout the company;
- Quantitative indicators such as the number of stages as well as the time and cost necessary to complete a specific business process.

Organizations such as UNCEFACT propose methodologies for process analysis based on the UNCEFACT Modeling Methodology (UMM).



The UNCEFACT Modeling Methodology (UMM) is a modeling approach that enables the design of business services which all partners and stakeholders should develop to facilitate collaboration.
"UMM enables to capture business knowledge independent of the underlying implementation technology used, like Web Services or ebXML. The goal is to specify a global choreography of a business collaboration serving as an agreement between the participating partners in the respective collaboration. Each business partner derives in turn its local orchestration, enabling the configuration of the business partner's system for the use within a service-oriented architecture", Wikipedia
The UMM collaboration model is based on three major mappings: i) a Business Domain View (BDV), ii) a Business Requirements View (BRV) and iii) a Business Transaction View (BTV). These three pillars of the UMM model are generally stereotyped. For instance, the BDV is described as follows:
"The BDV is used to gather knowledge from stakeholders and business experts. Through interviews, the business analysis tries to have a good understanding of processes in a specific area. The description of cases of use related to a given process remains at a high level. One or several types of partners may be involved in a process, but it may be that no stakeholder has an interest in the process. The BDV leads to the development of a process mapping, i.e. a categorization of the process…"

The results from the business process analysis will serve as a starting point to implement trade facilitation measures, in line with the setting up of a Single Window, such as:

- Simplification of procedures;
- Simplification of document requirements and their alignment with international standards;
- Automation of international trade transactions and creation of electronic documents for the Single Window.

BOX 2: Example of setting up a BPA

UNESCAP's BPA efforts in Asia

The BPA approach contributes to building the basic capacities for the implementation of paperless trade and Single Window. In fact, to improve the efficience and efficacy of trade processes and information flows throughout the logistics chain, it is vital that the procedures in place be analyzed prior to the implementation of trade facilitation reforms such as a Single Window.
The goal of BPA training sessions provided by UNESCAP is to facilitate the analysis of the processes in place and develop recommendations for the improvement of trade processes and information flows.

These training sessions generally help participants to better understand the role of business process analysis in simplifying procedures, harmonizing data and implementing a Single Window.

Thus, UNESCAP plays a very important role in promoting the Single Window principle and assisting in the optimization of Foreign Trade procedures.

Harmonization of data and documents with standards such as the WCO Data Model, etc.

With a view to ensuring maximum interoperability among the various stakeholders in international trade, the World Customs Organization (WCO) set up a standardized data model enabling the harmonization and effective exchange of data. This WCO data model represents a maximum set of demands carefully combined, harmonized and inspired from the regulation of crossborder flows.

The WCO thrives to regularly update these demands in order to meet the legal and procedural needs of border agencies such as Customs, for the control of export, import and transit transactions.

The WCO Data Model is based on the revised Kyoto Convention which makes it mandatory for Customs Administrations to request a minimum set of data to ensure compliance with customs laws in each country.

The rigorous use of the WCO Data Model guarantees that any new data demand, as part of procedures to regulate crossborder flows, follows a thorough analysis of the need and leads to a decision based on international standards.

Simplification and standardization of Foreign Trade documents

Setting up a Single Window necessarily requires simplification and unification of Foreign Trade procedures. In that regard, it is recommended to set up a committee in charge of optimizing the procedures and documents in use.
The work of such a committee can be organized in four major phases:

- Analysis of Foreign Trade procedures;
- Description of Foreign Trade operators' information;
- Plan the simplification of document standardization procedures;
- Proposal of a solution scenario for generalization of EDI.

The simplification plan developed as part of the committee's work should propose a range of concrete measures aimed at facilitating and optimizing Foreign Trade operations. Besides, it should also provide answers to the shortcomings noted in the processes as well as in the flow of documents among the various Foreign Trade stakeholders.
To do so, the plan could focus around three major pillars, namely:

- Horizontal measures to optimize procedures and documentary flows;
- Proposals of target procedures per process and sub-process;
- Priority projects with action planning.

7. DEFINITION OF THE IMPLEMENTATION STRATEGY

This stage consists in defining the mode of implementation. There are three modes of implementation generally used across the world:

- Development of the solution and internal operating capacity;
- Choice of solution provider under a concession or BOT contract.

Each formula has its pros and cons, whose scope varies according to the country context. The following template raises the issue and can help decision makers find the best formula depending on the country:

FORMULAS	PROS	CONS	SUCCESS CONDITIONS
INTERNAL SOLUTION AND OPERATION	Independence and capacity to adapt the solution to the needs.	Too high cost, very long timeline and excessively long maturing period. It takes 4 to 5 years to have a stable and operable solution.	A well trained team and judicious choice of technologies. Announe sufficiently comfortable timeline so as not to repeatedly delay implementation.
EXTERNAL SOLUTION AND INTERNAL OPERATION	This is the most common approach as there is a gain in time and maturity of the solution selected if it has already proved effective elsewhere.	Technological dependence on the supplier for evolutions.	Ensure that the solution selected is already working in the same conditions elsewhere with satisfaction. Demand knowledge transfer if possible.
SERVICES PROVIDER (CONCESSION OR BOT)	Financing is not a problem, and there is no risk taken on the hazards of project management.	Services are often very weak and costly as the operator seeks to cover their risk and avoid being drawn into specifications.	Well draft the specifications and make sur the provider correctly implements with measurable results. Avoid being limited to a best-endeavours obligation.

The synthetic table below is based on the various options analyzed from the perspective of the designated National Champion's capacity to pilot the implementation of a Single Window:

	CHARACTERISTICS OF THE NATIONAL CHAMPION IN CHARGE OF IMPLEMENTATION		
	HIGH CAPACITY	**MEDIUM CAPACITY**	**LOW CAPACITY**
INTERNAL SOLUTION & OPERATION	Risky	Very risky	Not to be considered
EXTERNAL SOLUTION & INTERNAL OPERATION	Favorable	Favorable	Risky
SERVICE PROVIDER (BOT OR CONCESSION)	Limited interest	Limited interest	Favorable

8. DEVELOPMENT OF SPECIFICATIONS

"The book of specifications is a document which contains the list of needs, demands and requirements to be met in the implementation of a project" source Wikipedia.

Under a Single Window, it would be risky to limit oneself to a book of technical specifications because a Single Window is more than an IT project. Various aspects need to be looked at:

- Technical aspect;
- Organizational aspect;
- Operational aspect (including the concession model).

Specifications should always be drafted for each component, while taking into account interconnections among the various aspects.
The content of the specifications often adapt to the political, legal and economic context. The following box contains a set of questions that will help you better transcribe the specifications.

What type of architecture? Centralized, decentralized?
What infrastructure and hardware do we need?
What infrastructure is in use?
What is the status of computerization? If none, what can the existing infrastructure sustain?
What is the legal framework? Is it sufficient?
Are there improvement projects?
What is the time allotted to set up the project?
What are the most critical processes?
What are the bottlenecks?
Who adheres to this project?
What are the targets?
What is the stakeholders' level of technological maturity?
What are the processes to be developed, rewritten?
What is the change management risk level?
How do we enroll the maximum number of stakeholders in the sector?

9. PROJECT IMPLEMENTATION AND DEPLOYMENT

In methodology terms, the implementation of a Single Window follows a traditional system for the management of IT system integration projects. However, the project team should agree upstream on a method and tools that enable to monitor the progress, budget, working points and risks. It is important to define a clear communication strategy, targeting all stakeholders and enabling to lift all resistance to change at each stage of the project implementation.

However, specific contraints to take into account are the availability of resources (human, financial, technical...), the nature of needs and the interest of change, which vary according to the public administrations and sectors involved. For a successful Single Window, special attention should be given to the following elements:

- Phasing in deploymen over time;
- Change management strategy;
- Taking into account the specificities of public administrations;
- Modalities for deployment and transition towards operation.

9.1 Sequencing of deployment

In a Single Window project, it is important to have an ambitious vision, but also to start with interim objectives, which may reasonably be reached with tangible results that will increase the project's attractiveness.

Moreover, starting with a large scope increases the risk fo failure, since users do not have time to absorb the change, and the project team risks being understaffed to properly support each stakeholder. Therefore, deployment should be prepared with the right balance between the following two factors:

- Defining several phases or waves of deployment, with reasonable spacing to enable better ownership;
- Reorganizing the scope into simple and coherent functional lots, to be deployed at each phase.

However, even if the deployment is gradual, the infrastructure of the Single Window should be initially dimensioned in a target configuration to avoid costly readjustments in the course of the project.

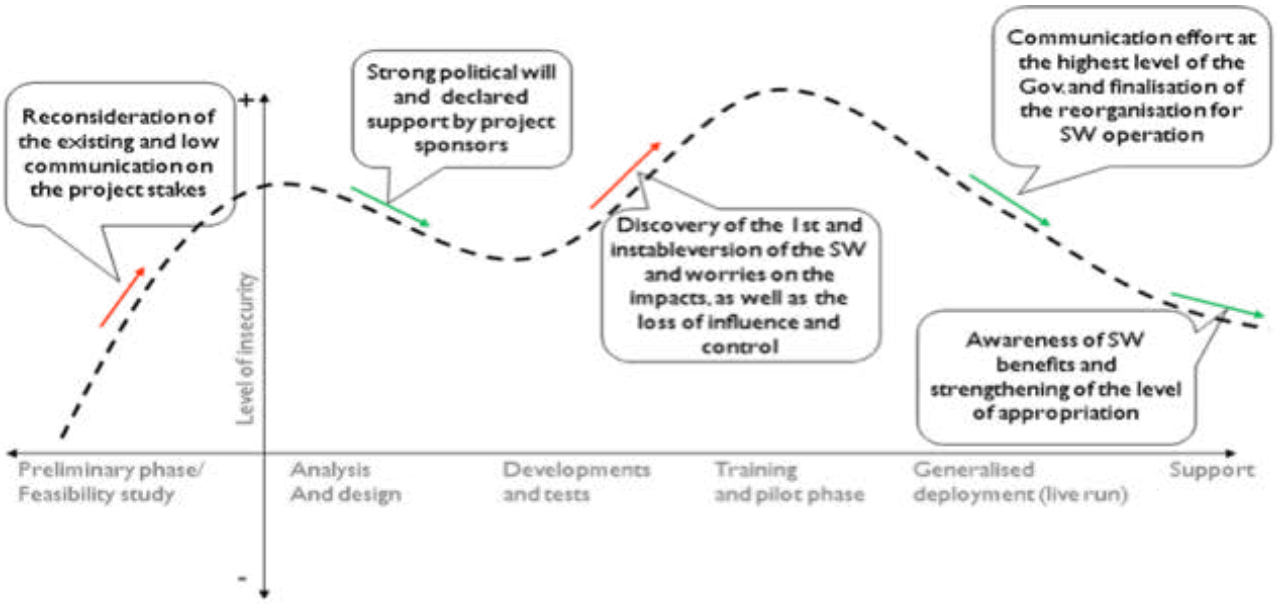
9.2 Change management strategy

The change management system of a Single Window should include the following vital components, which must be well organized at the start of the project and gradually implemented:

- Involve stakeholders at the start of the project, with the creation of user groups comprising the respective focal points who will be involved from the analysis phase;
- Communication strategy, with transmitters, messages, channels and a frequency adapted to each of the stakeholders;
- Training for the focal points of various administrations as trainers, to facilitate ownership of the Single Window and serve as relays for their colleagues;
- Functional and technical assistance;
- Support users in the field.

The expectations and concerns of all stakeholders should be managed proactively to facilitate their buy in. In fact, changes related to the Single Window implementation may be perceived as a source of insecurity with regard to working methods, acquired advantages or even career prospects.

Illustration 8 : *Evolution of user insecurity according to project phases*



To increase the chances of success, efforts must be made to manage change, as illustrated in the graph above, at the beginning and throughout the life of the project, rather than just at the pilot phase and deployment.

9.3 Managing the specificities of public administrations

One should not underestimate the scope of efforts to be deployed to take into account the specific constraints of an administration. In fact, integrating each new administration into the Single Window may be regarded as separate project because it requires:

- Situation analysis and reengineering of specific processes;
- Integration with existing systems and possibily their modification;
- Adapted change management strategy.

In some developing countries, the scarcity of means leads to additional efforts to meet the needs for processing expected as part of a Single Window operation.

9.4 Managing the transition phase to operation

The most important part of a Single Window project starts with deployment, which is one of the major risk periods, during which any critical incident may jeopardize previous efforts. The recommendations described below may be followed to reduce the risks inherent in this stage:

- Start the deployment phase over a managed perimeter;
- Space deployment waves to enable gradual ownership;
- Stimulate stakeholder performance by building their capacities if need;
- Continue the gradual deployment until full coverage of the perimeter.

At the end of the deployment phase, the project team will hand over to the entity in charge of operating the Single Window. That entity will be in charge of managing current operation over the deployed and stabilized perimeter. Thanks to the development of performance monitoring indicators, the entity will operate the Single Window by carrying out change management and technical assistance actions, and by identifying the necessary evolutions to integrate into the application.

9.4.1 Information quality and security policy

Considering the critical importance of positioning a Single Window within Foreign Trade procedures, it is vital to put in place a data quality and security policy. Such a policy requires the adoption of technical and organizational measures, namely:



Data access management:
- Ensure the security of the premises;
- Ensure the security of the computer rooms;
- Secure the work stations;
- Use strong identification and authentication;
- Manage remote access.

Data life cycle management:
- Pseudonymization and anonymization;
- Data encryption;
- Media security;
- Data backup and archiving
- Data destruction;
- Subcontracting (third-party processing).

Secure data transfert through:
- Network security;
- Message encryption;
- Message signature;
- Data media transmission;
- Transfer logging.

One of the most interesting systems to also provide for is that relating to personal data protection. In accordance with the domestic law of each country, the collection of personal data is only legal under strict conditions, and only to serve a legitimate purpose. Besides, the Single Window management body should prevent their fraudulent use and respect the rights conferred on the owners of these data.

9.4.2 Continuity of activity



To guarantee the continuity of activities and services, the Single Window should develop, implement and maintain an Activity Continuity Plan (ACP), depenfingon the key Foreign Trade stakeholders, notably by covering the following areas:

- Continuity of IT services provided to the partners and clients;
- Continuity of general resources "IT resources" and reconstitution of working environments;
- Management of crisis ad communication at all levels.

I- DIALOGUE STRUCTURES

Dialogue structures are frameworks for consultation and decisions shared among the various stakeholders around the Single Window. They generally involve the following:

- Customs, port and airport;
- Public administrations issuing authorizations or certificates;
- Private administrations: banks, insurance, etc.;
- Logistics stakeholders: approved customs agent, stevedores, consignees, etc.
- Single Window stakeholders in Africa and the rest of the world.

The existence of dialogue structures is fundamentally inherent in the active neutrality of Single Windows, aligned on the objective of competitive Foreign Trade formalities.

I-1 The various dialogue frameworks

In general, there are as many dialogue frameworks as there are stakes around a Single Window. To facilitate understanding, the dialogue frameworks will need to be segmented and stakeholders identified a each level.

I-1-1 Segmenting dialogue frameworks

Managing the diversity of dialogue frameworks requires segmentation along two criteria: geographic (national and international) and the number of stakeholders in the Single Window (1 (bilateral) or several (multilateral)).

This segmentation enables us to develop a dialogue template around the Single Window at four levels:

The various consultation frameworks that exist or need to be set up are grouped into 4 segments as follows:

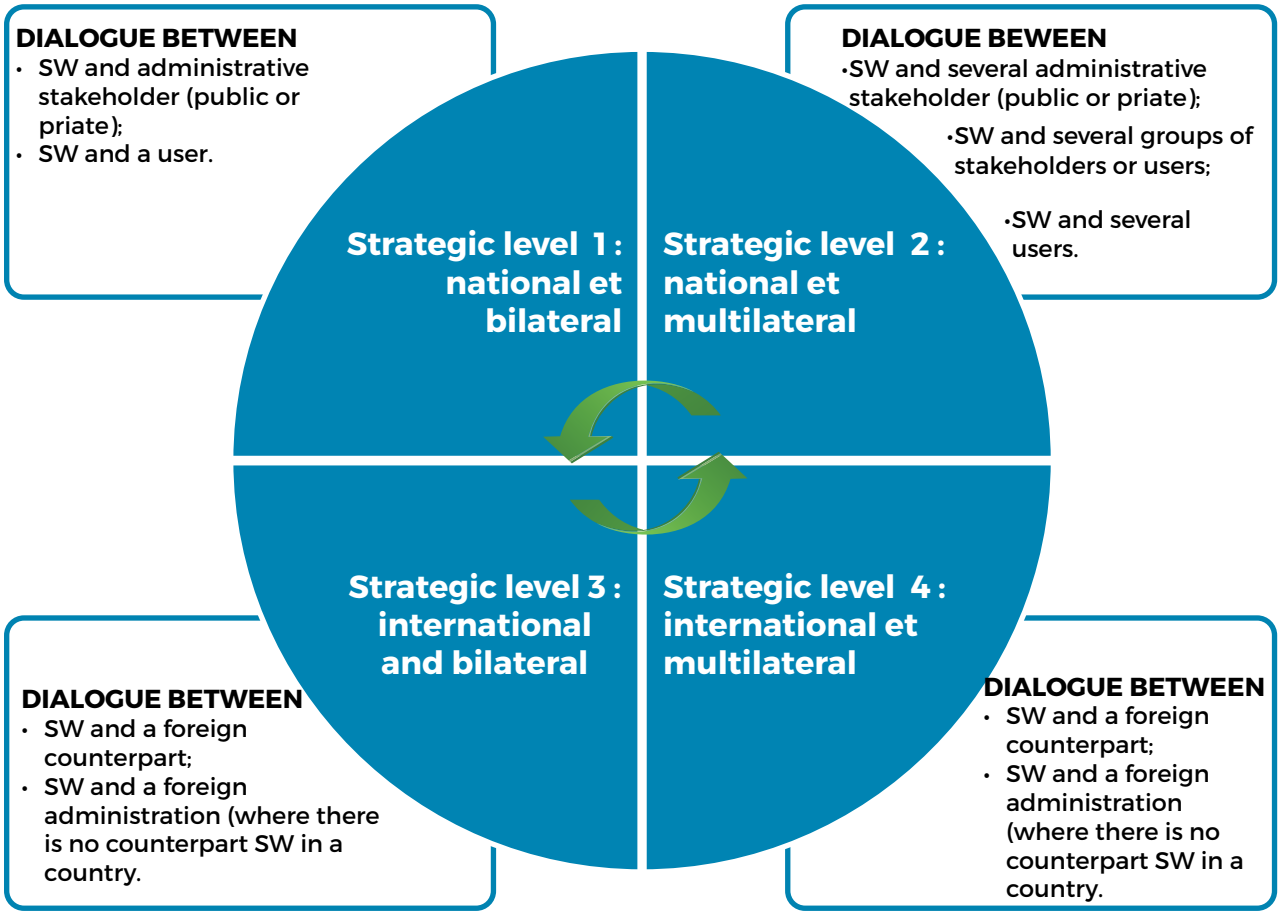
I-1-2 Strategic levels of dialogue

The identification of strategic levels of dialogue will result from the cross-reference matrix of segmentation criteria, which enables to identify 4 strategic levels:

CRITERIA	BILATERAL	MULTILATERAL
NATIONAL	Strategic Level 1	Strategic Level 2
INTERNATIONAL	Strategic Level 3	Strategic Level 4

This various strategic levels enable to highlight the nature of dialogue levels as follows:

Illustration 9 : *strategic dialogue levels*



I-2 Dialogue structures at the various strategic levels

The analysis of dialogue structures, based on the experience of various single windows, enables to classify them according to the 4 strategic levels previously identified.

CRITERIA	BILATERAL	MULTILATERAL
NATIONAL	**Strategic Level 1** • Business Focal Point; • Technical Focal pPoint; • Technical Assistance • Ad hoc Work Session.	**Strategic Level 2** • General Assembly, • Board of Directors; • Supervisory Board; • Steering Committee; • Executive Secretariat • National Trade Facilitation Committee; • Inspection Coordination Unit; • Strategy Papers; • Evaluation Seminars; • Satisfaction Survey.
INTERNATIONAL	**Strategic Level 3** • Joint Commission; • Steering Committee.	**Strategic Level 4** • Regional Economic Commissions; • Regional Associations (AAEC, PAA) ; • International Forums (UNCEFACT, UNECE, UNESCAP, UNECA, UN, etc.) ; • UNNEXT ; • International Events: SWC.

While there is agreement on the meaning of dialogue frameworks, which is mainly to facilitate good implementation of Single Window activities (removal of constraints, development of facilities, etc.), these partnership frameworks should fit into a dynamics of continuous improvement.

I-3 Dialogue structures in the BALI Agreements

The new Bali Agreement on Trade Facilitation (TFA) takes into account the importance of dialogue for its implementation and highlights it in the framework of cooperation among stakeholders at the border, at national as well as international levels.

Reconciliation between Trade Facilitation Agreements and the strategic levels of dialogue framework of identified Single Windows puts them at Strategic Levels 2 (national and multilateral) and 4 (international and multilateral).

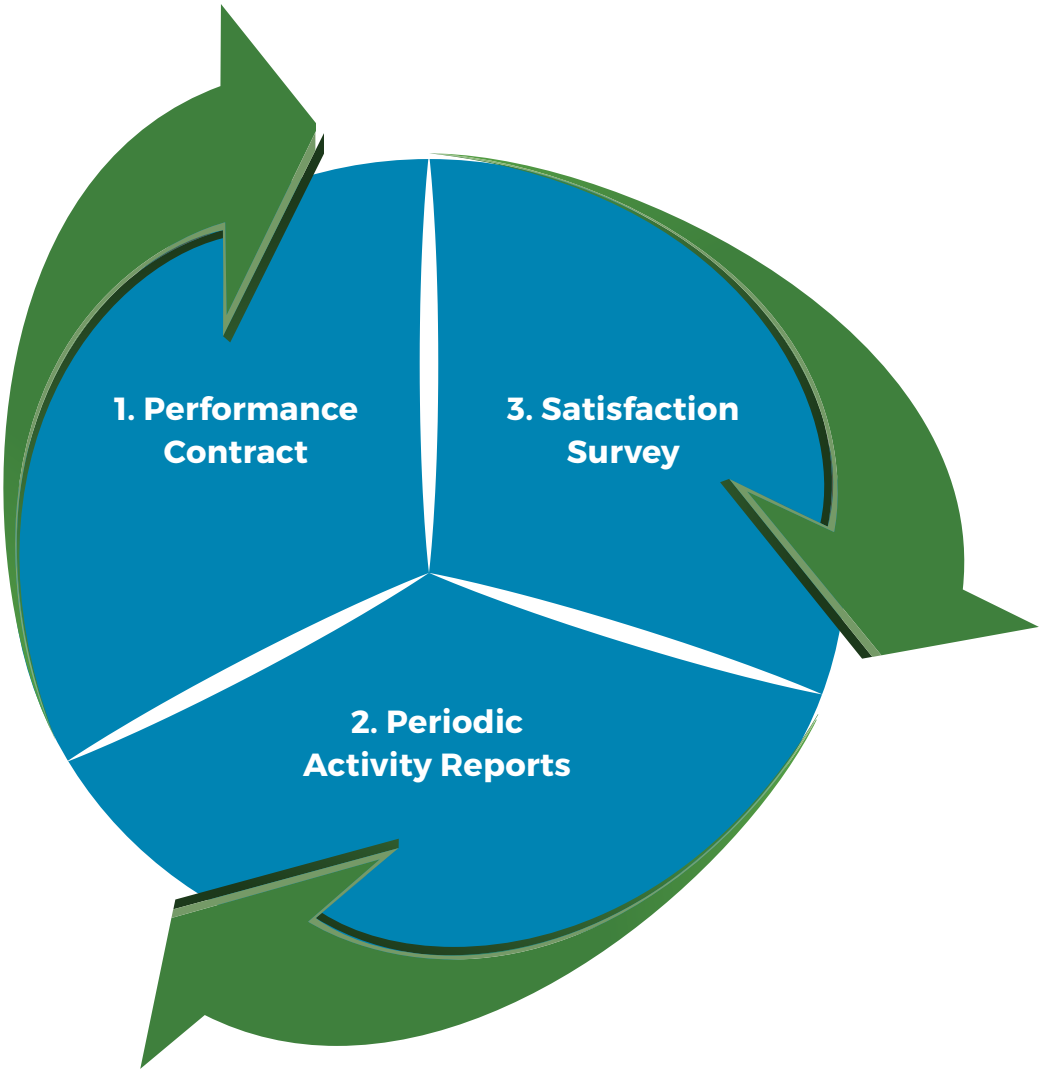
STRATEGIC DIALOGUE LEVEL	BALI ARTICLES
Strategic Level 2 (national and multilateral)	**Article 13.2 National Trade Facilitation Committee** "Each member shall establish or maintain a national trade facilitation committee or designate an existing mechanism, to facilitate both internal coordination and implementation of this agreement".
	rticle 8: "Border Agency Cooperation" **Art 8.1** "Each Member shall ensure that its authorities and agencies responsible for border controls and procedures dealing with the importation, exportation, and transit of goods cooperate with one another and coordinate their activities in order to facilitate trade".
Strategic Level 4 (international and multilateral)	**rticle 8: "Border Agency Cooperation"** **Art 8.2 :** "Each Member shall, to the extent possible and practicable, cooperate on mutually agreed terms with other Members with whom they share a common border with a view to coordinating procedures at border crossings to facilitate cross-border trade. Such cooperation and coordination may include: (i) alignment of working days and hours; (ii) alignment of procedures and formalities; (iii) development and sharing of common facilities; (iv) joint controls; (v) establishment of one stop border post control".

II. MONITORING

Monitoring consists in following the Single Window's performance indicators. It fits into a 3-level approach:

- First, the starting point is the setting of the Single Window's performance targets, which are formalized and communicated to all the stakeholders;
- Then, these performances should be monitored and periodically reported;
- Finally, satisfaction surveys are regularly conducted to ensure that the services are consistent with the users' needs and expectations.

Illustration 10 : *Monitoring*



Beyond setting the performance targets of Single Windows and setting their activities in a dynamics of continuous improvement that requires giving pride of place to the management and monitoring of their performance, one should also consider their impact on international indicators such as **Doing Business** and **Logistics Performance Index (LPI)**.

II-1 National Level Monitoring

It takes place at several levels as follows:

Monitoring Levels	Observations
Per individual or administration (Performance Agreement)	The performance targets assigned to each stakeholder could be the subject of a performance covenant signed by each stakeholder concerned. To maintain that performance dynamics, motivation strategies could be implemented by the Single Window or administration concerned to the benefit of administrations or their competitive agents.
Per Transaction	For each transaction in a Single Window, observance of performance targets should be a reality. Failing that, the technical or functional causes of delay should be identified, and the expected responses or corrections should be carried out speedily. Thus, each transaction should be monitored from start to finish until its delivery. Stakeholders and users should also be given the possibility to enquire about the status of their dossier and receive information within the required timeframe.
System	Evaluation of the file processing time by all the administrations involved should be a reality for each Single Window.
Technical	The quality of performance hinges on the quality of infrastructure and connectivity. Single Windows should ensure the upgrading of their infrastructure, but also that of the connected public or private administrations.

II-2 International Level Monitoring

The performance of Single Windows influences the attractiveness of the business environment. Thus, several countries have already valorized their results in various Doing Business reports on the crossborder trade criterion.

Doing Business valorizes electronic Single Windows by taking into consideration all Single Window procedure as a single procedure.

Doing Business: the crossborder trade criterion

Doing Business lists the timeframe and costs related to goods export and import logistics. In accordance with the new methodology put in place this year, Doing Business measures the timeframe and costs (exclusive of customs duties) related to three categories of procedure – observance of documentation requirements, observance of crossborder trade and internal transport procedures – which are part of the overall goods export and import process. The rating of economies based on crossborder trade facilitation is done by sifting the scores of distance from the border for the crossborder trade indicator. These scores correspond to the simple average of all scores of distance from the border, computed for the timeframe and cost of lodging the required documentation and observance of transborder trade procedures for export and import…

Crossborder trade data are collected through a questionnaire sent to local forwarding agents, customs agents and traders. Responses to the questionnaire go through several verification cycles with monitoring of respondents, exchanges with third parties and consultation of public sources. The questionnaire data are confirmed by teleconference or visits to all the economies.

http://francais.doingbusiness.org/methodology

The other indicator impacted by the performance of Single Windows is the LPI:

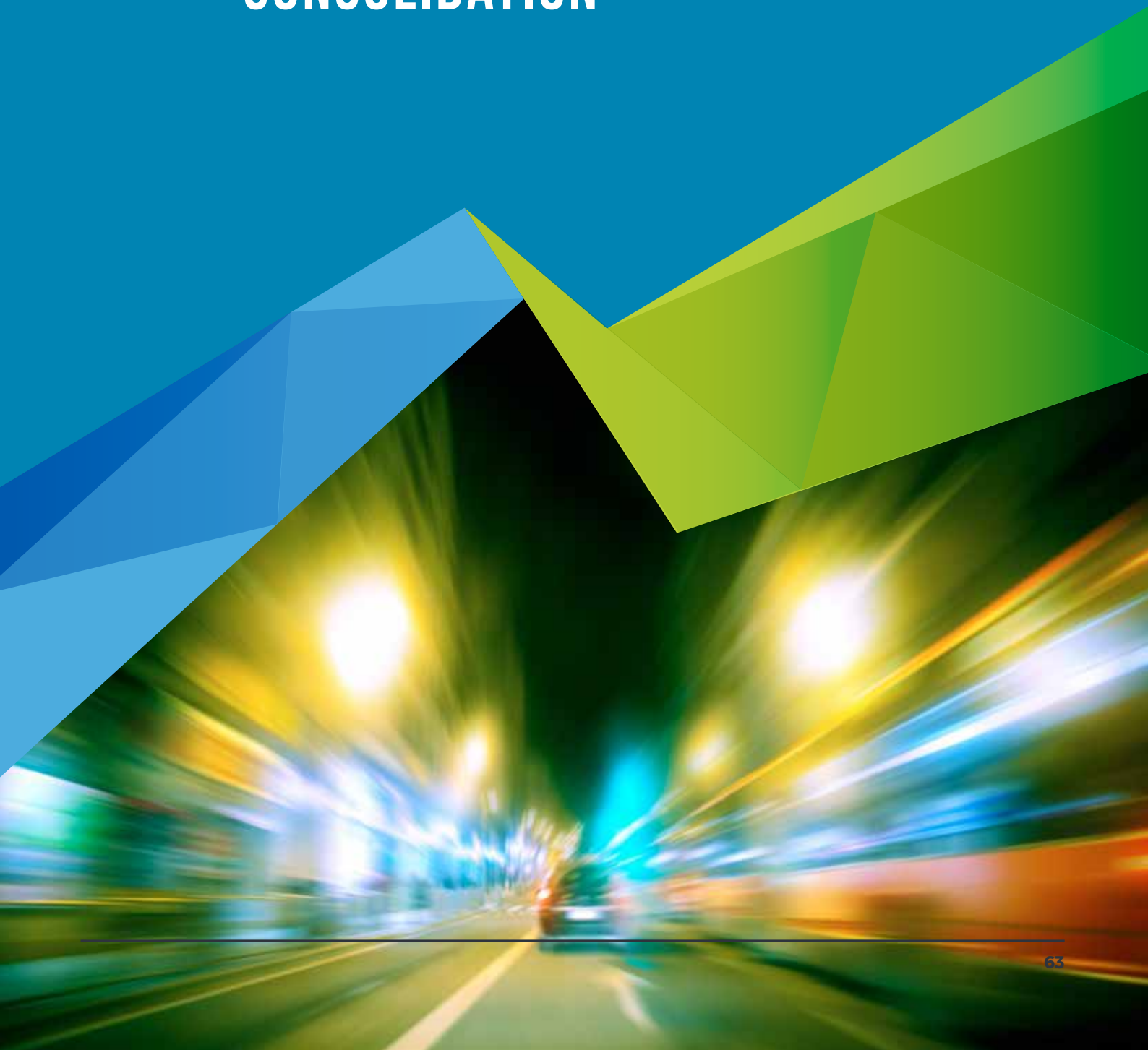
Logistics Performance Index (LPI): overall performance (1= low et 5 = high)

The overall score of the Logistics Performance Index reflects the perceptions related to a country's logistics based on the efficacy of customs clearance processes, the quality of trade infrastructure and related transport infrastructure, the ease of shipment at competitive prices, the quality of infrastructure services, the shipment monitoring and traceability capacity and the frequency with which shipments arrive at destination on time. The index scale is 1 to 5 and the highest score represents the best performance. The data for the index are drawn from LPI surveys carried out by the World Bank in partnership with academic and international institutions as well as private corporations and people active in the international logistics market.

http://donnees.banquemondiale.org/indicateur/LP.LPI.OVRL.XQ

SECTION 5

PERFORMANCE EVALUATION AND CONSOLIDATION



To improve the overall performance of the Single Window and make it valuable a system should be put in place to measure and monitor service improvement. A set of tools and indicators should be developed to allow permanent monitoring of the Single Window's performance and propose areas of improvement for its consolidation.

1. EVALUATION MECHANISMS

As is the case with any IT system, there are mainly two types of evaluation, first during the implementation of the project, then after the implementation of the project:

Evaluation of the methodology used to put in place the Single Window : this is the final evaluation of the project; it seeks to measure efficacy and efficience. I generally translates into:

- Appraisal of the authorities' level of commitment generally shown through the publication of texts, laws and enforcement decrees for the use of the Single Window as the sole plateform for trade and validation of requests;
- Verification of the efficacy of change implementation and sensitization: workshops, seminars, signing performance covenants, training and coaching of users.

Evaluation the Single Windows results and effects: It should permanent in order to measure the Single Windows performance and propose areas of consolidation. This evaluation translates into the development of indicators that enable the monitoring of:

- Cuts in time: processing times in timeframe mode (24/7) and in duration.
- Cost cutting: savings in travel time, cuts in printing;
- Improvement of transparence among stakeholders.



2. AVAILABILITY MANAGEMENT

The performance of a Single Window should be supported by a good availability management policy, which should ensure that the level of services provided meets or exceeds the needs agreed in a rationale of profitability.

As is the case with any IT system, the basic parameter to define to restore services, when they are not available, is Mean Time to Restore Service (MTRS). This parameter may be estimated based on assistance means and tools provided to the technical media.

Other variants may be defined as part of technical operation, with a view to take care of any default.



3. PERFORMANCE MANAGEMENT

To maintain the commitment level of Single Window stakeholders, it is necessary to put in place a number of dynamic levers:

- Precisely specify the performance measurement units which are the key indicators;
- Maximum use of standards and statistics that are easily interpreted and easier to communicate to quantify the observations;
- Use the various sources of information possible, such as the Single Windows production data, stakeholders' IT system data and indicators prior to the advent of the Single Window;
- Define the periodicity for publishing reports and at each production insist on needs for improvement.
- Identify the major recipients of reports: trade unions, authorities, managers, stakeholders and other high ranking decision makers;
- Produce a dashboard to constantly monitor gaps from indicators and warn the stakeholders that are below the set performance threshold.

4. ASSISTANCE, MONITORING AND CONSOLIDATION SYSEM

- **Assistance Center:**

Service center put in place as a single point of contact (SPOC) to manage requests, incidents, problems and events;

- **Performance monitoring tools:**

This is a set of tools provided to the service center for performance monitoring.

- **BI decision making tools:**

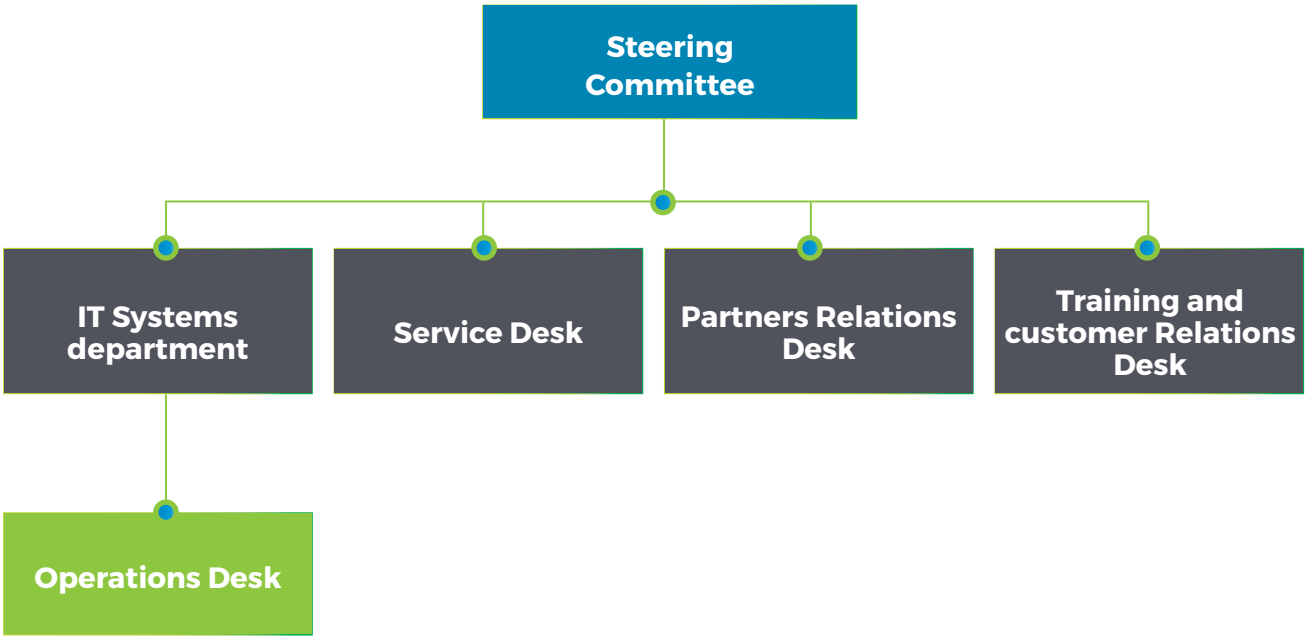
Decision making tools based on the concept of Business Intelligence and using analytical databases (OLAP).

ANNEXES



ANNEXE 1 : SINGLE WINDOW MANAGEMENT AND OPERATING SYSTEMS

Single Window management bodies: Case of the Moroccan Single Window, Portnet.



- **Service Desk:** desk set up as the sole point of contact (SPOC) for the management of orders, incidents, problems and events.
- **Operations Desk:** the goal of this desk is to ensure high availability of the Single Window platform, in order to provide a better service.
- **Training and Customer Relations Desk:** this desk supports users of the platform in procedures related to its use. The desk also takes care of communication around the Single Window, at national and internatnional levels.
- **IT System Department:** this department is aimed at managing the IT system operations of the Single Window platform.
- **Single Window Steering Committee:** this committee is aimed at developing the strategic pillars of the Single Window and record investment and governance choices.
- **Partner Relations Desk:** the Single Window context demands the setting up of a desk to take care of relations with the various partners of the platform: Customs, forwarding agents, etc. This desk's main mission is to coordinate among the various stakeholders in order to guarantee efficacy of the platform.

Management and governance tools:

Illustration 11 : Management and governance tools



- **Performance monitoring tools:** this is a set of tools provided to the service desk for the monitoring of performance;
- **BI decision making tools:** decision making tools based on the Business Intelligence concept and using analytical databases (OLAP). These tools provide a customized dashboard for each user so as to enable them to manage their activity;
- **Workflow Engine:** in an environment similar to a Single Window, it is recommended to build the platform around a workflow engine. This engine will enable great flexibility in terms of modifying the management rules and processes;
- **Test Plateform:** the Single Window is the subject of frequent requests for evolution. It is therefore indispensable to provide for a test automation tool in order to swiftly carry out non-regression tests and be in 'Time to Market' mode;

- **Tools for Single Window access authentication:** the most commonly used authentication tools to access Single Windows ar of PIN type (and/or password system) and PKI (Public Key Infrastructure);

- **EDI messaging management tool:** EDI connections between customs systems, freight community systems, commercial operators systems, banks and automated license control systems;

- **Platform security management:** the development of a Single Window should give serious consideration to the IT security aspect by using a framework for the implementation of security standards such as ISO 27001 and BS 7799;

- **Quality assurance framework:** the sound operation of a Single Window platform requires the adoption of a quality assurance approach in order to guarantee satisfactory service delivery;

- **Performance management tools:** to ensure high performance by the platform, it is recommended to procure an IT performance management tool in order to monitor the buildup.

ANNEXE 2 : SYNTHESIS OF PEER REVIEW FINDINGS

In 2014, the African Alliance for Electronic Commerce (AAEC) introduced, with support from the World Bank, an impact evaluation of Foreign Trate formalities Single Windows through the peer review mechanism.

In accordance with major international benchmarking indicators such as Doing Business, the aim of this important exercise was to carry out objective evaluation of the impact of Single Windows in performance of goods processing in the target countries, with a view to highlight all the strengths and identify possible weaknesses.

The first edition recorded the participation of the following volunteer countries: Cameroon, Ghana, Madagascar, Mauritius and Senegal.

The findings from this review should serve as an improvement framework for the countries involved and a benchmark for new or currently implemented Single Windows.

EVALUATION METHODOLOGY

Launched in 2014 in Pointe noire, Republic of Congo, the evaluation went through several phases. The following diagrams illustrate the activity based on the peer review mechanism:

Illustration 12 :*Evaluation methodology*

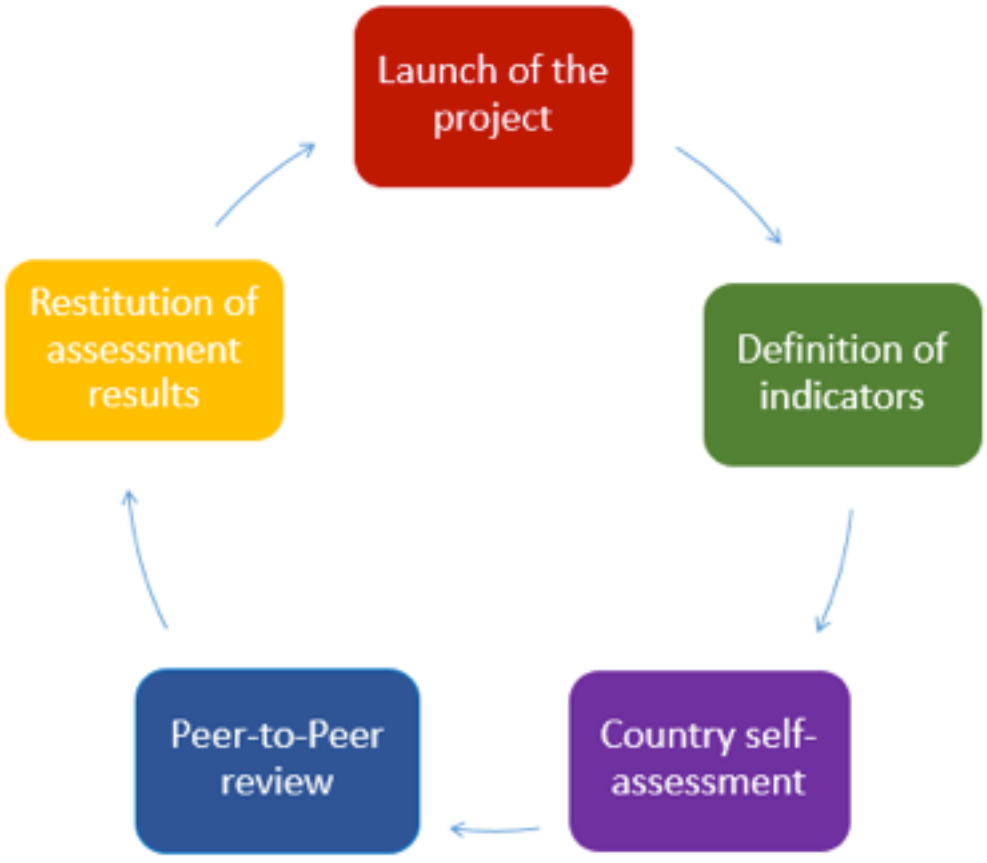
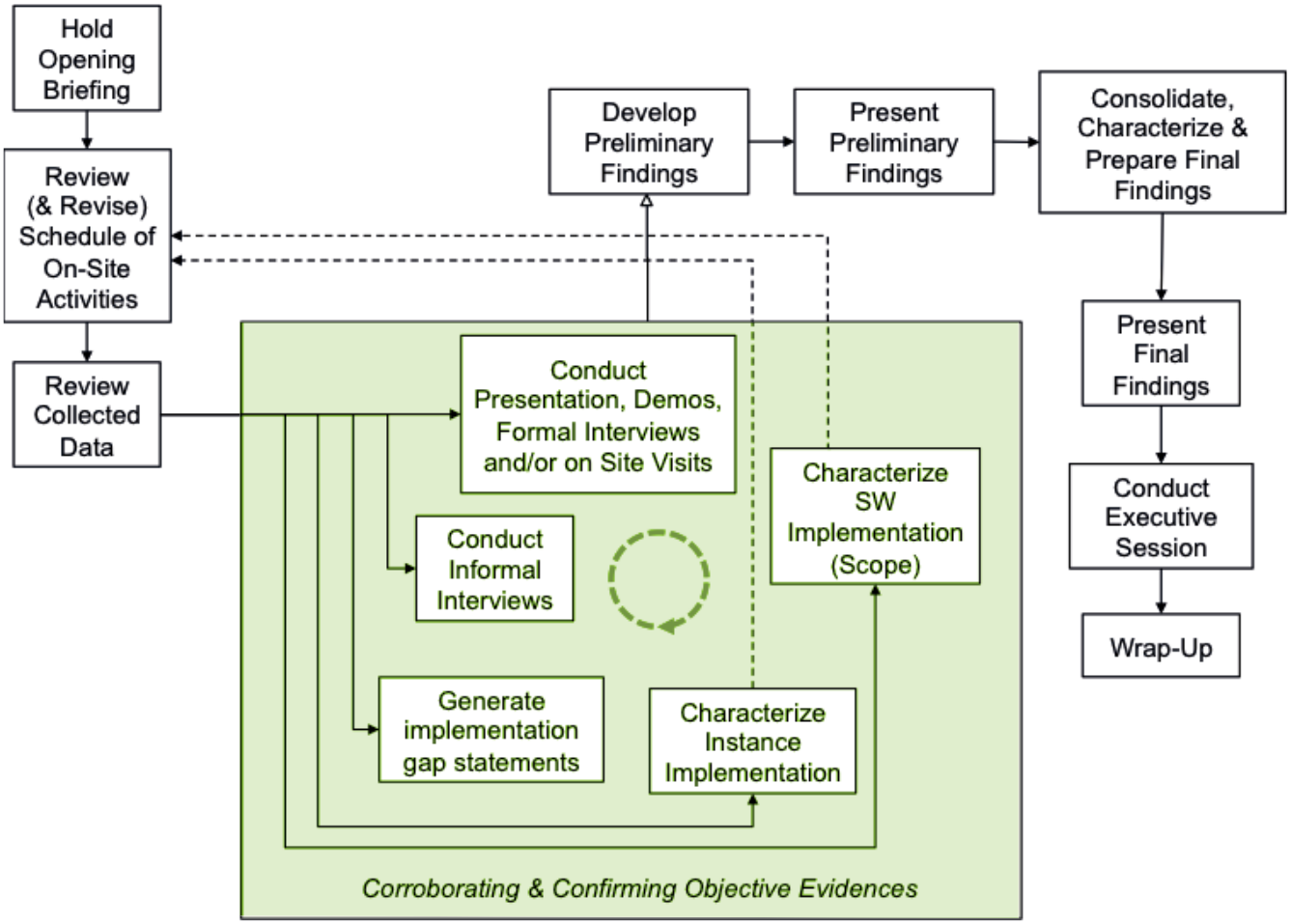


Illustration 13 :Evaluation methodology



It is important to note that all the operational, technical, organizational and legal aspects of the five systems were reviewed to identify their strengths and weaknesses.
The evaluation was carried out through presentations, user interviews and demonstrations. During the exercice, the Customs and a few other users of the system were visited.

REVIEW OF GASYNET/MADAGASCAR

Composition of the peer review team

Reviewer	World Bank Consultant
Peer Countries	Mauritius
Field Activities Coordinator	GASYNET/Madagascar

GAYSNET, the Single Window operator in Madagascar, was founded in 2007 under a Public-Private Partnership (PPP) between the Government (30%) and the SGS company (70%). However, the partnership is not based on any solid legal framework. Its business strategy and financial model are based on customs operations through the Single Window platform.

The services billing model is based on the following conditions:

• Cost of imports:
- a lump sum for freight below 25,000 EUR
- a percentage of the CAF value for freight above 25,000 EUR

• Cost of exports:
- a lump sum is paid depending on the type of shipment.

Implementation and performance
- There was a sustained growth of customs revenue;
- A reduction of customs processing time (from 16 to 4 days for clearance, and from 20 to less than 7 days for the whole processing time);

Challenges and recommendations
■ The customs system (Asycuda) is at the end of its lifecycle and should be replaced. This puts Madagascar in a delicate situation, as there is currently no strategy or plan to manage this significant change program;
■ It is therefore suggested to the World Bank that a neutral party be appointed to help Madagascar carry out the following tasks:

- Carry out a detailed diagnosis such as business environment analysis;
- Assist in the development of short, medium and long term strategic plan;
- Assist in the development and implementation of imminent change programs.

Strategic Orientation and Pilots:
- The customs system needs to be coordinated with the strategic orientation of Single Window operations. This may be done by developing strategic pilots derived from the balanced dashboards, and by implementing key performance indicators for the departments and leaders at all the levels of the organization.
- Customs may take advantage of the GasyNet statistics and reports to help improve and manage this process.

Compendium on the legal framework of Single Windows

• It is suggested to AAEC that a legal framework compendium comprising the legal provisions, processes, system functionalities and lessons learned be compiled and consolidated by all the countries evaluated through the peer review mechanism. This would provide a guide for AAEC members and other countries trying to build and extend their Single Window.

REVIEW OF GUCE/CAMEROON

Reviewer	World Bank Consultant
Peer Countries	GASYNET/Madagascar
Field Acitivies Coordinator	GUCE/Cameroon

GUCE - Cameroon's Single Window operator - is a PPP-type organization operating as an economic interest group. It is based on a legal framework for its operation and business model. Its services cover the pre-clearance and clearance processes. Currently, the environment is not yet dematerialized throughout. This Single Window still demands paper as well as electronic documents for Foreign Trade transactions.

Implementation and Performance:

Time Saving	50.24%
Fully Paperless Procedures	• e-Manifest; • e-payment of customs duties and tax; • e-ID; e-CIVIO (used cars); e-insurance.
Interfaced Stakeholders:	
OGA	15%
Customs	100%
Commercial Banks	100%
Insurance Companies	100%
Inspection Company	100%
Port Authority	100%
CAD	70%
Shipping Lines	100%

Challenges and Recommendations:

1. Stronger leadership and better implementation of change management are necessary to establish an electronic, paperless process in the country.
2. Need to permanently inform importers and exporters on the functions, processes and services provided by the Single Window environment.
3. Every 2 years, hold a series of Single Window evaluations.

REVIEW OF GCNet/GHANA

Reviewer	World Bank Consultant
Peer Review Representantive	Senegal
Field Activities Coordinator	GCNET/Ghana

GCNet is the Single Window for Foreign Trade Formalities of Ghana. The Single Window operates in accordance with national policy. The platform has already served 50% of OGAs, 100% of GCMS (Customs Management System), the port authority, 2 out of 29 commercial banks, 100% of inspection companies at destination, 98% of customs agents, 100% of shipping lines, 100% of forwarding agents and container terminals/depots.

The supply chain and commercial procedures cover three main processes, namely the approval/before arrival process, goods release/reception declaration process and the removal process. These cover the regulatory processes, the transport processes, the Single Window processes, the paper and paperless environment and the Single Window services.

Implementation and Performance:

Year-on-year average increase for the port of TEMA and KIA (Kotoka International Airport of Accra)	34%
Customs Clearance Procedure	From 14 to 4 days
OGAs connected	17 out of 36

Challenges and Recommandations:

- Service Level Agreements (SLA) should be put in place with MDAs (Ministries, Departments, Agencies) to enhance collaboration;
- The highlights should be integrated into the activity monitoring system of MDAs;
- Control should be put in place to check the accuracy of input data;
- A better Single Window structure should be developed;
- Integration with port processing procedures should be better developed.

REVIEW OF MACCS/MAURITIUS

Reviewer	World Bank Consultant
Peer Review Representative	Gcnet/Ghana
Field Activities Coordinator	MACCS/Mauritius Single Window

This type of Single Window is a system called Port Single Window. It nearly provides a fully paperless environment, in operation since 2009. This platform, called Mauritius Cargo Community System (MACCS), can be a good reference model for the community of CCS Single Windows of other countries. It provides an electronic data exchange platform that facilitates the coordination and treaceability of goods movements among logistics stakeholders at the port and airport. It is based on the 2008 customs regulation, which provides a legal status to MACCS to interact with the Customs Management System (CMS) and TradeNet. This regulation also provides for a clear mandate to operate the electronic network system for its services. This Single Window platform also benefits from strong collaboration between institutions and other electronic transactions related to the legal framework.

Mauritius should take advantage of the various opportunities and many value added services found in the current system and in the organizational management, while overcoming its weaknesses.

Implementation and Performance:

Through the various services provided by the Mauritius Single Window model, the following performance was achieved:

Shipping Line/Airlines	100%
Ground Handling Agencies and Terminal Operators (CHCL/GHAs)	100%
Warehousesdes/Container Freight Stations (CFSs)	10%
Forwarding Agents	100%
Master B/Ls (law on Bills of Lading)	100%
House B/Ls	100%
Master AWB (Air Waybill) (2013 data, but 100% in 2014)	2%
House AWB (2013 data, but 100% in 2014)	2%
Customs Declarations for transshipment at sea	100%

These imply a great impact on:

- visibility of containers and movement of goods through the supply chain;
- availability of information enabling greater security through cross checking of data;
- improved port delivery processes;
- reduced transport cost (up to 93%);

- reduced invisible costs (due to SLA and the visibility of information between the stakeholders involved;
- elimination of paper manifests;
- greater security and accuracy of container delivery;
- efficacy of processing;
- greater security, for instance: MACCS enabled Customs to better comply with the WCO's SAFE framework and standards.

Challenges and Recommendations:

1. Use the opportunities of interaction with the Customs Single Window supplier to make the services more remarkable/beneficial to the stakeholders (medium and long term perspective);
2. High-level stakeholder meetings should be held regularly;
3. The remaining processes and major functions an other value added services still need to be rapidly implemented and adopted; for instance the port export process, the air import/export related process, statistics and Business Intelligence reports, and value added functionalities for back-end operations of certain stakeholders;
4. To accommodate numerous promising new functions and value added services, the MACCS human resources should be considered more strategically.

SENEGAL'S ORBUS

Peer Review Team

Reviewer	World Bank Consultant
Peer Review Representative	GUCE/Cameroon
Field Activities Coordinator	ORBUS/Senegal

Senegal has a Single Window for customs pre-clearance and clearance formalities with a few services related to the almost fully dematerialized, paperless logistics.

This Single Window platform is developed and operated by GAINDE 2000, a PPP-type company (CGPID 92% and 8% Private). It takes careof electronic interaction between operators, Customs agents, shipping companies, forwarding agents, banks, insurance companies, the inspection company, customs administration and nearly all other foreign bodies to regulated trade with electronic transmission of data and regulatory authorizations, consolidated online and offline payments of fees and duties, notifications and reporting services on the performance during import and export procedures. This is a fully paperless environment, but not for some exceptional cases, such as amendments.

This platform has been operating since 2004 and was gradually improved with more processes and continually improved coverage of services.

It also has a solid leadership and strong collaboration with customs and other stakeholders.

Implementation and Performance

Time Saving	Up to 90%
Cost Reduction	Up to 65%
• **Statistics and Uses**	
Nomber of Customs Declarations (2014)	183,902 (76%)
Pre-Import Declarations	100%
Number of OGA Transactions	58,272 (61%)
Manifests	16,259
• **Users**	
Shipping Lines	91%
Forwarding Agents	100%
Authorized Customs Brokers (both ORBUS and CMS)	100%
• **Other Services**	
OGAs	90%
Inspection Companies	100%
Commercial Banks	100%
Insurance Companies	100%

Challenges and Recommendations

1. A strategic orientation should be followed to ensure a strong political mandate for the future evolution and sustainability of the organization. This mechanism could also strategically suppor. The collaboration and development of more services for the port community, as well as the post-clearance functionality, should be established and exploited;
2. A more systematic approach of project management (PM) and resources dedicated to PM may still be improved since many promising value added services have been pursued;
3. Other business models and revenue flows should be further explored;
4. A proposal of Key Performance Indicators (KPI) for the strategic and operational level may be developed and discussed more broadly;
5. The possibility of more external human resources in periods of high workload may be explored and further established;
6. The visibility of data for Customs should be available in a single interface rather than several user interfaces.

International Standards

The importance of Single Windows translates into the existence of several proceedings or recommendations by various organizations. The WCO, UNCEFACT, ISO mainly have abundant literature in this field. Interventions can be classified in 3 categories:

1. 1. Recommandations high-level vision mainly WCO, UNCEFACT, IATA, FIATA, IMO, etc.;
2. 2. Recommendations for the reengineering such as document definition, e.g. Rec. 1 UNCEFACT;
3. 3. Commonly used standards such as country codes, units of measurement found in the operation phase. ISO is the most active organization in this area.

Following is a table of the various standards:

WCO	Data Model v3.0
ISO	6346 Container Code
UN/ CEFACT	Recommrndation 1 "United Nations Layout Key for Trade Documents" Recommendation 3 "ISO 3166 Code for Representation of Names of Countries" Recommendation 5 "Abbreviations of INCOTERMS" Recommendation 7 "Numerical Representation of Dates, Time and Periods of Time" Recommendatino 9 "ISO 4217 Alphabetic Code for the Representationof Currencies" Recommendation 10 "Code for the Identification of Ships" Recommendation 16 "Code for Trade and Transport Locations UN/LOCODE" Recommendation 17 "PAYTERMS: Abbreviations for Terms of Payment" Recommendation 19 "Codes for Modes of Transport" Recommendation 20 "Code for Units of Measure Used in International Trade" Recommendation 21 "Codes for Types of Cargo, Packages and Packaging Materials" Recommendation 23 "Freight Cost Code-FCC: Harmonization of the Description of Freight Costs and Other Charges" Recommendation 28 "Codes for Types of Means of Transport" Recommendation 33 "Recommendations and Guidelines Establishing a Single Window" Recommendation 34 "Simplification and Standardizationof International Trade" Recommendation 35 "Establishing a Legal Framework for an International Trade Single Window" Recommendation 36 "Single Window Interoperability" (draft)

Technologies

In term of technology, there is no pre-established standard. In fact, Single Window software editors each have their own technological orientation based on the company's technical strategy.
A well carried out situation analysis should enable to identify the needs for automation, draw up an IT allotment plan describing the general principles of dimensioning and expected performance.

A. Hosting

The following principles should be observed by the Single Window's host platform:

- Centralization of the platform hosting the Single Window without having to multiply the physical or logical environments;
- High availability of the platform enabling 24/7 operation and, in case of an incident, resumption of service within less than 15 minutes, without data loss;
- The platform has a backup system with overlapping of servers and other equipment as well as production databes and real time synchronized backups;
- The platform has a consolidation system (Servers) and storage pool (Databases) using virtualization technology according to need
- Evolutiveness of capacity and performance to ensure consistency between technical performance, traffic evolution and deployment;
- Setting up a strong system of authentication (PKI-based) and electronic signature;
- Interoperability to exchange with IT systems of other platforms.

In this respect, the proposed Single Window architecture and technology should be owned (managed with specifications specific to the context) and should be based on state-of-the-art standards.

1. Single Window Components

The Single Window is based on sub-systems. All these sub-systems are integrated around the same database and the same EAI:

- A Sub-system: a data and document exchange platform among Foreign Trade partners. This platform is integrated around an EAI and sustains all the workflows;
- A Single Window (Internet-based) for access and dissemination of information on Foreign Trade electronic forms;
- An IT application for Foreign Trade file monitoring and management;
- An Internet Portal presenting the Single Window and Foreign Trade;
- Utility applications for operation including billing tools and user monitoring;
- Applications for warehouse and data operation.

2. Connectivity

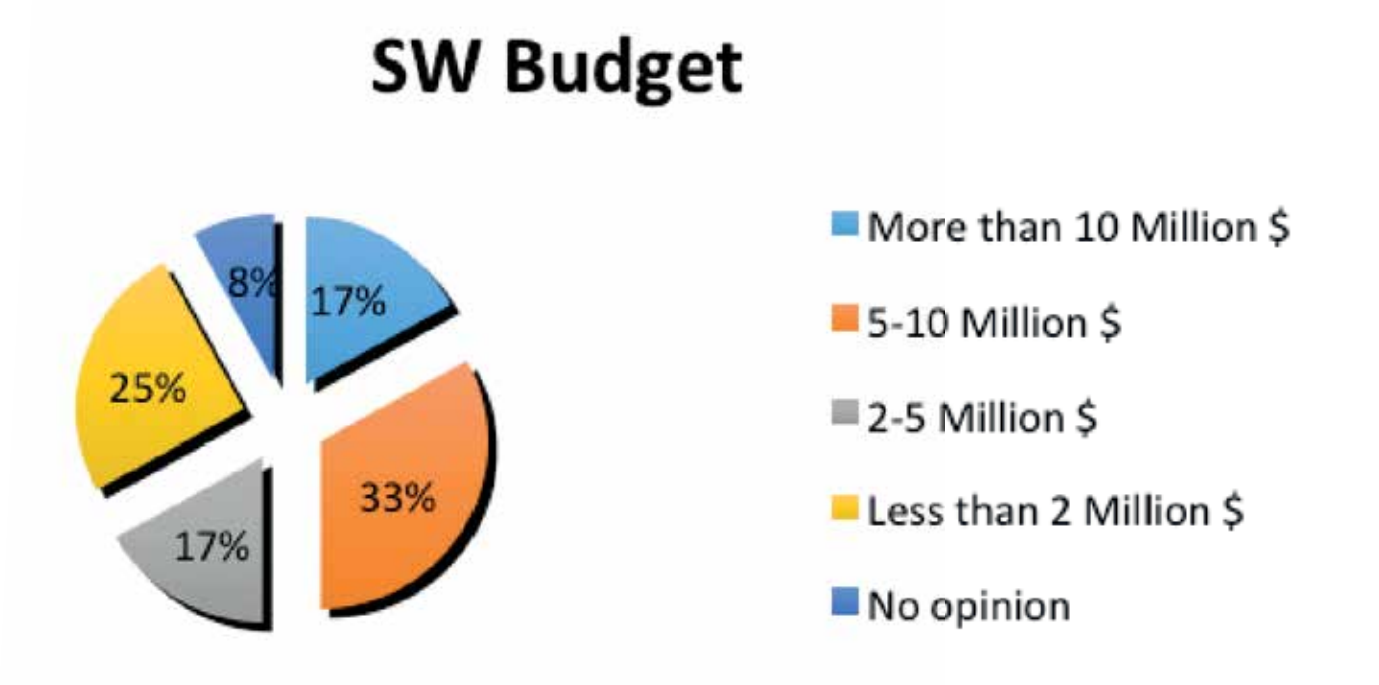
Two cases need to be considered for the Single Window's member organizations:

- The organization does not have IT applications to manage the data it will exchange with the Single Window. In such a case, the Single Window, through its Internet capacity, should develop Web interfaces to post the forms;
- The organization has its own IT system and exchanges with the Single Window will be through file exchange under various formats: EDIFACT, XML, flat Files, etc. In this second case, the user may also use the Web Single Window. The Single Window should take care of the functions of data conversion, translation and transmission between the various EDI formats.

B. Cost Estimate and Implementation Timeframe

For 41.6% of the countries interviewed, the Single Window budget is between 5 and 10 million US dollars, between 2 and 5 million US dollars for 16.6% of respondents. It is more than 10 million US dollars for 16.6% and less than 2 million for 25% of the countries.

Illustration 14 : *Cost Estimate and Implementation Timeframe*



			Costs	DURATION OF VARIOUS PHASES (months)				
COUNTRY	**Start Date**	**COST**	**CONSENSUS**	**STUDY**	**DEVELOPMENT**	**PILOT**	**TOTAL**	**YEARS**
GHANA	2002	6 Million USD	12	8	7	3	**2.50**	**2.50**
BURKINA FASO	2016		12	6	6	6	**2.50**	**2.50**
LIBYA	NOT YET		3	6	12	14	**2.92**	**2.92**
MALI	NOT YET		6	12	12	12	**3.50**	**3.50**
MADAGASCAR	2008		12	12	12	12	**4.00**	**4.00**
SENEGAL	2004	12 Million USD	12	12	24	6	**4.50**	**4.50**
COTE D'IVOIRE	2008		36	18	18	2	**6.17**	**6.17**
CAMEROON	2002	6 Million USD	12	24	24	36	**8.00**	**8.00**
CONGO		7.4 Million USD	60	36	36	18	**12.50**	**12.50**
MOROCCO		5 Million USD						
AVERAGE		6.4	18	**15**	**17**	**12**	**5**	**5**

Source : AAEC Task Force

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