

**Working Paper Series  
International Trade & Economic Diplomacy  
Middlebury Institute of International Studies at Monterey, CA**

**TRADE FACILITATION AGREEMENT:  
COST & BENEFIT ANALYSIS OF SINGLE WINDOW  
IMPLEMENTATION  
WITH MOZAMBIQUE CASE STUDY**

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JANUARY 2021

**ABSTRACT**

When it comes to the implementation of the Trade Facilitation Agreement, Single Window arises as a popular topic to streamline customs documentation and acts as a single access point for information for the trader. But the modernization of these processes requires great effort— consensus between stakeholders, staff training, infrastructure development and funding—to implement well. This study is an attempt to define Single Window, weigh the costs and benefits of single window implementation, and to also discover by example through the case study of Mozambique.

The views and findings expressed here are those of the authors and do not necessarily reflect those of the Middlebury Institute of International Studies or any officials of the Institute.

## Introduction

Per UN/CEFACT Recommendation Number 33, Single Window is defined as “a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements.”<sup>1</sup> For electronically submitted information, the TFA states that necessary documents are only submitted *once* for verification—eliminating further “red tape” and redundancies in the process. As this measure requires much stakeholder coordination and consensus to initiate implementation, Single Window remains to be the highest measure requesting capacity building support. For Article 10.4.3, the operation of Single Window, 51% of Members in the World Trade Organization have not yet notified any definitive dates of implementation.<sup>2</sup> This indicates there have been no formal announcements of donor assistance or definitive dates of implementation to the WTO Committee of Trade Facilitation. Due to the high implementation cost, brings about the question whether the cost is worth the gains. The goal of this analysis is to provide a cost and benefit analysis of single window implementation and a case study via Mozambique.

## Background

With the ratification and implementation of the Trade Facilitation Agreement at the World Trade Organization, trade facilitation has shown great importance in overcoming cumbersome soft barriers such as documentation requirements for clearance in addition to how to solve issues in hard barriers at ports or other infrastructure. The modernization of import and export processes at the governmental level provides benefits to all stakeholders, the key result being that goods are delivered to the consumer faster and in a more efficient manner, with single window as the means to modernization and efficiency to speed up documentation and handling of information.

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<sup>1</sup> United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) - Economic Commission for Europe. (2005). *Recommendations and Guidelines on establishing a Single Window* (Vol. ECE/TRADE/352, Recommendation No. 33). Geneva, Switzerland: United Nations Centre for Trade Facilitation and Electronic Business. ISBN 92-1-116924-0

<sup>2</sup> World Trade Organization. *Trade Facilitation Agreement Database*. [tfadatabase.org/notifications](http://tfadatabase.org/notifications).

As a topic, trade facilitation is not new. Governments around the world are still implementing and increasing efficiency with their processes but improvements can still be made to expedite timeliness and still maintain a record of importing and exporting goods. As the Agreement is still a new concept to many industries, the legal text of Article 10.4 Single Window and a brief primer on the Agreement is provided below.

### **Single Window in the TFA**

#### **TFA Measure 10.4 - Single window**

10.4.1 Members shall endeavour to establish or maintain a single window, enabling traders to submit documentation and/or data requirements for importation, exportation, or transit of goods through a single entry point to the participating authorities or agencies. After the examination by the participating authorities or agencies of the documentation and/or data, the results shall be notified to the applicants through the single window in a timely manner.

10.4.2 In cases where documentation and/or data requirements have already been received through the single window, the same documentation and/or data requirements shall not be requested by participating authorities or agencies except in urgent circumstances and other limited exceptions which are made public.

10.4.3 Members shall notify the Committee of the details of operation of the single window.

10.4.4 Members shall, to the extent possible and practicable, use information technology to support the single window.

### **Brief primer on Trade Facilitation Agreement**

For many developed nations, trade facilitation is an ingrained process of moving goods from one country to another but for many least developed and developing nations, these processes are not as defined or are in the process of being developed. As such, a smooth process that a trader could leverage for international business is of utmost importance.

The TFA legal text is composed of three sections. Section I entails provisions per processes related to import and export clearance of goods, in addition to goods and transit and customs cooperation. Section II details special and differential treatment (SDT) measures where Members are required to classify each provision of the Agreement into three categories, Category A, B, and C, respectively. These categories are defined as follows:

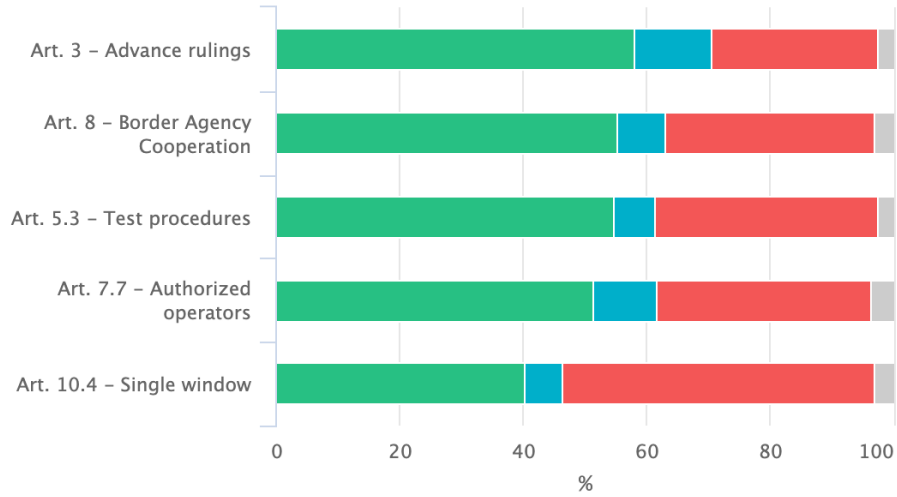
- **Category A** are “Provisions that the Member will implement by the time the Agreement enters into force (or in the case of a least-developed country Member within one year after entry into force).”
- **Category B** are “Provisions that the Member will implement after a transitional period following the entry into force of the Agreement.”
- **Category C** are “Provisions that the Member will implement on a date after a transitional period following the entry into force of the Agreement and requiring the acquisition of assistance and support for capacity building.”

For measures that countries identify as “Category C,” these measures indicate that a country is requesting technical assistance and support for capacity building in the implementation of a particular article. Key donor partners within the trade facilitation sector review Category C measures and applications for potential projects in their respective field—technical assistance projects can range from developing a single window for trade related government resources to coordinating lab testing.

Article 10.4 Single window in the TFA is shown to be the least implemented measure among all TFA ratified WTO member countries, per the image below. This paper will discuss further of the implementation challenges that face countries going through the initial process.

### Bottom 5 measures with lowest implementation rate

Based on implementation commitments by all WTO Members



● Rate of implementation commitments requiring additional time

● Rate of implementation commitments yet to be designated

Source: <https://tfadatabase.org/implementation>

**Chart 1: Bottom 5 measures with lowest implementation rate**

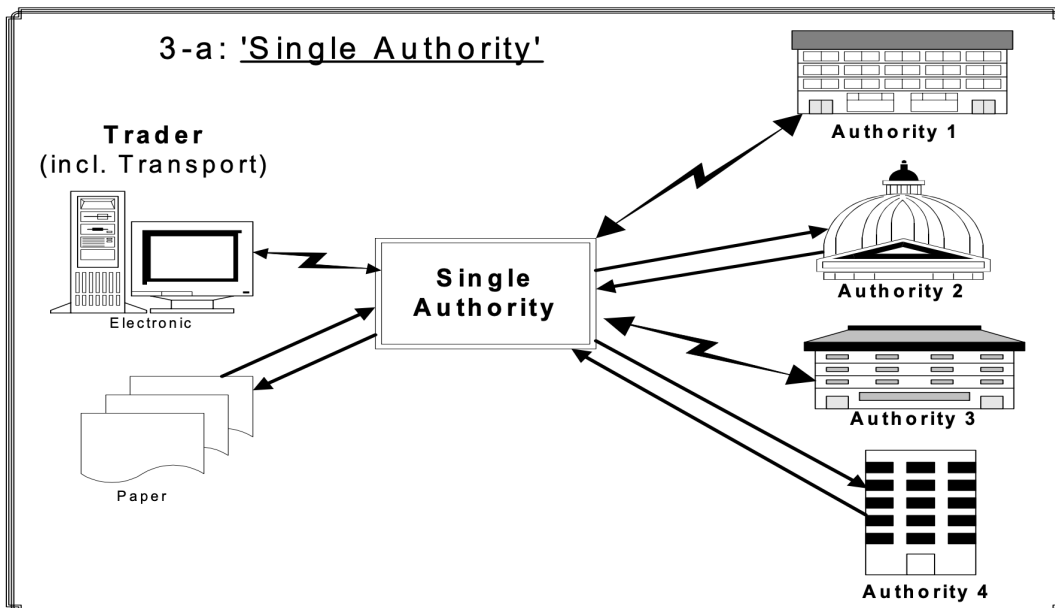
**Three fundamental models of SW**

- 1. Single authority**
- 2. Single automated system**
- 3. Automated information transaction system**

The models described in this section below demonstrate the general infrastructure design of the single window system. Close relationships and coordination between all stakeholders (trading groups, agencies, and government groups) should be assumed when undertaking the transition to single window and further maintenance of the platform. But one element that cannot be assumed is the capability of high-tech information and communication technology as countries are at different stages of performance and development.

As these definitions are technical, the following are sourced from the UN/CEFACT International Trade Procedures Working Group (ITPWG/TBG15) Report.

- 1. Single authority:** This system “receives information, either on paper or electronically, disseminates this information to all governmental authorities, and co-ordinates controls to prevent undue hindrance in the logistical chain.”



**Image 2: Single Authority (WCO)**

2. **Single automated system:** This system can be either public or private and “integrates the electronic collection, use, and dissemination (and storage) of data related to trade that crosses the border.”

This model can be constructed in three ways. The first is the **integrated system** where data is processed through the system. The second is the **interfaced system** (decentralized) where data is sent to the agency for processing. The third is a **hybrid system** of the first and second systems.

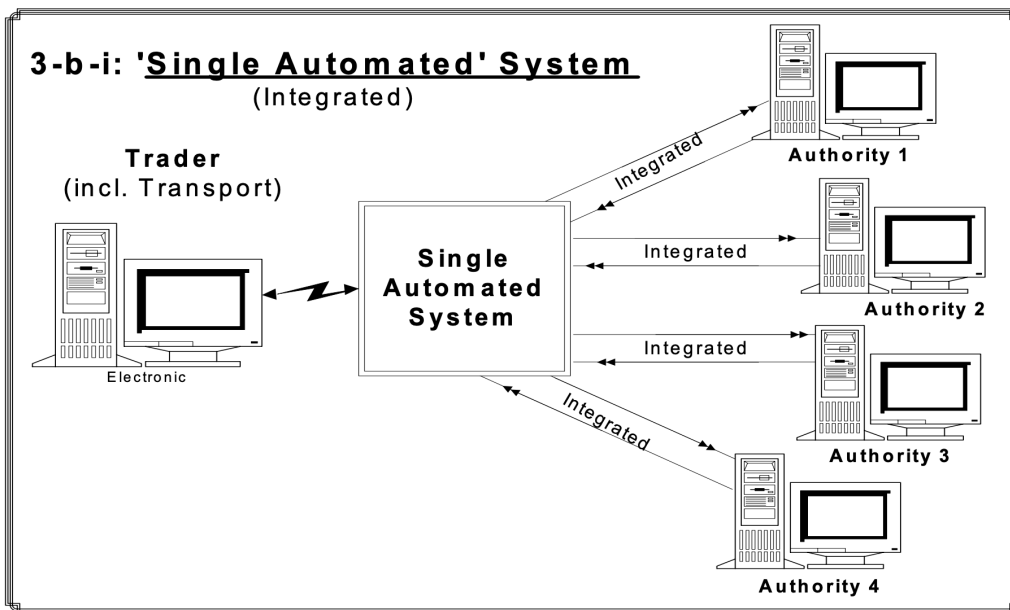
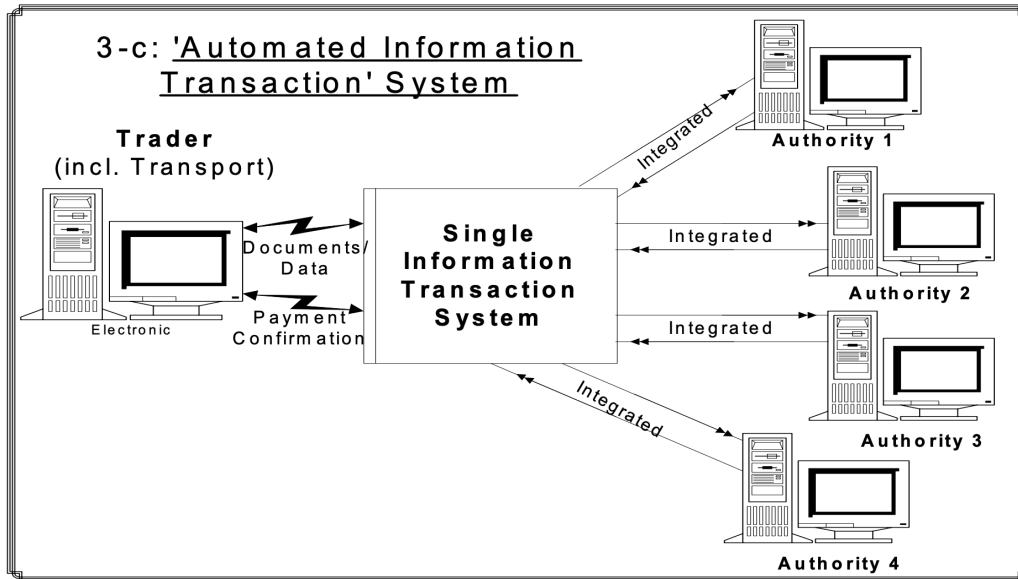


Image 3: Single Automated System (WCO)

3. **Automated information transaction system:** Where “a trader can submit electronic declarations to the various authorities for processing and approval in a single application. All transactions within this system are submitted electronically from government authorities directly to the trader and their bank accounts (i.e. Fees, taxes, and duties). The risk factor applies to the amount of financial and personal information needed to carry out the transactions and the overall system security.



**Image 4: Automated Information Transaction System(WCO)**

### **Benefits of Single Window**

- 1. Traders**
- 2. Government**

**Trade Benefits of Single Window:** Through an electronic single submission filing system that SWs offer, various customs processes are streamlined into one, which drastically reduces clearance time periods. According to the United Nations Center for Trade Facilitation and Electronic Business (UN/CEFACT), clearance time ranged from a reduction of between 3 and 4 days to 1 day to a few hours (See table). With this much time saved, various costs that usually go into this process are obviously saved. In certain cases, different offices are involved in the process, which requires traders to spend more money and time moving between offices to get their documentation. With a single submission system, much of the time cost normally spent in this process is saved, which leads to avoiding delays. In the case of trading perishable goods, avoiding delays implies that goods are not wasted.

There are also several advantages to Single Window facilities for customs authorities. Single Window offers the certainty and transparency needed when going through customs processes. With a predictable system that is expected to follow a specific framework, many of



the uncertainties that come in customs processes can be eliminated. This enables a more secure and smooth clearing process that also enables customs authorities to be more efficient.

Case studies <sup>3</sup>	
<b>Singapore</b>	Document processing time reduced from 4 days to 15 minutes.
<b>Thailand</b>	Implemented trade facilitation measures (procedural reforms and customs modernization) as a step towards SW implementation. Thailand reduced the number of days to export from 24 days (2006) to 14 days (2009).
<b>Hong Kong</b>	Estimated savings estimated at HK\$1.3 billion with SW implementation.
<b>South Korea</b>	Automated information transaction system - total savings estimated to be \$1 billion to \$818.9 million USD.

**Table 5: Case studies of successful single window implementation**

**Governments Benefits of Single Window:** An electronic system reduces the chances for human error which increases safety and accuracy. This also increases the capacity for risk management, both as a result of in-built risk management tools within the system but also a reduced burden on customs personnel during certain safety protocols. As a result, a safer and risk averse process enables supply chain security, which means that other aspects of international trade such as value chains are more implementable because the process has been rendered safe and secure.

The other important set of benefits Single Window Facilities offer to the government are those of streamlined data and revenue collection. In countries where customs authorities are siloed and largely dependent on manual collection of information, data availability can sometimes be an issue. With an electronic single submission system, however, collecting data and organizing it becomes much easier than the traditional data collection method. For statistical analysis and other purposes of data collection, the availability and accuracy of information become an extra benefit.

<sup>3</sup> Slide 5, United Nations Economic and Social Commission for Asia and the Pacific. "Single Window Implementation: Benefits and Key ... - UNNeXT." *Single Window Implementation: Benefits and Key Success Factors*, <https://Unnext.unescap.org/Sites/Default/Files/Switajik-Sangwon.pdf>, Nov. 2012, [unnext.unescap.org/sites/default/files/switajik-sangwon.pdf](https://unnext.unescap.org/sites/default/files/switajik-sangwon.pdf).

Similarly, revenue collection processes largely improve as a result of Single Windows. With both a single authority system, a single electronic system or an automated transaction system, the reduction of middlemen in the revenue collection process reduces the risk of corruption, safer transactions and reduced risk of gaps in revenue accounts. In a study by the UNDP, it was found that corruption in trade costs about 2 billion USD every year. Trade facilitation measures that include organizational and technological reforms were found to drastically reduce corruption. Understandably so, the ability to cut costs and increase revenues also leads to more effective deployment of resources.

When it comes to international trade policy implementation, SWs offer various benefits for governments. In the effort to further economically integrate, ASEAN member countries have been pursuing the ASEAN Single Window Initiative, which is set to “*open a vast window of opportunities for ASEAN to include more documents, such as ASEAN Customs Declaration Document (ACDD), electronic Phytosanitary Certificate (e-Phyto), electronic Animal Health Certificate (e-AH) and electronic Food Safety Certificate (e-FS) Certificate to be exchanged through the ASW in the future.*”<sup>4</sup>

**Single Window Costs for Government:** Although the government benefits of SW are many, there are certain costs and barriers. The establishment of a Single Window can be highly expensive, which is why many developing countries request grants. This is in addition to the post-implementation maintenance and upkeep of the infrastructure that must be invested by the government.

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<sup>4</sup> <https://asw.asean.org/>

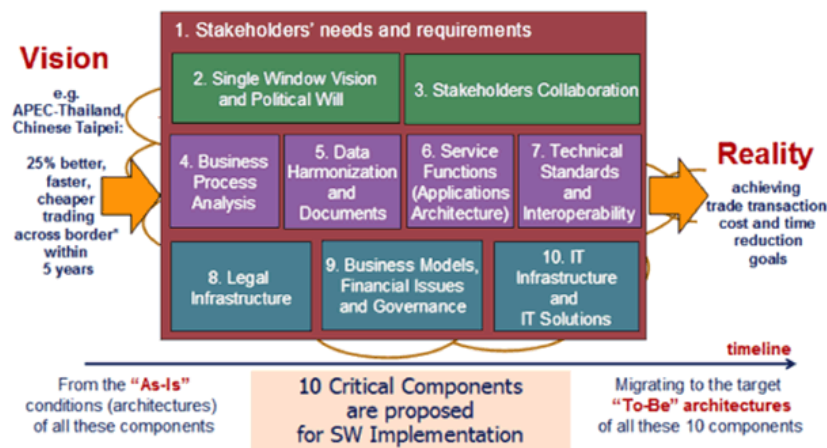
Entity	Costs	Benefits
<b>Government</b>	<ul style="list-style-type: none"> <li>- Implementation initial capital and long term funding</li> <li>- Maintenance (short term v. Long term)</li> </ul>	<ul style="list-style-type: none"> <li>- Resource efficiency</li> <li>- Current/increased revenue yield</li> <li>- Improved trader compliance</li> <li>- Higher security</li> <li>- Higher integrity and transparency</li> </ul> <p>(UN/CEFACT International Trade Procedures Group (ITPWG/TBG15))</p>
<b>Traders</b>	N/A	<ul style="list-style-type: none"> <li>- Provides single point for one time submission of necessary info/documentation</li> <li>- Higher accuracy</li> <li>- Increased transparency</li> <li>- Cutting costs; reduce delays</li> <li>- Faster clearance and release</li> <li>- Predictable application and explanation of rules</li> </ul> <p>(UN/CEFACT International Trade Procedures Group (ITPWG/TBG15))</p>

**Table 6: Summary of Costs and Benefits**

## Critical factors for SW implementation

The implementation of Single Window can be a complex and often challenging task, mainly due to the collaborative effort and the technical planning required. The Single Window Implementation Framework (SWIF) is a framework put in place by the TFIG to assist countries through a step-by-step process of going from the vision of a single window to the reality. SWIF describes 10 critical components of SW implementation which have been summarized into five pillars below.

1. **Political will (mandate)**
2. **Stakeholder coordination**
3. **Legal framework**
4. **Business model**
5. **Technical issues**



Source: UNECE

**Image 7: 10 Critical Components are proposed for SW Implementation (Source)**

The preparatory step is an analysis of the stakeholder's needs and requirements. This step is necessary because it establishes the vision for the SW. Countries implement SWs for different reasons, and knowing the specific needs that trying to be addressed through SW defines the path that the stakeholders will take in implementing this but outlining the budget, systems, entities and the partners needed to make this process successful.

The first two pillars are **political will** and **stakeholder coordination** to push for a single window policy and establish regulatory infrastructure to coordinate across multiple government

agencies. To do so, the goal and objectives need to be stated from the start in addition to defining agencies' responsibilities in the process.<sup>5</sup> As the transition entails the preparation of base data, streamlining of business processes and harmonization, these initial steps require multiple round table meetings with involved stakeholders and representatives of government agencies. And at the core, a fundamental political will and policy to bring together Customs and border management agencies.<sup>6</sup> An issue of “political turf” becomes apparent as the effort of streamlining processes implies that some government agencies are left out of the new process. To modernize systems that have been culturally or politically rooted, there are many levels of negotiations required to achieve necessary stakeholder buy-in to establish a single window project. A case study of Lao PDR's Trade Facilitation Road Map for 2017-22 is detailed as an example below. It is important to consider that these efforts are being driven by Lao PDR's goal to graduate from LDC status by 2024.<sup>7</sup>

### Case study: Lao PDR<sup>8</sup>

#### Key achievements:

- Focus on trade facilitation in Lao PDR while preparing for WTO accession.
- Trade Facilitation Secretariat (TFS) established in 2010 as a nodal organization for trade facilitation work in the country.
- Five-year TF strategic plan adopted in 2011 to simplify clearance procedures across various departments.
- Lao Trade Portal (LTP) set up in 2012 as a one-stop shop for customs information.
- Ratification of WTO TFA in 2015 - Lao PDR was the Least Developed Country to sign
- Accession to the revised Kyoto Convention in 2016.

#### Major challenges:

<sup>5</sup> World Customs Organization. vol. 2, World Customs Organization, *Building a Single Window Environment*.

<http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/single-window/compendium/swcompendiumvol2all-parts.pdf>

<sup>6</sup> World Customs Organization. vol. 1, World Customs Organization, *Creating the Policy Momentum*.

<http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/single-window/compendium/swcompendiumvol1partiv.pdf>

<sup>7</sup> UNCTAD. “Lao PDR on Track to Meet Least Developed Country Graduation Criteria for a Second Time.” UNCTAD, UNCTAD, 23 Oct. 2019,

[unctad.org/news/lao-pdr-track-meet-least-developed-country-graduation-criteria-second-time](http://unctad.org/news/lao-pdr-track-meet-least-developed-country-graduation-criteria-second-time).

<sup>8</sup> Phounesavath, Santisouk. “Trade Facilitation in Lao PDR: Key Achievements and Challenges.” Lao PDR Department of Foreign Trade Policy, Ministry of Industry and Commerce, 16 Oct. 2019.

Lao PDR's Trade Facilitation Road Map for 2017-22 - TFA ...[www.tfadatabase.org](http://www.tfadatabase.org) › thematicdiscussiondocument › L...

- Country's score on Trading Across Borders (TAB) remains high (ie. Documentary compliance).
- Lack of coordination among concerned agencies
- Multiplicity of payment points for different services
- Absence of cooperation with private sector partners.

Table 8: Case study of Lao PDR and Political Will

The third pillar is **legal framework** that consists of the Revised Kyoto Convention (RKC), WTO Trade Facilitation Agreement, ePhyto, Conference of Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) ePermits.

The RKC emphasizes on the importance of the documentation involved in goods declaration, and other relevant customs processes. In a nutshell the RKC, ensures the documentation for operation control, compliance with customs law, and information filling.

The TFA ensures that the formalities normally involved in government and customs processes are simplified for the purpose of trade facilitation. Paragraph 2 of Article 10 of the TFA encourages the fast tracking of the documentation process through the use of electronic copies in the process. This process is aimed at achieving 'dematerialization' as intended in the use of SW. ePhyto is the electronic version of the phytosanitary certification. The Legal texts of ePhyto explains that with the necessary information for the phytosanitary certificate present on the electronic version can be securely processed in digital format.

CITES ePermits has been promoting the use of an electronic permitting toolkit. The use of electronic toolkit enables importers and exporters to access information on "common information exchange format, protocols, standards for use with electronic permitting systems."

The fourth pillar is the **business model** or **business case**, defined as "a written document containing reasoned arguments for initiating a project."<sup>9</sup> This can include financial justification to proceed with the project and be demonstrated in the final pitch to tell a compelling story—including "scope, costs and benefits, risks and returns, outlays and outcomes, and schedules and timelines, etc." Per the World Customs Organization (WCO), their

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<sup>9</sup> World Customs Organization. vol. 2, World Customs Organization, *Building a Single Window Environment*.

<http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/single-window/compendium/swcompendiumvol2all-parts.pdf>

recommendations for this step include that the business case should be perceived as a “management process” as this project not only includes the initial implementation of SW in addition to lifelong maintenance of the data processed within the platform. The key questions that should be addressed in a business case are defined by WCO in the following table.

**Key questions to consider for a Business Case**

- Why should this project be done?
- What happens if the project is not done?
- What value will it deliver? What are the benefits?
- Can the same benefits be derived through alternative means?
- Who is paying for the project and why?

Source: Page 6, (WCO - Building a Single Window)  
**Table 9: Key Questions to consider for a Business Case**

The fifth pillar is the **technical issues** in SW, defined below into three parts: business process analysis, data harmonization, and information and communications technology application. The first step is to collect the necessary information or inputs and to identify the relevant processes that are needed to conduct transactions (data or monetary). By mapping the critical networks, this can provide a visual representation to the transfer of information and what gateways are necessary for checkpoints or to receive approvals. The second step is data harmonization where the inputs and outputs are streamlined so that data is not duplicated within the process, decreasing efficiency. Harmonizing processes at each level and coordinating across agencies ensures a streamlined experience for the trader and for each agency receiving a receipt of the transactions. The last step is the information and communications technology (ICT) application. As said previously, not all countries implement the same ICT system so this step must be done on a case-by-case basis. The ICT infrastructure enables paperless trading and cross-border data harmonization. Currently, ASEAN Single Window is the first regional infrastructure to coordinate national single window systems to a regional network, and receive updates in real time.<sup>10</sup> As this platform just entered live operations in November 2020 with five exchange ready ASEAN Member States: Indonesia, Malaysia, Singapore, Thailand and Vietnam.<sup>11</sup> With further

<sup>10</sup> <https://asw.asean.org>

<sup>11</sup> <https://asw.asean.org/index.php/news/item/launch-of-the-asean-single-window-live-operation>

monitoring and evaluation, this could become a trend for regional single window efforts to streamline processes and receive live trade data.

<p><b>Business process analysis</b></p> <ol style="list-style-type: none"> <li>1. Business process analysis</li> <li>2. Process simplification + harmonization</li> </ol>
<p><b>Data harmonization</b></p> <ol style="list-style-type: none"> <li>3. Documents simplification and alignment</li> <li>4. National data harmonization</li> </ol>
<p><b>Information and communications technology (ICT) application</b></p> <ol style="list-style-type: none"> <li>5. Cross-border data harmonization &amp; exchange</li> <li>6. E-single window and paperless trading</li> </ol>

Source: UNESCAP -. “Single Window Implementation: Benefits and Key ... - UNNeXT.” *Single Window Implementation: Benefits and Key Success Factors*

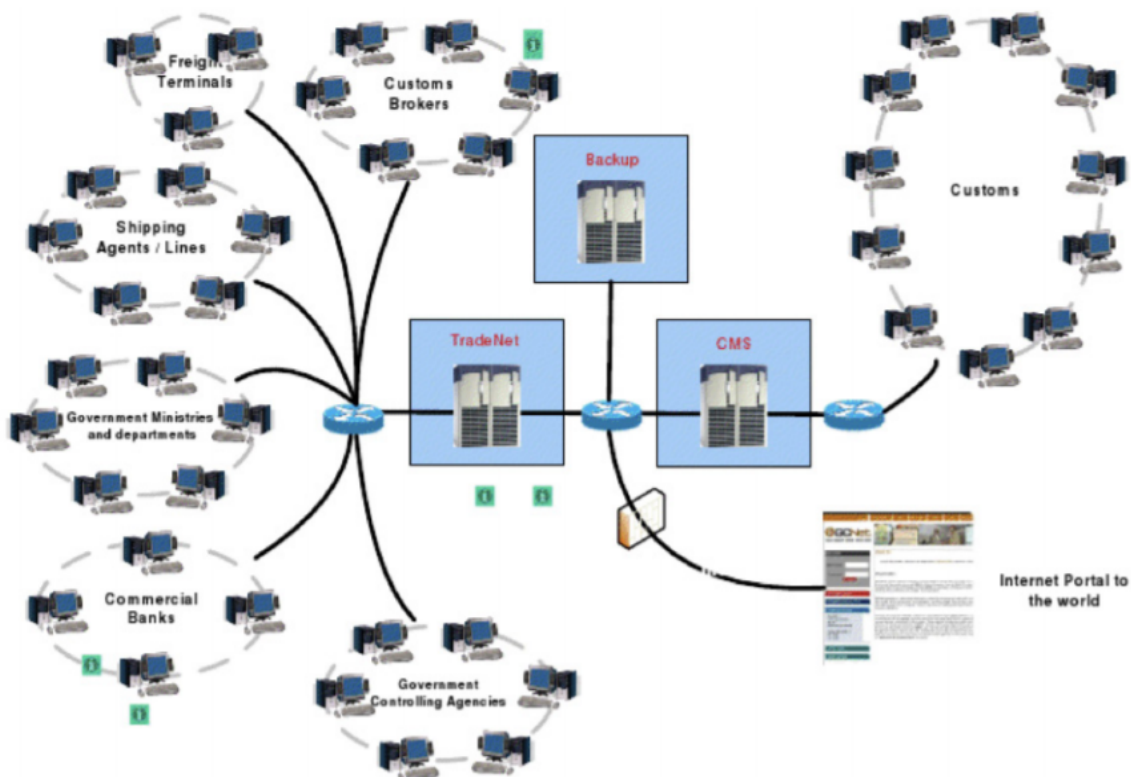
**Table 10: Technical issues in SW**



### Case study – Mozambique:

The country of Mozambique makes an interesting case study because as a developing country, the country faced various customs issues and trade obstacles that other developing countries face. This case study provides good insight into the kinds of challenges a country in the same situation might face as well as how to overcome them.

According to the Trade Facilitation Implementation guide (TFIG), Mozambique was facing issues of corruption, inefficient administrative processes as a result of weak infrastructure, larger waiting periods for traders, and others. In launching its Single window, the Mozambique government was mainly focused on two objectives: to improve border control, and to streamline and simplify its customs operations through a centralized platform. To reach these objectives, Mozambique implemented a 2-software system: Customs Management System (CMS) and TradeNet Electronic Data Interchange. These systems are further defined below.



**Image 11 - Mozambique Single Window network**

**Customs Management System (CMS)**

The CMS software being solely focused on customs processes, it provides an impressive list of customs services. The system enables the streamlining of customs declaration, valuation, and permit insurance into one process. This normally being a process that involves a hefty amount of paperwork, it avoids this burden by enabling these processes into one. CMS also allows the collection of duties through its system, which is safer and more accurate. This leads to the reduction in the likelihood of bribes, which assists both the government and the trader in cost saving. In addition to these services, CMS also provides Transit management services as well as freight terminal, port, and warehouse management. This adds to the benefits in border management, which in the case of Mozambique's was problematic because of high traffic.

**TradeNet Electronic Data Exchange**

The TradeNet system provides a bridge that connects multiple groups as well as many safety tools for traders. The entities that are connected through this system are: Customs brokers, Freight terminals, Shopping agents, Government Ministries and departments, Commercial Banks and Government controlling agencies. By bringing together these entities, the single window facility provides multiple benefits to everyone involved.

The TFIG report on Mozambique explains that commercial bank, for example, experienced an increase in customers as well as circulation. The government also experienced an increase in revenue as result of this. In terms of the traders, there was a decrease from 3 days to a few hours reduction in clearance time, while this system increased the capacity.

TFIG reports that Mozambique's Single Window cost \$15 million USD in total fees, including maintenance, staff training and other ongoing costs. This was divided between IT systems upgrade, infrastructure building, and others.<sup>12</sup>

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<sup>12</sup> UNECE. *Trade Facilitation Implementation Guide - Single Window Implementation in Mozambique*, UNECE. <http://tfig.unece.org/cases/Mozambique.pdf>

## **Conclusion**

Due to these various facets of single window implementation, the high barrier that single window presents as a policy and infrastructure challenge is initially perceived to be insurmountable, even with its immediate benefits. With the main challenge being stakeholder buy-in, this correlates to the majority of least developed and developing countries that have still yet to conduct preliminary assessments on their internal government trade data processes. The question that remains is twofold: (1) how to lower the accessibility barrier to single window assessments and/or (2) how to increase technical assistance and capacity building to implement. Given these fundamental barriers within the context of our cost and benefit analysis, Single Window is a both a challenge and a golden opportunity once implemented well—but how do we get other nations there?

**Annex**

	Overall		Developing		LDCs		Developed	
<b>1.4 - Import, export and transit procedures</b>								
Members that have notified ALL article items	88	54%	46	51%	3	9%	39	100%
Members that have notified NONE	70	43%	38	42%	32	91%	0	0%
Members that have notified SOME article items	6	4%	6	7%	0	0%	0	0%
<b>10.4.3 - Operation of the single window</b>								
Members that have notified	81	49%	38	42%	4	11%	39	100%
Members that have NOT yet notified	83	51%	52	58%	31	89%	0	0%
<b>10.6.2 - Use of customs brokers</b>								
Members that have notified	108	66%	61	68%	8	23%	39	100%
Members that have NOT yet notified	56	34%	29	32%	27	77%	0	0%
<b>12.2 - Contact points for customs cooperation</b>								
Members that have notified	99	60%	56	62%	4	11%	39	100%
Members that have NOT yet notified	65	40%	34	38%	31	89%	0	0%

<https://tfadatabase.org/notifications-matrix#tab2>

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