

Single Window (SW) and Paperless Trade Implementation

Success Factors, Lessons Learned & Emerging Trends

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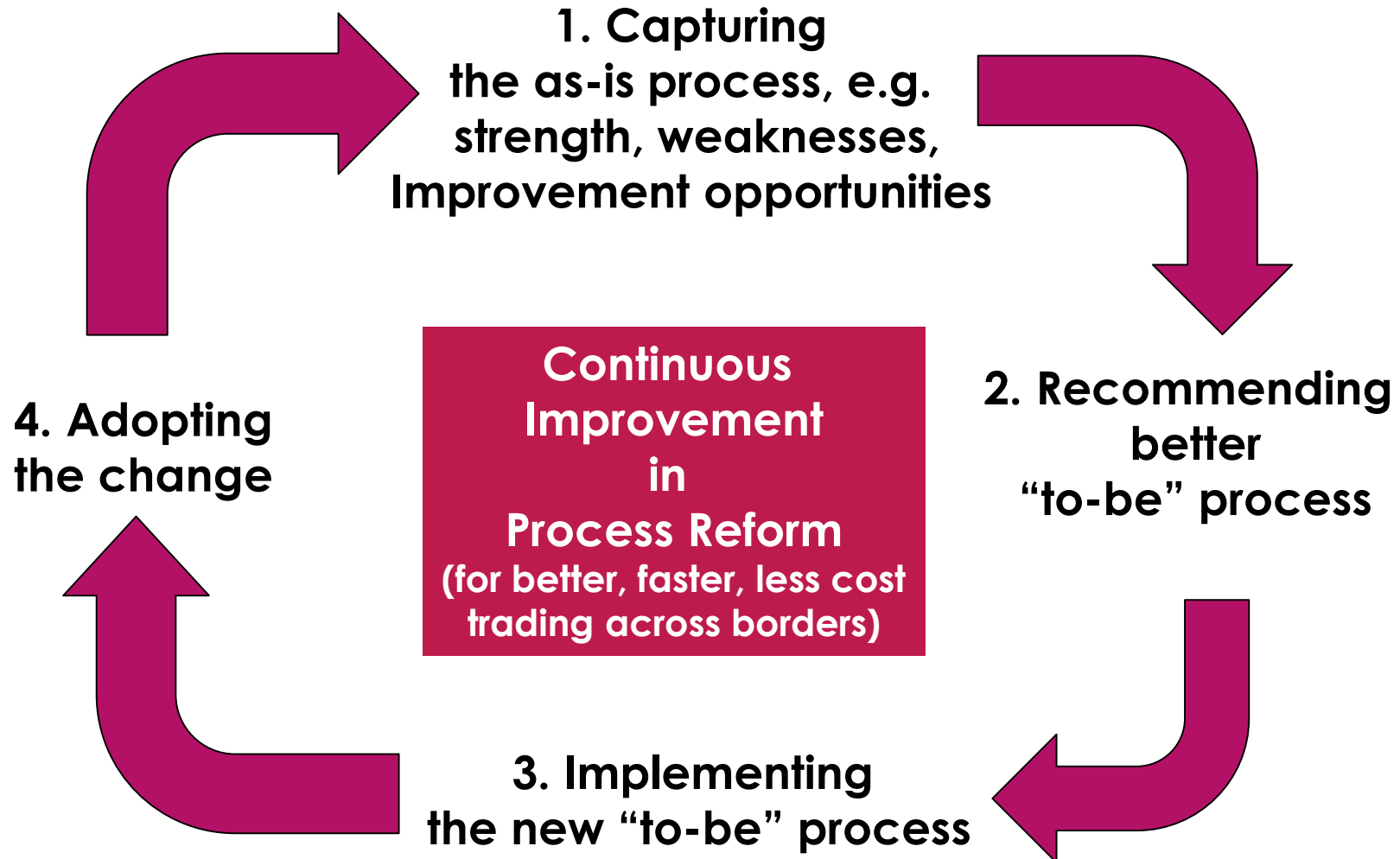


ESCAP-ARTNET/ITD Trade Facilitation for Sustainable Development Regional Workshop 2019
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Topics

- ▶ SW/Paperless Trade Implementation is about Trade Process Reform
 - **Agency Process Reform** within each regulatory agency
 - **Inter-Agency Process Reform** among regulatory agencies
 - **Inter-Government Process Reform** between economies
- ▶ Success Factors & Lessons Learned
- ▶ Emerging Trends
 - **Institution Change** suitable for Innovation & Digital Transformation
 - **Cloud Computing & Data Analytics**

Trade Facilitation (SW/Paperless trade implementation) = Trade Process Reform =



Goal and Strategy

[Trade Process Reform]

Goal:

Making trading across borders better compliant, faster, and less cost

A Proposed Strategy:

To achieve end-to-end digital transformation along the cross-border trade supply chain, particularly within-agency & inter-agency regulatory procedures

Cross-border Trade Supply Chain Improvement in 3 flows

**Seller
(Exporter)**

Physical Goods

**Buyer
(Importer)**

**Trade
Facilitation
Improvement
-
Efficiency in
procedures &
document
handlings**

Payment

**Our
Improvement
Opportunities**

Information/Documents (up to 300 document types*)

**>20 regulatory agencies,
10 business sectors*,
e.g. importers,
exporters, banks,
F/F, Customs Brokers,
Insurance companies,
Terminal Operators,
Sea Carriers, Airlines,
Trucks, etc.**

Traders

Banks

Importers Traders

Exporters

Customs Borkers

Customs Officers

Dept. of Fisheries

Dept. of Agriculture

Freight Forwarders

Food and Drug Administration (FDA)

Other regulatory agencies

Ship Agents

Transport-Operators

Economic Operators

Cargo Insurance Companies

Carriers

Chamber of Commerce

Terminal-Operators

Port Authority

Trucks

Airlines

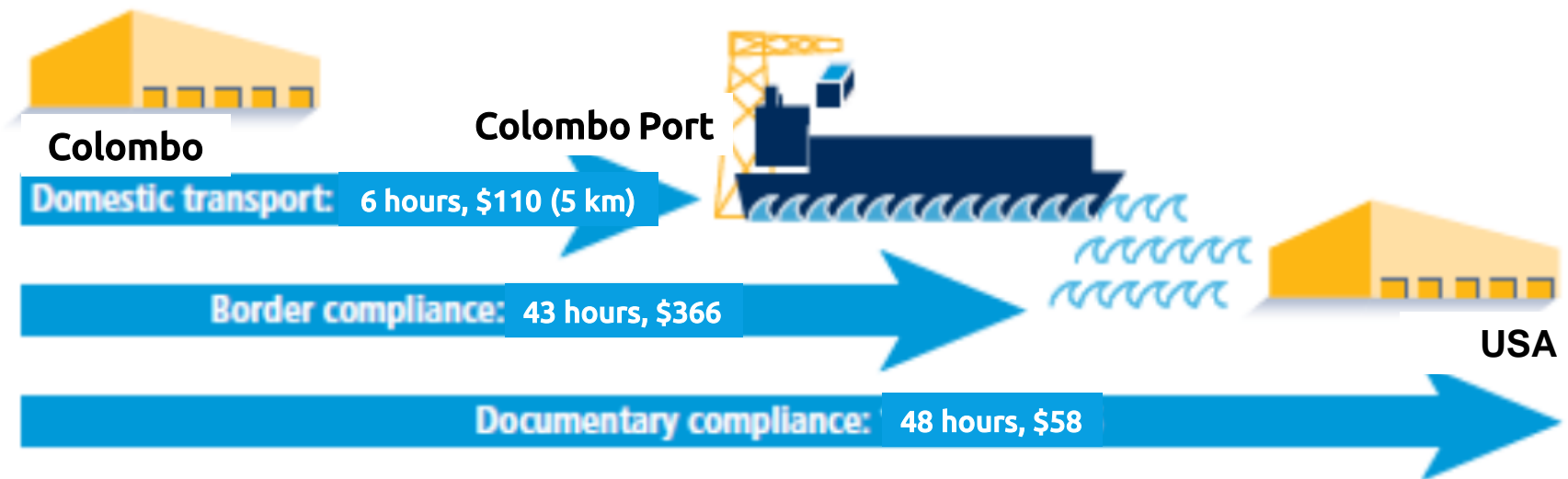
WB Trading Across Border Indicators (2019)*

(showing here only export indicators)

Economy	TAB Score	Time to Export: Border Compliance (hr)	Cost to Export: Border Compliance (USD)	Time to Export: Documentary Compliance (hr)	Cost to Export: Documentary Compliance (USD)
Netherlands	100	0	0	1	0
Bhutan	94.25	5	59	9	50
Korea, Rep.	92.5	13	185	1	11
Thailand	86.45	44	223	11	97
Lao PDR	78.12	9	140	60	235
Nepal	77.17	56	288	43	110
Sri Lanka	73.29	43	366	48	58
Vietnam	70.83	55	290	50	139
Timor-Leste	69.70	96	350	33	100
Indonesia	62.27	53.3	253.7	61.3	138.8
PNG	60.47	42	660	96	75
Tajikistan	59.06	51	313	96	275
Maldives	55.87	42	596	48	300
Myanmar	47.67	142	432	144	140
Bangladesh	31.76	168	408.5	147	225

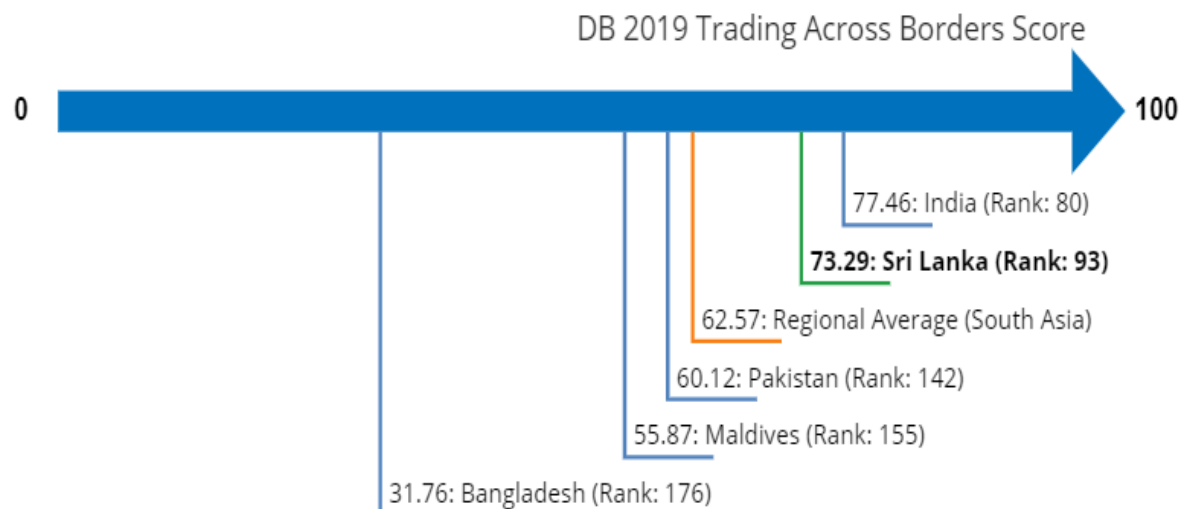
Time & cost to export from Sri Lanka to USA*

(because of regulatory & logistics procedures & documentary requirements)



* Note: data as collected by World Bank
(to export HS 61 : Articles of apparel and clothing accessories, knitted or crocheted)

- Trading across Borders in Sri Lanka and comparator economies – Ranking and Score



Note: The ranking of economies on the ease of trading across borders is determined by sorting their scores for trading across borders. These scores are the simple average of the scores for the time and cost for documentary compliance and border compliance to export and import.

*Documents required to export from Sri Lanka to USA**

- ▶ Bill of lading
- ▶ Insurance Certificate
- ▶ Commercial invoice
- ▶ Packing list
- Export declaration
- Certificate of Origin
- SOLAS certificate*

Which documents are in electronic/paperless forms

Could it be improved?

Note: data as collected by World Bank
(to export HS 84 : Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof)

* SOLAS - International Convention for the Safety of Life at Sea

Process Reform in 3 levels (SW/Paperless Trade Implementation) to achieve end-to-end digital transactions

3. Inter-Government Process Reform to streamline and digitize inter-government procedures **between trading economies**

2. Inter-Agency Process Reform to streamline and digitize inter-agency procedures **among regulatory agencies within a country**, e.g. national digital ID, single data submission, and coordinated border clearance

1. Agency Process Reform to streamline and digitize its inter-division procedures **within each regulatory agency** e.g. for single-sign on, e-registration, e-applications, lab test e-reports, online payment, and e-permit/e-certificate issuance

1. Process Reform within each agency

To digitize/streamline **end-to-end paperless transactions** within each regulatory agency

- ▶ Single Sign-on/Unique ID to access all e-services of the agency
- ▶ Digital Registration
- ▶ Automatic Customs Valuation & Validation
- ▶ Paperless Customs Declaration & Online Approval
- ▶ Digital Submission of Requests & Online Verification
- ▶ Lab test e-reporting
- ▶ Inspection e-reporting
- ▶ Online Payment for Customs Duty and/or Fee
- ▶ Electronic permit/electronic certificate issuance
- ▶ Automatic Risk Analysis
- ▶ Online Clearance

End-to-end Paperless Customs Transactions

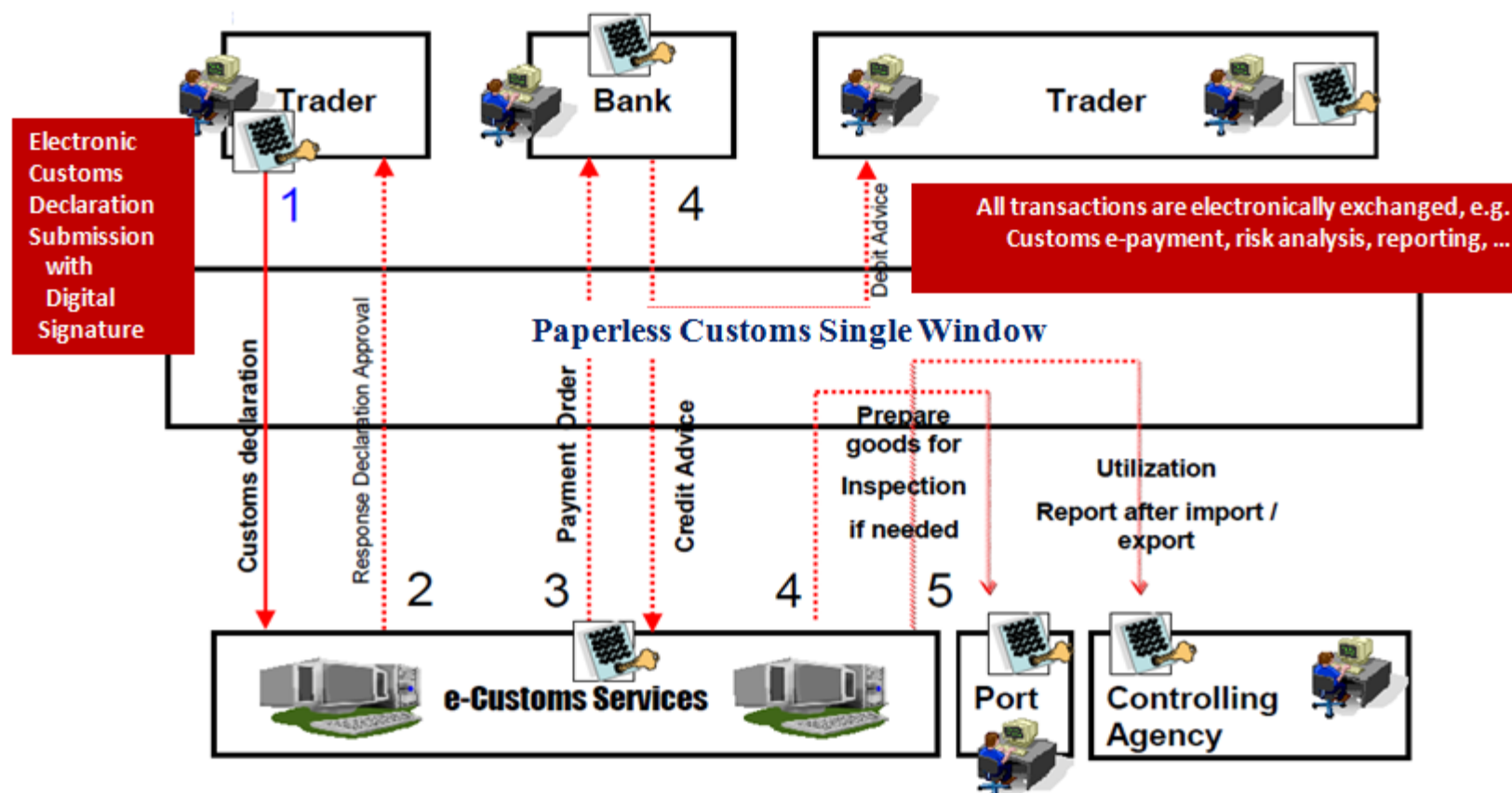
Preferred Features/Functions for Paperless Customs Single Window –

Electronic Customs Declaration Submission with electronic signature +

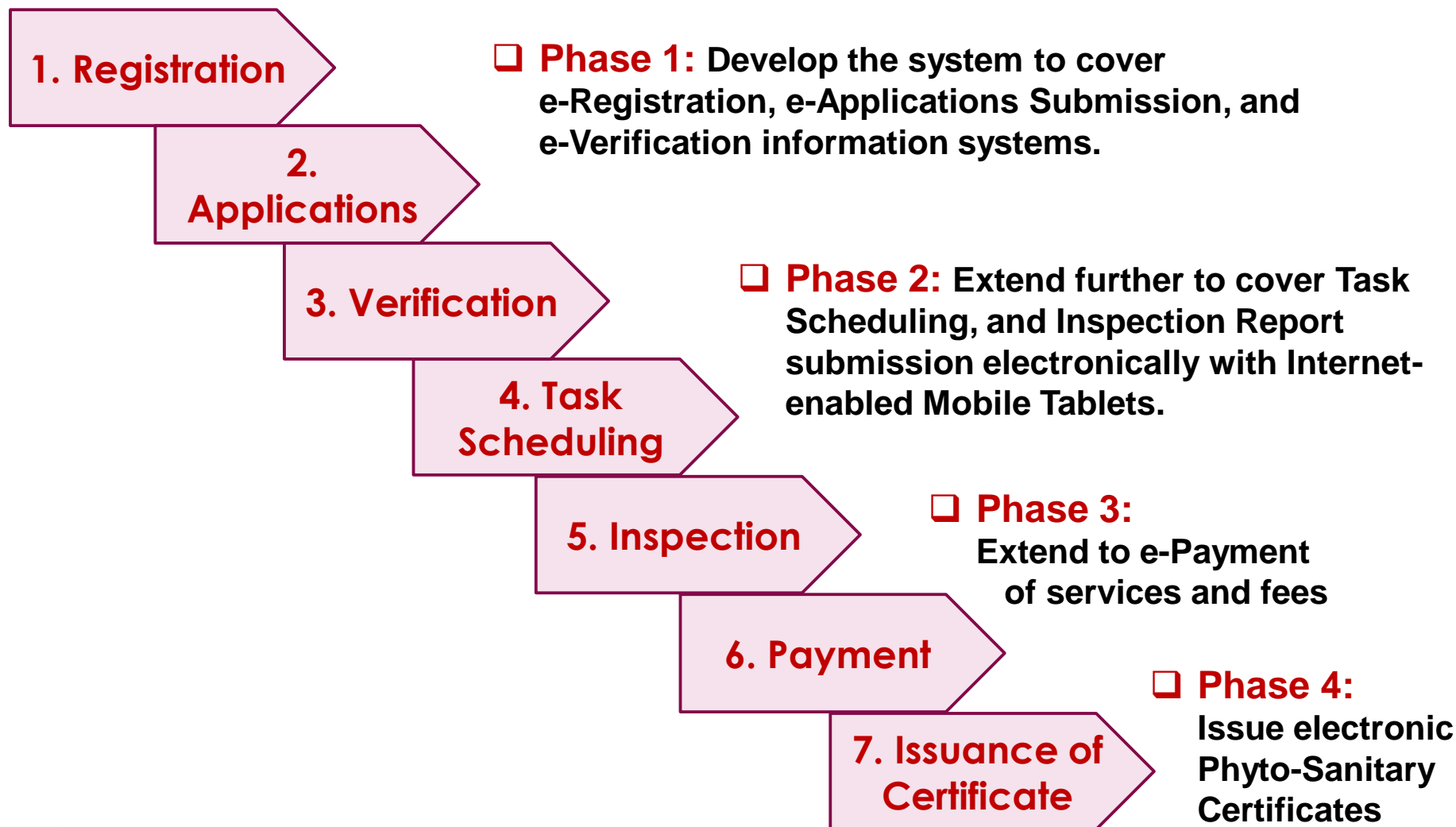
e-Payment for Customs Duty +

e-Manifest + and electronic risk analysis

for speeding up customs clearance and reducing # of physical inspections



Digitizing/Streamlining end-to-end inter-division regulatory procedures for issuing e-Phyto Sanitary Certificates



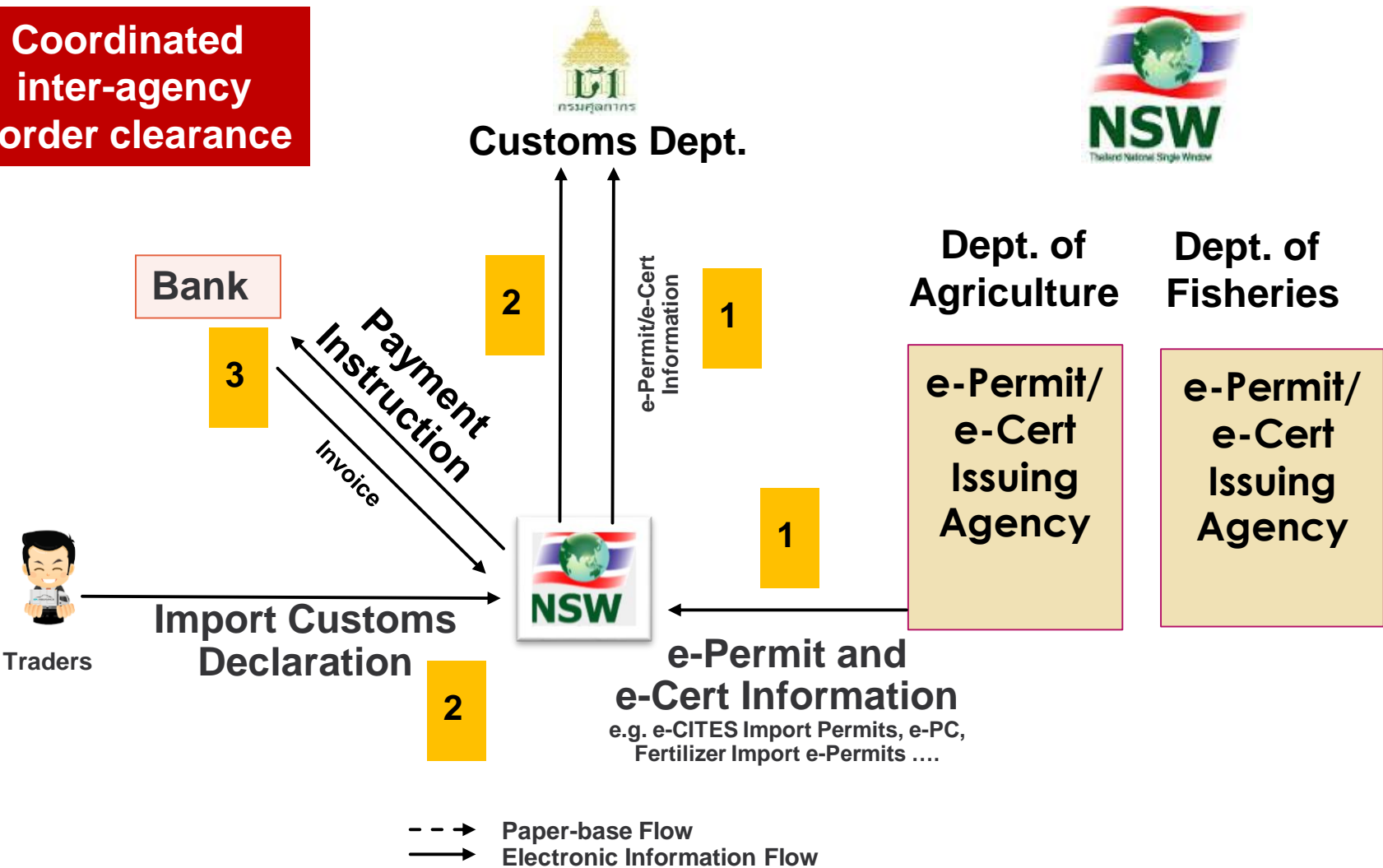
2. Inter-agency Process Reform among regulatory agencies

To digitize/streamline **end-to-end paperless transactions** across different regulatory agencies within a country

- ▶ Establish **National Digital ID** for individuals and enterprises/organizations
- ▶ Develop a system with
single data submission,
paperless permits exchange,
coordinated border clearance,
coordinated statistics reporting,
quota validation, etc.

Exchanging of e-Permits and e-Certificates Information from other regulatory agencies with Customs Department

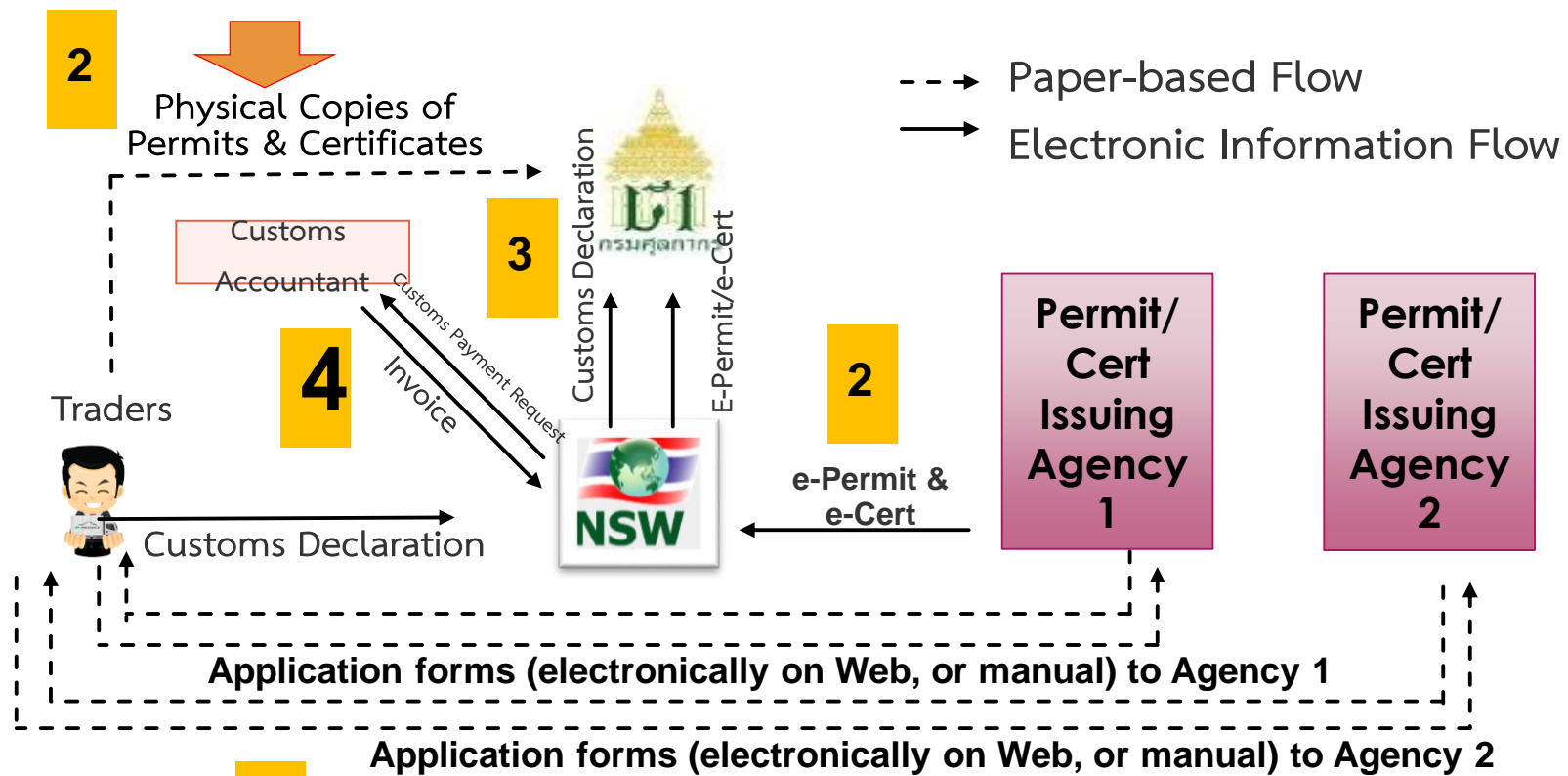
Coordinated inter-agency border clearance



Electronic Permits/Certificates information exchange through NSW for efficient/effective clearance [within the country]

- ▶ **Electronic Import Permits** (e.g. as issuing by **Dept. of Agriculture**) **could be electronically sent** to **Customs Department** through the NSW environment.
- ▶ Then at the border, that **electronic Export Permit** could be automatically matched with the corresponding **Export Customs Declaration for Customs Clearance**.
- ▶ In this case, the **Permit Identification Number** needs to be submitted along with the electronic Customs Declaration so that these two corresponding e-documents could be linked and the data can be cross-validated automatically.

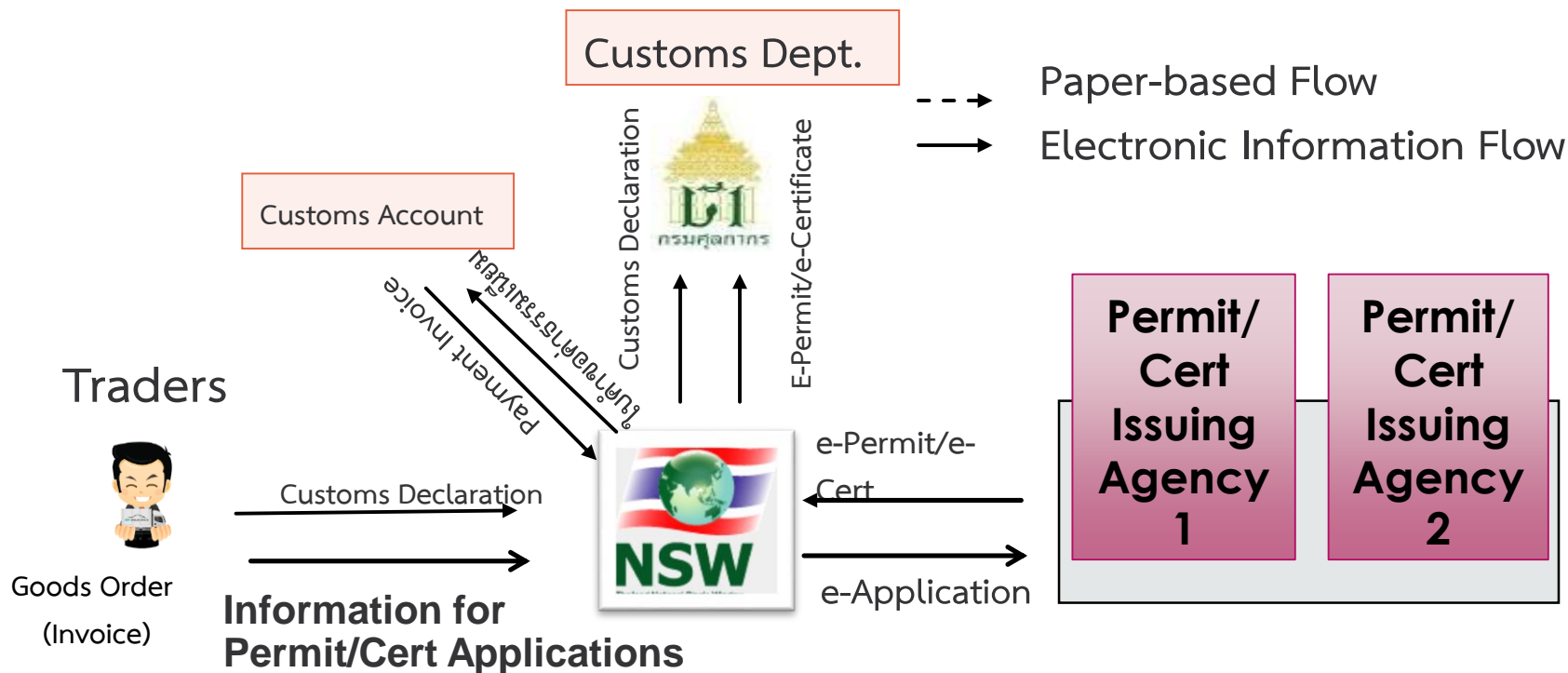
Inter-agency Process Analysis (As-Is)



Problems: Traders submit multiple/duplicated physical papers in different physical locations, or several electronic data on several websites..

Several visits, multiple documents, time consuming

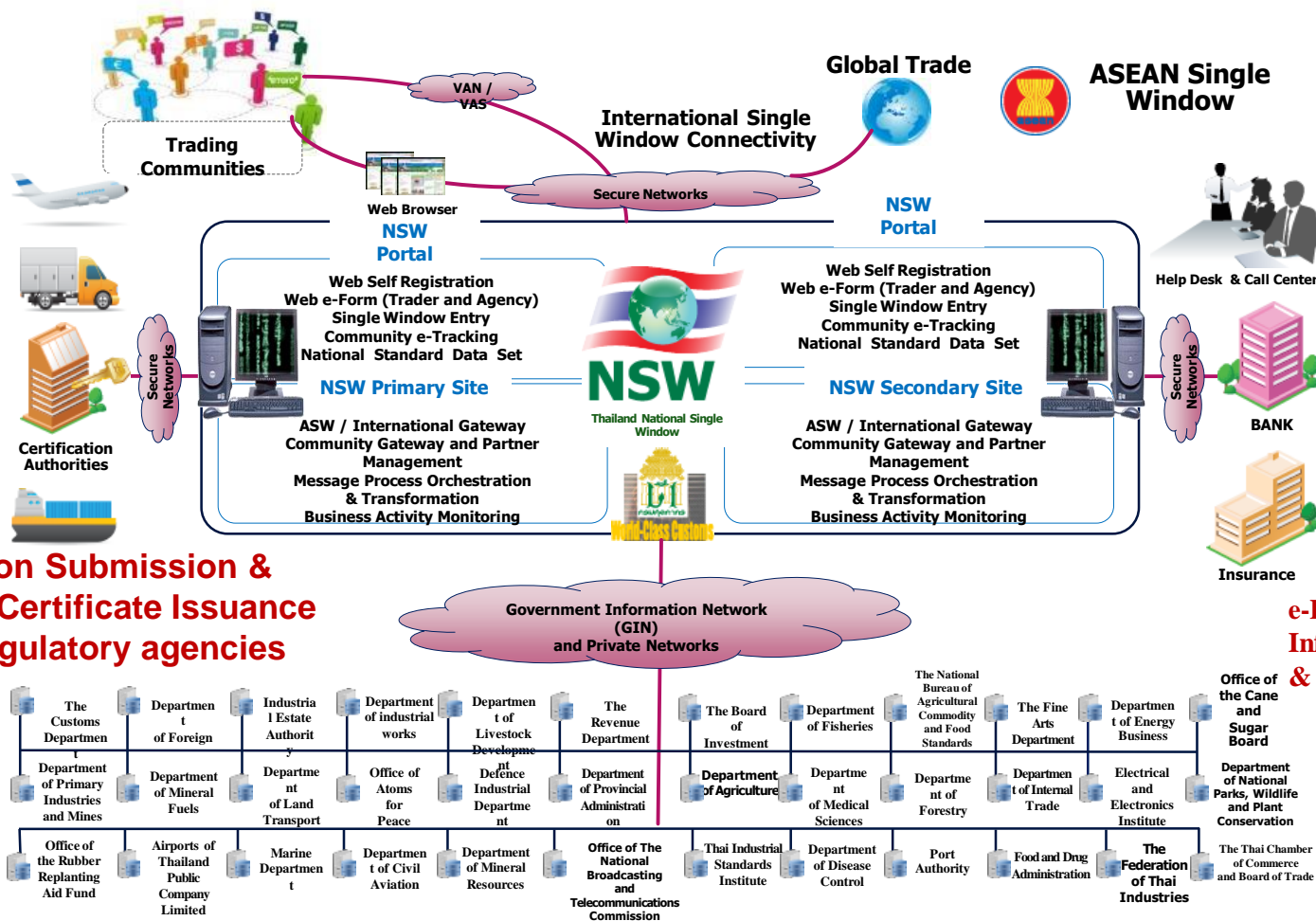
Inter-agency Process Re-design (To-Be)



Traders could submit each electronic data element once at a Single Entry Service – and the appropriate e-application form will be sent to the different agency accordingly.



Thailand National Single Window since 2016



Better Risk Analysis by Customs and PGAs

Better Cooperation for Joint Inspection

e-Application Submission & e-Permit/e-Certificate Issuance of 36 regulatory agencies

e-Permit/e-Certificate Information Exchange & Matching with Corresponding Customs e-Declaration

Inter-agency Process Re-design: for Sugar Export Procedures



Export (13 Laws and Regulations)



Process Reduction
37%

	As-Is	To-Be
Process	17	17
Steps	154-156	92



Paper Reduction
100%

	As-Is	To-Be
Form	21	0
Docs	52	0



Time Reduction
55%

	As-Is	To-Be
Days	67	30



Cost Reduction
96%

(บาท/ครั้ง)

	As-Is	To-Be
Transport	5,260	200
Cost		
Paper cost	58	0

**5
Government
Agencies**

**4 Business
Entities**

- MOC : Dept. of Foreign Trade
- MOAC: Dept. of Agriculture
- MOI: Sugar and Sugar Cane Commission
- MOF: Customs Department
- MOST: Institute of National Nuclear Technology
- Business: Thai Chamber of Commerce, Thai Chamber of Industry, Sugar Factory, Surveyor.

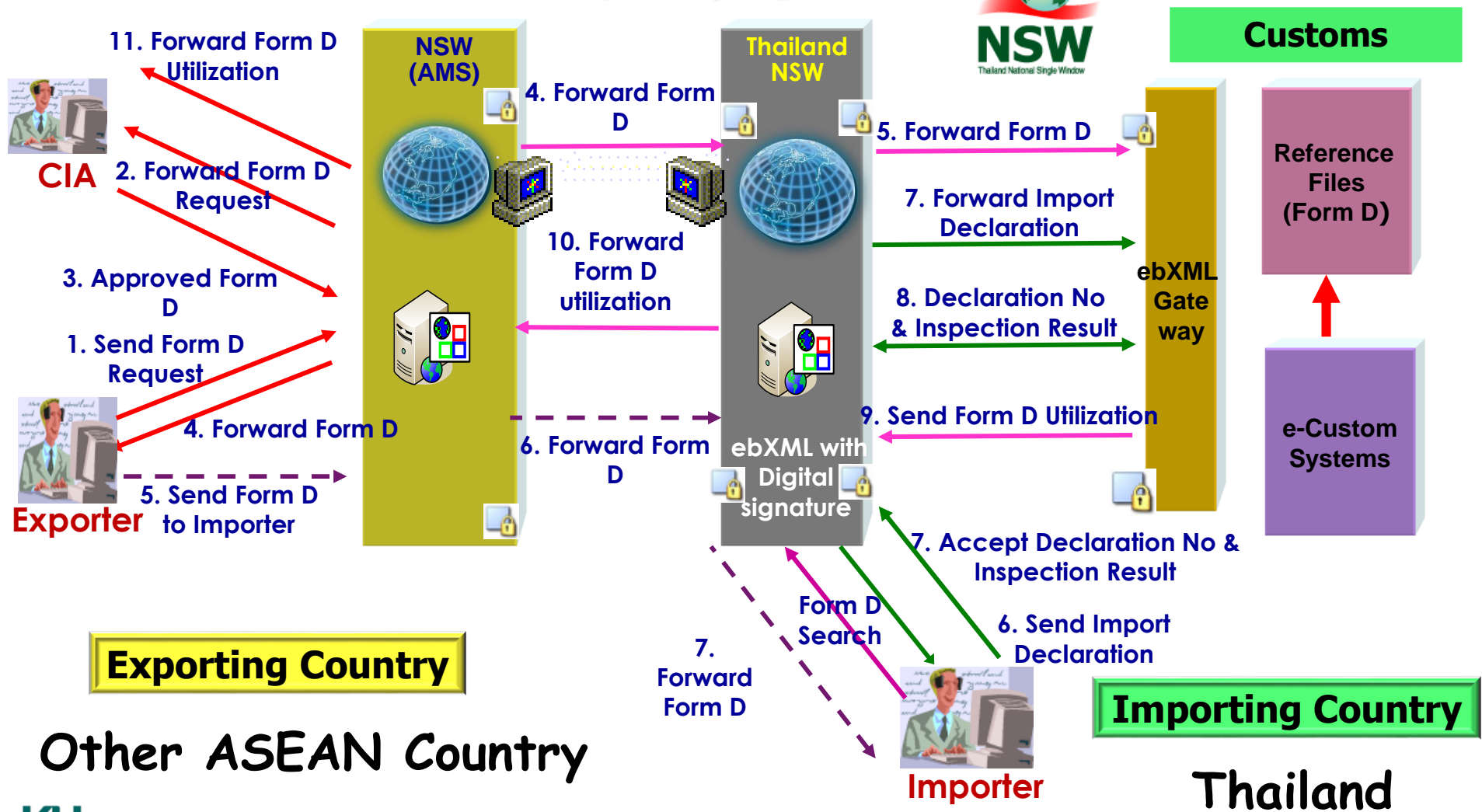
3. Inter-government Process Reform between economies

To digitize/streamline inter-government or cross-border regulatory transactions

- ▶ **Develop cross-border information exchange** between National Single Windows for more efficient coordinated border clearance

Cross-Border Information Exchange of "Certificate of Origin" between two countries

ATIGA Form D



Success Factors

1. Established Political Mandate

- ❑ Establishing it as a national commitment (by developing national strategic plan, and obtaining endorsement by the highest political institution, e.g. by the Cabinet).
- ❑ Establishing it as a regional commitment, e.g. MOU signing among the Head of States to develop the National SW and the Regional SW.

2. Institutionalizing the Policy i.e. transforming the policy mandates into normal routine management, e.g.

- ❑ Institutionalize the National High-level Committee (National TF Committee), and Project Management Office (PMO) for steering and overseeing the SW implementation, by the Cabinet's mandates and by laws (with the support from several working groups, governments, business sectors and academia)
- ❑ Securing the necessary budgets to finance the project.

Success Factors

3. Establishing effective collaborative taskforces

- ▶ At the agency level, the key challenge is in working collaboratively among different divisions within the agency - **breaking the silo within the agency!**
- ▶ At the inter-agency level, the challenge is in working collaboratively among several regulatory agencies and with business stakeholders
- ▶ At the cross-border level, the challenge is in working collaboratively among regulatory agencies of different economies

Success factors

4. Established **laws** and **regulations** to support new digital processes
5. **Sustainable Business Models**, e.g.
 - In several economies, “**Special Corporate Vehicles(SCV)**” for **SW services** have been established, e.g. Japan’s NACCS Inc., and Korea’s KNet.

SW Planning and Implementation Guide (UNNExT/ESCAP, 2012)

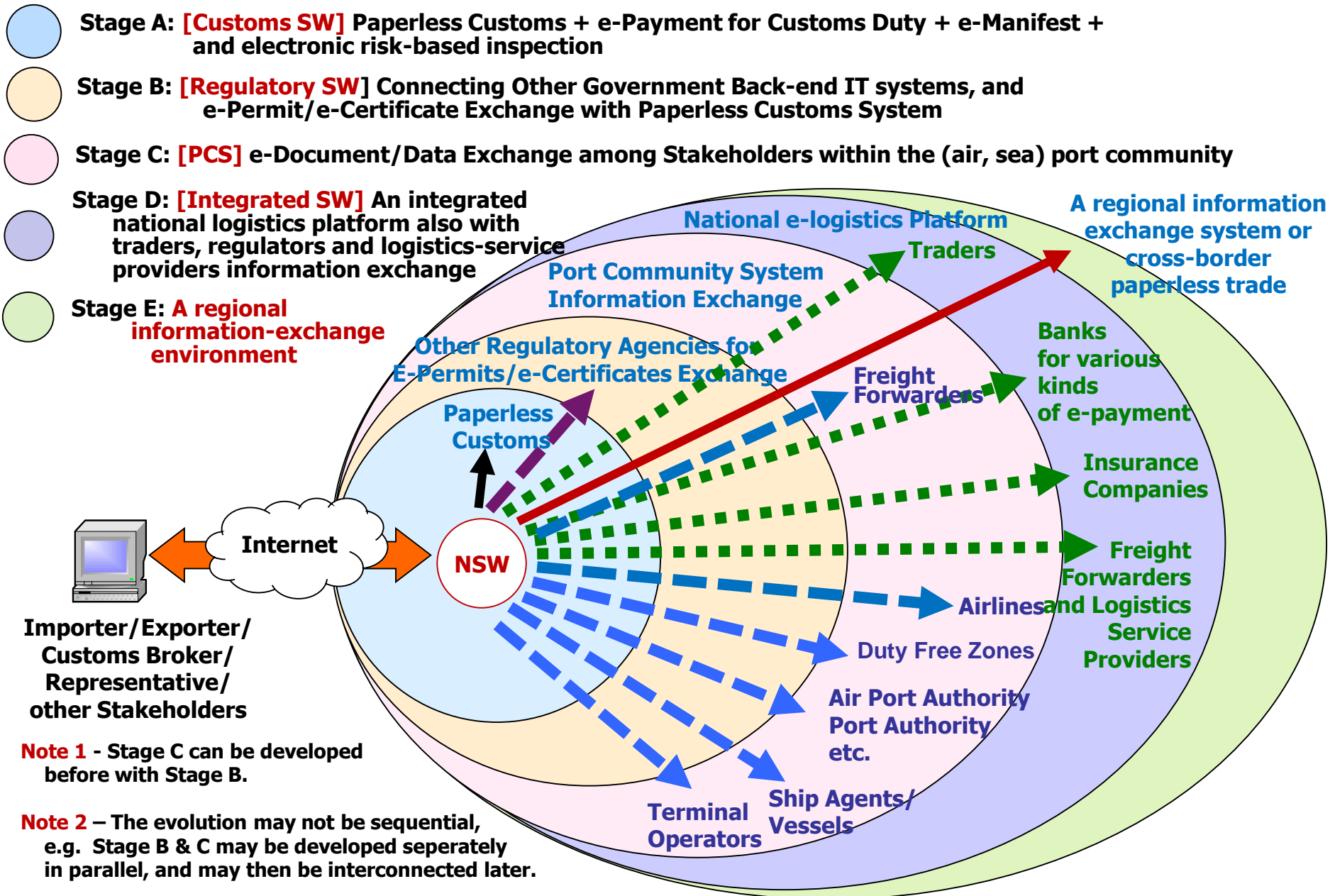
- ▶ A managerial guide on **how to plan and implement SW and paperless trade projects**



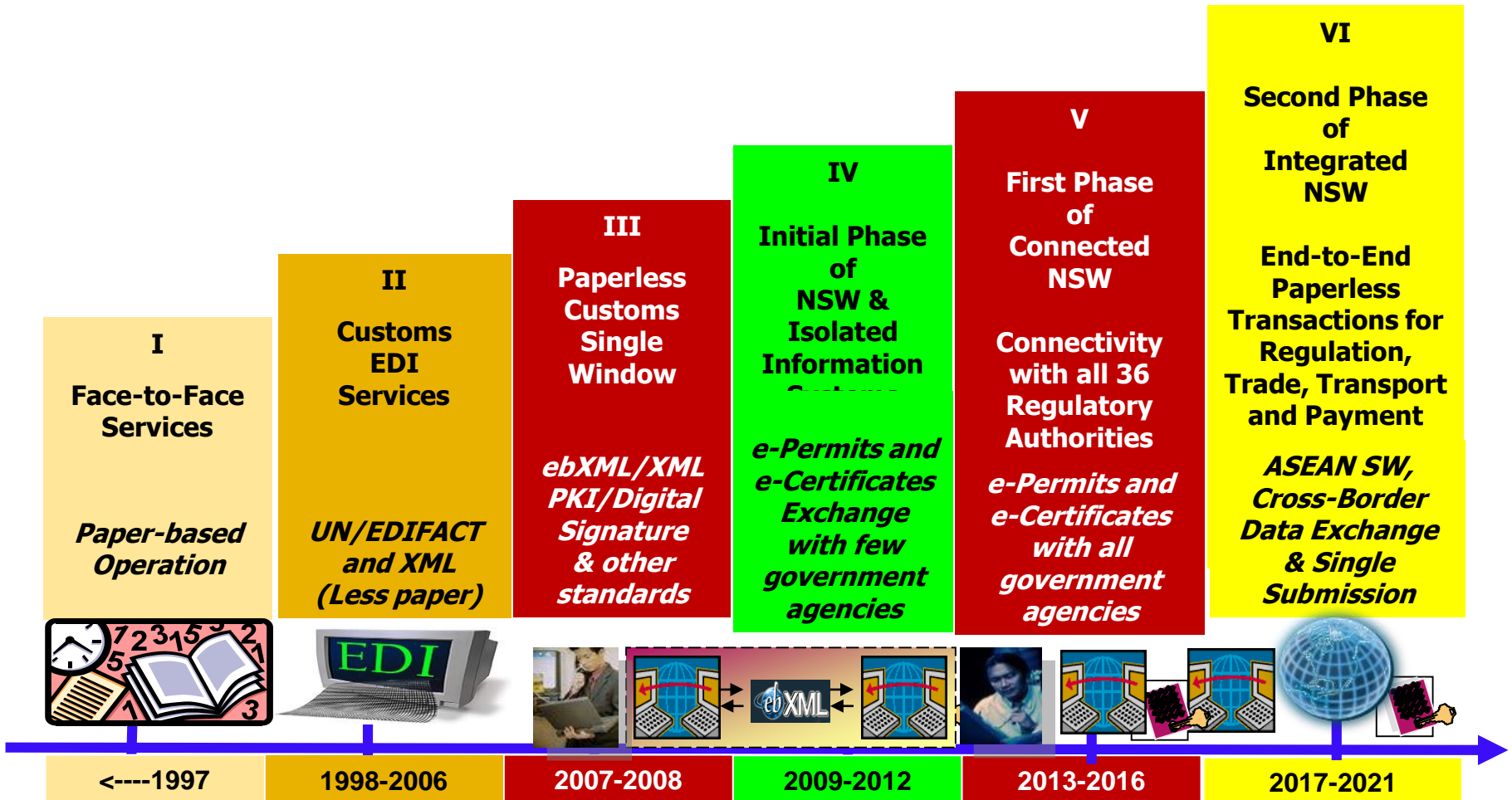
A systematic approach based on Enterprise Architecture (EA) is the basis of this guide.

Single Window Evolutionary Roadmap

(not necessary in a sequential fashion)



A Case Study – Evolution of Single Window



Original Definition of Single Window (2005)*

- ▶ **Single Window is a facility** that allows parties involved in trade and transport to lodge standardized information and documents with **a single entry point** to fulfill all import, export, and transit-related **regulatory requirements**. If information is electronic, then individual data elements should only be submitted once.

Aiming to

1. enhance the **efficient information exchange** and **coordination** of traders, transport and government for **regulatory transactions**, and
2. facilitate **single submission of data** or **reduction of the same data/same document submissions**.

***UN/CEFACT Recommendation and Guidelines on establishing a Single Window, UNECE, 2005**
http://www.unece.org/cefact/recommendations/rec33/rec33_ecetrd352_e.pdf

After about 10 years of experiences*

Different forms of Single Windows emerged!

Pre-Single Window Evolution

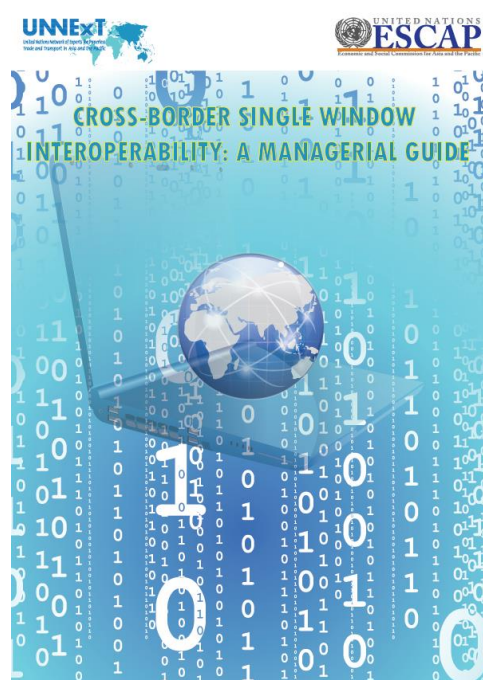
- ▶ Basic Customs Automation
- ▶ Trade Points Portals, e.g. Lao PDR's Trade Portal
- ▶ Trade Electronic Data Interchange (EDI)/Value Added Network (VAN)

Single Window Evolution

- ▶ A limited form of SW - Customs Single Window, e.g. Pakistan Customs SW
- ▶ A limited form of SW - Port Community System, e.g. India Port Community Systems
- ▶ Trade-regulatory National Single Windows, evolving from few number of regulatory agencies, e.g. Azerbaijan NSW (with 11 agencies), Thai NSW (from 4, to 15 to 36)
- ▶ Extended Trade National Single Window, e.g. Korea uTradeHub, HK DTTN
- ▶ Transport-regulatory National Single Windows, e.g. China LOGINK (Maritime SW)
- ▶ Integrated National Single Window (all-regulation NSW+PCS), e.g. Japan NACCS
- ▶ Integrated Sub-National Single Window, e.g. Shanghai e-Port SW
- ▶ Regional/Global Single Windows, e.g. ASEAN Single Window (regional trade SW), NEAL-NET (connecting China, Japan, Korea maritime SWs)

Cross-Border Single Window Interoperability: A Managerial Guide (UNNExT/ESCAP, 2018)

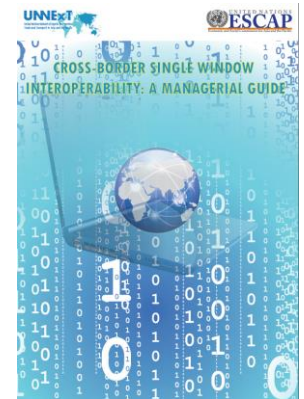
- ▶ A management guide with a framework and recommended actions for establishing cross-border Single Window Interoperability (SWI)



A systematic approach based on Enterprise Architecture (EA) is also the basis of this guide.

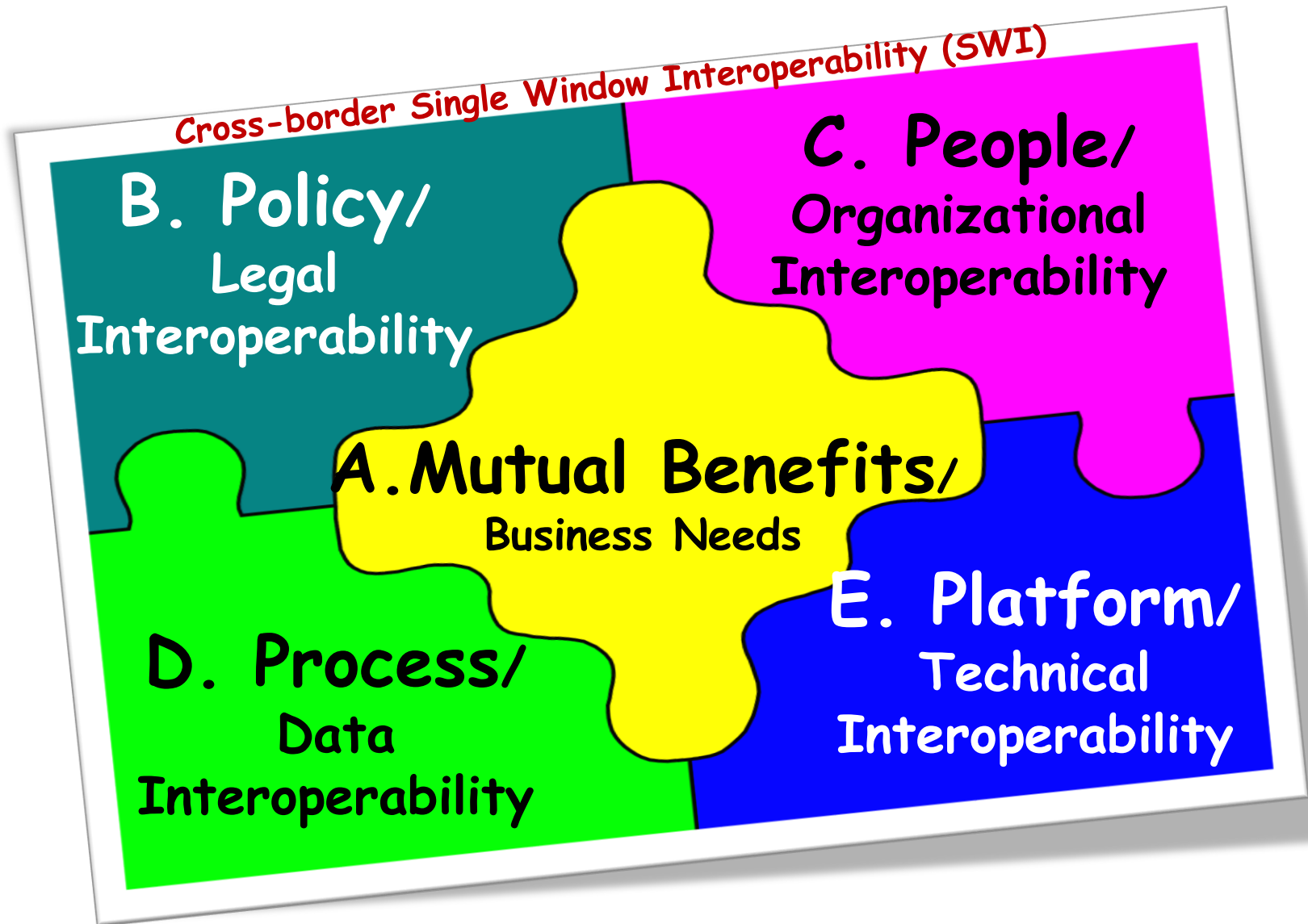
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- ▶ Chapter 2 - State of Paperless Trading Implementation including Single Windows
- ▶ Chapter 3 - A Framework for Cross-border SWI
- ▶ Chapter 4 - Specific Issues for Cross-border SWI
- ▶ Chapter 5 - Governance and Management of Cross-border SWI
- ▶ Chapter 6 - Summary



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

Lessons learned/Government Problems

▶ Government Problems

- ▶ Huge and complex organizations
- ▶ Bureaucratic and slow decision making
- ▶ Not coping well with reform
(new process/process reform) -
development of new
things/innovation/digital transformation

Lessons learned/Government Problems

- ▶ **Government's Procurement Law/Management is not suitable for development of software (process reform) (waterfall/step-by-step contract management is not suitable for creating innovation)**
 - ▶ Hire a vendor & start the software development project
 - ▶ Guess the requirements/system specification
 - ▶ Approve the software specifications
 - ▶ Design and Implement the software
 - ▶ Install and deliver the software
 - ▶ Test and finish the project



Emerging Trends

- Lean Organizations for Digital Transformation

- ▶ **Agile/Lean Organizations** – lean decision making, collaboration spirit of all levels
- ▶ **Continuous improvement culture** in **process & products/services**
- ▶ **Scientific/Iterative method** - problem statement, hypothesis, exploration, building a new system, testing/collecting lessons learned/improvement feedback
- ▶ **Cross-functional multi-disciplined team***
- ▶ **Small incremental & fast feedback iteration**
- ▶ **DevOps software tools** – development tools for automatic testing, continuous integration, continuous delivery, monitoring
- ▶ **Cloud computing**, e.g. servers/hardware on a cloud
- ▶ **Data Analytics** e.g. assigning/educating staff to work as data scientists within the organizations

Conclusion

- ▶ A good **strategy formulation** is needed, e.g.
 - the vision towards end-to-end trade supply chain digital transformation
- ▶ But **a good capability for strategic execution** is the key success factor (to make it happens), e.g.
 - ▶ National-level policy decision makers (e.g. NTFC)
 - ▶ Authorized policy management with PMO support
 - ▶ Designated inter-agency working groups, etc.

Q & A

Thank You

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Education

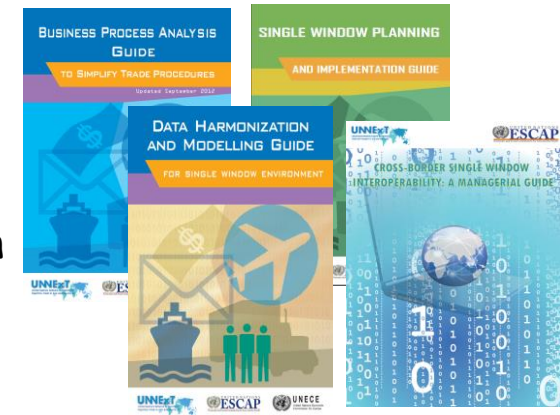
- ▶ Ph.D. (Computer Science), Univ. of Louisiana at Lafayette, USA.

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 Architecture 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)