

Special Training Session

Enabling Single Windows for Cross-border Paperless Trade

(based on a new UNNExT Guide)



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**Capacity Building Workshop on Crossborder
Paperless Trade Facilitation:
Implications of Emerging Technologies**



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United Nations Conference Centre, Bangkok

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Education

- Ph.D. (Computer Science), Univ. of Louisiana at Lafayette, USA, 1992.

Current Position

- Director, Institute for IT Innovation (INOVA) and Assistant Professor, Dept. of Computer Engineering, Kasetsart University, Bangkok, Thailand
- UNNExT Advisory Committee



Research and Work Interest

- Digital Government Strategies and Transformation
- Paperless Trade and Single Window for Trade Facilitation
- Enterprise Architectures and Software Engineering

Related Work

- Author, Cross-border Single Window Interoperability - A Managerial Guide (2018), UNNExT Guide for Single Window Planning and Implementation (2012)
- Co-author, UNNExT Business Process Analysis Guide (2009, 2012)
UNNExT Data Harmonization Guide (2012)
- Project lead, Trade and Transport Facilitation Monitoring Mechanism (2016 - 2017)
(UN/CEFACT Recommendation No.42)

Outline

- Introduction to the UNNEXT Guide on Cross-border Single Window Interoperability (SWI) (A Managerial Guide)
- Chapter 1 - Single Window: Concept & Challenges
- Chapter 2 - State of Paperless Trading Implementation including Single Windows
- Chapter 3 - A Framework for Cross-border SWI
- Chapter 4 - Specific Issues for Cross-border SWI
- Chapter 5 - Governance and Management of Cross-border SWI
- Chapter 6 - Summary



Introduction to the UNNExT Guide



Cross-border Single Window Interoperability (SWI) - A Managerial Guide -

Objective of this training/guide

- To provide a framework and recommended actions for establishing
Cross-border
Single Window Interoperability
(SWI)



Intended Audience of this guide

Primary audience

- Government policy decision makers
- Government policy managers*
who manage and drive the establishment of interoperability between Single Windows of participating countries,
either bilaterally or multilaterally



Other possible audience

- Public and private stakeholders in trade, e.g.
relevant government officers and traders
knowledgeable about some specific
import/export/transit procedures,
who are candidates to collaborate during
the consultation, planning and
implementation of the cross-border SWI.

* those who provide assistance to policy decision makers, or
those who manage tasks according to the policy decision makers' directives or mandates

Definition and Scope of SWI

Definition

"Cross-border Single Window Interoperability (SWI)"
means

"the ability of Single Windows of two or more countries to exchange information and use the information that have been exchanged to meaningfully facilitate regulatory-related requirements for the movement of goods across those countries."

Scope

- Regulatory-related (import, export, or transit) procedures and information exchanged
 - Across the borders



Relationships with other existing Guidelines and Recommendations

- **No intention to replace but rather to complement**
 - It's not the intention of this UNNExT Guide (and these training materials) to replace any existing guidelines and recommendations related to SW and SWI, but rather to align and complement those existing ones with more detailed recommended actions, and case examples, etc.
 - For example, the scope and definition of SWI, in this guide, is similar to what was defined in

UNECE Recommendation 36: Single Window Interoperability

- **Recognizing that there are several guidelines and recommendations that are relevant and useful for establishing SWI, e.g.**
 - WCO Compendium
 - How to build a Single Window Environment, 2011
 - UNECE Recommendation 35 - A Legal Framework for International Trade Single Window, 2013
 - UNNExT Single Window Planning and Implementation Guide, 2013

Reviewed Questions?

1. What are your expectations for attending this training session and from the UNNExT Guide on SWI?
2. What are your roles related to the establishment of SWI?
 - Policy decision makers
 - Policy managers
 - Public government officers who are knowledgeable about some import/export/transit-related regulatory procedures
 - Private/business stakeholders in trade, or
 - Other (please specify)
e.g. legal experts, ICT specialists, or _____





Chapter 1

Single Window: Concept & Challenges

Topics of Chapter 1

- What is Single Window?
- Benefits of Single Window
- Business Needs of Cross-border Single Window Interoperability
- Challenges of SWI



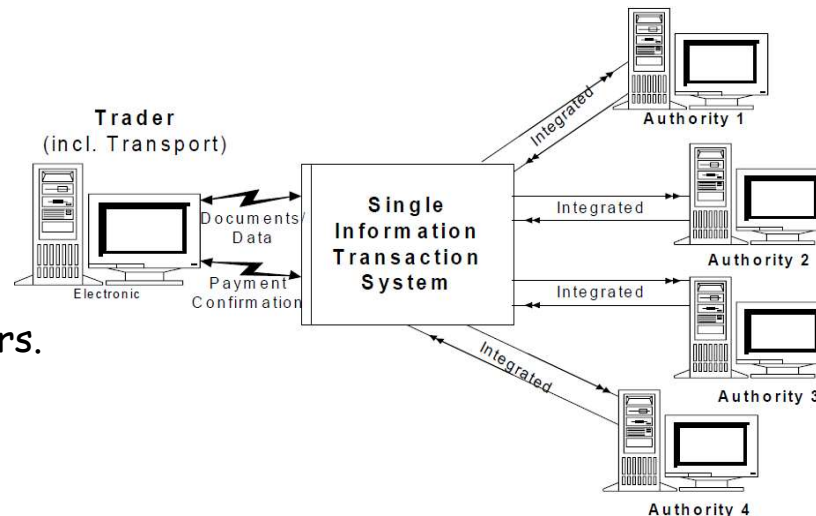
What is Single Window (SW)?

A definition of SW (as proposed by UNECE Recommendation 33 - Establishing Single Window, 2005)

"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.

If information is electronic then individual data elements should only be submitted once."

An example of a Single Window facility with a single entry point of electronic data submission to facilitate traders/transporters.



Benefits of SW

- **Increase efficiency through time and cost savings for traders and transport operators**

in their dealing with government authorities, e.g. for obtaining licenses, certificates, permits and clearance related to import, export or transit-related regulatory requirements

- **More effective regulations**

Government authorities e.g. customs dept. and permit-issuing agencies, could be able to obtain international trade-related data and statistics in a comprehensive and timely manner for their regulatory transactions from the Single Window facility

- **Less errors with reduced duplicate paper documents & reduced duplicate data submission**

Necessary information are electronically submitted and processed instead of physical papers submission & manual operations



Benefits of SW

WTO's Trade Facilitation Agreement (TFA)

coming into force on 22 Feb 2017*

- more than 100 countries have the commitment on improving trade facilitation including Single Window

- For expediting the movement, release and clearance of goods, including goods in transit
- For expectedly creating a significant boost for the multilateral trading



Business Needs/Business Opportunities of Cross-border Single Window Interoperability

- Many countries have successfully established Single Window facilities with better regulation and better efficiency (in both time & cost savings)

However **the electronic information exchange** is used to coordinate work **among stakeholders mostly within the country** (national-level SW).

- **Several documents and information** required by authorities **are still in paper forms**, especially those created in other countries and then used within the country.



Business Needs/Business Opportunities of Cross-border Single Window Interoperability

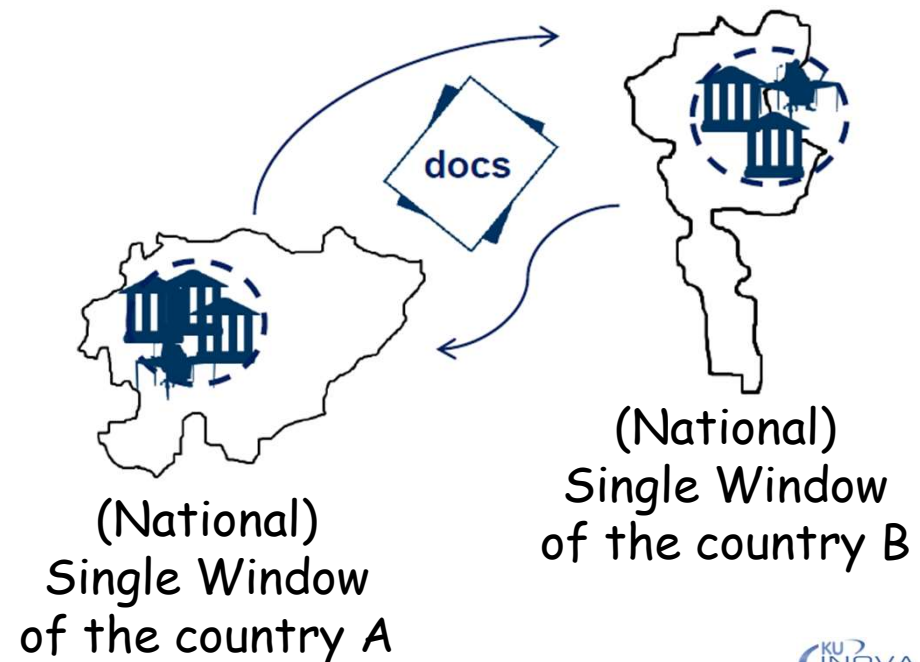
National Level

- On average 15 national agencies are involved in international trade.



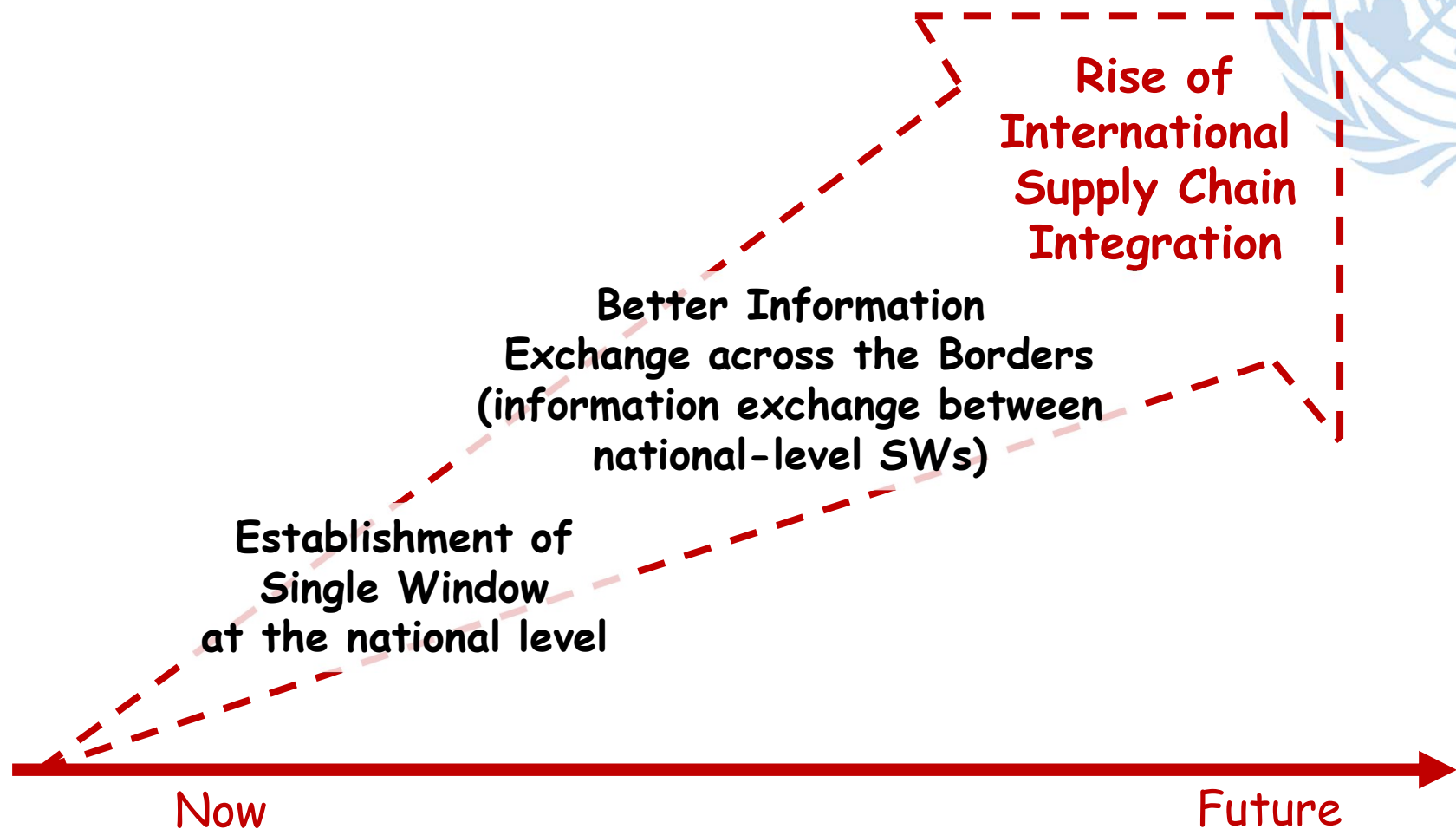
Cross-border level

- Many documents for international trade are generated in one country then used in the other country.



Business Needs/Business Opportunities of Cross-border Single Window Interoperability

The Rise of International Supply Chain Integration demands the establishment of SW at the national level, and also better information exchange across the borders.



Business Needs/Business Opportunities of Cross-border Single Window Interoperability

[Cross-border Information Exchange between SW's]*

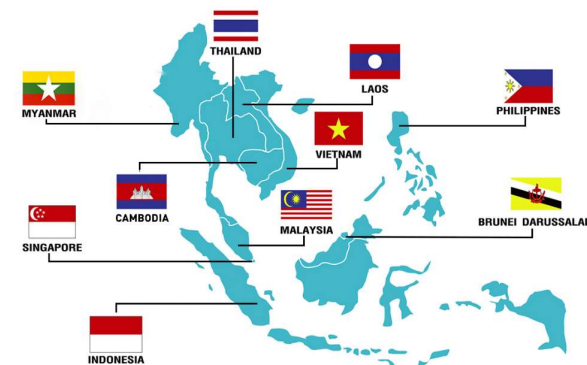
- for trade facilitation
 - by facilitating (electronic) international trade transactions
- for regional integration
 - by providing measures for closer cooperation among countries in the region
 - by promoting economic growth through regional trade
- for advanced information for risk analysis & risk management
 - with data accuracy, advance intelligence and processing
- for advanced information visibility for logistics preparation/infrastructure-use planning,
 - e.g. one country's export declaration is another country's import declaration, other advanced info for infrastructure-use planning
- for combatting illicit activities



Interoperability among 10 National Single Windows (10 Southeast Asian Nations (ASEAN))

A Case Example

- Business Needs of Cross-border information exchange
 - Supporting the vision of the regional economic integration
 - Seamless cargo movement of goods across borders
 - Pre-arrival cargo clearance
 - Risk Management/Compliance
- Types of Information Exchange proposed
 - G2G - Customs Declaration, Transit information, Information about Physical Inspection at Export, Preferential Certificate of Origin (CO)
 - B2G - Export Licenses/Permits
 - B2B - Bill of Lading, Sea Waybill, Air Waybill, Cargo Manifest, Commercial Invoice, and Packing List



The Agreement to Establish and Implement
the ASEAN Single Window, 2005.

Definition of National Single Window (NSW)

- NSW is a Single Window facility that handles all cross-border trade-related regulatory requirements in a country.

The designation National Single Window (NSW) normally indicates that there is only one official Single Window and all related government agencies should - either at the outset or progressively - participate with this facility*.

* Ref: Technical Note on Terminology for Single Window and other electronic platforms, UNECE, 3-4 April 2017.

Definition of Interoperability

- **Interoperability** is about the degree to which two or more systems can usefully **exchange meaningful information** via interfaces in a particular context*.
 - The definition includes having the ability
 - to exchange data (**syntax interoperability**), and also
 - to correctly interpret the data being exchanged (**semantic interoperability**).



Ref:



Standards Glossary

Definition of Interoperability

- **Interoperability** is the ability of disparate and diverse organizations to interact towards mutually beneficial and agreed common goals, involving the sharing of information and knowledge between the organizations through the business processes they support, by means of exchange of data between their respective ICT systems*.



Challenges in establishing Cross-border SW Interoperability

- **Difficulties of cross-border cooperation**
e.g. how to establish an appropriate governance structure to drive this inter-countries' and inter-agencies' collaborative effort
- **Conflict of interest**
e.g. how to align and agree upon common beneficial goals among the participating countries and stakeholders
- **Innovative business processes**
e.g. how to design new business processes for more efficient regulations, faster and less expensive cross-border trading
- **Non-harmonized data and documents**
e.g. how to harmonize and agree on the data's meanings used among disparate and diverse organizations
- **Lack of adequate laws and regulations**
to enable cross-border legal recognition of electronic data among the trading countries
- **Lack of necessary ICT infrastructure**





Chapter 2

State of Paperless Trading Implementation including Single Windows

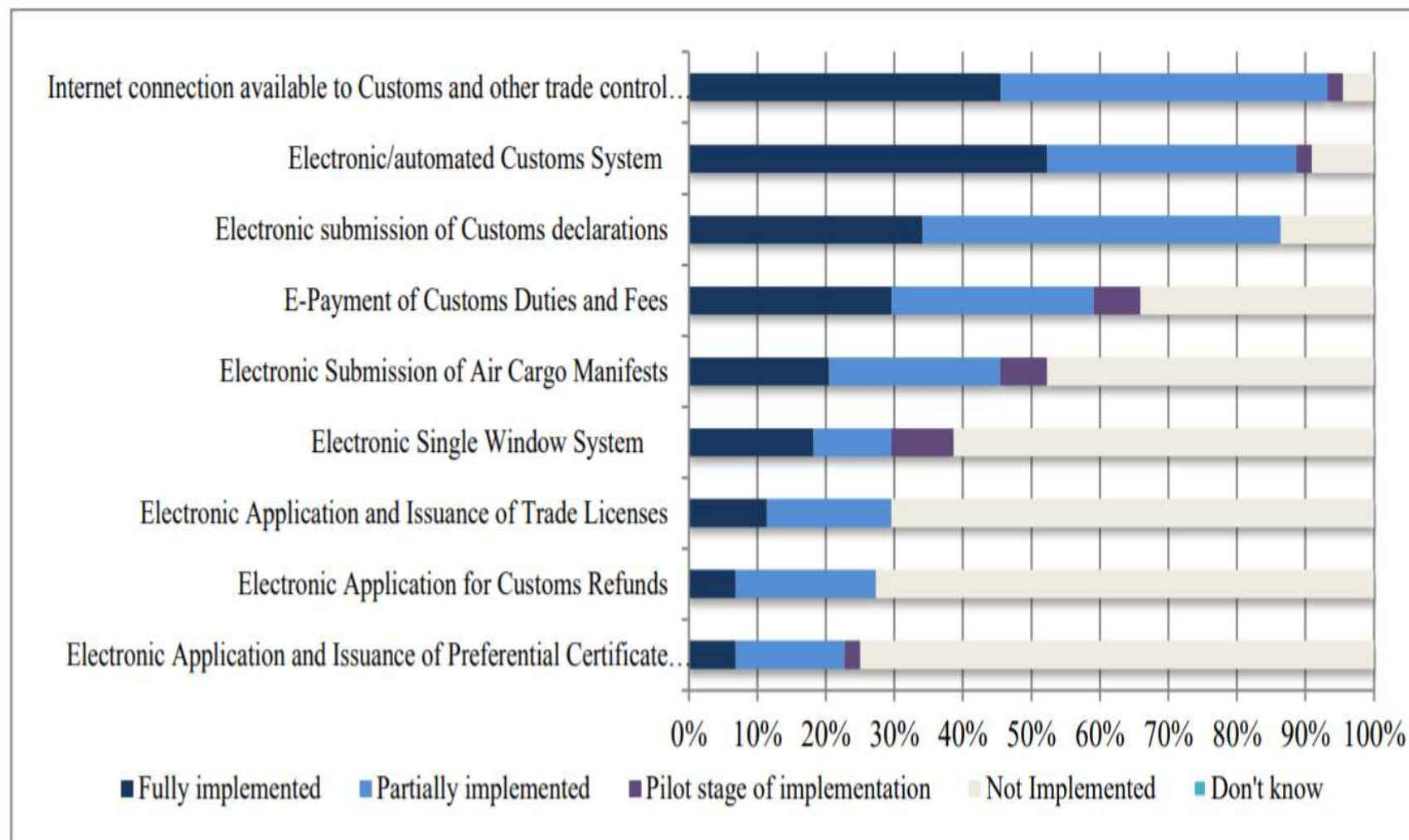
Topics of Chapter 2

- State of Implementation in the Asia and Pacific Region
- Cross-border Paperless Trading Implementation Globally
- Case Studies of Cross-border Interoperability
- Key Findings



State of Implementation in the Asia and Pacific Region

State of implementation of paperless trade measures in Asia-Pacific countries (%)



Source: ESCAP, UNRCs TF Survey 2015

Definition of Paperless Trading

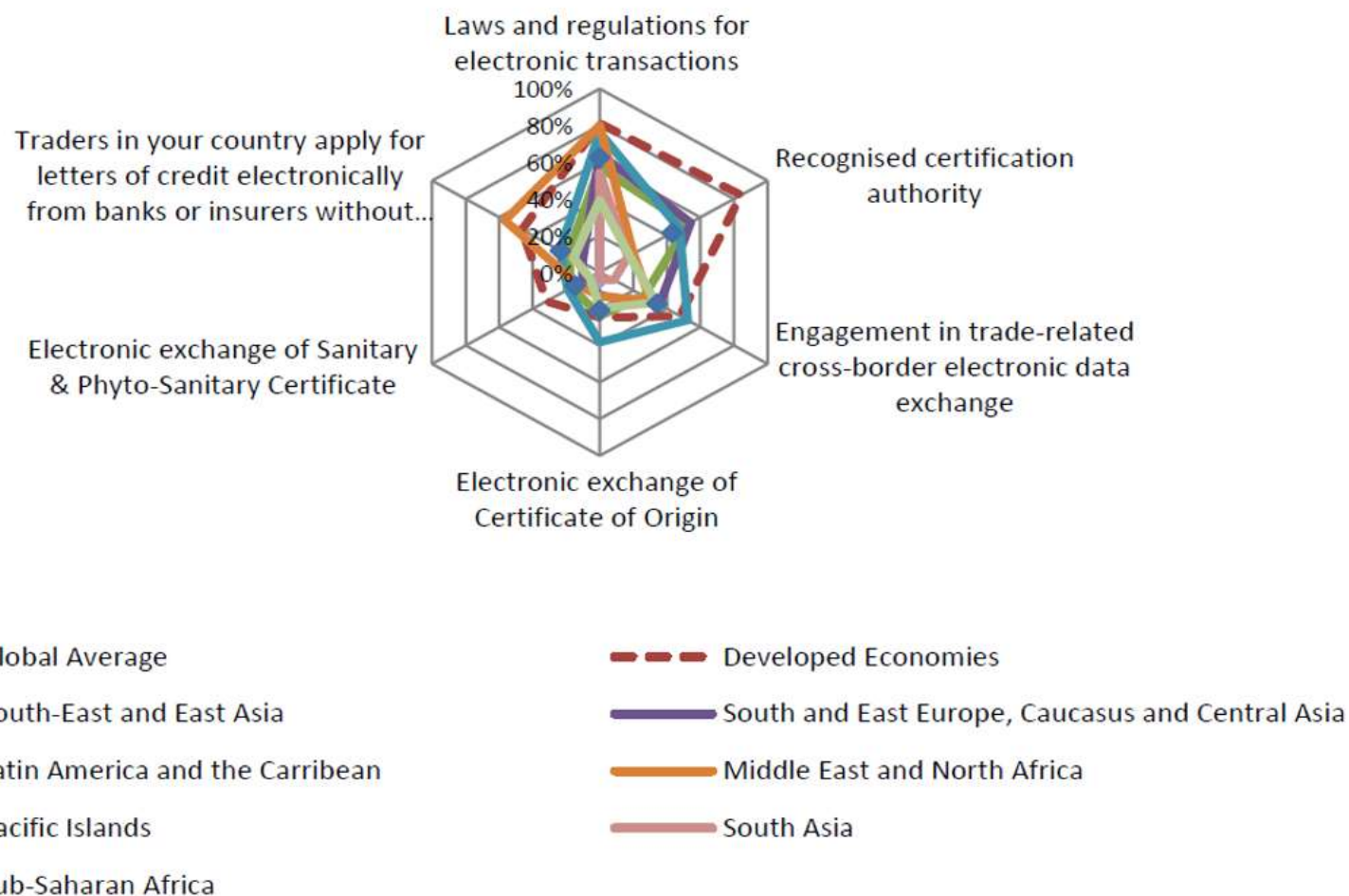
- In this guide, the term
“paperless trading”
means
“trade taking place
on the basis of electronic communications,
including
exchange of trade-related data and documents
in electronic form.”

Therefore, paperless trading covers a broader context including, e.g. automated Customs system, and the electronic Single Window facility.



Implementation of Cross-border Paperless Trade Globally

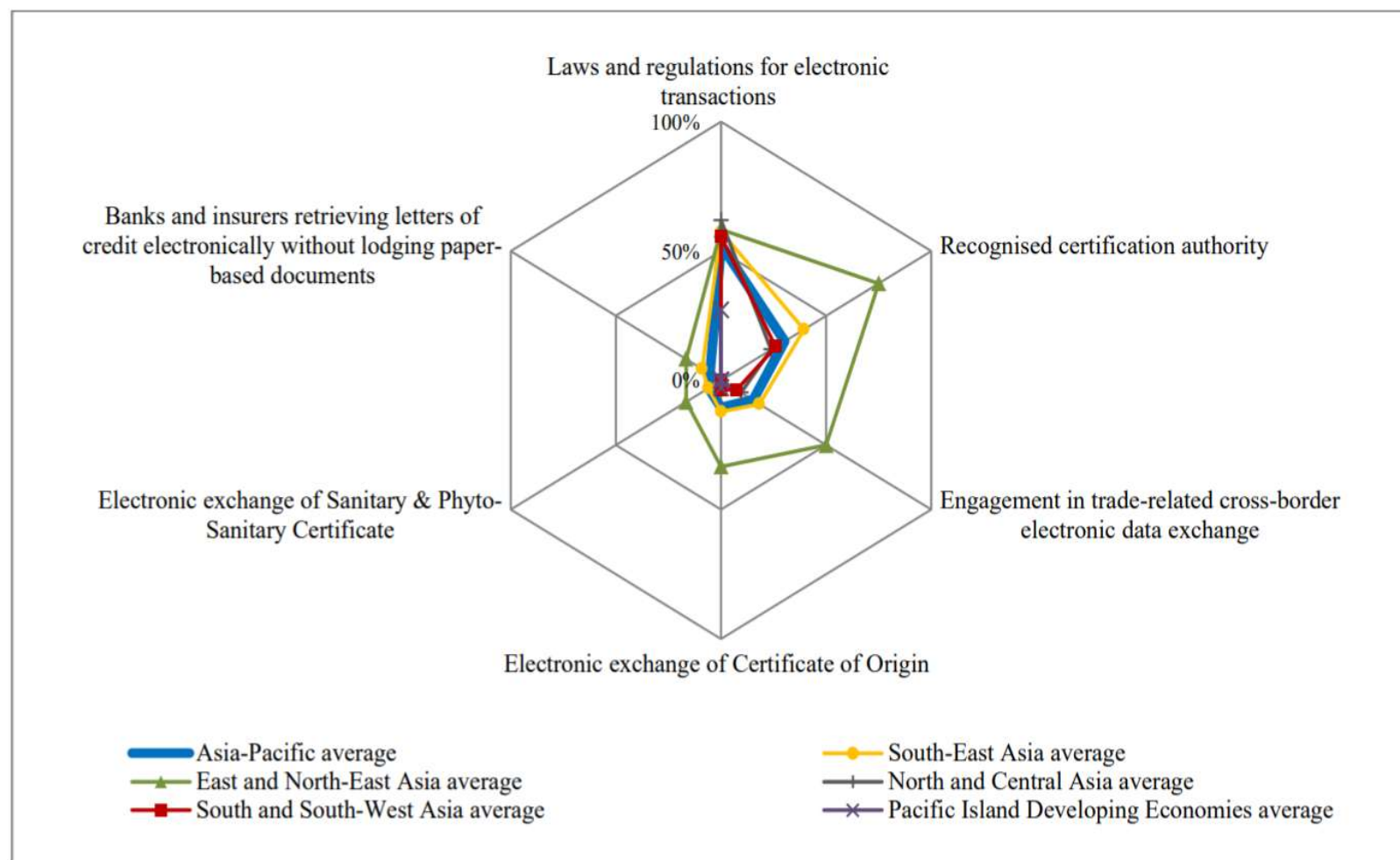
Implementation of cross-border paperless trade measures in various regions globally



Source: The UN Global Survey on Trade Facilitation and Paperless Trade Implementation 2017.

Implementation of Cross-border Paperless Trade in the Asia and Pacific Region

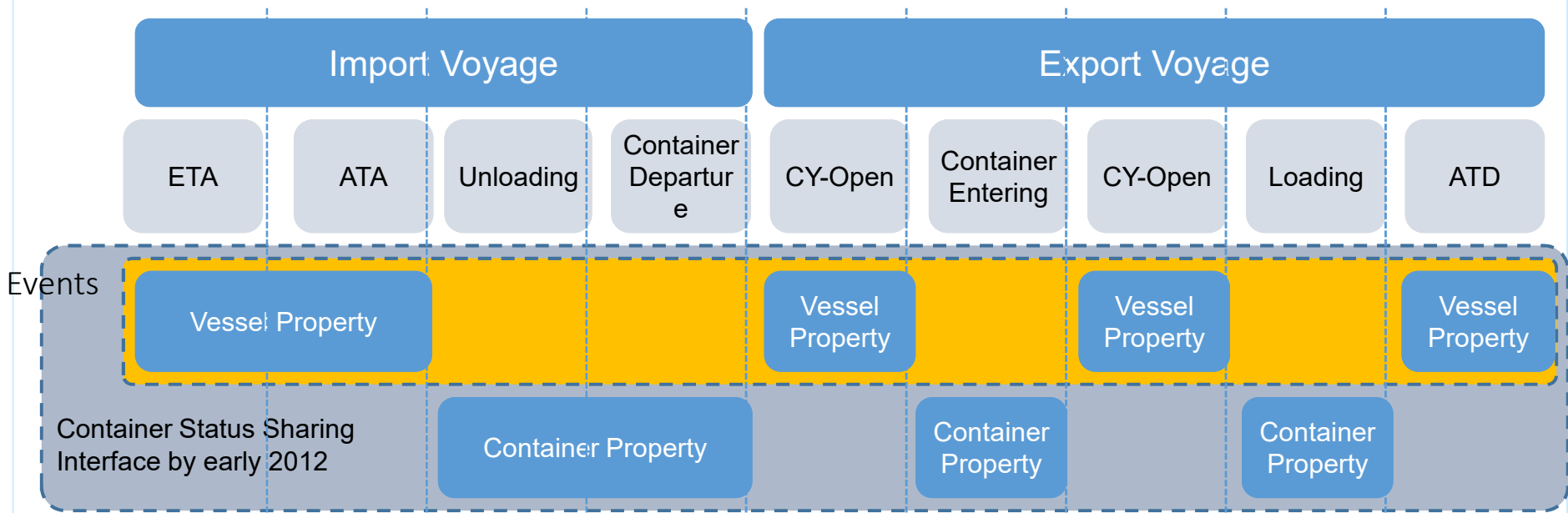
Implementation of cross-border paperless trade measures: Asia-Pacific average



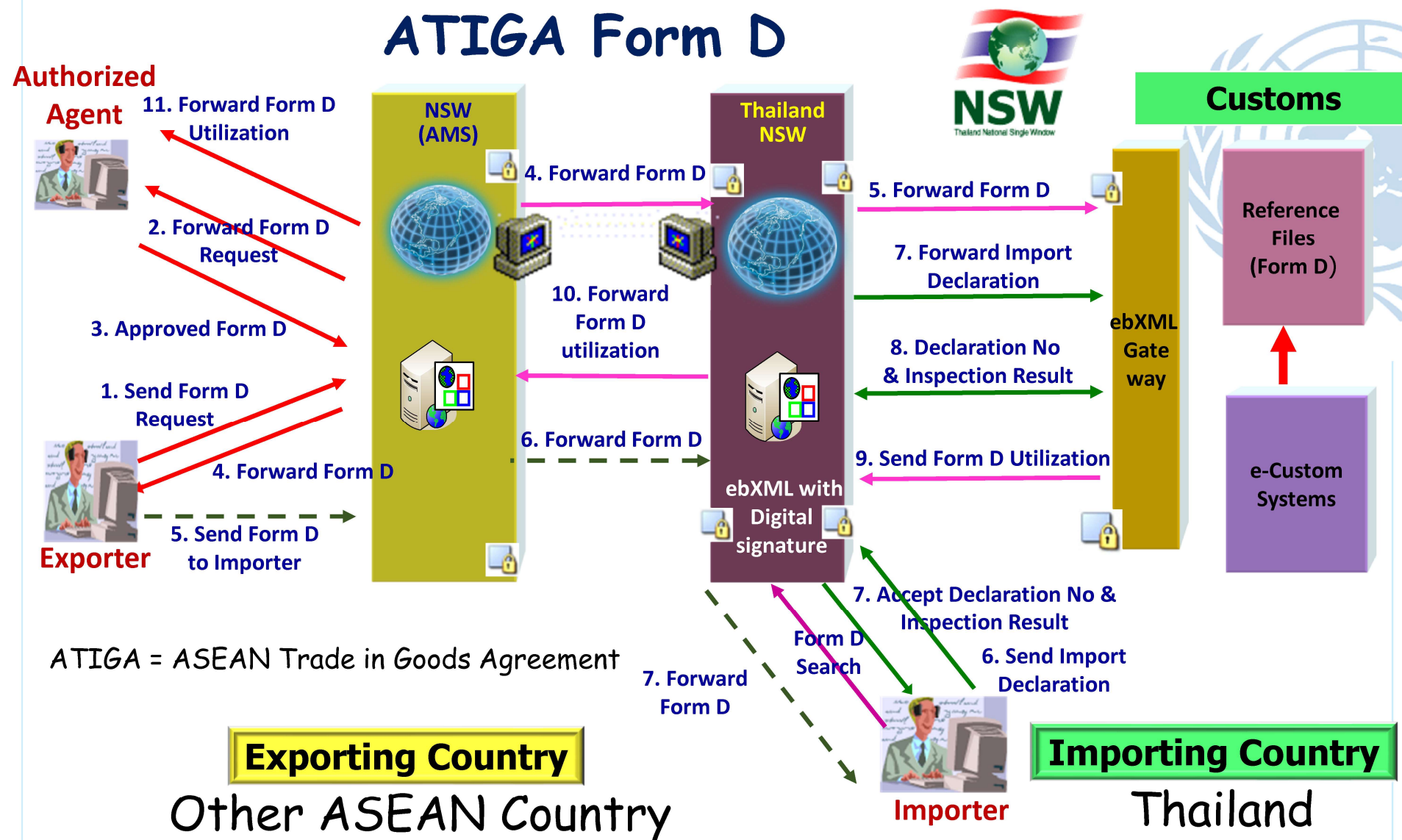
Source: ESCAP, UNRCs TF Survey 2015

NEAL-NET: Logistics Information Sharing across borders between China, Japan and Republic of Korea

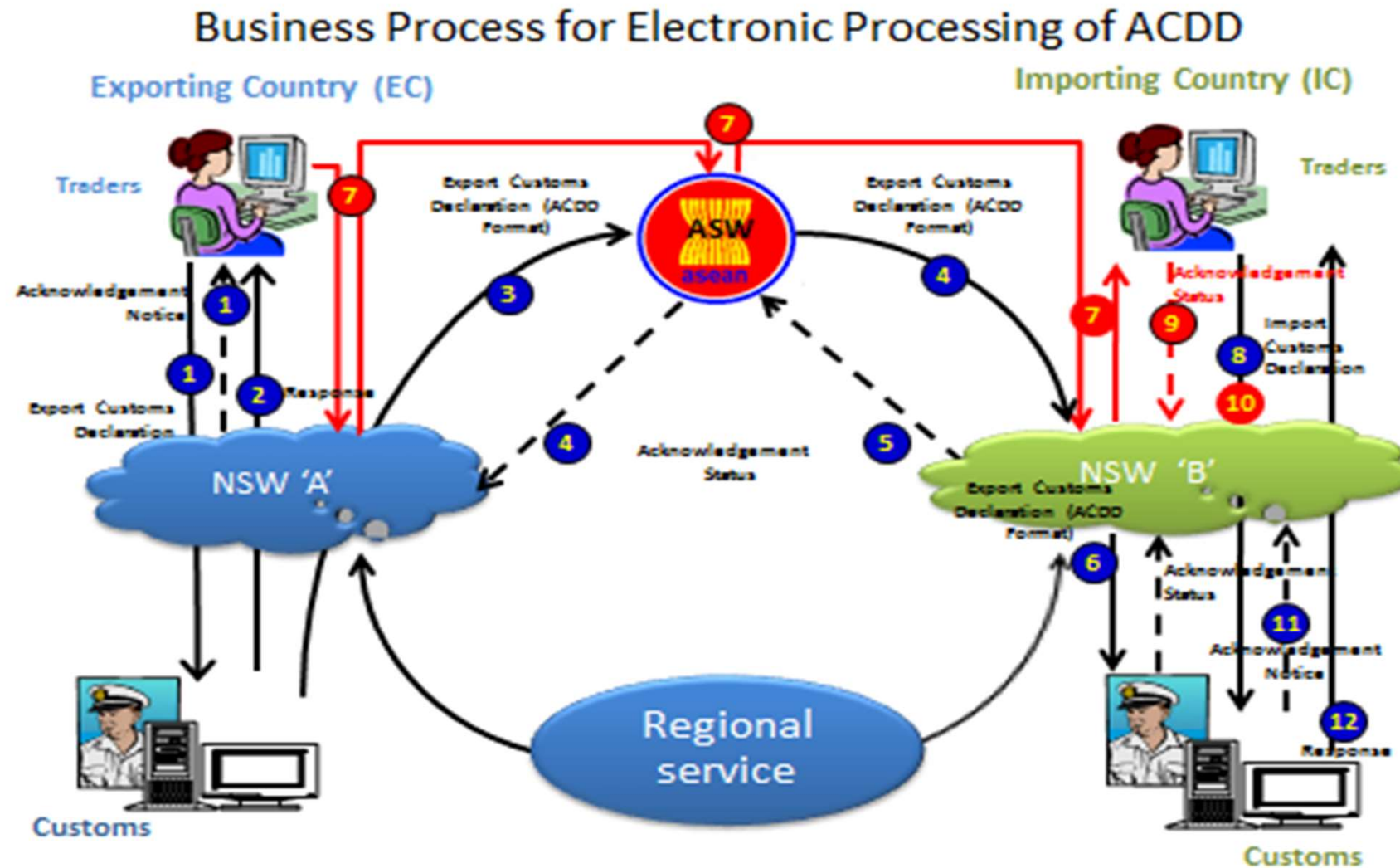
- Information about dynamic vessel status and container status are shared between major sea ports in China, Japan and ROK
 - Firstly, the dynamic container vessel status sharing interfaces are defined.
 - 9 basic events of dynamic vessel schedule and container status are abstracted and technical framework is designed.
 - vessel properties: ETA, ATA, CY-Open, CY-Cut and ATD
 - container properties: Unloading, Container Gate Out, Container Gate In, Loading



Cross-Border Information Exchange of "Certificate of Origin" (e-CERT) between two National SWs



Cross-Border Information Exchange of ASEAN Customs Declaration Documents (ACDD)



Key Findings

- **Certificates of origin (CO)** - the most commonly acknowledged regulatory documents available in many Single Window facilities, then followed by purchase certificates, SPS certificates, and national standard and quality certificates
- **Business process reform is needed** - lesser paper documents needed for verification, and faster approval by government agencies
- **Simplification of processes and documentation requirements** within Single Windows is a top priority as they are proposed by the business community
- **Private sectors are increasingly demanding of cross-border electronic information exchange of trade data and documents (B2B, B2G & G2G)**



Key Findings/Critical Success Factors

- High-level political commitment among participating countries
- Inter-governmental collaboration
- A strong coordinating secretariat/PMO
- Business needs identification
- Business process reform
- Common data interpretation
- Mutual recognition of cross-border electronic data
- Connectivity options and common technical specifications
- Appropriate financial model/business model
- Development and sustainable operations of NSW (NSW's operator) and of the inter-connectivity services or common infrastructure





Chapter 3

A Framework for Cross-border SW Interoperability

Topics of Chapter 3

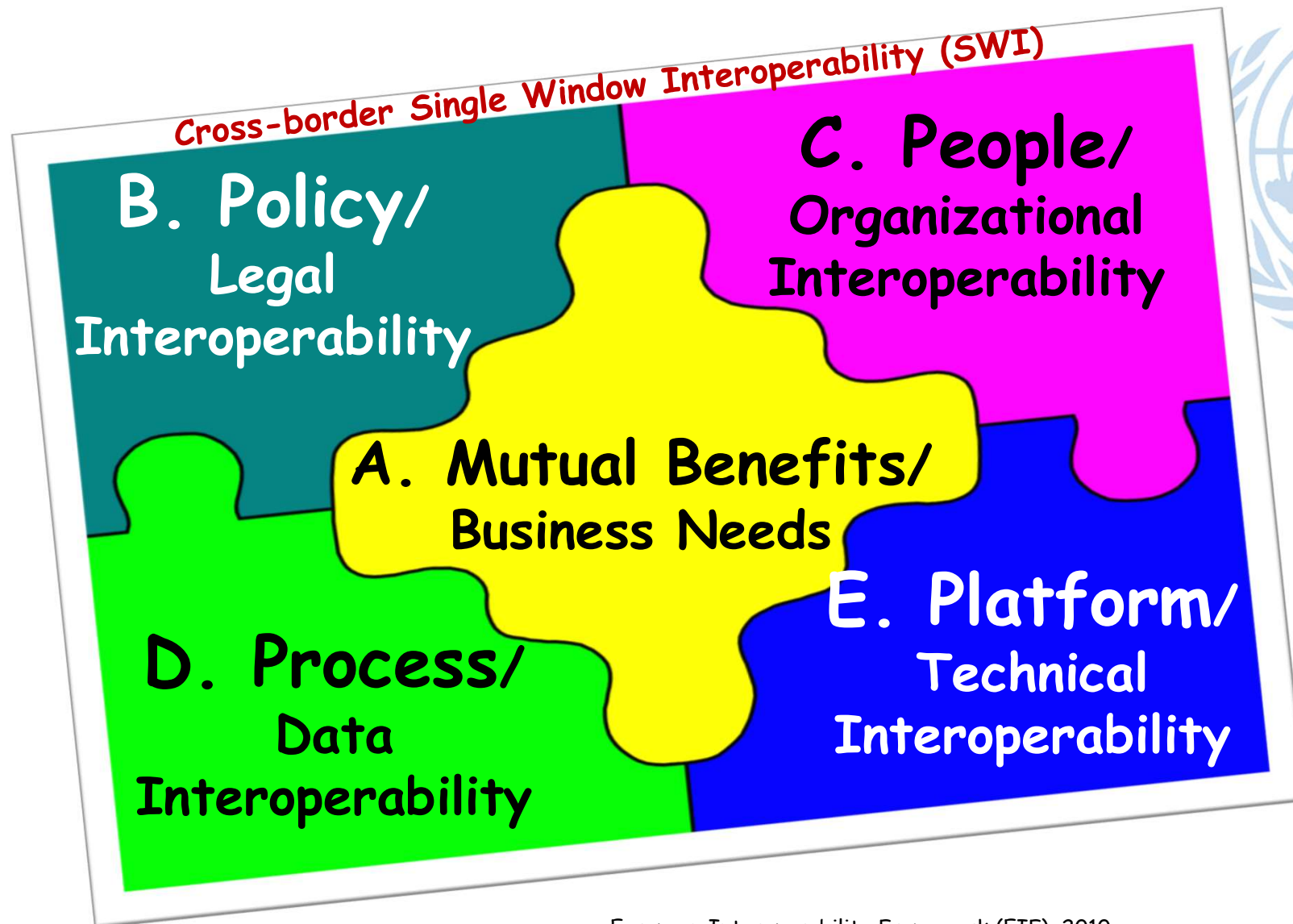
The proposed Framework

- Mutual Benefits/Business Needs as the driver for establishing SWI
- Four levels of interoperability
 - Policy & Legal Interoperability
 - People & Organizational Interoperability
 - Process & Data Interoperability
 - Platform & Technical Interoperability



The proposed Framework for Cross-border SWI

composing of 5 critical components



A. Mutual Benefits/ Business Needs for SWI

B. Policy/ Legal Interoperability

Policy Setting/Laws & Regulations

C. People/ Organizational Interoperability

Collaboration/Governance/Management

D. Process/ Data Interoperability

Process Reengineering/Data Harmonization

E. Platform/ Technical Interoperability

Interface Specifications/Connectivity

Key Roles for each of the critical SWI components

High-level Policy
Decision Makers,
& Legal Specialists

Policy Managers,
Leading Agencies &
Public/Private Stakeholders

Business Domain Experts &
Data/Document Analysts

ICT Specialists



A. Mutual Benefits/Business Needs

Recommended Action#1

- Capturing, analyzing, evaluating and agreeing on business needs as the primary driver for cross-border Single Window Interoperability by including perspectives from public and private stakeholders in trade of the participating countries*.

* It's recommended to conduct feasibility study including "Business Process Analysis" (BPA) to identify business needs of SWI. (Referring to Chapter 4 (BPA Session) and Chapter 5 (Phase 1) of the SWI Guide)

A. Mutual Benefits/Business Needs

Further detailed actions
to achieve the Recommended Action#1

- **#1.1** Capture the current or as-is processes and indicators related to the types of documents/data to be exchanged across borders.
- **#1.2** Analyze the captured as-is processes, especially examining for any duplication and redundancy related to document/data submissions and manual processes, bottlenecks, delayed or costly steps with no value addition, or any improvement opportunities.
- **#1.3** Map the proposed to-be electronic information exchange and automatic transactions with the list of possible primary drivers and business/economic needs of the participating countries (slide no. 18*)
- **#1.4** Refine and improve the proposed to-be processes, and its impact analysis with relevant public and private stakeholders of the participating countries.

* e.g. trade facilitation, regional integration, advanced risk analysis, infrastructure-use planning, combating illicit activities



B. Policy & Legal Interoperability

Recommended Action#2

- Securing the highest-level possible political commitment between the participating countries for the collaboration towards the establishment of cross-border SW interoperability

Policy interoperability for cross-border Single Windows means the establishment of necessary policies and political commitment between the participating countries for the collaboration towards the implementation and operations of the cross-border Single Window interoperability.

B. Policy & Legal Interoperability

Further detailed actions
to achieve the Recommended Action#2

- **#2.1** Secure the bilateral or multilateral political commitment by the highest-level possible policy decision makers among the participating countries, e.g. Heads of States (Prime Ministers or Presidents), or Ministers.
- **#2.2** Formally sign or ratify the bilateral agreement or the multilateral agreement among the participating countries.



B. Policy & Legal Interoperability

Recommended Action#3

- Analyzing, developing and enacting related laws and regulations for mutual recognition of electronic data exchanged across the borders, and establish legally binding on related operational and service level agreements among stakeholders

Legal interoperability for cross-border Single Windows covers the laws, regulations and other legally-binding agreements needed to allow mutual recognition of electronic information exchanged between SWs of the participating countries.



B. Policy & Legal Interoperability

Further detailed recommended actions to achieve the Recommended Action#3

- **#3.1** Carry out a legal assessment with a checklist among the participating countries of SWI to identify laws and regulations that need to be enacted or amended, especially with regard to mutual recognition of electronic data exchanged across borders.
- **#3.2** Analyze the legal issues in a broader sense of not only regarding the necessary laws and regulations but also on related operational and service level agreements of SWI facilities and the operators of SWs.
- **#3.3** Consider adoption of relevant uniform texts and international agreements, including the Framework Agreement of the Facilitation of Cross-border Paperless Trade in Asia and the Pacific.



C. People & Organizational Interoperability

Recommended Action#4

- Establishing of intergovernmental governance and management structure among the participating countries with mandated directives and supporting resources

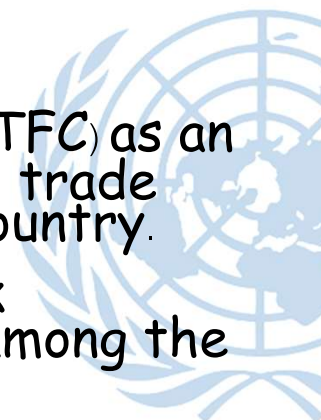


Organizational interoperability for cross-border Single Windows covers the organization of intergovernmental agencies and relevant stakeholders of the participating countries in cooperating and agreeing on mutual benefits or business needs of SW interoperability as well as in working together to synchronize and establish the cross-border SWI.

C. People & Organizational Interoperability

Further detailed recommended actions
to achieve the Recommended Action#4

- **#4.1** Establish a National Trade Facilitation Committee (NTFC) as an organization model for the governance and management of trade facilitation initiative including Single Window within the country.
- **#4.2** Extend the NTFC's mandate to also manage and work collaboratively for inter-government cooperation of SWI among the participating countries.
- **#4.3** Formulate an appropriate structure for the intergovernmental cooperation i.e. the SWI inter-government steering committee, and at least two or more SWI working groups, e.g. one for business process and data harmonization, one for legal issues, and another one for technical issues. The steering committee and working groups should be mandated to collaborate from the high-level policy decision makers of the participating countries.
- **#4.4** Designate a strong coordinating secretariat or a program management office with adequate resources to manage, coordinate and support the work of the steering committee and the working groups.



C. People & Organizational Interoperability

Recommended Action#5

- Building and improving people capacity to cope with new technology, innovation and change related to cross-border SW interoperability



People interoperability for cross-border SW, in this guide, means the human resources and their capacity to work collaboratively in designing, managing and dealing with new technology, innovation and change related to the development and operations of cross-border SWI.

C. People & Organizational Interoperability

Further detailed recommended actions to achieve the Recommended Action#5

- **#5.1** Conduct capacity building programs with lessons learned and experience sharing, and training workshops among participating countries in interoperability. The capacity building and awareness creation for common understanding creation should be continuously conducted for policy decision makers, policy managers and technology teams involving in the inter-government cooperation.
- **#5.2** Conduct awareness activity and specific trainings for a wider audience including government officers and trade-related operators, especially those involved during the implementation and the operations and usage of the cross-border SW facilities.



D. Process & Data Interoperability

Recommended Action#6

- Analyzing the as-is processes, designing and agreeing on better to-be processes of those related to information exchange across borders

Process interoperability of cross-border SWs refers to the interoperability among related business processes, including import, export and transit-related processes, transactions and information, required for interaction among regulatory agencies of the participating countries.

D. Process & Data Interoperability

Further detailed recommended actions to achieve the Recommended Action#6

- **#6.1** Identify candidate processes that should be improved.
- **#6.2** Capture and analyze the as-is processes and associated data/documents.
- **#6.3** Design the better to-be processes, especially by eliminating non-value-added processes, turning manual transactions into electronic transactions with electronic information exchange, if possible without paper documents submission.
- **#6.4** Review, refine and agree on the proposed to-be processes which several rounds of consultation from public and private stakeholders.



D. Process & Data Interoperability

Recommended Action#7

- Analyzing, harmonizing and agreeing on the better to-be standardized data and documents in electronic form in order to enable paperless information exchange across borders of the participating countries in a meaningful way.

Data interoperability for cross-border SWs refers to the ability to ensure that the precise meaning of exchanged information is unambiguously interpretable by different Single Windows and users.

D. Process & Data Interoperability

Further detailed recommended actions to achieve the Recommended Action#7

- **#7.1** Capture and analyze the as-is documents, data elements and their meanings used across the borders.
- **#7.2** Develop, harmonize and agree on those data elements, including their meanings, to be turned into electronic form and used for cross-border information exchange.
- **#7.3** Design and agree on the syntax or formats of electronic documents and data elements to be exchanged electronically between multiple SWs



E. Platform & Technical Interoperability

Recommended Action#8

- Analyzing, designing and agreeing upon a set of common platforms and open technical specifications, e.g. interface specifications, interconnection, and ICT infrastructure if needed, such that different SW facilities can connect and communicate to each other.

Platform and technical interoperability for cross-border SWs refers to a set of common platform and open technical specifications such that different SWs (different ICT platforms) can connect and exchange electronic information without the need for extra operator intervention. This includes aspects such as technical interface specifications, interconnection model and services, security specifications, data syntax structures, any necessary common development platform, and any common ICT infrastructure if needed.

The term “platform”, in this guide, means a group of technologies that are used as a base upon which software applications are developed and used.

E. Platform & Technical Interoperability

Further detailed recommended actions to achieve the Recommended Action#8

- **#8.1** Design and agree on the connectivity model of SWI, e.g. a centralized model (one common SWI system for all participating countries) or a distributed model (each country having its own SW, and then having a network connectivity among SWs).
- **#8.2** Design and agree on common technical interface specifications, preferably open specifications, e.g. communication protocols for the system-to-system connectivity, and security protocols.
- **#8.3** Establish any common ICT infrastructure if needed, e.g. network linkage among SWs across the countries.
- **#8.4** Agree on the schedule and planning for the establishment of the common ICT infrastructure, SWI implementation, and including conducting cross-border proof-of-concept implementation projects or pilot projects, sharing lessons learned and assisting each other technically.



The term “platform”, in this guide, means a group of technologies that are used as a base upon which software applications are developed and used.



Chapter 4

Specific Issues for SWI

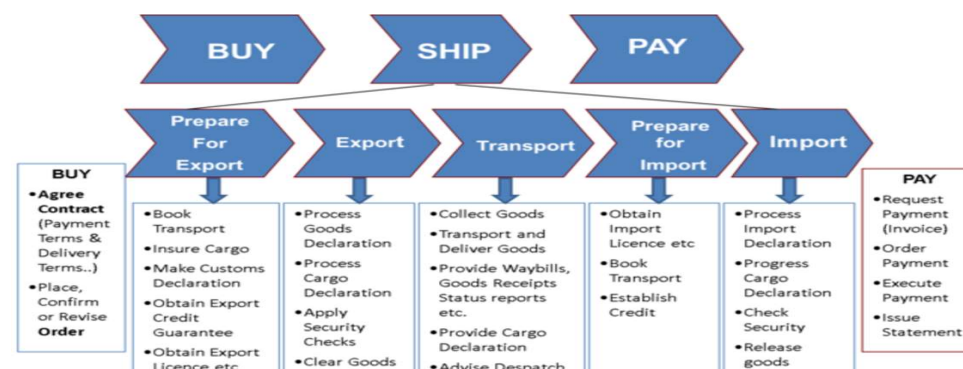
Topics of Chapter 4

- A. Business Process Analysis (BPA)
- B. Data Harmonization (DH)
- C. Messaging and Interface Specifications
- D. Connectivity
- E. Security and Privacy
- F. Legal Issues
- G. Financial Models



A. Business Process Analysis (BPA)

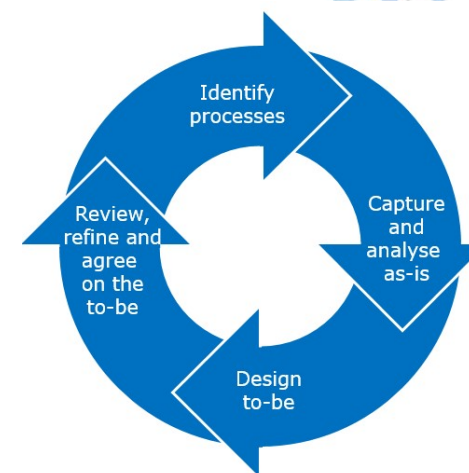
- What is BPA?
 - BPA is the analysis and redesign of workflows within and between organizations in order to optimize end-to-end processes and automate those processes.
- When to conduct BPA?
 - Conduct BPA during the identification of business needs to start the cross-border SW initiative, and during its detailed design and implementation in order to achieve its process interoperability.



A. Business Process Analysis (BPA)

• How to conduct BPA?

1. Identify candidate processes that should be improved, e.g. those processes related to information and documents required to be exchanged across borders, e.g. processes related to certificates of origin.
2. Capture and analyze the as-is processes and associated data/documents.
3. Design the better to-be processes, especially by eliminating non-value-added processes, turning manual transactions into electronic transactions with electronic information exchange, if possible without paper documents submission.
4. Review, refine and agree on the proposed to-be processes which several rounds of consultation from public and private stakeholders.



Business Process Analysis Cycle



B. Data Harmonization

- What is DH?
 - *Data harmonization comprises a set of activities for reconciling the definitions and representation formats of data elements in a domain of interest.*
- When to conduct DH?
 - *Conduct DH on the documents and their set of information that needed to be exchanged across borders to enable electronic cross-border SW interoperability, normally after or during the BPA activities.*



B. Data Harmonization

- How to conduct DH?

1. Identify data requirements in the country of departure, in the country of transit, and in the country of destination
2. Identify data requirements for existing electronic data exchange (if there is any)
3. Develop harmonized data names and their definitions/descriptions used at the bilateral or multilateral level of the participating countries, if possible, with the international standards' data definitions e.g. UN Trade Data Element Directory (UNTDDED).
4. Develop a standardized data format and structure by adopting existing international standard to the best possible, e.g. mapping to WCO Data Model, or UN/CEFACT Supply Chain Reference Data Model (SCDRM).



B. Data Harmonization - Case Example

ASEAN Case Study

Certificate of Origin for ASEAN (ATIGA Form D) - the paper form and its data definitions by mapping to UNTDED

ASEAN ATIGA FORM D Data									
0-1 Reference Number TDED 1004: Reference number identifying a specific document. an..35 (Min=1, Max=1)									
1 Goods consigned from (Exporter's business name, address, country) TDED 3036: Name (and address) of the party consigning the goods as stipulated in the contract by the party ordering the transport (This may be the exporter or seller.) an..35 (Min=1, Max=1)									
2 Goods consigned to (Consignee's name, address, country) TDED 3132: Name and address of party to which goods are consigned an..512 (Min=1, Max= 1)									
3-1 Departure date TDED 2380: The value of a date, a date and time, a time or of a period in a specified representation. an..35 (Min=1, Max= 1)									
3-2 Vessel's name/aircraft etc. TDED 8212: Name of a specific means of transport such as the vessel name an..35 (Min=1, Max= 1)									
3-3 Port of discharge TDED 3224: Name of a location. an..256 (Min=1, Max=1)									
4 For official use (Declaration Type) TDED 1001: Code specifying the name of a document. an..3 (Min=1, Max=1)									
5 Item No. TDED 1050: To identify a position within a sequence an..10 (Min=1, Max=1)									

1. Goods consigned from (Exporter's business name, address, country)			Reference No. ASEAN TRADE IN GOODS AGREEMENT/ ASEAN INDUSTRIAL COOPERATION SCHEME CERTIFICATE OF ORIGIN (Combined Declaration and Certificate) FORM D Issued in _____ (Country) See Overleaf Notes		
2. Goods consigned to (Consignee's name, address, country)			4. For Official Use <input type="checkbox"/> Preferential Treatment Given Under ASEAN Trade in Goods Agreement <input type="checkbox"/> Preferential Treatment Given Under ASEAN Industrial Cooperation Scheme <input type="checkbox"/> Preferential Treatment Not Given (Please state reason/s)		
3. Means of transport and route (as far as known) Departure date Vessel's name/ Aircraft etc. Port of Discharge			Signature of Authorised Signatory of the Importing Country		
5. Item number	6. Marks and numbers on packages	7. Number and type of packages, description of goods (including quantity where appropriate and HS number of the importing country)	8. Origin criterion (see Overleaf Notes)	9. Gross weight or other quantity and value (FOB)	10. Number and date of invoices
11. Declaration by the exporter The undersigned hereby declares that the above details and statement are correct; that all the goods were produced in _____ (Country) and that they comply with the origin requirements specified for these goods in the ASEAN Trade in Goods Agreement for the goods exported to _____ (Importing Country) Place and date, signature of authorised signatory			12. Certification It is hereby certified, on the basis of control carried out, that the declaration by the exporter is correct. Place and date, signature and stamp of certifying authority		
13. Third Country Invoicing Accumulation Back-to-Back CO Partial Cumulation			• Exhibition • De Minimis • Issued Retroactively		

B. Data Harmonization – Case Example

ASEAN Case Study

ATIGA Form D's data elements mapping to WCO DM v3.0

ASEAN ATIGA FORM D Data	WCO ID	Data Model Classes	WCO Dictionary Entry Name
0-1 Reference Number TEDD 1004: Reference number identifying a specific document. an..35 (Min=1, Max=1)	D014	Declaration	Declaration. Identification. Identifier
1 Goods consigned from (Exporter's business name, address, country) TEDD 3036: Name (and address) of the party consigning the goods as stipulated in the contract by the party ordering the transport (This may be the exporter or seller.) an..35 (Min=1, Max=1)	R031	Exporter	Exporter. Name. Text
2 Goods consigned to (Consignee's name, address, country) TEDD 3132: Name and address of party to which goods are consigned an..512 (Min=1, Max= 1)	R037	Importer	Importer. Name. Text
3-1 Departure date TEDD 2380: The value of a date, a date and time, a time or of a period in a specified representation an..35 (Min=1, Max= 1)	030	Goods Shipment	Goods Shipment. Departure. Date time
3-2 Vessel's name/aircraft etc. TEDD 8212: name of specific means of transport such as vessel name an..35 (Min=1, Max= 1)	T001	Arrival Transport Means	Arrival Transport Means. Name. Text
3-3 Port of discharge DED 3224: Name of a location. an..256 (Min=1, Max=1)	L012	Unloading Location	Unloading Location. Name. Text



C. Messaging and Interface Specifications

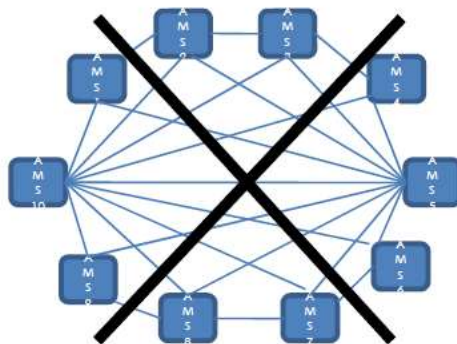
- Ensure interoperability among participating countries at the ICT technical level, it is necessary to select messaging structures, interface specifications and a connectivity option between the SWs of participating countries.

According to the ESCAP trade facilitation survey (2017) - many SW facilities are moving toward Web-based platforms, i.e. using Internet and Web technology, XML message structures, web services e.g. REST, JSON, and API for defining common messaging structures and interface specifications to enable technical interoperability between the participating countries' SWs.

D. Connectivity Options

ASEAN Case Study

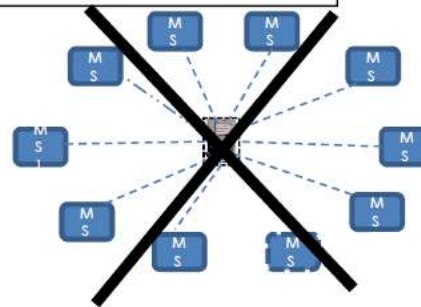
Bilateral Approach :
Point-to-Point Leased
Line Connectivity



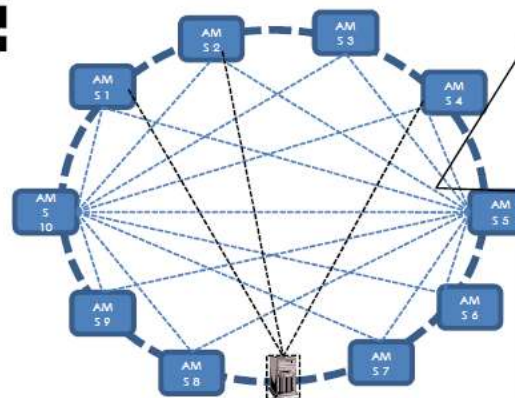
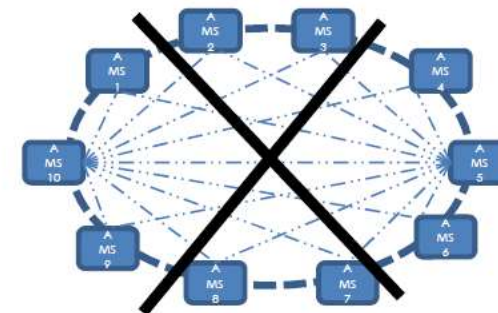
- ✓ Data to be routed from country to country without being stored at one place
- ✓ IPVPN enabled secured data exchange between countries in a secured environment

Virtual Network
(Https, IP/VPN)

Centralized
system/server



Decentralized System



A **combination of centralization and decentralization** whereby **sensitive data such as trade data does not go through a centralized gateway residing in a central server**. A central server may be required for hosting non-confidential/non-sensitive data such as common reference code list, ANTH etc and some central facility for general enquiry , transaction volume monitoring etc

Adopted by ASEAN SW

D. Connectivity

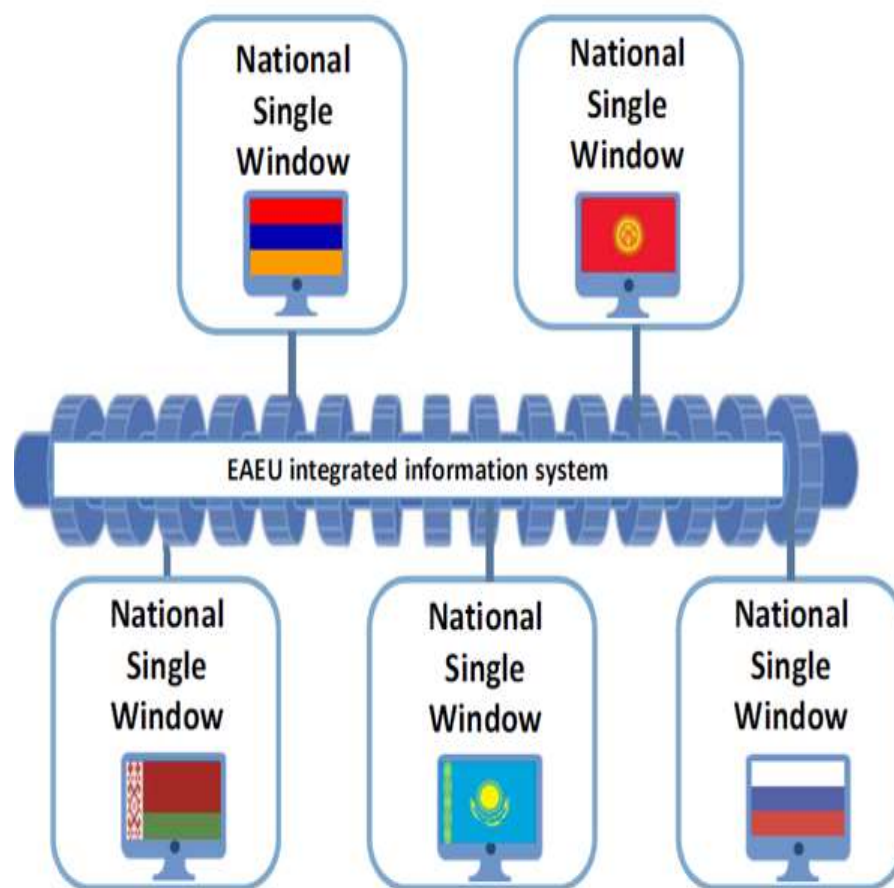
Recommendation

- Adopt a combination of centralization and decentralization for the connectivity between SWs
 - whereby sensitive data such as trade data does not go through a centralized gateway residing in a central server. However, a central server may be required for hosting non-confidential/non-sensitive data such as common reference code, and some central facility for general enquiry, and transaction volume monitoring, etc..



EAEU SW Connectivity

EAEU Case Study



Basic principles of the Single Window development :

- Each country develops National Single Window (NSW);
- Coordination of efforts makes it possible to converge approaches of the National Single Window development;
- Ensuring mutual recognition of electronic data;
- Using the infrastructure of the integrated information system of the Union for the organization of NSWs information exchange.



Ref: EEC Initiative on Nationals “Single Window” development of the Eurasian Economic Union Member States.
Eurasian Economic Commission. March 24, 2017.

E. Security and Privacy

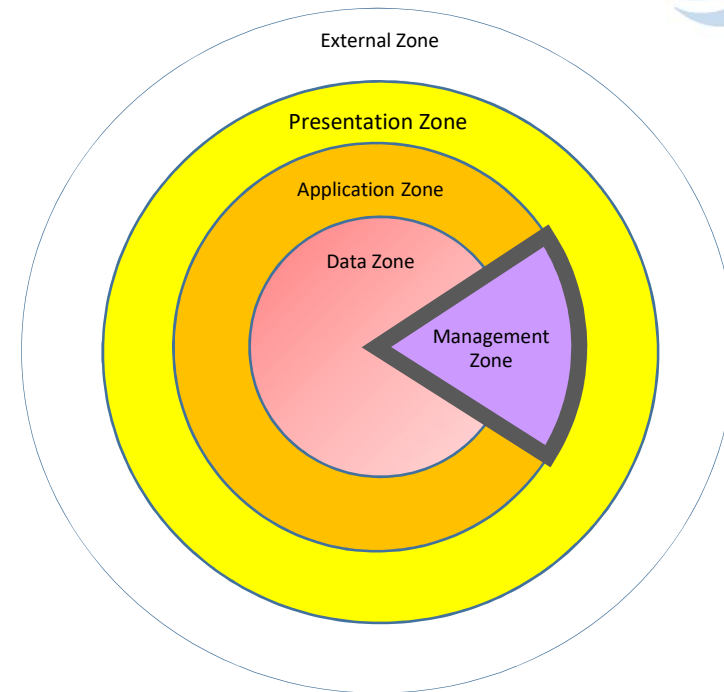
Recommendations

- Establish information security and privacy policies among the participating countries such that the design and operations of the cross-border SWI facility, and the operational procedures of stakeholders/users must comply with
- Assess, and amend or enact any necessary laws and regulations within the participating countries such that cross-border information security and privacy could be legally enforced
- Design and operate the cross-border SWI facility to comply with the information security and privacy policy and requirements, e.g. adopting the defense-in-depth architecture design, identifying roles and access privileges, and establishing standard operational procedures for each stakeholder/user with the security and privacy concern.
- Conduct regular security/privacy monitoring, auditing, and risk assessment, and implement improvement measures by utilizing international security standards, e.g. ISO/IEC 27001



E. Security and Privacy Options

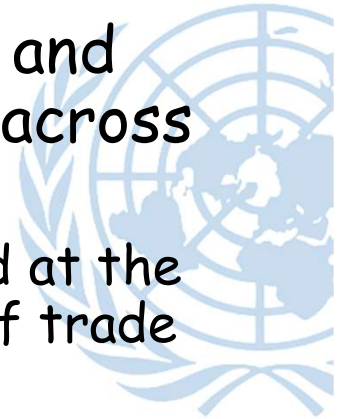
- ❖ Defense-In-Depth/Security by Design, e.g. multi-layered nested-zone ICT architecture
- ❖ User Authentication and Identify Management
- ❖ Security Audit Trails
- ❖ Mutual Recognition



Defense-In-Depth

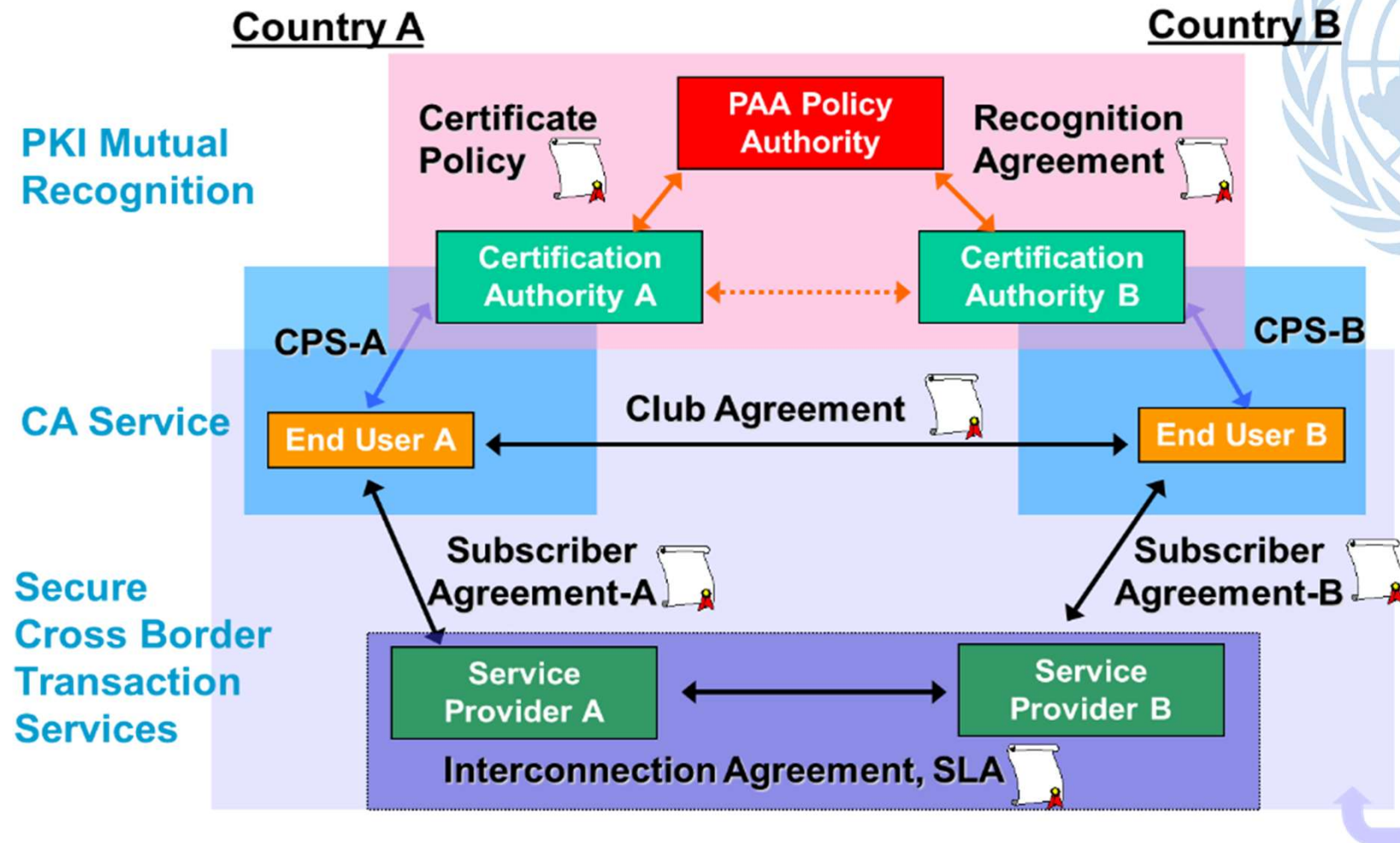
F. Legal Issues

- ❖ The mutual recognition of electronic documents and data in electronic form must be legally accepted across the borders.
- ❖ The management of chain of trust should be addressed at the national level as well as in the participating countries of trade



PAA Legal Framework

PAA Case Study



Ref: HA, S.H.. Connecting Supply Chain in the Region - A private sector initiative to facilitate cross-border paperless trade data exchange. Workshop on Advancing Interoperability of Single Windows, organized by EEC/ESCAP. May 31 – June 1, 2017:

PAA Legal Framework

PAA Case Study

Three Layers of Legal Agreements

1. The first layer is the **Recognition Agreement** between the PAA Certificate Policy Authority and the Certificate Authorities of the PAA members. This is to recognize digital certificates issued among certified Certificate Authorities of the PAA members.
2. The second layer is the **Interconnection Agreement** among PAA members. This includes the **Service Level Agreement** for secure cross-border transaction services.
3. The third layer is the **Subscriber Agreement** between each PAA member and its users who are the users of the cross-border transaction services. By entering into the Subscriber Agreement with PAA members, the users are agreeing with the **PAA Club Agreement**.



G. Financial Models

- Financial options for development investment and operations of SWI
 - Investment for establishing the SW facility and the operator(s)/provider(s) within the country is normally depending upon each individual country's policy decision making.
 - However, the shared infrastructure for connectivity between different SW facilities, and probably any common ICT applications and services between the SWs, are the new investment and cost both for development and continuous operations.
- Different options, e.g.
 - 100% public investment, or
 - 100% private investment, or
 - Public-Private Partnership (PPP) models.
- For the cases of private or PPP models, usually there are service fees charging to the business users - but how much it should be charged is to be considered and governed also
 - The governance body must make a final decision on the agreed financial and business model.
- It is very crucial that the designated operator/provider must be formally, or even better legally appointed by the authorized high-level policy decision makers.





Chapter 5

Governance and Management of SWI

Topics of Chapter 5

Phase 1 - Evaluating

Phase 2 - Directing

Phase 3 - Planning

Phase 4 - Building

Phase 5 - Running

Phase 6 - Management Monitoring

Phase 7 - Governance Monitoring



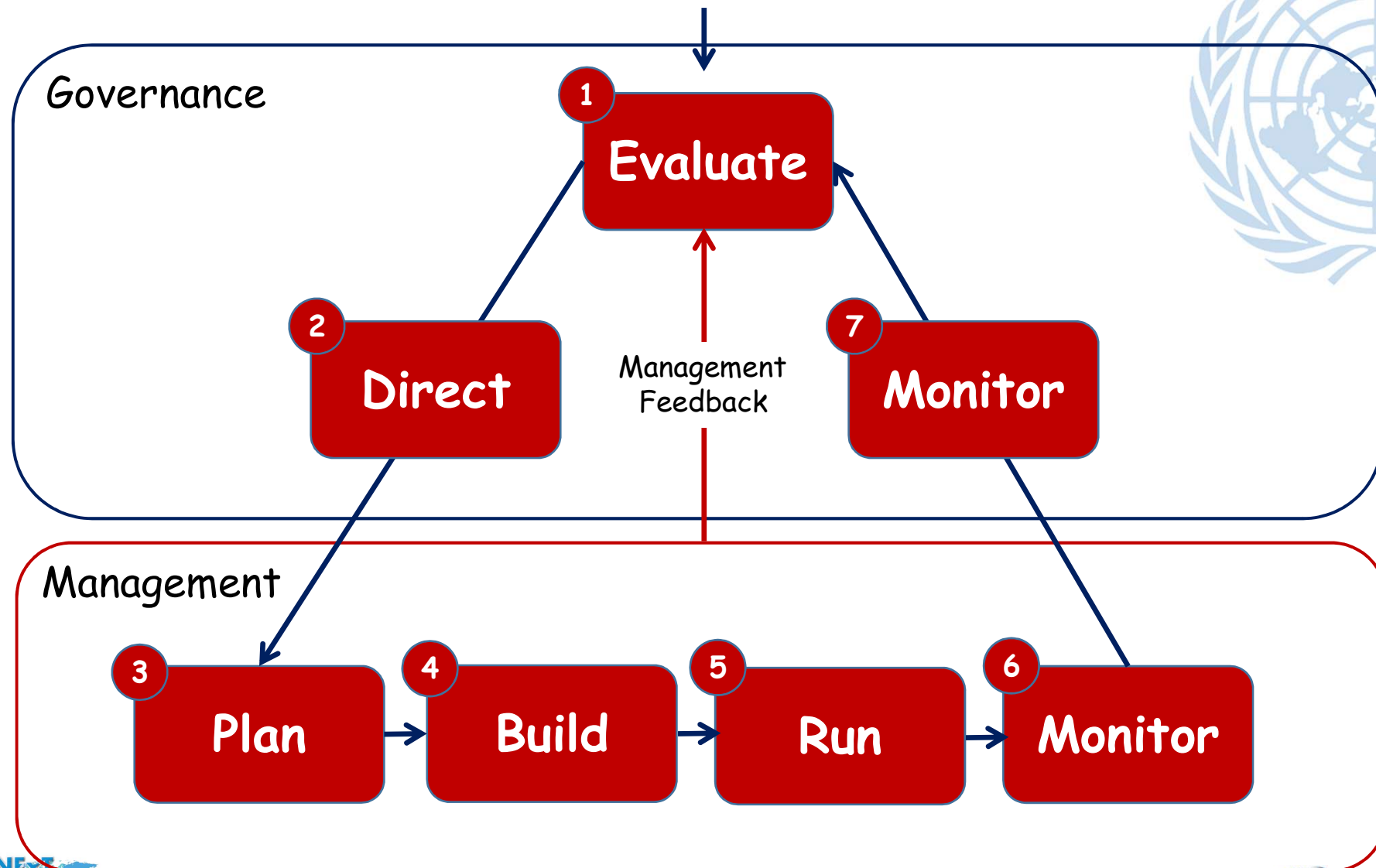
A governance and management approach & recommendations for establishing SWI*

- **The governance of SWI** is about ensuring that
 - A governance body, task forces and supporting resources of the participating countries are established;
 - Business needs/objectives of SWI are captured with the consultation from public and private stakeholders of the participating countries;
 - Strategic directions and plans by which prioritization and decision making are set;
 - Compliance and impacts of, performance and progress on agreed directions and objectives are monitored;
 - Agreed business needs/objectives are achieved.
- **The management of SWI** is about
 - planning, building, running and monitoring activities aligning with the strategic directions and implementation plans approved by the governance body to establish the SWI facility and achieve the business needs/objectives of SWI.



Governance and management of cross-border Single Window interoperability

Business Needs of SWI



Phase 1 - Evaluating

What work must be accomplished?

- Capture, analyze and evaluate strategic business needs and feasibility of establishing cross-border SWI by including perspectives from public and private stakeholders in trade of the participating countries.



What deliverables must be generated and reviewed?

- A conceptual report including proposed strategic business needs/objectives, feasibility and recommendations whether a SWI initiative should be undertaken.

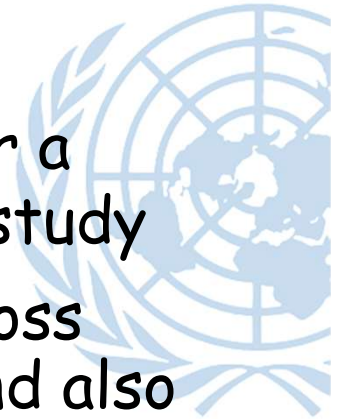
Phase 1 - Evaluating

Who must be involved?

- A designated task force, e.g. a consulting team or a special intergovernmental team, to conduct the study
- Key public and private stakeholders in trade across borders to support facts, opinions, feedbacks and also provide their due diligence to help decide if the initiative is a “go.”
- High-level policy decision makers of the participating countries to review and make decisions

How to control and approve this phase?

- High-level policy decision makers of the participating countries to review and make decisions whether the SWI initiative is a go to the next phase, otherwise stop the initiative.



Phase 2 - Directing

What work must be accomplished?

- Agree on the strategic business needs and strategic directions among the participating countries
- Establish the intergovernmental governance and management structure among the participating countries with mandated directives and supporting resources



What deliverables must be generated and reviewed?

- A formal bilateral and multilateral agreement with strategic directives for establishing the cross-border SWI to be reviewed and signed by the highest-possible-level policy decision makers of the participating countries.
- A proposal for establishing an intergovernmental governance and management structure among the participating countries with mandated directives and proposed resources.

Phase 2 - Directing

Who must be involved?

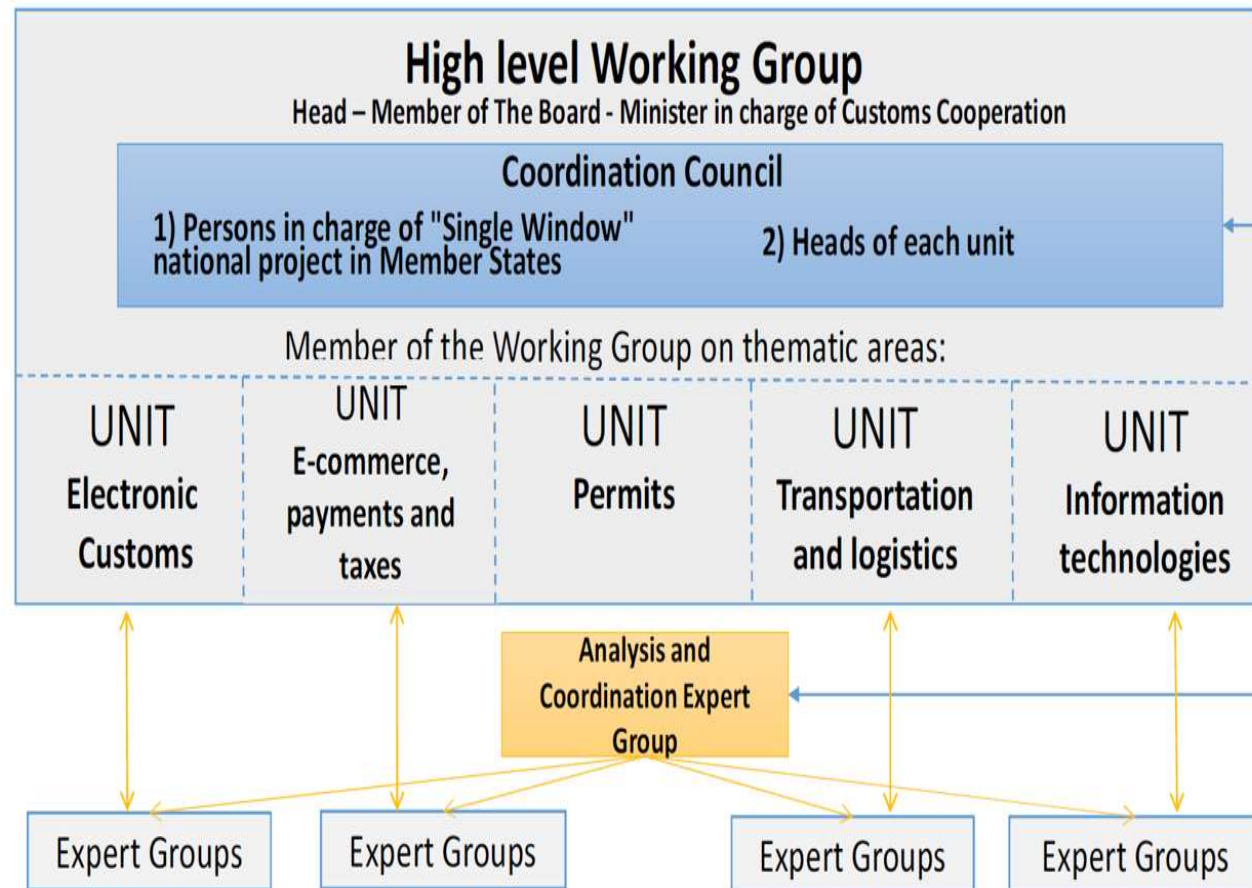
- A designated task force, e.g. a consulting team, a special intergovernmental team or the candidate intergovernmental management team, to develop the draft agreement and the governance and management proposal.

How to control and approve this phase?

- The highest-possible-level policy decision makers, e.g. Heads of States or Ministers, sign the agreement, approve and mandate the governance and management structure with the supporting resources.
- The governance structure include the highest-level policy decision makers, e.g. Head of States or Ministers, who makes the final policy decisions, but normally with the assistance by an intergovernmental SWI steering committee that work on evaluating strategic needs, refining the policy and the strategic plan, and monitoring the progress on behalf of the highest-level policy decision makers.



EAEU SW Governance & Management Structure



Ref: EEC Initiative on National "Single Window" development of the Eurasian Economic Union Member States.
Eurasian Economic Commission. March 24, 2017.

Phase 3 – Design To-Be & Planning

What work must be accomplished?

- Analyze the as-is processes, design and agree on the better to-be processes of those related to information exchange across borders (**to-be process interoperability**)
- Analyze, harmonize and agree on the better to-be standardized data and documents in electronic form in order to enable paperless information exchange across borders of the participating countries in a meaningful way (**to-be data interoperability**)
- Analyze, develop and enact related laws and regulations for mutual recognition of electronic data exchanged across the borders, and establish legally binding on related operational and service level agreements among stakeholders (**to-be legal interoperability**)
- Analyze, design and agree upon a set of common platforms and open technical specifications, e.g. interface specifications and ICT infrastructure if needed, such that different Single Window facilities can connect and communicate to each other (**to-be technical interoperability**)
- Consider initiating, and possibly implementing a proof-of-concept project to validate the design and receive feedback from stakeholders



Phase 3 – Design To-Be & Planning

What deliverables must be generated and reviewed?

- A design specification document of proposed to-be business processes for cross-border information exchange and interoperability
- A design specification of proposed to-be data harmonization
- Draft laws and regulations, draft operational and service level agreements
- A design specification document of proposed technical interface specifications, connectivity models, and other recommended technology
- Proposed implementation and change management plans, including estimated budgets and possible sources



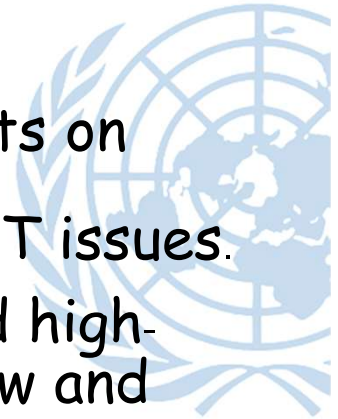
Phase 3 – Design To-Be & Planning

Who must be involved?

- Intergovernmental working groups and domain experts on thematic areas, i.e. on business processes, data harmonization, laws and regulations, and technical ICT issues.
- The intergovernmental SWI steering committee, and high-level policy decision makers when necessary, to review and approve the design and plans.
- Key public and private stakeholders in trade to offer facts, opinions, feedback and also provide their due diligence to help decide if the design and plans is a “go” to the next phase (the building phase)

How to control and approve this phase?

- The intergovernmental SWI steering committee, and the high-level policy decision makers when necessary, to review and approve the design and the programme/project plans, including granting or/and coordinating the necessary budget.



Phase 4 - Building

What work must be accomplished?

- Manage all projects from the investment portfolio in alignment with the SWI strategic directions and in a coordinated way, e.g. initiate, plan, control, and execute projects, and close with a post-implementation review.
- Identify solutions and analyze SWI requirements before acquisition or creation to ensure that they are in line with the business requirements of cross-border interoperability covering business processes, software applications, data, ICT infrastructure and services. To coordinate with affected stakeholders the review of feasible options including approval of requirements and proposed solutions.
- Establish and maintain identified solutions in line with the SWI requirements covering design, development, procurement and partnering with suppliers/vendors. To manage configuration, test preparation, testing, requirements management and maintenance of business processes, applications, data, ICT infrastructure and services.
- Maximize the likelihood of successfully implementing sustainable cross-border organizational change quickly and with reduced risk, covering the complete life cycle of the change and all affected stakeholders in the business and ICT.
- Formally accept and make operational new solutions, including implementation planning, system and data conversion, acceptance testing, communication, release preparation, promotion to production of new or changed business processes and ICT services, early production support, and a post-implementation review.
- Define and maintain descriptions and relationships between key resources and capabilities required to deliver IT-enabled services, including collecting configuration information, establishing baselines, verifying and auditing configuration information, and updating the configuration repository.



Phase 4 – Building

What deliverables must be generated and reviewed?

- The SWI facility including its applications, data, ICT infrastructure and services has been developed, tested, deployed, formally accepted and ready to be used.

Who must be involved?

- Designated programme/projects managers who manage the projects
- Suppliers/vendors who provide solutions, development and installation
- Users who provide input for requirements specification, test and utilize the facility.
- Users who receive training and take assigned roles for the new operational solutions.

How to control and approve this phase?

- Authorized representatives, e.g. the procurement evaluation committee, formally approve and accept the delivered facility.



Phase 5 – Running: delivering, servicing & supporting

What work must be accomplished?

- Coordinate and execute the activities and operational procedures required to deliver SWI services, including the execution of pre-defined standard operating procedures and the required monitoring activities.
- Provide timely and effective response to user requests and resolution of all types of incidents. Restore normal service; record and fulfil user requests; and record, investigate, diagnose, escalate and resolve incidents.
- Establish and maintain a plan to enable the business and ICT to respond to incidents and disruptions in order to continue operation of critical business processes and required ICT services and maintain availability of information at a level acceptable to business needs of cross-border trading.
- Manage security services by protecting information to maintain the level of information security risk acceptable to the key stakeholders of the SWI facility in accordance with the security policy, e.g. by complying with ISO 27001. Establish and maintain information security roles and access privileges and perform security monitoring.



Phase 5 – Running: delivering, servicing & supporting

What deliverables must be generated and reviewed?

- The SWI facility continuously delivers services to support the business of cross-border electronic information exchange and interoperability.
- Whenever incidents occur, they are managed and resolved systematically according to the standard operational procedures.

Who must be involved?

- SW operators of the participating countries who provide services and support
- Operators of the SWI coordinating or central facility, if any, who provide services and support
- Stakeholders and users who use the SWI facility

How to control and approve this phase?

- Service level agreements and standard operational procedures shall be used to control and audited for compliance.



Phase 6 – Management Monitoring

What work must be accomplished?

- **Monitor, evaluate and assess performance and conformance** by collecting, validating and evaluating business, ICT and process goals and metrics. To monitor that processes are performing against agreed-on performance and conformance goals and metrics and provide reports that is systematic and timely.
- **Monitor, evaluate and assess the system of internal control** by continuously monitoring and evaluating the control environment, including self-assessments, independent assurance reviews, and improvement plans and actions.
- **Monitor, evaluate and assess compliance with external requirements** by evaluating that ICT processes and ICT-enabled business processes are compliant with laws, regulations and contractual agreements.

What deliverables must be generated and reviewed?

- Periodic reports, e.g. daily and monthly, about performance and conformance assessment, internal control, and compliance with external requirements



Phase 6 – Management Monitoring

Who must be involved?

- SW operators of the participating countries who provide periodic reports
- Operators of the SWI coordinating or central facility, if any, who provide periodic reports
- Internal auditors, and certified external auditors

How to control and approve this phase?

- Some international standards, e.g. ISO/IEC 27001 information security management system, shall be adopted to control security measures through internal audit and certifications by certified external auditors
- Improvement plans are proposed and endorsed by relevant sponsors of the SW or SWI operators, and those plans are carried out accordingly



Phase 7 - Governance Monitoring, Evaluating and Directing

What work must be accomplished?

- Ensure benefits delivery by optimizing the value contribution to the business from the business processes, ICT services and ICT assets
- Ensure risk optimization by ensuring that the SWI facility's risks and tolerance are understood, articulated and communicated, and that risks to the SWI value related to the use of ICT is identified and managed.
- Ensure resource optimization by ensuring that adequate and sufficient IT-related capabilities (people, process and technology) are available to support enterprise objectives effectively at optimal cost.
- Ensure stakeholder transparency by ensuring that SWI facility's ICT performance and conformance measurement and reporting are transparent, with stakeholders approving the goals and metrics, and the necessary remedial actions.



Phase 7 - Governance Monitoring, Evaluating and Directing

What deliverables must be generated and reviewed?

- Evaluation reports about benefits delivery, risk optimization, resource optimization, stakeholder engagement and transparency.

Who must be involved?

- The governance body, e.g. the SWI steering committee and high-level policy decision makers, who review the evaluation reports and make a mandate decision
- The working groups with the support from the SW/SWI operators who prepare the evaluation reports including the improvement plans.
- Stakeholders and users who provide facts and recommendations for improvement

How to control and approve this phase?

- The governance body will evaluate and make the policy mandate/directive.



Chapter 6

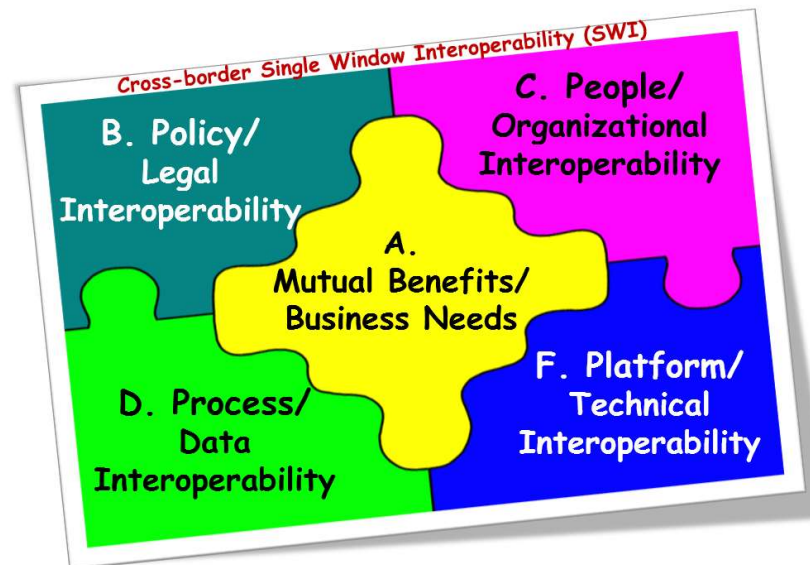
Summary



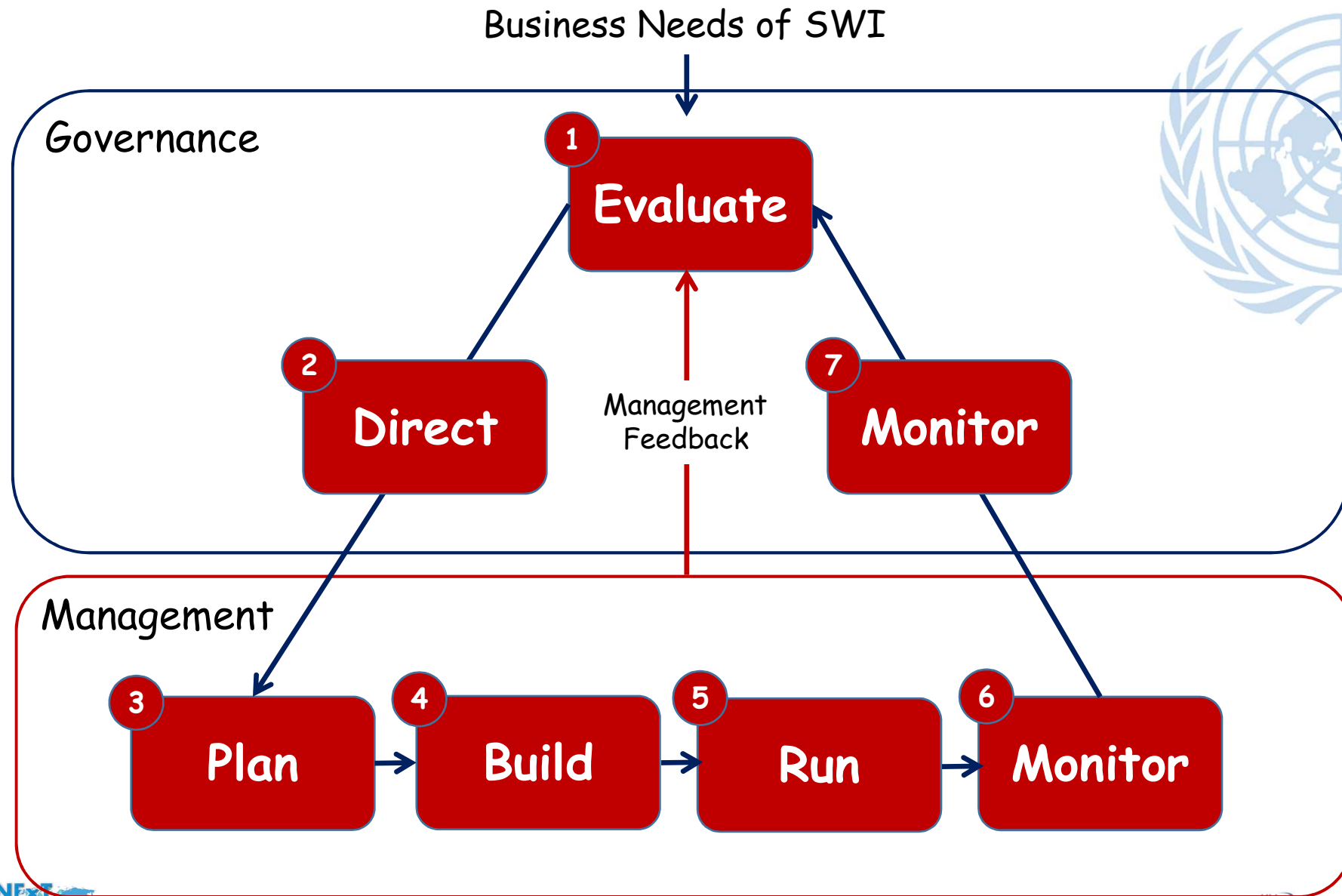
The proposed Framework for Enabling Single Window for Cross-border Paperless Trade

5 Critical Success Components

- A. Mutual Benefits/Business Needs
- B. Policy & Legal Interoperability
- C. People & Organizational Interoperability
- D. Process and Data Interoperability
- E. Platform and Technical Interoperability



Governance & Management for establishing SWI



Thank you for
your kind attention



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Questions & Answers