

How to Plan Implementation of a National Single Window?

- Using State of the Art Management Concepts for SW Planning and Implementation -



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Cambodia Single Window Implementation**
28-29 March 2013, UNCC – Bangkok



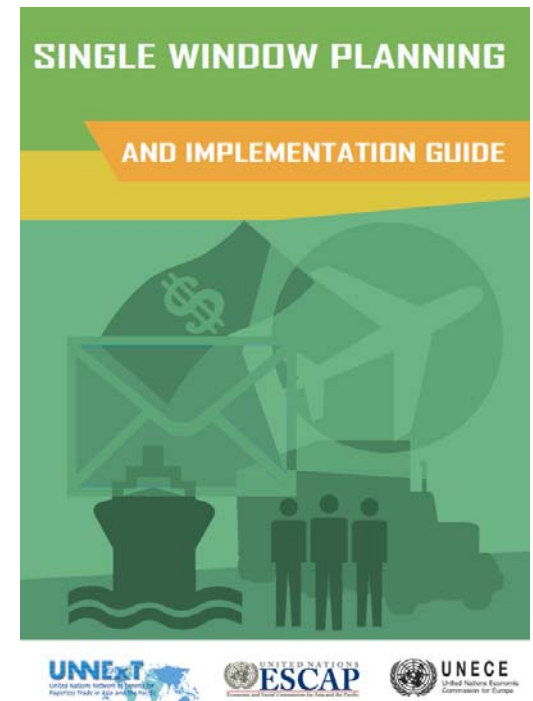
Organized by UNESCAP and World Bank

With the Support of Thai Customs Department, Ministry of Finance and UNNExT

The objective of this presentation

- ❑ To introduce and recommend a systematic approach, so called Single Window Implementation Framework (SWIF), for guiding policy managers, decision makers and relevant stakeholders in planning, managing, and overseeing the NSW development projects.

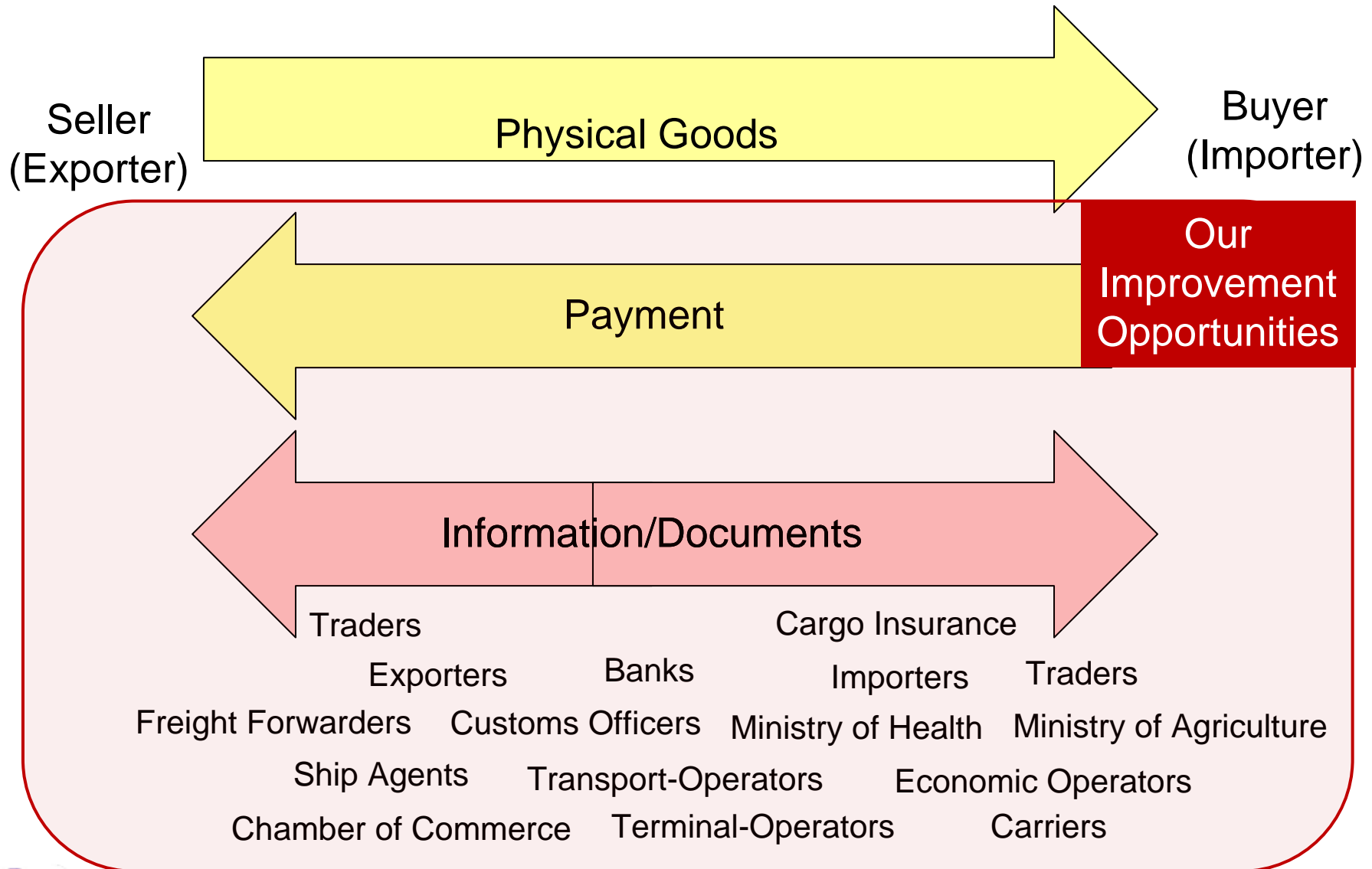
Referring to
“UNNEXT SW Planning and Implementation Guide”
www.unescap.org/unnext



Topics of the presentation

- Our Context: Trade Facilitation & NSW Vision
- Why a systematic methodology is needed to help planning and implementing a NSW Vision?
- An architecture-based SW framework is introduced to guide the planning and development of NSW
 - How to formulate a SW Vision/Goals
 - SW long-term Roadmap
 - Step-by-step Project Management
(1. Inception, 2. Elaboration/Detailed Analysis, 3. Planning,)
- Conclusion

Trade Logistics – 3 Kinds of Flow



The issue is about Increasing National Trade Competitiveness

by improving
Import/Export/Transit/Trade Procedures and
Documents Handlings
among **Government Agencies,**
Business Entities and
Logistics Service Providers
(this is called **“Trade Facilitation”** improvement)

Documents related to Exportation of Rice

(from purchase order until the cargo container leaving the sea port)

36 Documents involving 15 parties, and more than 1,140 data elements to be filled in

1. Proforma Invoice (35)
2. Purchase Order (39)

Buy/Pay Docs

3. Commercial Invoice (51)
4. Application for Letter of Credit (24)
5. Letter of Credit (32)

6. Packing List (25)

7. Cargo Insurance Application Form (20)

8. Cover Note (23)

9. Insurance Policy (24)

10. Booking Request Form – Border Crossing (25)

11. Booking Confirmation – Border Crossing (30)

12. Booking Request Form – Inland Transport (16)

13. Booking Confirmation – Inland Transport (18)

14. Bill of Lading (42)

15. Empty Container Movement Request (TKT 305) (20)

16. Request for Port Entry (TKT 308.2) (27)

17. Equipment Interchange Report (EIR) (24)

18. Container Loading List (28)

19. Container List Message (32)

20. Outward Container List (34)

Transport Docs

21. Master Sea Cargo Manifest(17)

22. House Sea Cargo Manifest (37)

23. Export Declaration (114)

24. Good Transition Control List (27)

25. Application for Permission to Export Rice (KP. 2) (24)

26. Sales Report (KP 3) (21)

27. Application for the Collection of the Permit for the Export of Rice (A. 3) (35)

28. Permit for the Export of Rice (A. 4) (35)

29. Application for Certificate of Standards of Product (MS. 13/1) (44)

30. Certificate of Analysis (17)

31. Certificate of Product Standards (MS. 24/1) (45)

32. Certificate of Fumigation (21)

33. Application for Phytosanitary Certificate (PQ. 9) (29)

34. Phytosanitary Certificate (33)

35. Application for Certificate of Origin (42)

36. Certificate of Origin (38)

Regulatory Docs

* Number in parenthesis is the no. of data elements

A Business Process Analysis

– in Exporting Jasmine Rice from Thailand –

BUSINESS PROCESS ANALYSIS

GUIDE

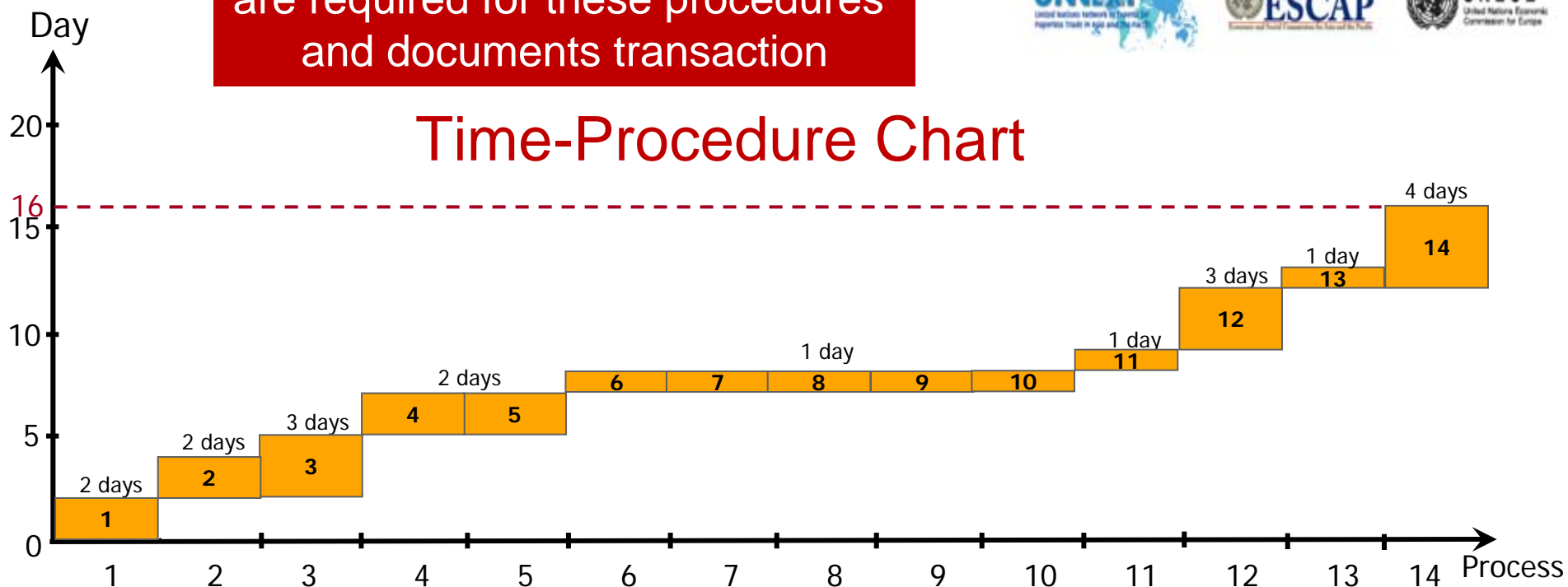
TO SIMPLIFY TRADE PROCEDURES

16 days

are required for these procedures
and documents transaction



Time-Procedure Chart



1. Buy - Conclude sales contract and trade terms
2. Obtain export permit
3. Arrange transport
4. Arrange the inspection and fumigation
5. Obtain cargo insurance
6. Provide customs declaration
7. Collect empty container(s) from yard

8. Stuff container(s)
9. Transfer to port of departure
10. Clear goods through customs
11. Handle container at terminal and stow on vessel
12. Prepare documents required by importer
13. Verify the accuracy/authenticity of exported cargo
14. Pay - Claim payment of goods

Exporting Rice from Thailand

(from purchasing time till the vessel leaving the port)

- 36 required documents (only 4-6 e-documents)
- 15 Stakeholders involved
- 14 big steps (123 small steps)
- 16 days needed (all together)
 - 6 days for **regulatory** procedures
 - 7 days for **transport-related** procedures
 - 12 days for **traders, banks** and **insurance** procedures

Indicators can help decision makers to understand the importance of import/export procedures related to national trade competitiveness

World Bank's Trading Across Borders Report (comparing 185 countries)

Indicators Singapore	Cambodia	Thailand	Malaysia	R-Korea	
Documents to export (number)	9	5	5	3	4
Time to export (days)	22	14	11	7	5
Cost to export (US\$ per container)	755	625	435	665	456

Reference - World Bank's Doing Business – Trading Across Border (27 March 2013) www.doingbusiness.org

Comparing among 185 countries, the costs and procedures involved in exporting (and importing) a standardized shipment of goods are studied.

Every official procedure involved is recorded – starting from the final contractual agreement between the two parties, and ending with the delivery of the goods.

Time & Documents needed for export a standardized cargo*



Ease of Doing Business in Cambodia

Nature of Export Procedures	Duration (days)	US\$ Cost
Documents preparation	14	220
Customs clearance and technical control	3	265
Ports and terminal handling	3	100
Inland transportation and handling	2	170
Totals	22	755

Export documents

Bill of Lading
 Certificate of Origin
 Commercial Invoice
 Customs export declaration
 Export permit
 Inspection report (from Camcontrol)
 Insurance certificate
 Packing List
 Terminal handling receipts

9 documents needed



Ease of Doing Business in Thailand

Export Procedures	Duration (days)	US\$ Cost
Documents preparation	8	290
Customs clearance and technical control	1	50
Ports and terminal handling	3	85
Inland transportation and handling	2	200
Totals	14	625

Export documents

Bill of Lading
 Certificate of Origin
 Commercial invoice
 Customs export declaration
 Terminal handling receipts

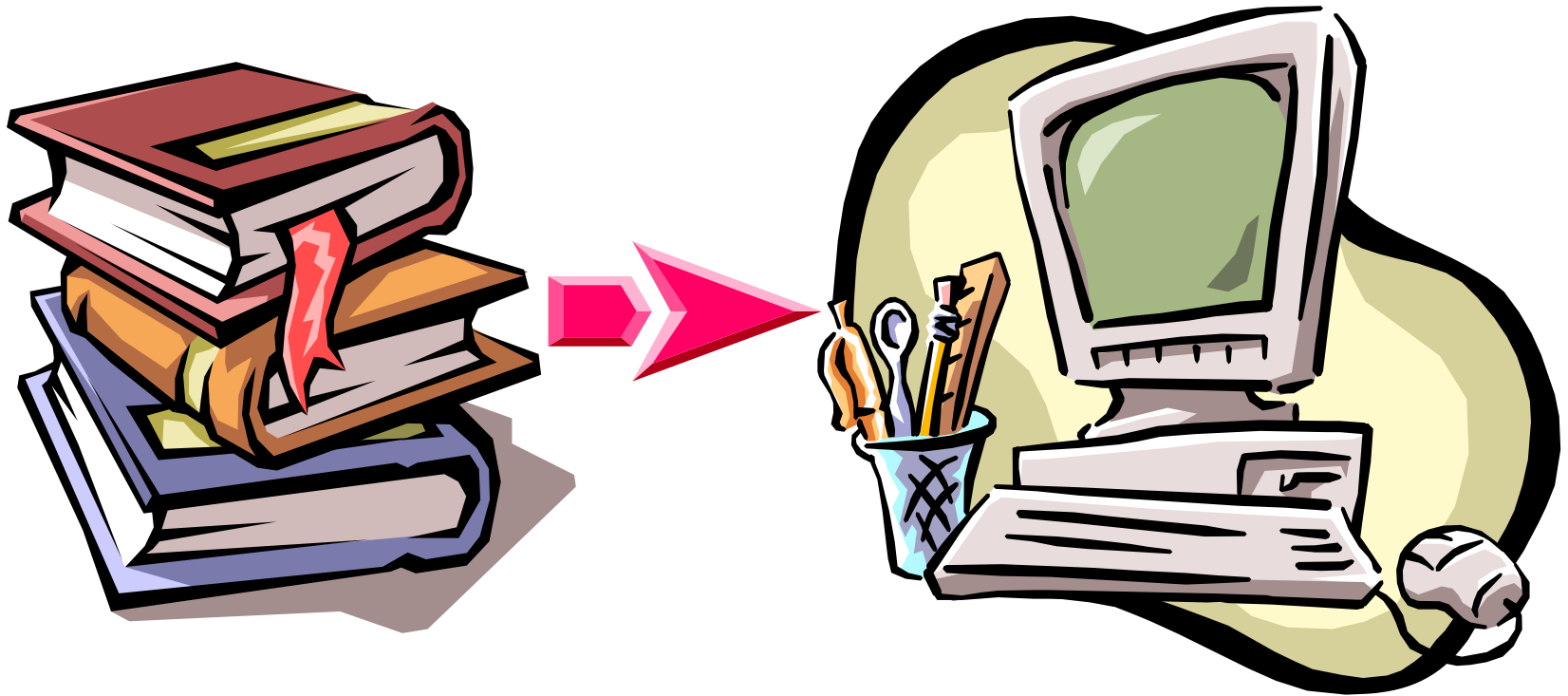
5 documents needed

* More documents will be needed for agriculture or dangerous goods.

Reference - World Bank's Doing Business – Trading Across Border (27 March 2013) www.doingbusiness.org

Why trading across borders in some countries are easier, faster and less risky?

Mainly because those countries gradually simplify/transform/reform their paper-based environment into **Collaborative e-Government/e-Business** platform.



**Paper-based
Environment**



**Paperless or e-Document
Environment**

Economic Impacts

because of the delay on trading across borders

- Each *additional day of delay* (e.g. because of trade logistics procedures) *reduces trade* by at least *1%*

Ref: “**Trading on Time**,” Simeon Djankov, Caroline Freund, and Cong S. Pham, World Bank (2007).

- “**Direct and Indirect Cost** from import/export-related procedures and required documents is about *1-15% of product cost.*”

Ref: “**Quantitative Assessment of the Benefits of Trade Facilitation**,” OECD (2003).

Topics of the presentation

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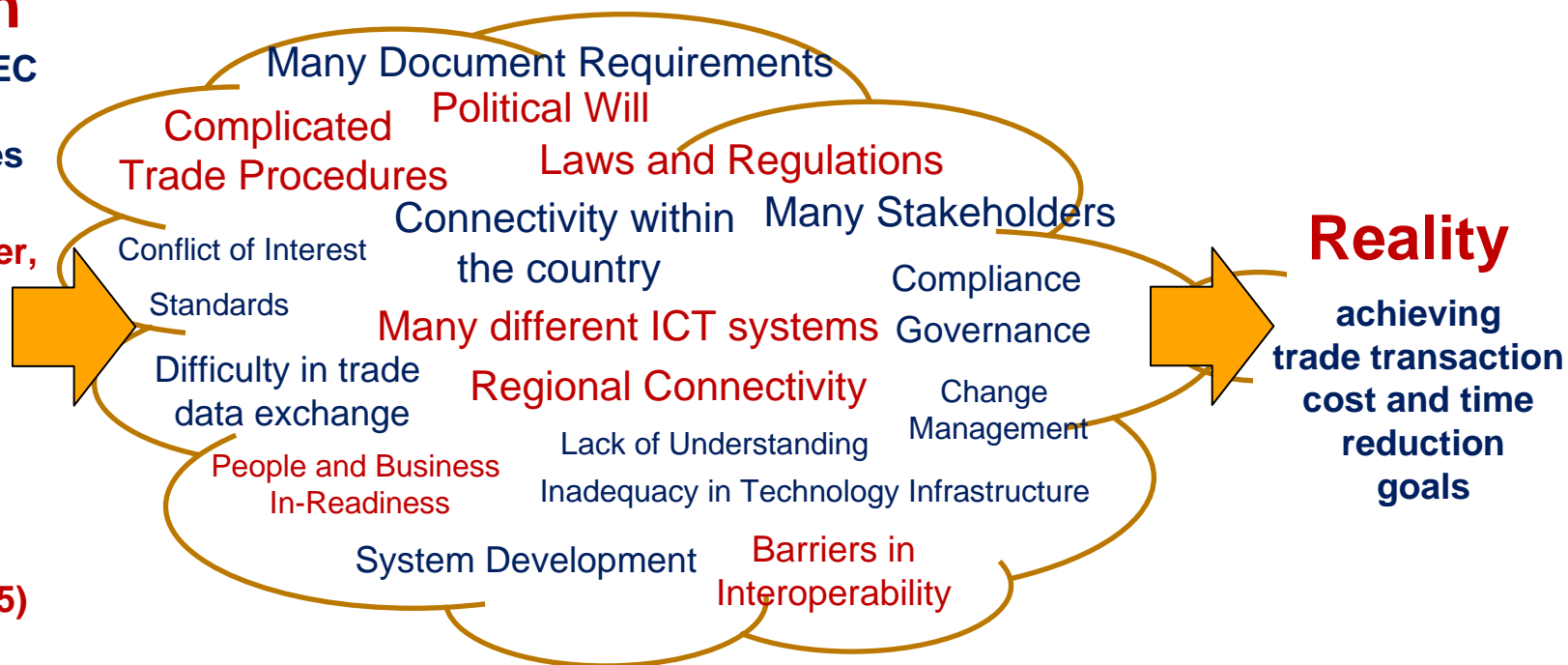
Why a systematic framework is needed? (for implementing or transforming the SW Vision into Reality)

Because there are so many complicated challenges to be managed such that the SW Vision could be transformed into reality.

Vision

e.g. of APEC
member
economies

**25% better,
faster,
cheaper
trading
across
border*
within
5 years
(2011-2015)**



Reality

**achieving
trade transaction
cost and time
reduction
goals**

* Referring to World Bank's Index (www.doingbusiness.org)

APEC = Asia Pacific Economic Cooperation (21 member economies in the Asia-Pacific Region)

What is SWIF?

- SWIF* is an **architecture-based framework** for guiding the SW Planning and Implementation.
- SWIF adapts the concept of **enterprise architecture**** and **development methodology**** to describe an approach on how to
 - systematically derive the **SW strategic architecture**,
 - formulate its **master plan**, and
 - **manage** the SW projects.

* Authored by Eveline van Stijn, Thayanan Phuaphanthong, Somnuk Keretho, Markus Pikart, Wout Hofman, and Yao-Hua Tan, **"Single Window Implementation Framework (SWIF),"** Free University Amsterdam, Kasetsart University Bangkok, UNECE and published as an EU-supported ITAIDE D5.0:4b deliverable.

** Adapted from The Open Group Enterprise Architecture Framework, called TOGAF-9, including its development methodology called ADM (Architecture Development Method).

Key Concepts and Guidelines within SWIF

1. **Visions & Goals Alignment** – how to formulate SW visions and goals, where possible with quantitative indicators, by aligning also with national and/or regional policy directions.
2. **An Evolutionary SW Roadmap**
recommended as a long-term SW development roadmap and as a **reference model** for
 - ❑ assessing the current or “as-is” condition of the country, and then
 - ❑ prioritizing for the next target or “to-be” SW environment
(where the country may consider for the next phase of implementation).
3. **Decomposition** – how to systematically decompose & structure the SW implementation challenges into smaller and more manageable components
(**10 critical components** are proposed).

Key Concepts and Guidelines within SWIF (cont)

4. **SW Development Cycle** – how to analyze the “as-is” or current conditions of those 10 components, and then how the “to-be” or future architectures (again of those 10 components) can be proposed and agreed.
5. **Viewpoints** – how to clearly visualize the implementation issues based on the interest of the target audiences (normally with diagrams and associated descriptions).
6. **Project Management Process in 5 practical phases** for preliminary and detailed analysis, planning and overseeing the SW projects.

1. SW Visions & Goals

must be aligned with national and/or regional economic policy directions, and quantitative indicators should be identified where possible.

National SW vision, goals and planning should be integrated as a part of related national/regional development agenda, e.g. aligning with national trade facilitation and logistics initiatives.

Vision: Enhancing national trade competitiveness by improving import/export procedures and documentation handlings

Quantitative Goals: 25% better, faster, and cheaper in trading across borders* within 5 years**

** An example from APEC Vision & Goals for 2011-2015.



National Logistics Development Master Plan (2007 -2011)

endorsed by the Thai Cabinet on Feb 2007

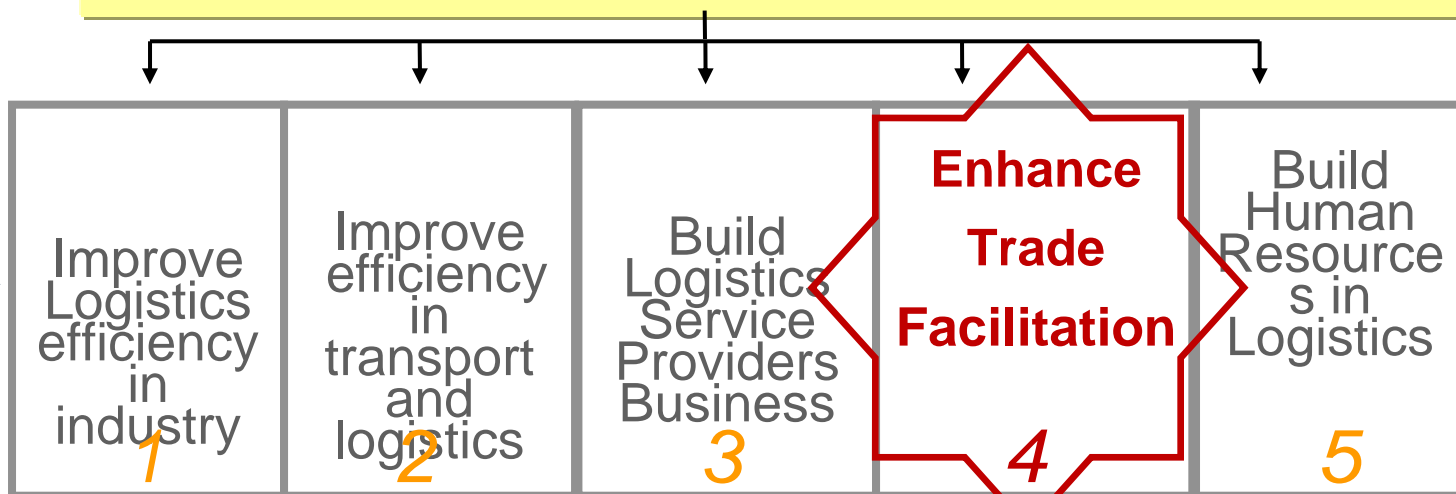
Vision

Towards A World-class National Logistics Environment to become a Trade Hub for Indochina

Objectives

- 1.Reducing logistics cost (*Cost Efficiency*), increase business *Responsiveness, Reliability* and *Security*
- 2.Create *Value-Added* on logistics industry and related business

Strategic Agenda



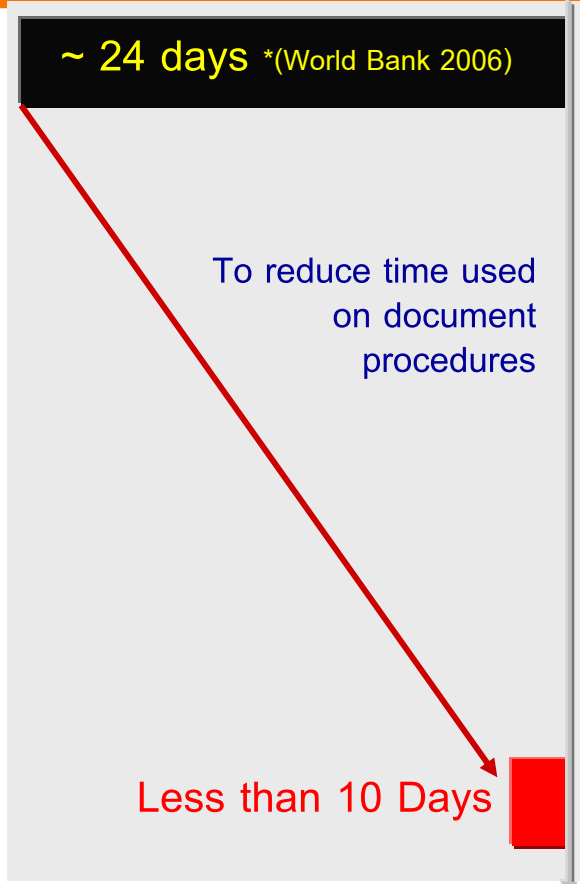
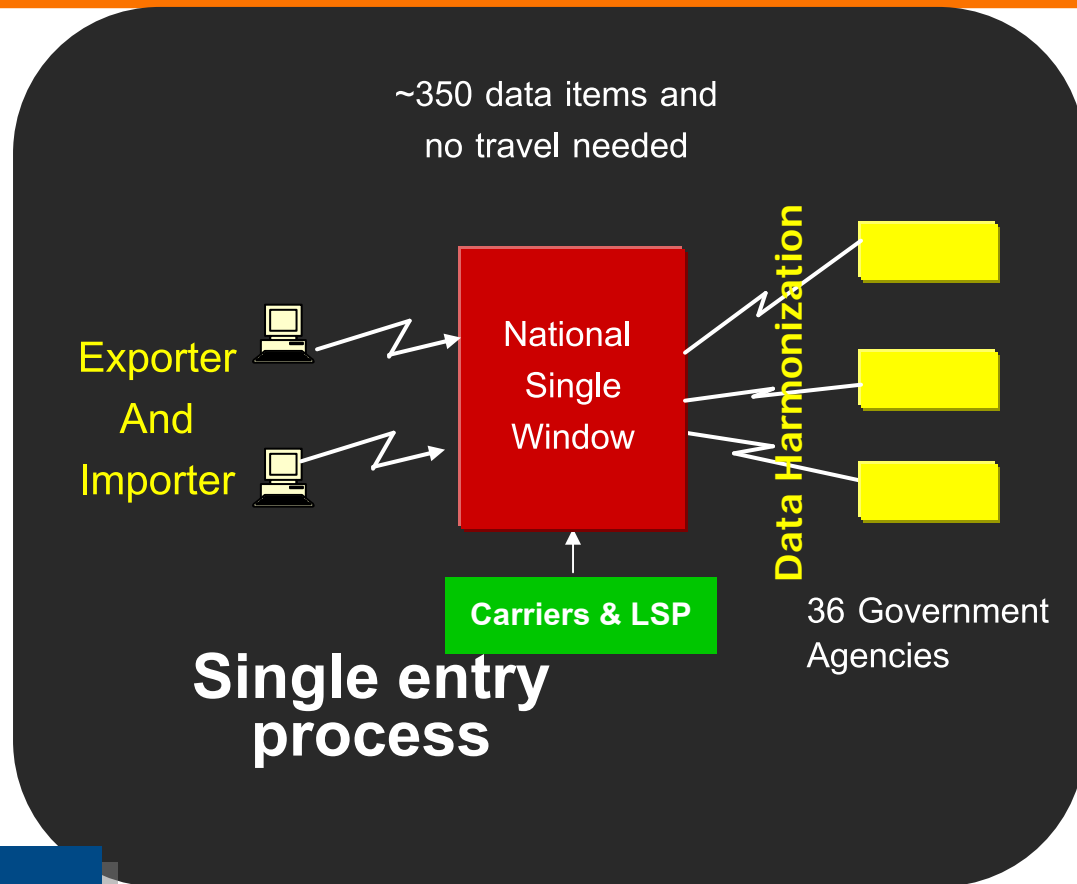
To reduce the trade logistics cost from 19% (2007) to 16% (2011) (comparing to GDP)

National Single Window (e-Logistics)

High-level Master Plan to develop data exchange platform among different government agencies and business related to import/export procedures

Thailand Vision:

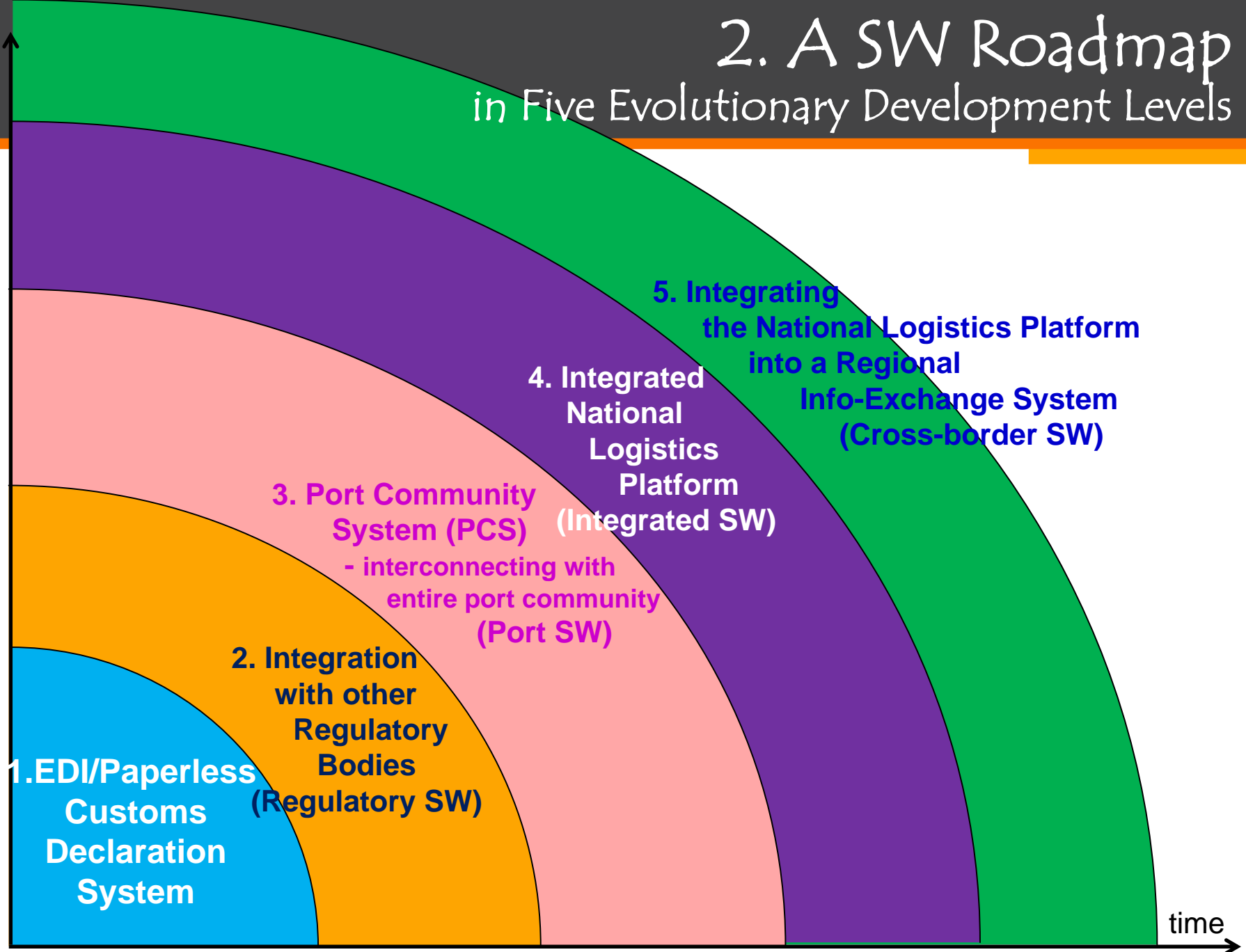
*from multiple windows to Single Window (Regulatory SW)
(since Paperless Customs has already been developed.)*



- One day delay costs 1% reduction in export value (World Bank, 2006)
- Direct and indirect costs incurred in documentary process account for 1-15 % of finished goods (OECD, 2003)

2. A SW Roadmap in Five Evolutionary Development Levels

Potential benefits



Note that in many countries, Port SW or PCS (Maturity Level 3) was fully developed before Regulatory SW (Maturity Level 2). Here, we do not necessarily recommend every country to develop Levels 4 & 5 if it does not really justify the cost and benefits.

Single Window Roadmap

in Five Evolutionary Development Levels and their Key Capabilities

Level 1: Paperless Customs Declaration System (EDI/Paperless Customs)

Submission of paperless Customs declaration, e-payment with banks for Customs duty, e-Container loading list (to associate between Customs declaration and physical containers of those declared goods), and risk-based inspections.

Level 2: Integration with other Regulatory Bodies (Regulatory SW)

Extending the paperless Customs system by interconnecting with other governments' IT systems for exchanging import/export e-permits and e-certificates with Customs Department for more accurate and faster Customs clearance, single window data entry for electronic submissions of application forms, and status e-tracking.

Level 3: Port Community Systems (PCS) in major sea/air ports (Port SW)

Interconnection and e-document exchange for efficient port operations among all related stakeholders, e.g. customs brokers, freight forwarders, transporters, terminal operators, Customs department, warehouses, port authority, and other control agencies.

Level 4: An Integrated National Logistics Platform (Integrated SW)

Extension the interconnection with importers/exporters, logistics-service providers, insurance companies, banks for online payment of services and goods,

Level 5: A Regional Information-Exchange System (Cross-border SW)

Cross-border e-document exchange between two or more economies.

EDI = Electronic Data Interchange

Note that in some cases, PCSs in major ports (as in Level 3) within a country were being fully developed before Level 2.
And some countries start exchanging e-document across the countries (as in Level 5) even though they haven't fully completed Level 3 or 4.

Recommendations

- ❑ Countries may use the SW Roadmap as a **reference model** for the planning and development of the national SW by

1. **assessing the current** or “as-is” level of the national SW, and for
2. **prioritizing for the next target** or “to-be” SW development

For example, by comparing the “as-is” condition of the country with the SW reference model (from Level 1 up to Level 5), and finding out that

- ❑ **If** the country doesn't have any Customs EDI system or risk-based inspections in place yet, **then** the first priority for development is the **Paperless Customs with risk-based inspections (Level 1)**.
- ❑ **If** the country's already established a full paperless Customs but not interconnecting with any other regulatory agencies and there are a lot of cumbersome procedures related to import/export permits/certificates, **then** the **regulatory SW** could be the next target to be developed **(Level 2)**.
- ❑ **If** the country's already established a full paperless Customs and/or a regulatory SW, but there are a lot of stakeholders and **transaction complications at the major ports**, **then** there are opportunities to interconnect e-documents among stakeholders in those major sea port(s) and air port(s) – **establishing Port Community Systems (Level 3)**.

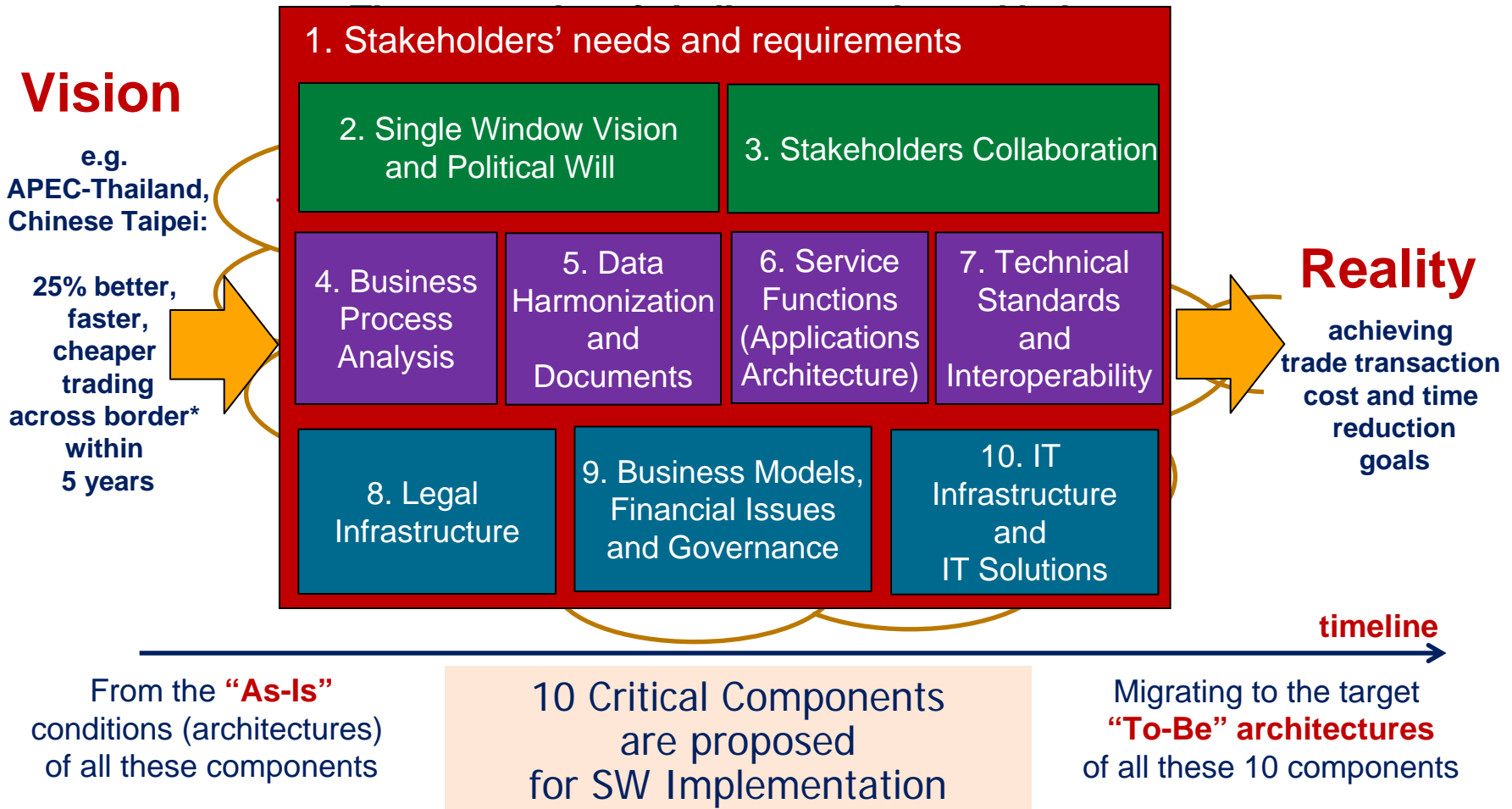
Recommendations (cont)

For example, by comparing the “as-is” condition of the country with the SW reference model (from Level 1 up to Level 5), and finding out that

- ❑ **If** the country's already established **a regulatory SW** and **Port Community Systems within major ports**, and there are a lot of small and medium importers/exporters and logistics providers still lacking of good supporting tools for document transactions and procedures, **then** there may be some opportunities to interconnect e-documents among business traders, logistics service providers, the regulatory SW and/or perhaps the Port Community Systems – **establishing Integrated National Logistics Platform (Level 4)**.
- ❑ **If** the country's already established the Paperless Customs, and/or the regulatory SW, and/or Port Community Systems within major ports, and any bi-lateral or sub-regional trade agreement is established, **then** there are some good opportunities to develop a cross-border information exchange between and among the regional members – **establishing a Regional Information-Exchange System (Level 5)**.

3. Decomposition

Complexity of Single Window can be handled by decomposing its challenges into smaller and more manageable sub-components.



* Referring to World Bank's Index (www.doingbusiness.org)

Understand the “As-Is” and propose the “To-Be” of these 10 Key Components

1. Stakeholders' Needs and Requirements
2. SW Vision and Political Will
3. Stakeholders Collaboration Platform
4. Business Process Analysis and Improvement
5. Data Harmonization and Document Architecture
6. Service Functions/Applications Architecture
7. Technical Standards and Interoperability
8. Legal Infrastructure
9. Business Models, Financial Issues & Governance
10. IT Infrastructure & Technical Architecture

4. SW Development Cycle

Key Components that need to be analyzed, planned, coordinated and implemented.



The **“as-is”** or current **conditions** of these 10 components must be analyzed, and then the target or **“to-be” architectures** (again of these 10 components) need to be developed and agreed.

Normally **many iterations** of the above activities are needed before we can **politically, organizationally and financially agree** on the “to-be” architectures before we make any commitments to implement.

"As-Is" Documents related to Exportation of Rice (from purchase order until the receipt of payment)

36 Documents involving 15 parties, and more than 1,140 data elements to be filled in

- | | |
|---|---|
| 1. Proforma Invoice (35) | 21. Master Sea Cargo Manifest(17) |
| 2. Purchase Order (39) | 22. House Sea Cargo Manifest (37) |
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| 20. Outward Container List (34) | |

Only few of these documents are in electronic format

* Number in parenthesis is the no. of data elements

"As-Is" Business Process

- Exporting Jasmine Rice from Thailand -

BUSINESS PROCESS ANALYSIS

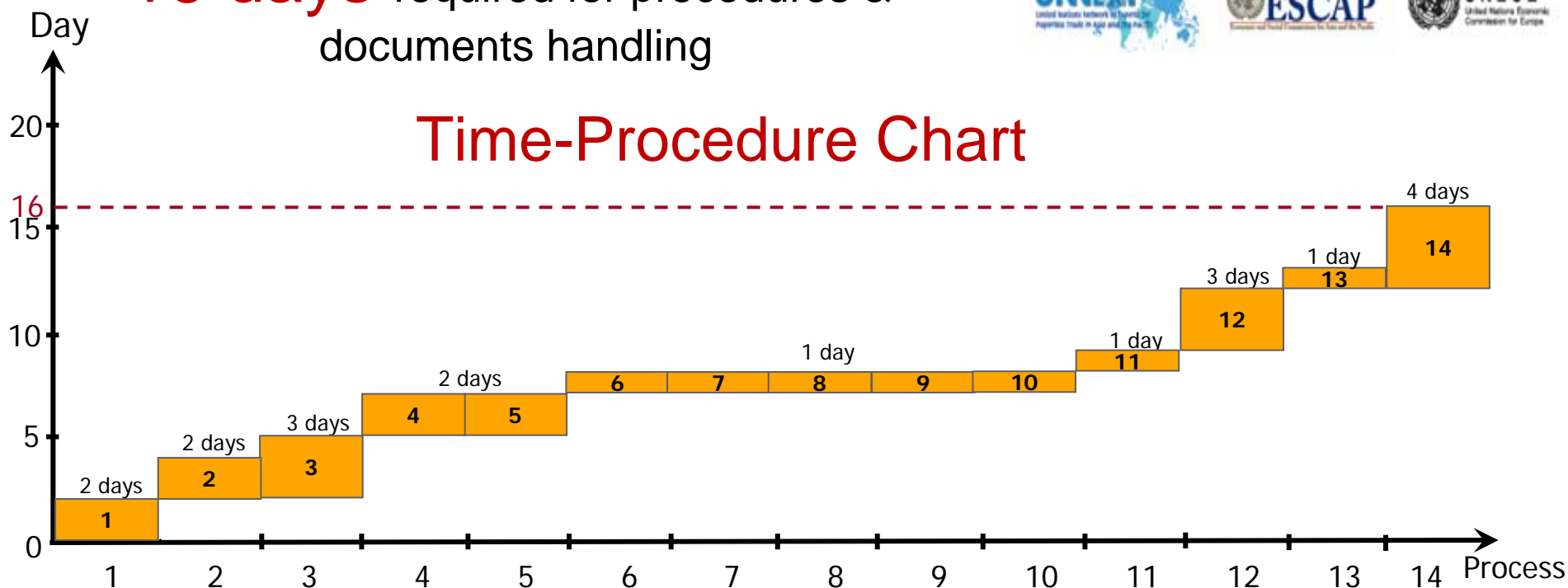
GUIDE

TO SIMPLIFY TRADE PROCEDURES



16 days required for procedures & documents handling

Time-Procedure Chart



1. Buy - Conclude sales contract and trade terms
2. Obtain export permit
3. Arrange transport
4. Arrange the inspection and fumigation
5. Obtain cargo insurance
6. Provide customs declaration
7. Collect empty container(s) from yard

8. Stuff container(s)
9. Transfer to port of departure
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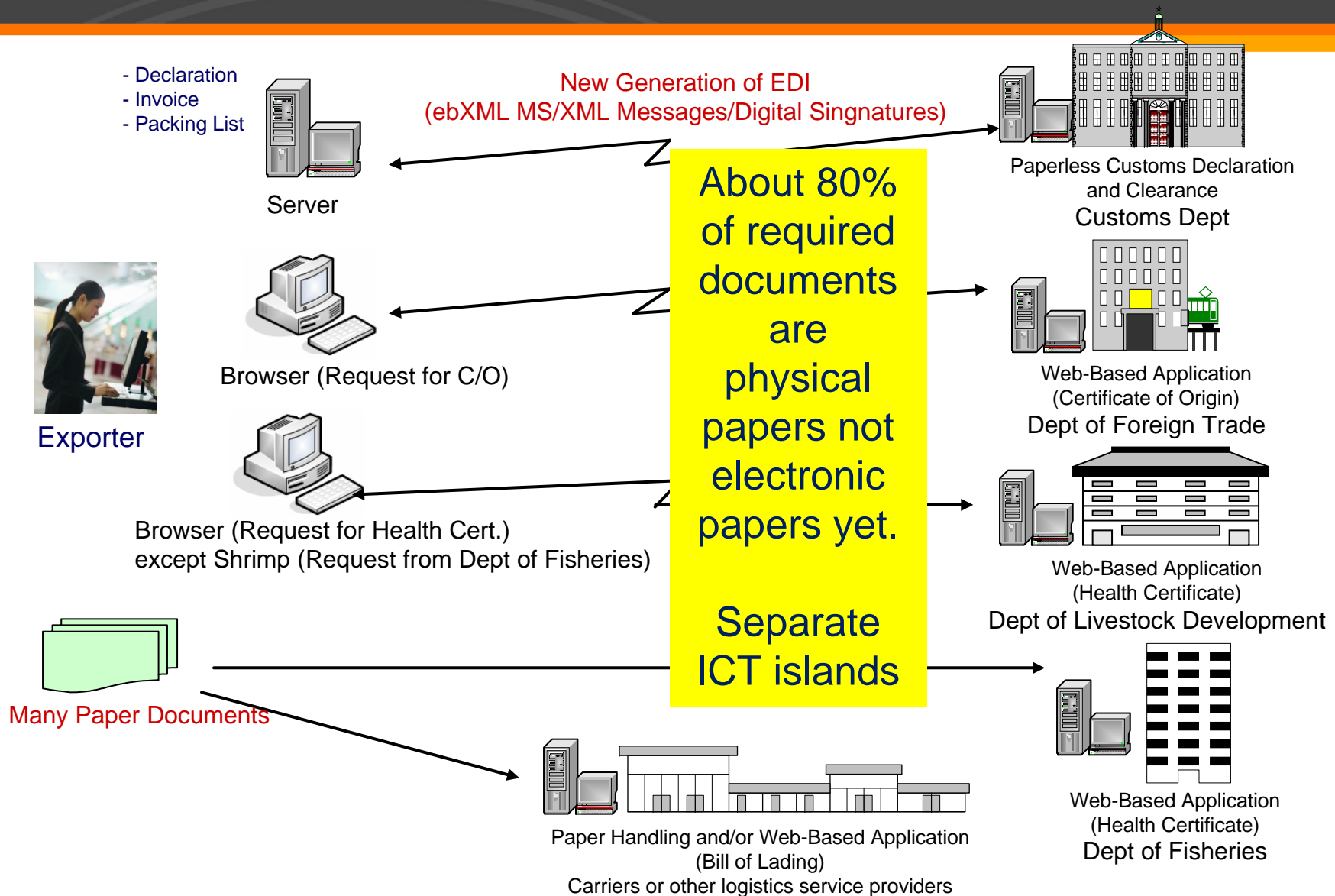
5. Viewpoints

Viewpoints are diagrams (sometimes called blueprints) along with verbal/written descriptions for explaining the same topic but with different levels of details based on the interest of the target audience

An architect uses different diagrams to explain about the same building, e.g.
one diagram showing the interior design to communicate with normal users,
one diagram showing concrete structures to be used by civil engineers,
one diagram showing wiring for electrical technicians, etc.

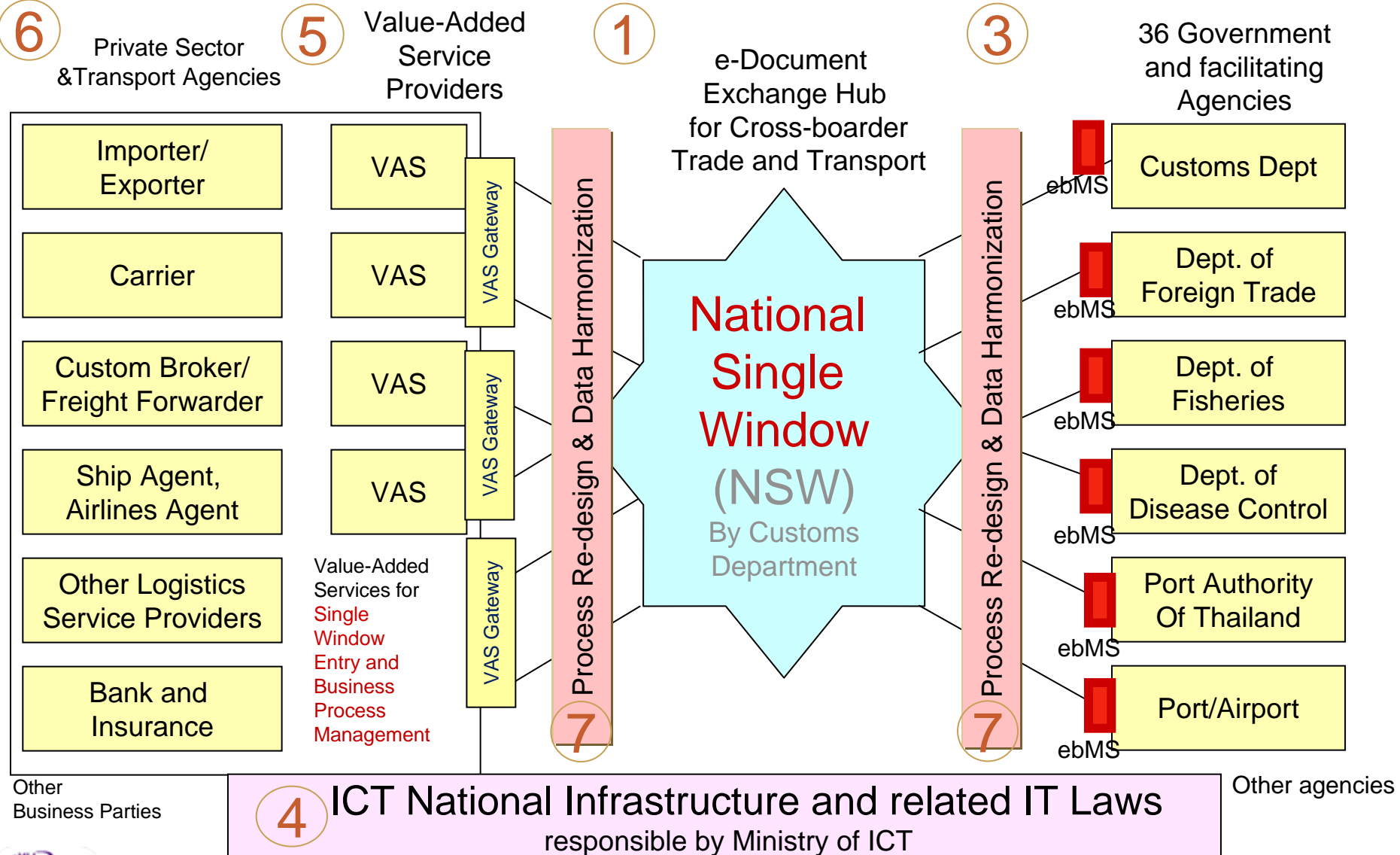
Likewise, several detailed levels of diagrams and descriptions should be used to communicate about SW components but each suitable for different target audiences (e.g. viewpoints/diagrams suitable for high-level policy makers, policy managers, business operators, and technical IT staffs)

"As-Is" Application Architecture in 2007



"To-Be" Thailand SW Architecture

2 Governance Mechanism – policy decision, service charge regulation, service level agreement etc.



6. SW Project Management – 5 Stepwise Activities/Phases

How to analyze, plan and oversee the SW projects (i.e. by revisiting and refining those 10 SW critical components iteratively in each phase).



1. **Preliminary/Inception Phase** – Developing a concept paper for preliminary and initial discussion
2. **Elaboration Phase** – Conducting detailed feasibility study
3. **Planning Phase** – Formulating a High-level SW master plan
4. **Execution Phase** – Executing and overseeing the project plan
5. **Lessons-learned/Feedback Phase** – Collecting lessons learned

SW Project Management Process in 5 Phases

1. **Inception Phase (Preliminary)** – Developing a concept paper for preliminary and initial discussion
2. **Elaboration Phase** – Conducting detailed feasibility study
3. **Planning Phase** – Formulating a SW high-level master plan
4. **Execution Phase (Implementation & Oversight)**
 - SW Project Implementation and
 - Monitoring and Controlling the project's progress
5. **Feedback & Lessons-learned Phase** – Collecting lessons learned and suggesting opportunities for SW improvement and extensions.

When an initial concept study should be conducted?

- ❑ An inception phase (preliminary study) should be conducted as an initial preparation at least for two occasions, i.e.
 1. When a country **starts to think** about the possible **implementation of a Single Window**, or
 2. When a country **thinks** about the possible **extensions** of the **existing Single Window**.

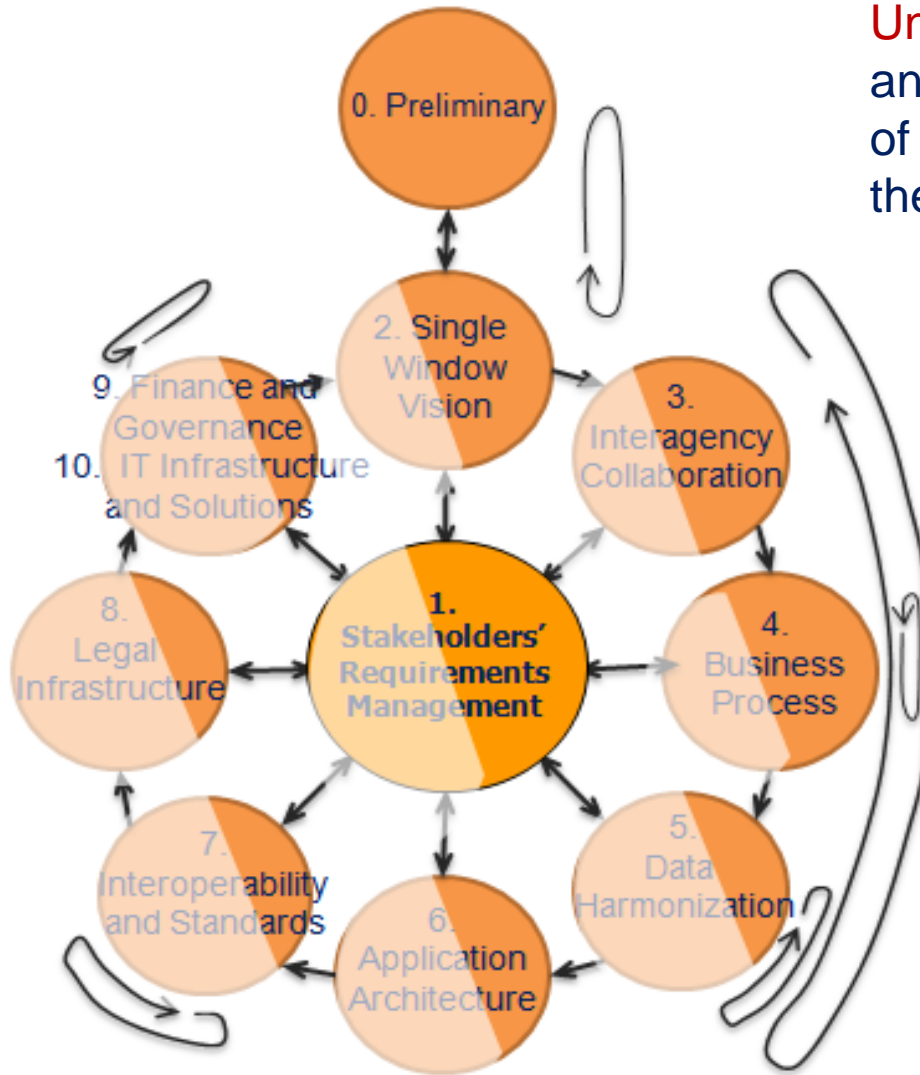
Why an inception phase should be conducted (the purpose of an initial concept study)?

- ❑ The purpose of this inception phase is **to develop a concept paper aiming to facilitate initial discussion on the SW and then to obtain feedback and approval to go forward for an in-depth study** into the need for, approach to and feasibility of a Single Window.
- ❑ Normally, this initial concept paper **is not intended to seek commitment or agreement** for the implementation of a Single Window **yet**.

What should we do with the concept paper (the deliverable of the inception phase)?

- ❑ With the concept paper, **a meeting** should be conducted, if possible, among high-level(as possible) **key government representatives** and **relevant business representatives** to discuss the proposed Single Window concept.
- ❑ Upon the feedback from the meeting, and presuming that a positive decision is reached to proceed with a recommended next step, an **elaboration phase (a detailed feasibility analysis)**, the meeting should establish a **Project Management Group** made up of **senior representatives of the key agencies** who will be directly involved in implementing and utilizing the Single Window.

How an inception phase be conducted?



Understand the “As-Is” conditions and propose the “To-Be” architectures of these 10 key components mainly at the conceptual feasibility and policy level, but some technical components should be roughly explored their feasibility, potential benefits, and risks.

1. Stakeholders’ requirements, and Related National Agenda (Module 2)
2. SW Vision & Goals (Module 2)
3. Possible SW Scope (Module 3)
4. Business Process and Document Requirements for export-import of some strategic goods and/or strategic ports,...
4. What are the existing ICT systems, What should be the “to-be” SW architecture (which SW levels in the Roadmap)
5. Platform for stakeholder collaboration
.....etc.

Understand the “As-Is” and propose the “To-Be” of these 10 Key Components

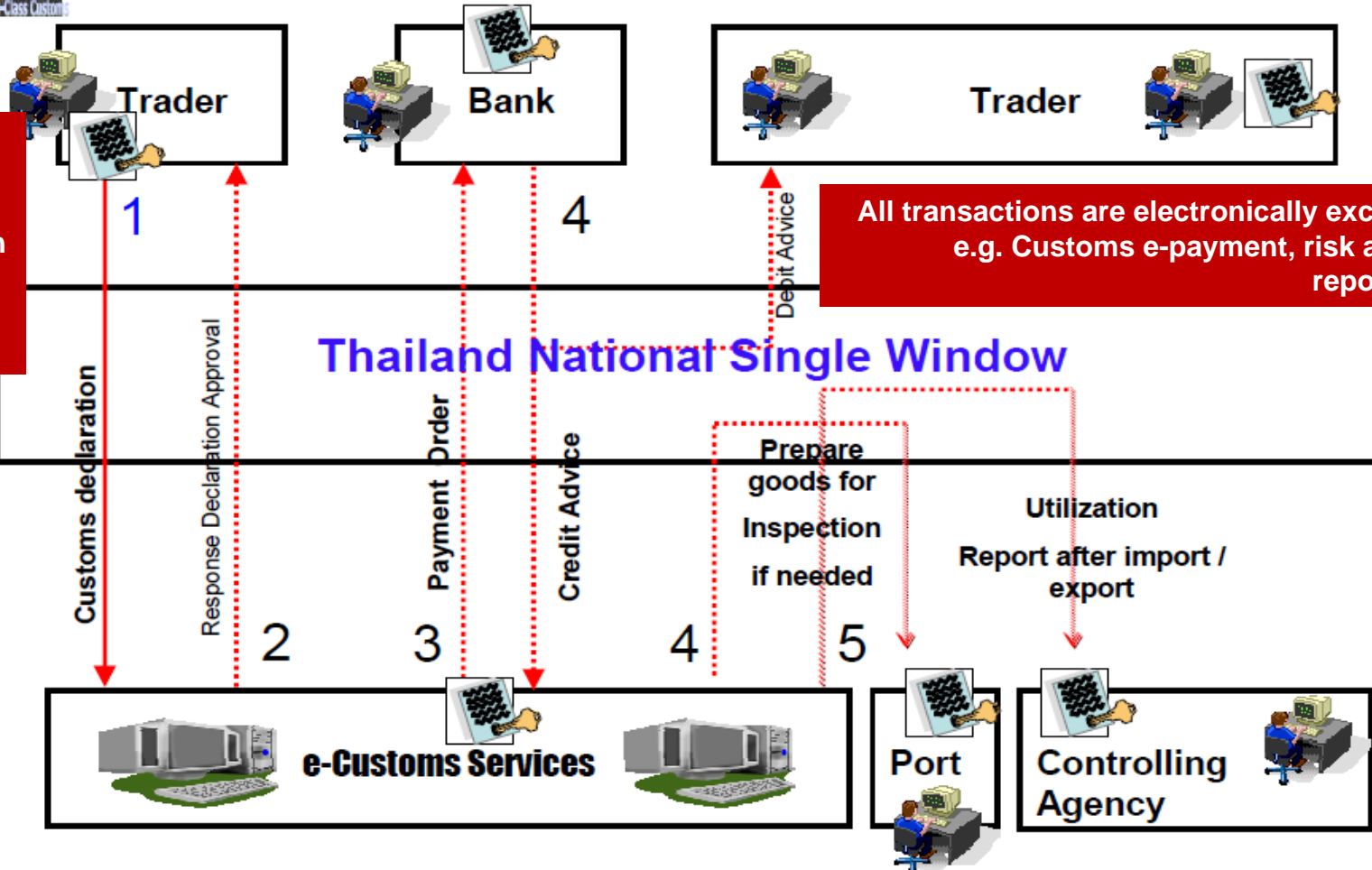
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9. Business Models, Financial Issues & Governance
10. IT Infrastructure & Technical Architecture

"To-Be" Paperless Customs Procedures

A Case Example 1
(referencing to
the SW Roadmap
Level 1)

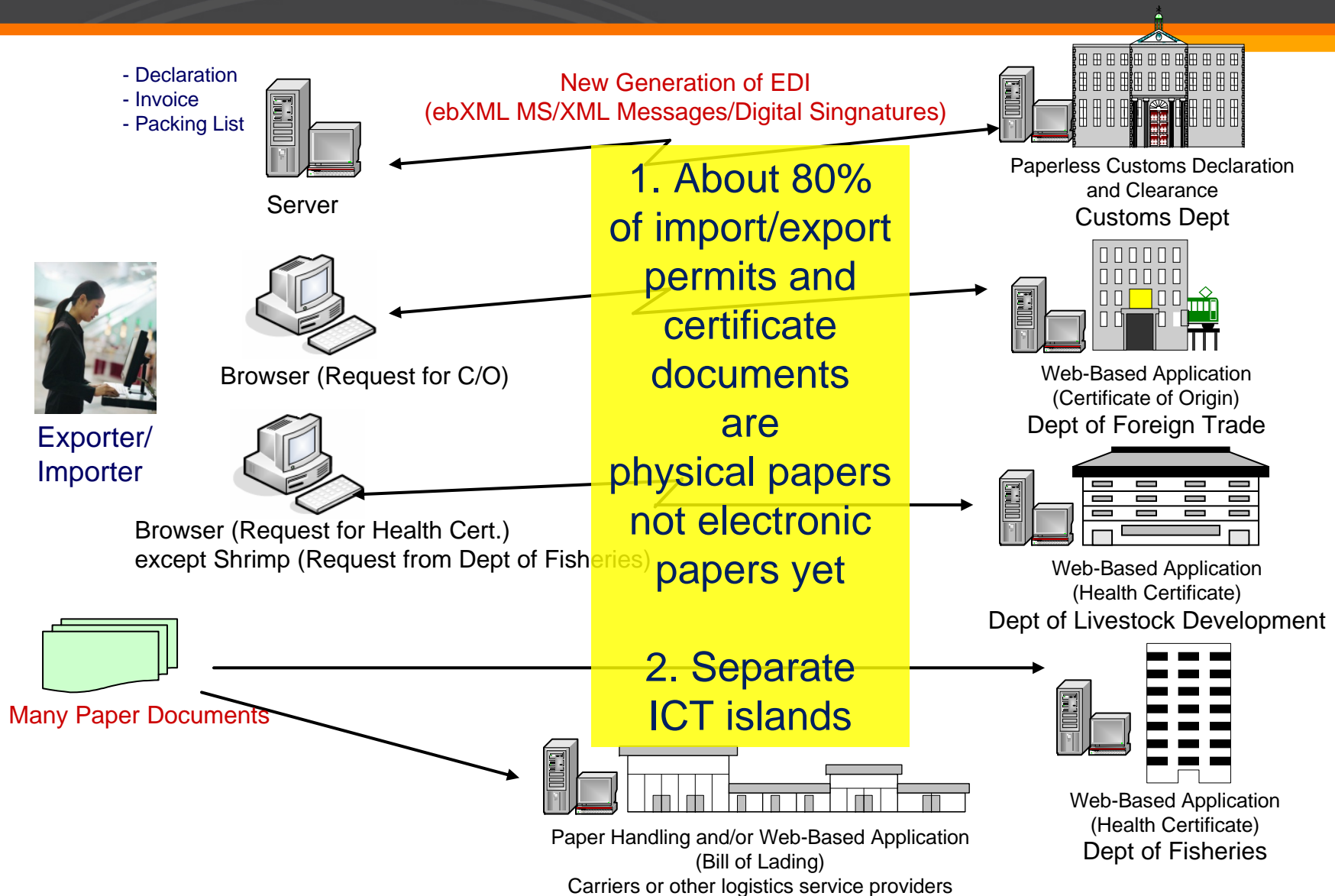
(an initial concept study in 2005, proposed for the development from the "As-Is (then)" paper-based documents and partial electronic procedures)

A Single Submission of Electronic Customs Declaration



Referring to – 'Thailand NSW' presentation by
Mr. SINMAHAT Kiatjanon, Thai Customs Department - February 2010., Nepal.

"As-Is" Application Architecture in 2007



A Conceptual Architecture* of the "To-Be" National Single Window

A Case Example 2 (cont)
(referencing to
the SW Roadmap
Level 2)

Technical interoperability protocols are needed, and common definitions of data elements, and semantic data structures (common data models) among different documents required by different organizations are required also.



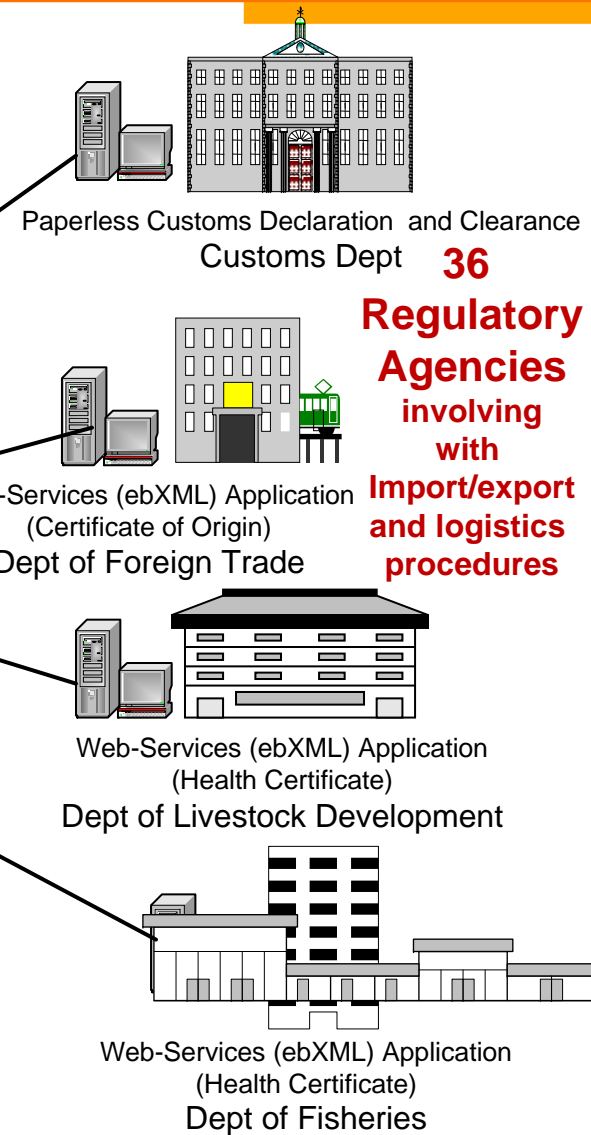
Exporter



1. National Single Window [Goal 1] e-Documents Exchange Hub

2. [Goal 2] – **Electronic Single Window Entry**
One time submission for each data element
but multiple usage for different purposes on
different ICT platforms

* as initially proposed for
discussion and feedback
with key stakeholders in 2007.



Carriers or other logistics service providers

SW Project Management Process in 5 Phases

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 - SW Project Implementation and
 - Monitoring and Controlling the project's progress
5. **Feedback & Lessons-learned Phase** – Collecting lessons learned and suggesting opportunities for SW improvement and extensions.

The purpose of the elaboration phase

- The purpose of the feasibility study is **to provide decision-makers** with an **insight into the options** available and their **consequences** for each involved governmental authority and each involved business sector, e.g.
 - ❑ detailed analysis of “as-is” and “to-be” procedures and documentation,
 - ❑ possible service functions to be provided by the “to-be” applications architecture,
 - ❑ technical and interoperability issues,
 - ❑ legal infrastructure
 - ❑ implementation options i.e. full or phased implementation) and the possible steps,
 - ❑ financial and business concerns, e.g. options for investment (by public, public-private, or private only), and other required resources, free services or fee charge for services, how to sustain the operational cost, etc.
 - ❑ potential benefits and risks,
 - ❑ a time frame, and
 - ❑ implementation and **management** institutions and strategy.

Who should conduct this detailed study? What should we do with the outcome?

- **A task force** (or called, a working group) comprising of all stakeholders' representatives should be identified and mandated to actively involve in this study, normally by the **assistance of a consulting team** who may do the detailed analysis, reporting, facilitating the discussion, consolidating the feedback and refinement of the final report and most (if not all) of the agreement.
- The outcome of this study should be presented, refined, then (hopefully) **finalized, and approved by the high-level Project Management Group**.
 - The **next step of formulating a (more detailed) SW master plan** can be mandated by the Project Management Group **as a way forward***.

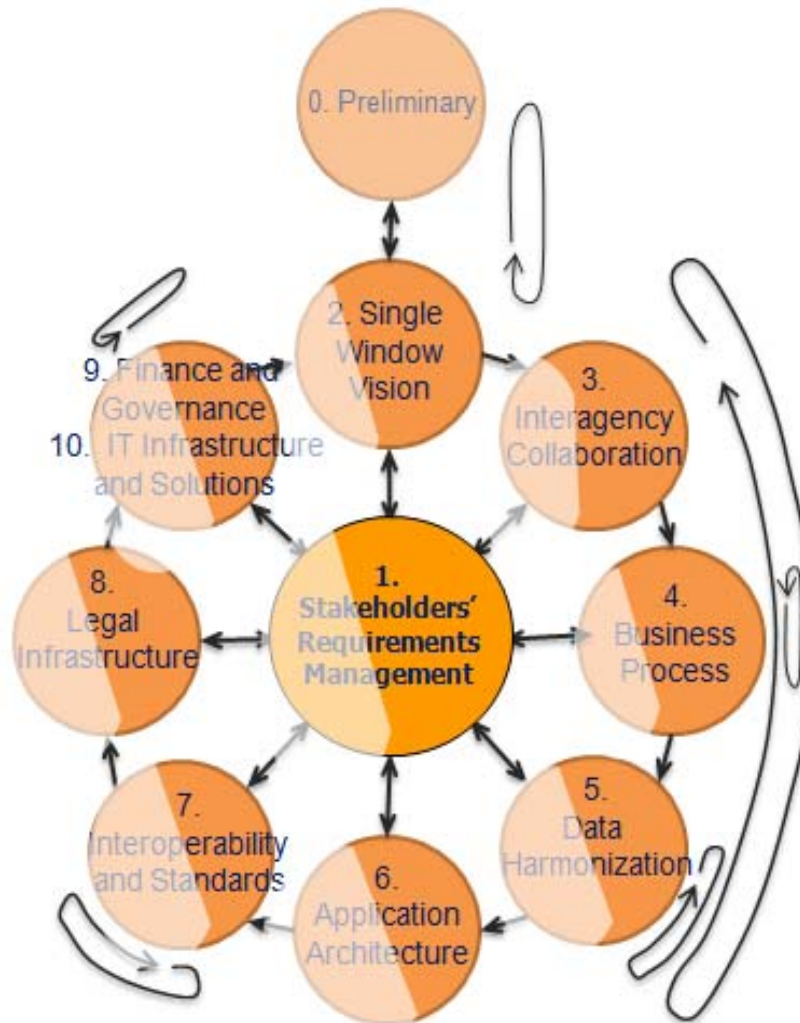
* In some cases, the SW high-level master plan may be developed along with the feasibility study and then at the same time be approved by the Project Management Group.

Suggested Contents of the study

1. Project Needs and Potential Benefits of a Single Window
2. Organizational Aspects and Interagency Collaboration
3. Human Resources and Training
4. Legal Infrastructure
5. Procedures, Information and Documentation
6. Technical aspects of a Single Window
7. Impact assessment
8. Implementation Options
9. Financial Options and Business Models
10. Promotion and Communications

How to conduct a detailed feasibility study?

SW Development Cycle



During a detailed feasibility study, all components related to SW implementation will be analyzed again but with much more details than in the preliminary study.

It is strongly recommended that this study be based on **direct face-to-face interviews with key players in both government and trade**, complemented by **relevant questionnaires** to collect information from **a wider circle of potential participants and users**.

Several meetings among key stakeholders and focus groups for presentation of findings, obtaining feedbacks and refinement should be conducted.

How to conduct a detailed feasibility study? (cont)

- ❑ Using the **SW development cycle** (as explained in the previous slide).
- ❑ Using the **architecture concept** (i.e. try to describe all key issues as clearly as possible, where possible **using diagrams/pictures to help conveying the messages** so that verification, validation, and refinement can be less ambiguous, and then **common understandings** and agreements by relevant stakeholders can be easily reached.)
- ❑ Developing several **architectures***/pictures and each picture (suitable for a different viewpoint) with
 1. Several **smaller components**
 2. **Inter-relationships (links)** between those components
 3. **Governing principles** for each component and/or each relationship, **e.g. who is in charge of each component.**

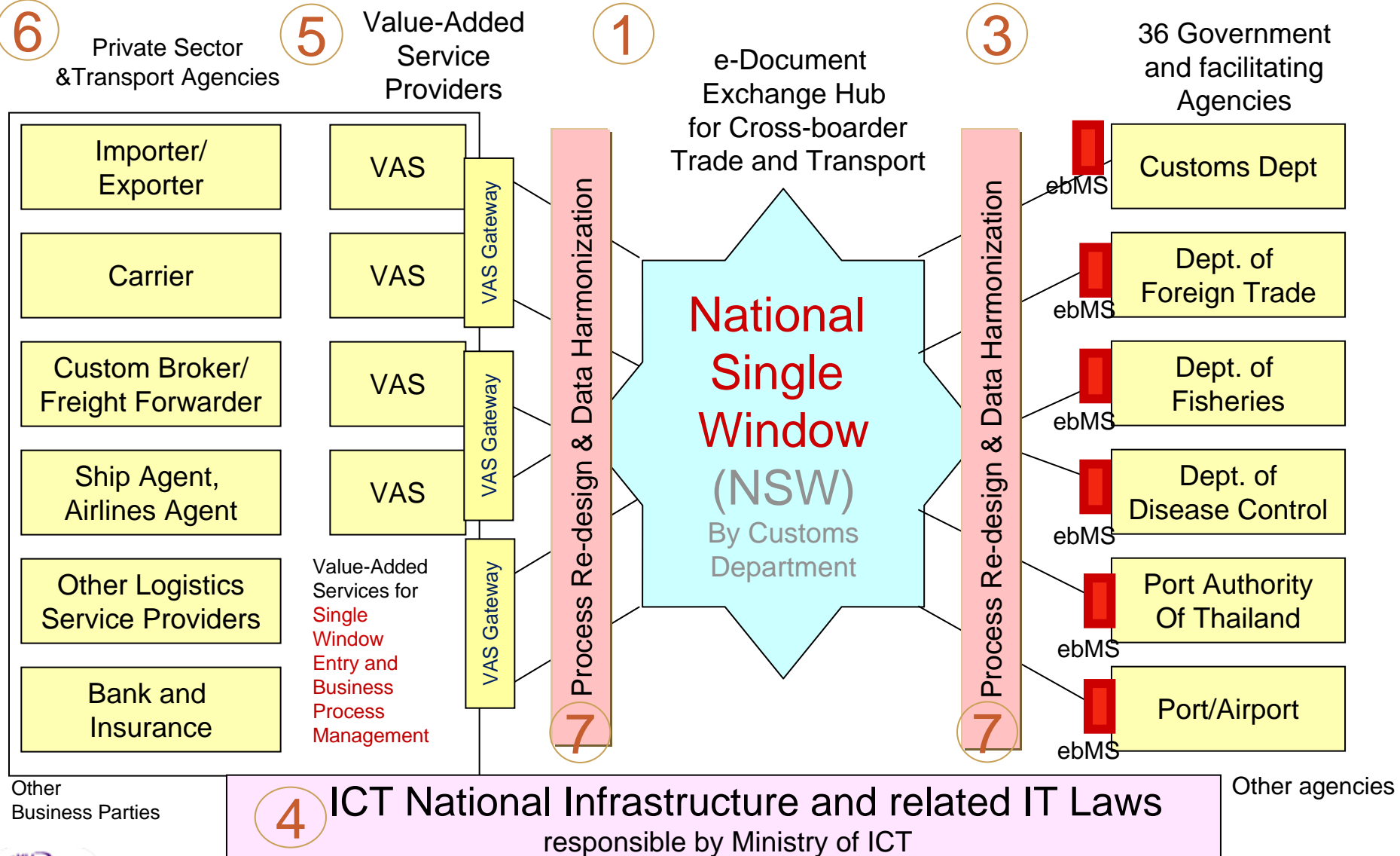
* As defined in ISO / IEC 42010:2007 Systems and software engineering, Architecture is the fundamental organization of a system comprising of a structure of components, their inter-relationships, and governing principles and/or guidelines for their design and evolution over time.

"To-Be" Thailand SW Architecture

A Case Example 2 (cont)

(referencing to
the SW Roadmap - Level 2)

2 Governance Mechanism – policy decision, service charge regulation, service level agreement etc.



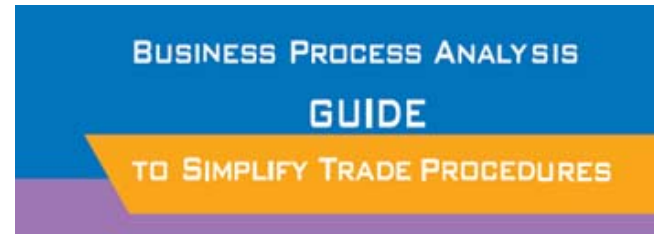
How to conduct a detailed feasibility study? (cont)

Referring to the SW Development Cycle (Business Process)

- ❑ Conducting more detailed **Business Process Analysis (BPA)** to
 - ❑ **understand the “as-is”** procedures and documentation,
 - ❑ **identify bottlenecks** and improvement opportunities, and
 - ❑ **propose “to-be”** procedures and documentation enabled by reducing and simplifying some procedures/documents, applying e-document submission, e-document exchange, and electronic processing.

For a more detailed BPA guide and associated capacity building workshops request, please refer to UNESCAP/UNECE and

- “**Business Process Analysis Guide to Simplify Trade Procedures**”, UNESCAP publication, 2009
- <http://www.unescap.org/publications/detail.asp?id=1371>



How to conduct a feasibility study? (cont)

Referring to the SW Development Cycle (**Data Harmonization**)

- ❑ Conducting feasibility and potential benefits through some document analysis and data harmonization to
 - ❑ **understand the “as-is” data elements and their structures** of relevant documents, and
 - ❑ **propose “to-be” flows and structures of documents and data elements** for better data exchange, and easier (e.g. non-duplicated data entry by the users) and more automatic handlings.

With this analysis, we could identify one important sub-project to be carried as part of the overall project implementation phase which is the Data Harmonization Project.

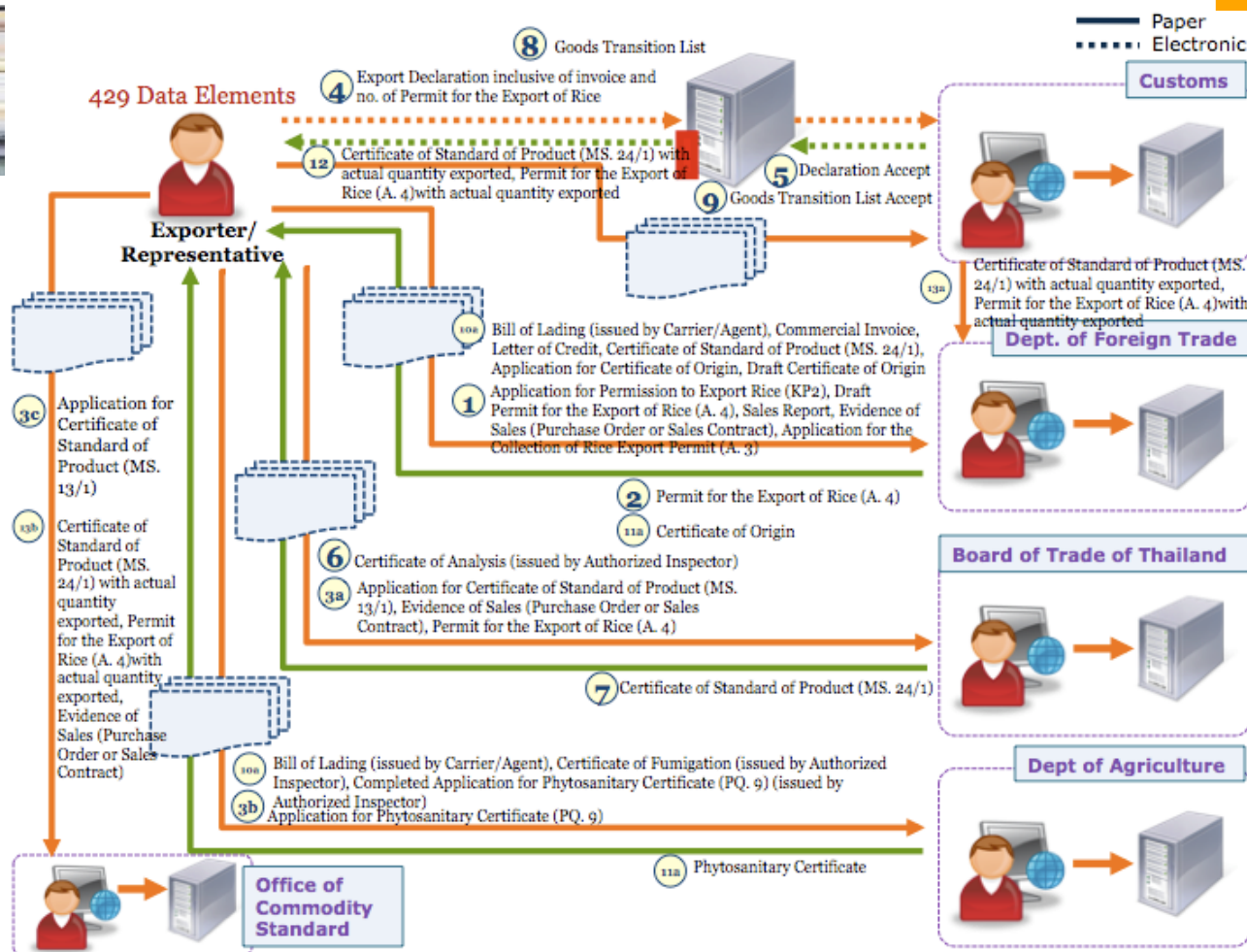
For more information about any capacity building workshop on Data Harmonization, and an upcoming Data Harmonization Guide, please refer to UNESCAP/UNECE.

How to conduct Data Harmonization?

- Evaluate and select **data model** based on comprehensiveness and compliance, e.g. WCO Data Model 3.0
- Confirm that the scope of **a data harmonization project** matches the scope of the business process analysis of the Business Process Phase
- Define each **data element in terms of definition**, data type, data format, and data constraints in actual operation
- **Analyze data elements across various documents** and organize them in a comparable manner
- Map the data elements to **selected standard data model**

"As-Is" Regulatory Business Process and Documentations for Exporting Jasmine Rice

A Case Example 2 (cont)
(referencing to the SW Roadmap - Level 2)



5 regulatory agencies and 17 different documents are required

(not counting those required by other business entities, e.g. banks, transporters, logistics providers)

Problems :

- Duplicated Information & multiple physical visits to different locations
- High Cost and Time for sending and receiving documents
- Possible Data Inconsistency

"To-Be" Data Harmonization

to harmonize for the common-meaning data elements among different documents

Regulatory-required Documents to be prepared by the rice exporter	As-is (no. of data elements)
To obtain a permit for the export of rice (A. 4) •Application for permission to export rice (KP. 2) •Sales report (KP. 3) •Application for the collection of the permit for the export of rice (A. 3) •Draft A. 4 •Commercial invoice	150
To obtain a certificate of standards of product (MS. 24/1) •Application for certificate of standards of product (MS. 13/1) •Commercial invoice •Permit for the export of rice (A. 4) •Certificate of analysis	32
To declare to-be exported goods •Export declaration	114
To inform Customs the movement of goods to port •Goods transition list	27
To obtain phytosanitary certificate •Application for phytosanitary certificate (PQ. 9) •Bill of lading •Certificate of fumigation	29
To obtain certificate of origin •Application for certificate of origin •Draft certificate of origin •Commercial invoice •Certificate of standards of product (MS. 24/1) •Bill of lading •Letter of credit	67
To report actual quantity exported	10
	429

Data Harmonization

180

**180
common
data
elements
among
these 17
documents**

Example – Exchanged Documents

A Case Example 2(cont)
(to enable single window data entry)

มส. 24-001-50 No.002618
 แบบ มส. 24/1

ใบรับรองมาตรฐานสินค้า เลขที่ E.....
 เลขที่ประจำตัวผู้เสียภาษี.....
 ใบรับรองเลขที่ ขม.
 คำร้องขอเลขที่ ขม.

ข้าวหอมมะลิไทย
ใบรับรองมาตรฐานสินค้า

ใบรับรองมาตรฐานสินค้านี้ ออกให้แก่.....
 ใบทะเบียนเลขที่ ผค.ซึ่งประสงค์จะส่งสินค้ามาตรฐานออกนอกราชอาณาจักร เพื่อแสดงว่าผู้ถือใบรับรองมาตรฐานสินค้านี้
 ได้จัดให้มีการตรวจสอบมาตรฐานสินค้า ที่จะส่งหรือนำออกนอกราชอาณาจักร ตาม มาตรา 17 แห่งพระราชบัญญัติมาตรฐานสินค้าขาออก
 พ.ศ. 2503 ซึ่งแก้ไขเพิ่มเติมโดยพระราชบัญญัติมาตรฐานสินค้าขาออก (ฉบับที่ 2) พ.ศ. 2522 แล้ว ปรากฏผลดังมีรายละเอียด ต่อไปนี้

1. สินค้าข้าวหอมมะลิไทย.....ประเภท.....ชนิด.....
 ปริมาณ.....น้ำหนัก.....กก. มูลค่า.....บาท
 น้ำหนักเฉพาะ.....กก. น้ำหนักรวม.....กก. ราคา.....ต่อหน่วย

2.2 ปริมาณ.....น้ำหนัก.....กก. มูลค่า.....บาท
 น้ำหนักเฉพาะ.....กก. น้ำหนักรวม.....กก. ราคา.....ต่อหน่วย

2.3 ปริมาณ.....น้ำหนัก.....กก. มูลค่า.....บาท
 น้ำหนักเฉพาะ.....กก. น้ำหนักรวม.....กก. ราคา.....ต่อหน่วย


 ใบอนุญาต
 ให้ส่งสินค้าออกนอกราชอาณาจักร (ข้าว)
 (เพื่อการค้าเป็นการค้า)
 เลขที่.....วันหมดอายุ.....
 ผู้ซื้อ (ชื่อ, ที่อยู่, ในกรณีที่เป็นคนและรายการผู้รับสินค้า)
 ประเทศผู้ซื้อ.....
 ประเทศปลายทาง.....
 คำหรับเจ้าหน้าที่ศุลกากรบันทึก (หากไม่พอให้ต่อด้านหลัง)

ทำหน้าที่ส่งออก.....
 รวมมูลค่าสินค้า.....
 2

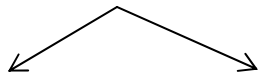
สรุปรวม.....
 อัตราแลกเปลี่ยน.....
 ประเภทสินค้า.....น้ำหนักสุทธิ (กก.)/ปริมาณ.....
 ราคาต่อหน่วย.....มูลค่าสุทธิ (เงินบาท).....
 ประเภทสินค้า.....น้ำหนักสุทธิ (กก.)/ปริมาณ.....
 ราคาต่อหน่วย.....มูลค่าสุทธิ (เงินบาท).....

**Rice Quality Certificate
By The Thai Chamber
of Commerce**

**Permit for the export of
rice by Department of
Foreign Trade**

Example – Defining data element names and definitions for 2 documents by comparing with International Standards

2 documents required for exportation of rice

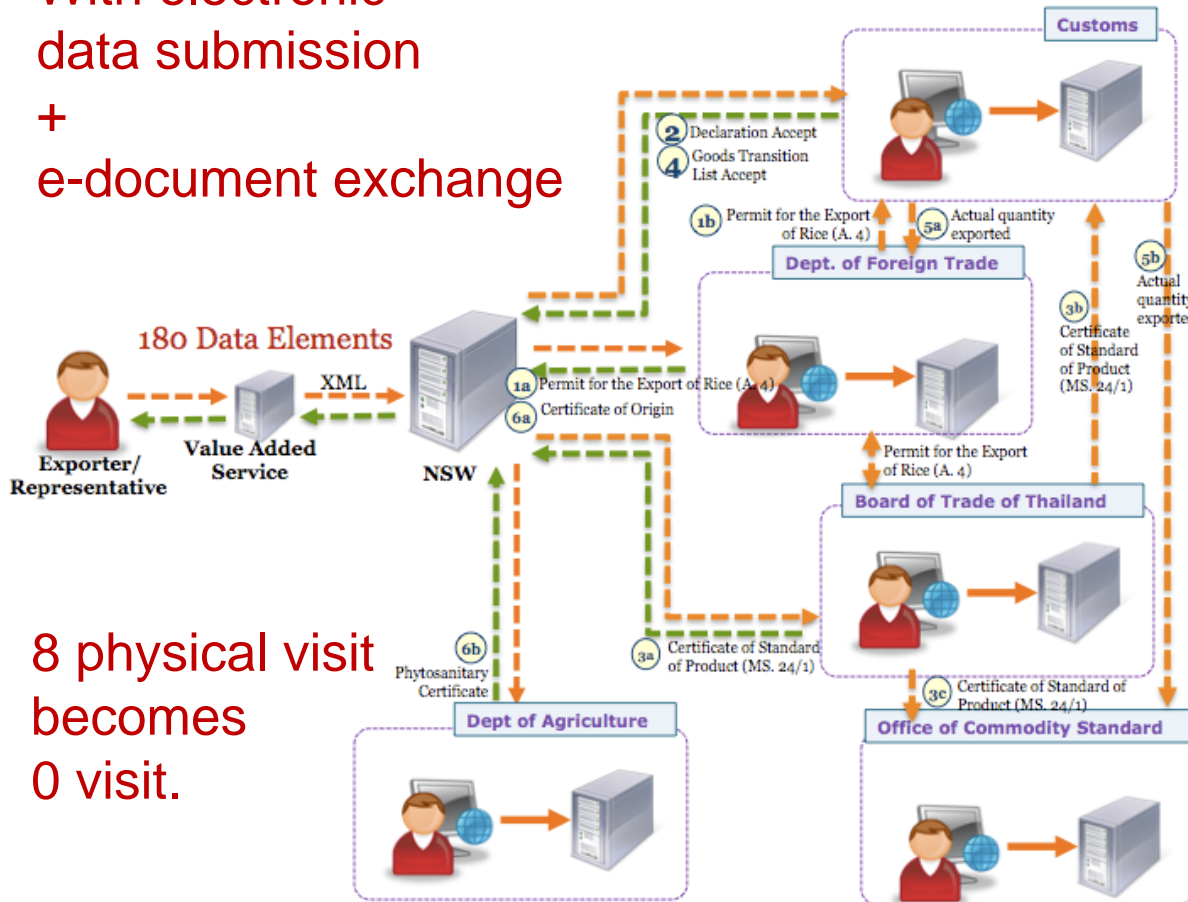


Permit for the export of rice	Rice Quality Certificate	Data Element Name	Definition
weight (kg.)	Net Weight (kg.)	Net Weight (item)	[TDED 6020] The measure of the net weight (mass) of this cross-border trade line item, excluding all packaging.
Unit Price	Price	Unit Price (item)	[TDED 5110] Price per unit of quantity on which an article item amount is calculated.
Name of transport	Ship's name	Name of Transport	[TDED 8212] Name of a specific means of transport such as the vessel name

"As-Is" Regulatory Business Process and Documentations for Exporting Jasmine Rice

A Case Example 2 (cont)
(referencing to the SW Roadmap
- Level 2)

With electronic
data submission
+
e-document exchange



8 physical visit
becomes
0 visit.

As-Is

- 429 data elements to be filled in different physical documents
- Multiple submissions of identical data
- Multiple visits to government agencies (to submit and collect documents as well as to report actual quantity of goods exported)

To-Be

- 180 data elements to be filled in electronically
- No repetitive submission of identical data
- No physical visit
- Electronic data cross-checking between controlling agencies
- Electronic data sharing between controlling agencies

Financial Analysis and Business Model Study

Referring to the SW Development Cycle (**Financial and Business Model Analysis**)

❑ It is necessary to conduct a comprehensive **cost benefit analysis**, e.g.

cost of designing,

cost of developing,

cost of maintaining individual agency systems;

its potential benefits; and

who should finance the development and operations e.g.

1. a system totally **financed by government** or
2. possibilities **for public-private partnerships** with some service fees, or
3. Some or all parts **financially supported by private sectors** with service fees, or.....

❑ Clarity on the financial model can significantly influence decision-makers to support the implementation of the system.

Look for examples in the UNECE SW Repository website

SW Project Management Process in 5 Phases

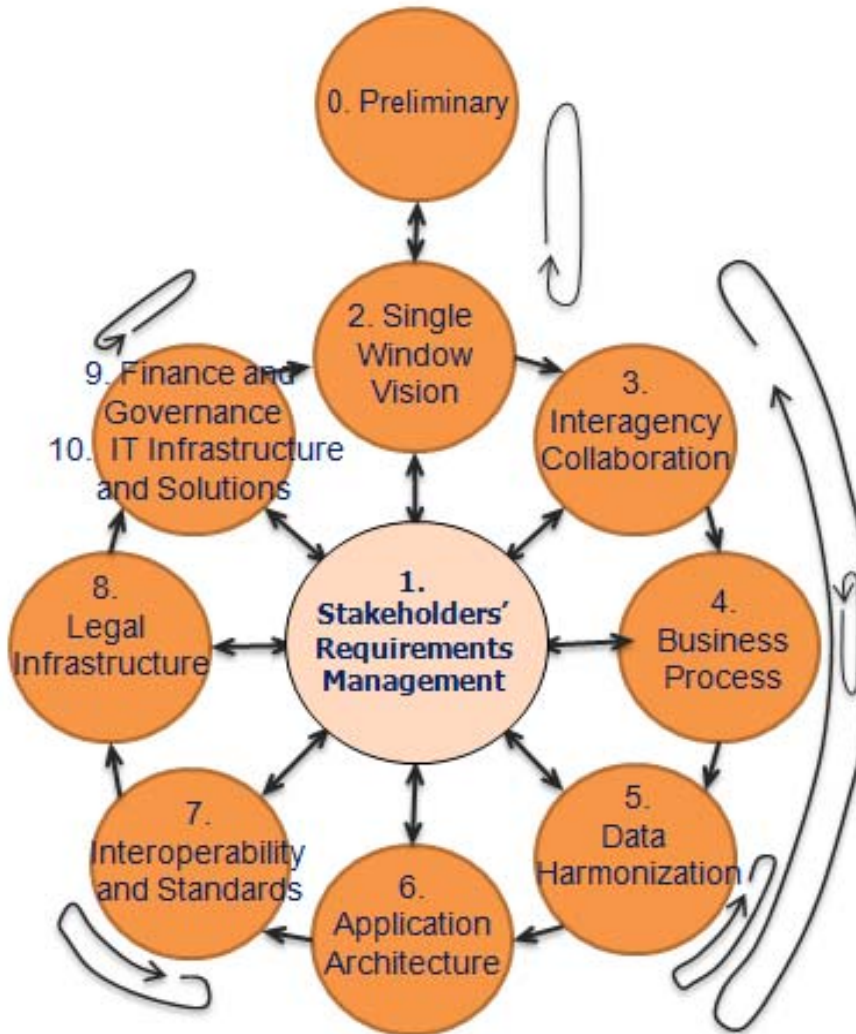
1. **Inception Phase (Preliminary)** – Developing a concept paper for preliminary and initial discussion
2. **Elaboration Phase** – Conducting detailed feasibility study
3. **Planning Phase** – Formulating a SW High-level master plan
4. **Execution Phase (Implementation & Oversight)**
 - SW Project Implementation and
 - Monitoring and Controlling the project's progress
5. **Feedback & Lessons-learned Phase** – Collecting lessons learned and suggesting opportunities for SW improvement and extensions.

An architecture-based planning approach

- After the inception and elaboration phases, the SW vision, objectives, and target “to-be” architectures and associated issues should be commonly clarified and agreed.
 - Here, the architecture analysis has already been conducted, i.e. we’ve already agreed upon the clear “to-be” architecture, we can now readily take those components and put into sub-projects with tasks (what to do) and schedule, etc.

An architecture-based planning approach

SW Development Cycle



To formulate the SW project implementation plan, again we should revisit all SW key components, but with the perspectives of prioritizing these components into **sub projects** with associated **deliverables**, **tasks**, **schedules**, **budgets**, **management issues**, **project risks**, other **necessary resources**, etc.

An Example Template for a SW Master Plan

1. Executive Summary
2. Overview of a National Single Window
 - 2.1 Scope and Objectives of NSW
 - 2.2 Expected Benefits
 - 2.3 Major Components of NSW
 - 2.4 Participating Agencies
3. Implementation Strategies
 - 3.1 Incremental Development
 - 3.2 Use of International Best Practices and Standards
 - 3.3 Business Process Improvement
 - 3.4 Harmonization of Data Requirements
 - 3.5 Provision of Legal Infrastructure
 - 3.6 Stakeholder Co-ordination
4. Stocktaking of NSW-related Development thus Far
 - 4.1 NSW Exchange Systems
 - 4.2 Business Process Analysis
 - 4.3 Business Model
 - 4.4 Harmonization of Data Requirements
5. Institutional Arrangement for Project Implementation, Management, and Governance
 - 5.1 Project Implementation
 - 5.2 Project Management
 - 5.3 Project Governance
6. Project Schedule and Budgets

Key contents that should be included in a SW master plan.

- Clear project's scope, goals and objectives;
- Key deliverables, responsibility for delivery, time frame and milestones
- Defined roles and responsibilities of various participants, including a clear agreement on who is in charge of the project (the project manager) and the level of authority of this manager;
- Specification of the management and monitoring responsibilities of the project manager and the line of authority and communication between the project manager, Project Management Group and the Task Force;
- Clear communication strategy for communicating with project stakeholders and potential users on a regular basis throughout the implementation, including an agreement on what information needs to be communicated with what groups and in what manner and frequency;
- A clear and agreed project budget, including financial and human resources; it is essential that the necessary funds and personnel be allocated to the project from the outset;
- A clear statement of the project risks (such as a cutback in budget, delay in required legal reforms, etc.) and an agreed response plan (to the best extent possible) to manage these risks, including contingency plans for high-level risks;
- Agreement on the criteria for measuring the project success;
- An agreed project review and feedback mechanism to provide ongoing monitoring of the project process and to deal with any changes in the implementation that may be required.

Who and What should we do with the draft plan?

- The **draft** project plan could be developed by a consulting team or a designated task force, but it should **be reviewed and refined** by relevant stakeholders through several rounds of communication and discussions.
- The final SW high-level master plan should be **commonly understood** by all relevant stakeholders, **and** then **agreed** by the senior-level Project Management group.
- The project should be **approved** and **funded** by the government authority or those high-level policy decision makers who have the resources and can grant the sponsorship for the project.

Summary

- A SW high-level master plan is to **align SW objectives** with the **current As-Is context**, and to define clear paths for development and deployment of the **target To-Be Single Window**.
- After a SW high-level master plan is initially established, **approved** and **financially funded**, it would become the reference for future solution implementation and deployment initiatives responding to SW requirements.
- Over the time, **this master plan** should be **periodically refined with changes** in environments or business objectives in order to stay as strategic and reference.

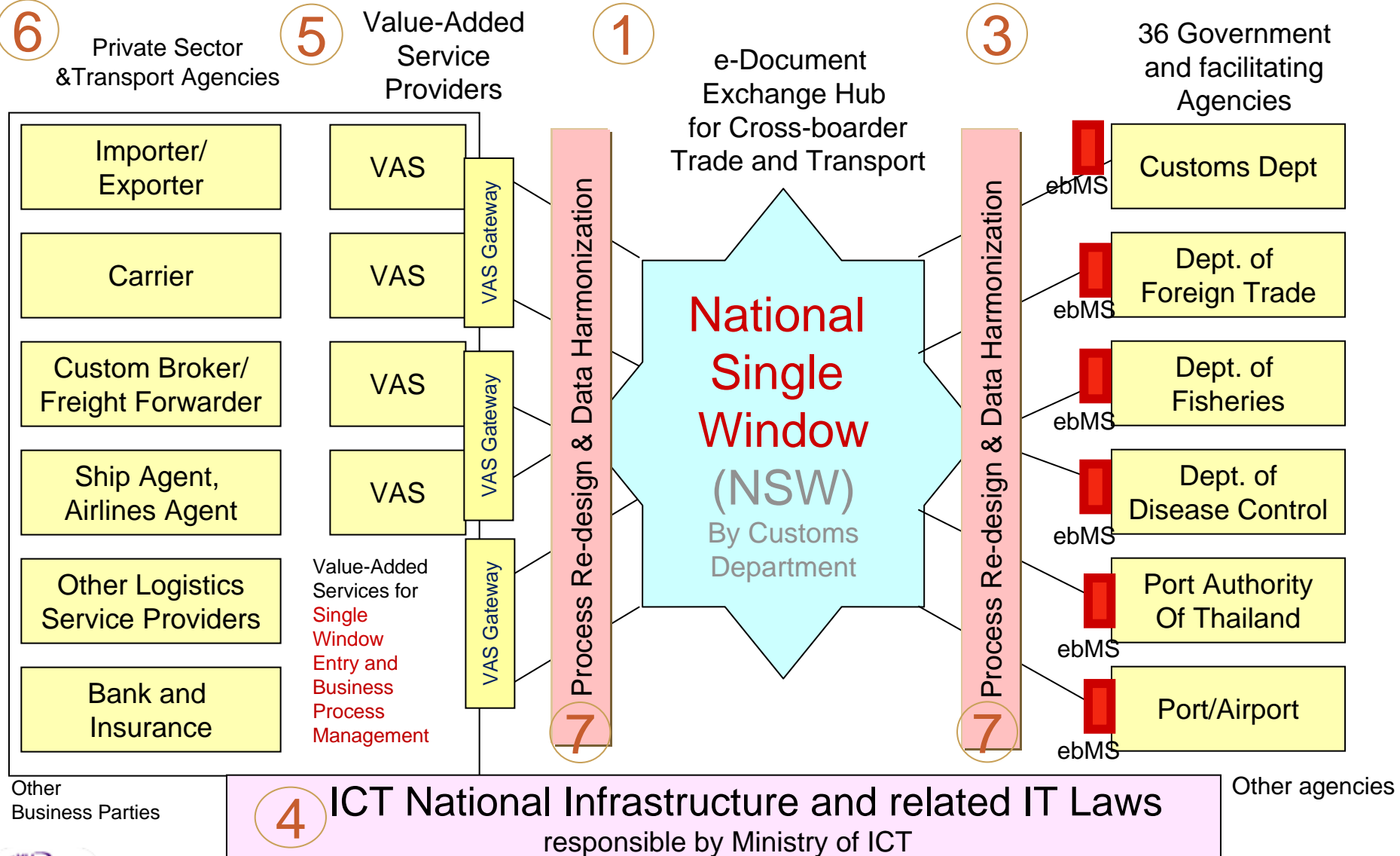
Case Examples & Discussion on SW high-level master plans

"To-Be" Thailand SW Architecture

A Case Example 2 (cont)

(referencing to
the SW Roadmap - Level 2)

2 Governance Mechanism – policy decision, service charge regulation, service level agreement etc.



Case Example – SW High-Level Project Plan version 2.0 (with Sub-Projects)

A Case Example 2 (cont)
(referencing to
the SW Roadmap - Level 2
and Level 3)

1. Preparation Projects

- ☐ Awareness Creation & Capacity Building Project (by Ministry of ICT)
- ☐ Business Process Re-design and Streamlining Rules & Regulation Project to support e-transaction via NSW (by Customs Department)
- ☐ Data Harmonization Project (by Customs Department)
- ☐ Interoperability Framework Project (to establish a national development standard for enabling interoperability across agencies and across different IT platforms) (by Ministry of ICT)

2. System Implementation Projects

- ☐ NSW-phase-1 (pilot) project for exchanging e-permits between 3 other government agencies with Customs Department. (by Customs Department)
- ☐ Backend-IT system implementation projects for 20 regulatory agencies (by each own department)
- ☐ NSW-phase-2 project for interconnecting 36 government agencies (by Customs Department)
- ☐ E-Port Development Project (Sea Port Community System) (by the Port Authority)
- ☐ Cross-border data exchange pilot project (by Customs Department and Ministry of Science)

3. Deployment and Change Management Project

- ☐ Awareness Creation, Training & Promotion Project (by Customs Department)

4. Other Supporting Projects

- ☐ Upgrading high-speed G2G infrastructure Project (by Ministry of ICT)
- ☐ Root CA (Certificate Authority) Development Project (by Ministry of ICT)

Summary

- ❑ An UNNExT Managerial Guide for SW Planning and Implementation, based on the SW Implementation Framework (SWIF) is recommended as a holistic and systematic framework and as a guide for policy managers and relevant stakeholders in planning, managing and implementing SW projects, including
 - The understanding of how the improvement of trade procedures and documentation can increase trade competitiveness of a nation.
 - The evolutionary development and roadmap of SW projects
 - A holistic SW Implementation Framework (SWIF) & Development Cycle
 - How to systematically prepare the SW architecture of the country, including key project components and deliverables
 - How to conduct the initial SW concept and the feasibility analysis
 - How to develop a High Level SW Master Plan
 - How to secure sustained support of key policy makers
 - How to put in place the effective inter-agency collaboration mechanisms
 - Step-wise SW project management phases include inception phase, detailed feasibility phase, planning phase, implementation oversight phase, and feedback phase.

An UNNExT Capacity Building Workshop on SW Planning and Implementation

during Global Trade Facilitation Conference 2011

14-15 December 2011, Geneva.

Training materials and case studies of several countries
are available in the following website:

<http://www.unece.org/tradewelcome/capacity-building-for-trade-facilitation/global-trade-facilitation-conference/capacity-building-workshop.html>



References

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- ❑ Eveline van Stijn, Thayanan Phuaphanthong, Somnuk Keretho, Markus Pikart, Wout Hofman, and Yao-Hua Tan, **"An Implementation Framework for e-Solutions for Trade Facilitation,"** in the book "Accelerating Global Supply Chains with IT Innovation," Springer, 2011.
- ❑ Thayanan Phuaphanthong, Tung Bui, and Somnuk Keretho, **"Harnessing Interagency Collaboration in Inter-organizational Systems Development: Lessons Learned from an E-government Project for Trade and Transport Facilitation,"** International Journal of Electronic Government Research (IJEGR), Vol. 6, No. 3, July-September 2010.
- ❑ **"Business Process Analysis to Simplify Trade Procedures",** UNNExT-UNESCAP/UNECE publication, 2010.
- ❑ Somnuk Keretho, **"UNNExT Managerial Guide for Single Window Planning and Implementation,"** UNNExT Workshop on SW Planning and Implementation, 14-15 December 2011, Geneva.
<http://www.unece.org/tradewelcome/capacity-building-for-trade-facilitation/global-trade-facilitation-conference/workshop-programme.html>

A Chinese Proverb

"If you don't know where you are going,
any road will do."

A Watts Humphrey's Proverb

"But if you don't know where you are,
a map won't help."

Deciding about the goal (where we want to go),
then having a guiding map will be quite useful,
but only if we can assess where we are now referencing to the map.

Thank You for Your Kind Attention



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