Process Analysis for Developing A Single Window - Case of Thailand

Dr. Somnuk Keretho
UNESCAP Consultant
Advisor to Ministry of Transport, and
Minister of Information and Communications Technology
for Thailand Single Window e-Logistics Project
Director, Institute for IT Innovation, Kasetsart University

Agenda

1. **Why** do we need "**Process Analysis**"?

2. **How** to perform "Process Analysis" of the *current* trade and transport related processes?

3. **The understanding** of the *current processes* provides opportunities for the next step (**the creation** of *future better processes*) – **Process Simplification**

4. **Recommendations**

1. Why do we need "Process Analysis"?

The purpose of process analysis is

- to understand the current processes and its attributes
  - *Who involved,*
  - *Procedures and documents required,*
  - *Related rules and regulations, and*
  - *Some quantitative indicators (e.g. number of steps, time & costs needed)*

Benefits of process analysis

- Understanding of the current situation
- Benchmarking with other countries
- Raising issues and priorities for improvement
- A stepping stone for the creation of future better processes, e.g. Process Simplification

Definition of "Process Analysis"

Process analysis is:

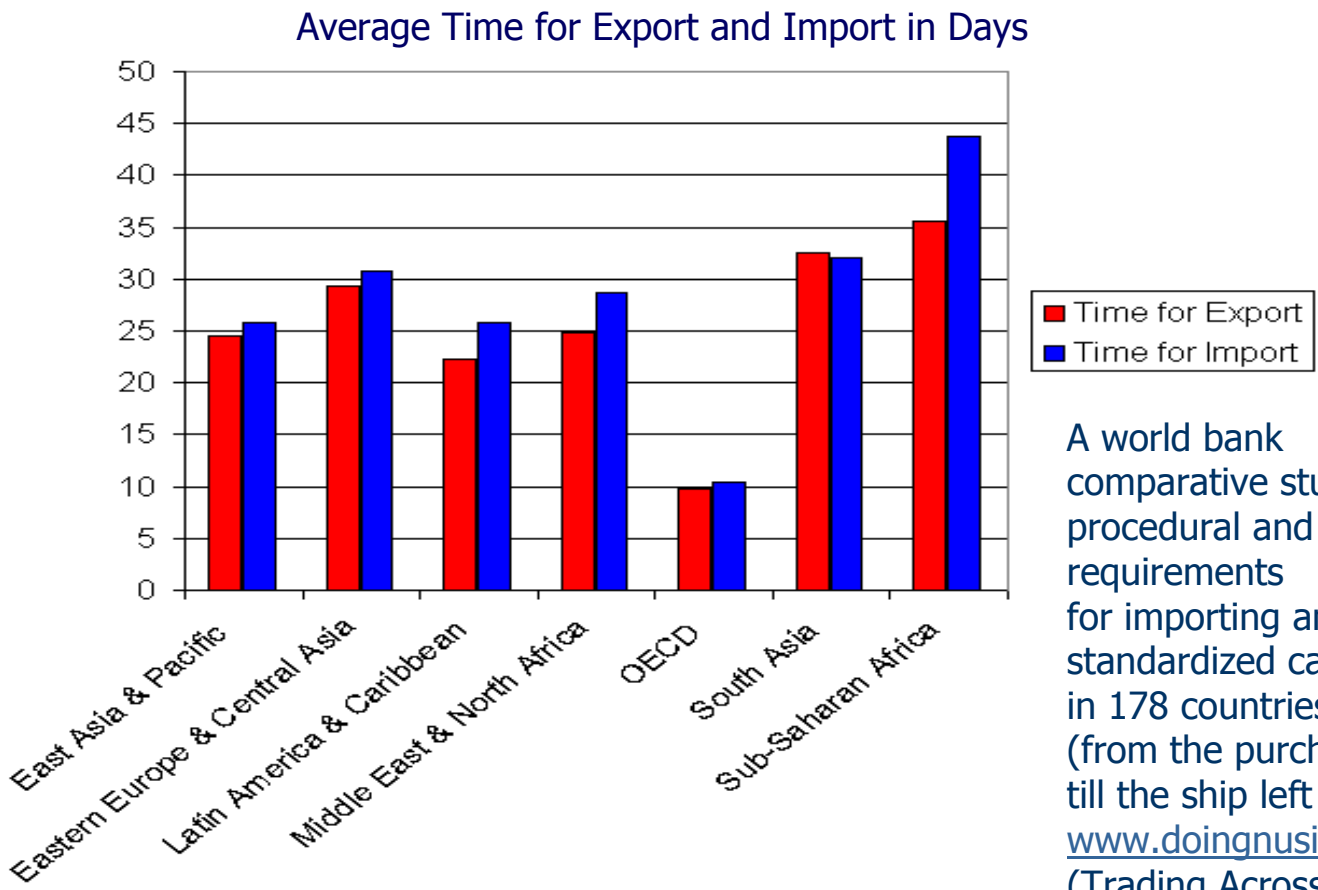
- A study of existing process 1) in normal situation and 2) in situations where exception takes place in order to gain insights on
  - *Who involved*
  - *Procedures and documents required, and*
  - *Related rules and regulations*
- An approach that facilitates
  - The development of *measurable and quantitative process indicators (e.g. number of steps, time & costs needed)*
  - The prioritization of initiatives for process improvement
  - Performance improvement

Components of "Process Analysis"

1. **Scope setting** – Specify a scope of processes to be analyzed
   - e.g. import and/or export processes of a specified product, through a certain mode of transportation (trucks, trains, ships or airplanes)
2. **Process definition** – Define and document a sequence of steps in actual practices and their attributes
   - *Who involved (stakeholders/actors)*
   - *Procedures and documents required (input to/output from),*
   - *Related rules and regulations*
3. **Problem analysis** – Develop measurable and quantitative process indicator *(e.g. the number of steps, time and costs required to fulfill those processes)*, locate bottlenecks and examine what causes them
4. **Recommendation development** – Determine how to eliminate each bottleneck and prioritize improvement actions

Process Analysis helps benchmarking our country efficiency on trading across borders

Some indicators help our policy makers to understand the important issues of improving our country competitiveness



A world bank comparative study on procedural and documents requirements for importing and exporting standardized cargos in 178 countries (from the purchase order, till the ship left its nearest port). www.doingnusiness.com, Dec 2007 (Trading Across Borders)

Trading Across Borders

Procedures and documents necessary to import and exports a standardized cargo of goods

Region (average data)	Documents for export (number)	Time for export (days)	Cost to export (US$ per container)
East Asia & Pacific	6.9	24.5	885.3
OECD	4.5	9.8	905
Middle East & North Africa	7.1	24.8	992.2
Latin America & Caribbean	7	22.2	1,107.50
South Asia	8.6	32.5	1,179.90
Eastern Europe & Central Asia	7	**29.3**	**1,393.40**
Sub-Saharan Africa	8.1	35.6	1,660.10

Economy	Documents for export (number)	Time for export (days)	Cost to export (US$ per container)
Hong Kong, China	4	6	525
Denmark	4	5	540
Sweden	4	8	561
Thailand	7	17	615
Sri Lanka	8	21	810
Afghanistan	12	67	2,500
Kyrgyz Republic	13	64	2,500
Uzbekistan	7	80	2,550
Azerbaijan	9	56	2,715
Kazakhstan	12	89	2,730
Tajikistan	10	82	3,000

By World Bank www.doingbusiness.org Dec 2007

Thailand

Procedures and documents necessary to import and exports a standardized cargo of goods

Nature of Export Procedures	Duration (days)	US$ Cost
Documents preparation	9	270
Customs clearance and technical control	1	50
Ports and terminal handling	4	75
Inland transportation and handling	3	220
Totals:	17	615
Nature of Import Procedures	**Duration (days)**	**US$ Cost**
Documents preparation	8	300
Customs clearance and technical control	2	66
Ports and terminal handling	2	200
Inland transportation and handling	2	220
Totals:	14	786

Export documents	Import documents
Bill of lading	Cargo release order
Certificate of origin	Commercial invoice
Commercial invoice	Consular invoice
Customs export declaration	Customs import declaration
Export license	Foreign exchange authorization
Packing list	Import license
Terminal handling receipts	Packing list
	Tax certificate
	Terminal handling receipts

Reference - World Bank: www.doingbusiness.org - Oct 2007

Azerbaijan

Procedures and documents necessary to import and exports a standardized cargo of goods

Nature of Export Procedures	Duration (days)	US$ Cost
Documents preparation	28	90
Customs clearance and technical control	10	250
Ports and terminal handling	5	375
Inland transportation and handling	13	2000
Totals:	56	2715

Nature of Import Procedures	Duration (days)	US$ Cost
Documents preparation	28	90
Customs clearance and technical control	8	80
Ports and terminal handling	6	375
Inland transportation and handling	14	2400
Totals:	56	2945

Export documents	Import documents
Bill of lading	Bill of lading
Certificate of origin	Cargo release order
Commercial invoice	Certificate of origin
Customs export declaration	Commercial invoice
Export license	Contract with supplier
Packing list	Customs import declaration
Power of attorney	Customs transit document
Selling contract	Import license
Transit document	Packing list
	Shipping invoice
	Tax certificate
	Technical standard/health certificate
	Terminal handling receipts
	Transit document

Sweden

Procedures and documents necessary to import and exports a standardized cargo of goods

Nature of Export Procedures	Duration (days)	US$ Cost
Documents preparation	2	66
Customs clearance and technical control	1	37
Ports and terminal handling	1	165
Inland transportation and handling	4	293
Totals:	8	561
Nature of Import Procedures	**Duration (days)**	**US$ Cost**
Documents preparation	2	124
Customs clearance and technical control	1	37
Ports and terminal handling	2	165
Inland transportation and handling	1	293
Totals:	6	619

Export documents	Import documents
Bill of lading	Bill of lading
Commercial invoice	Commercial invoice
Customs export declaration	Customs import declaration
Technical standard/health certificate	

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).

Agenda

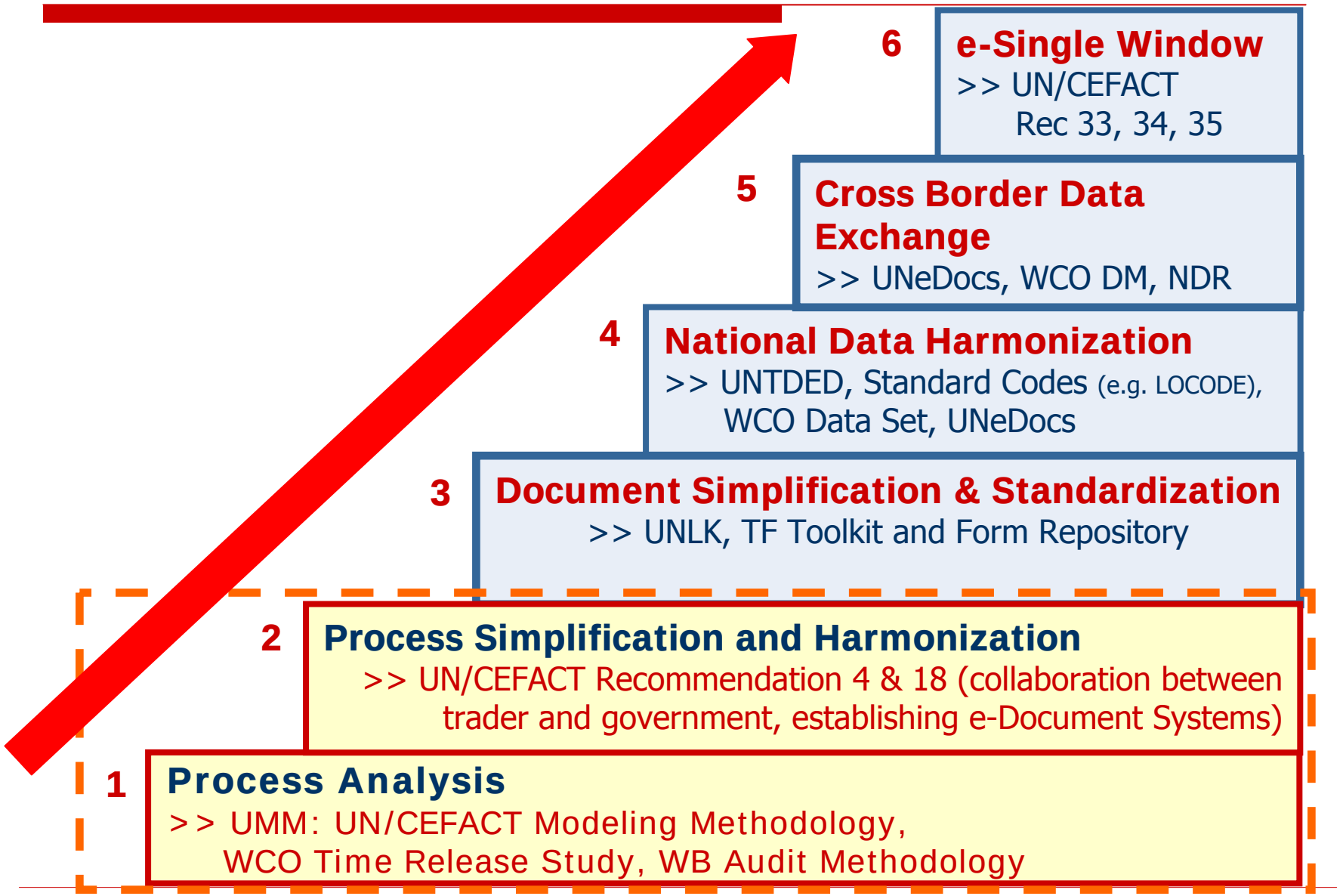
1. **Why** do we need "**Process Analysis**"?

2. **How** to perform "Process Analysis" of the *current* trade and transport related processes?

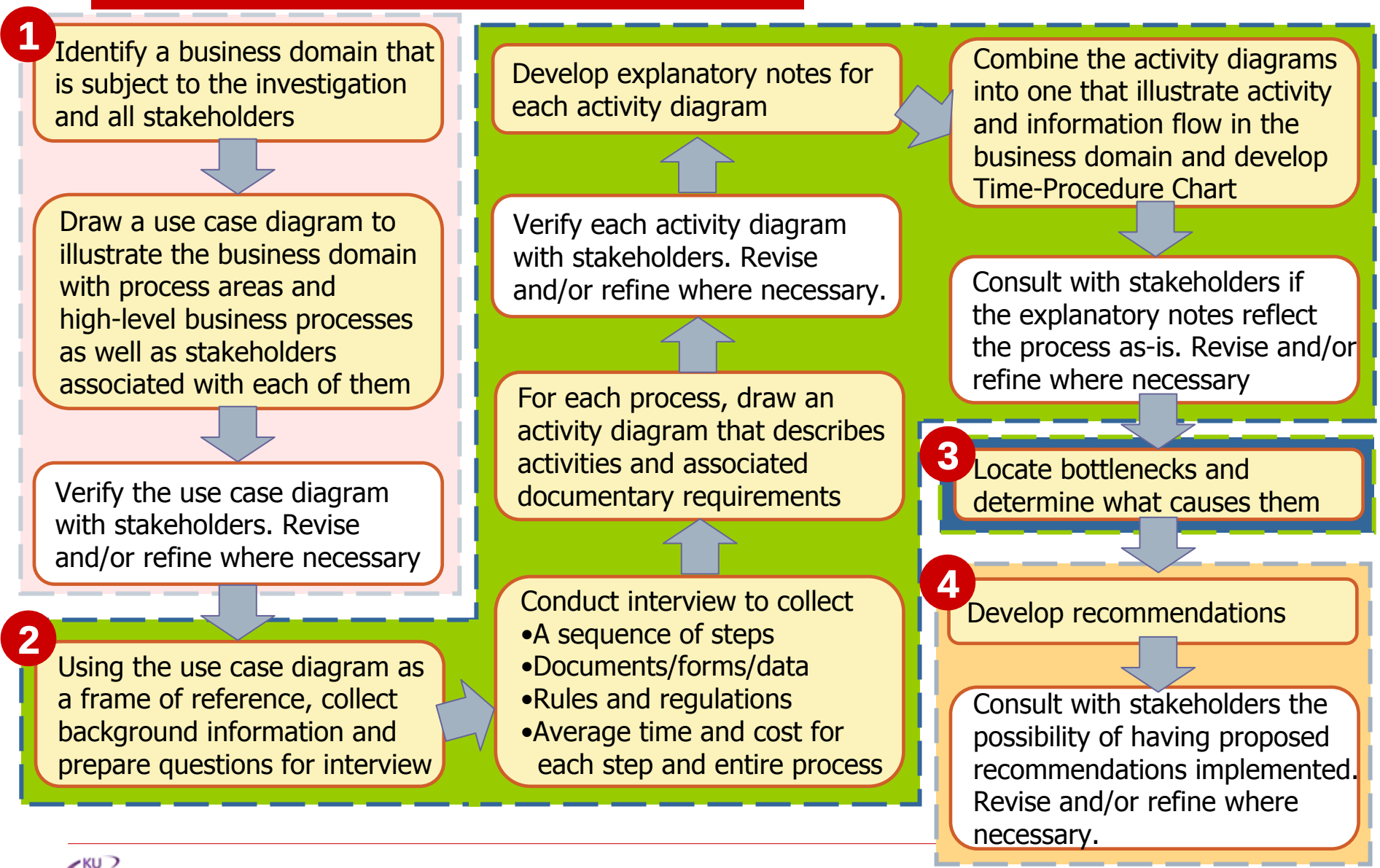
3. **The understanding** of the *current processes* provides opportunities for the next step (**the creation** of *future better processes*) – **Process Simplification**

4. **Recommendations**

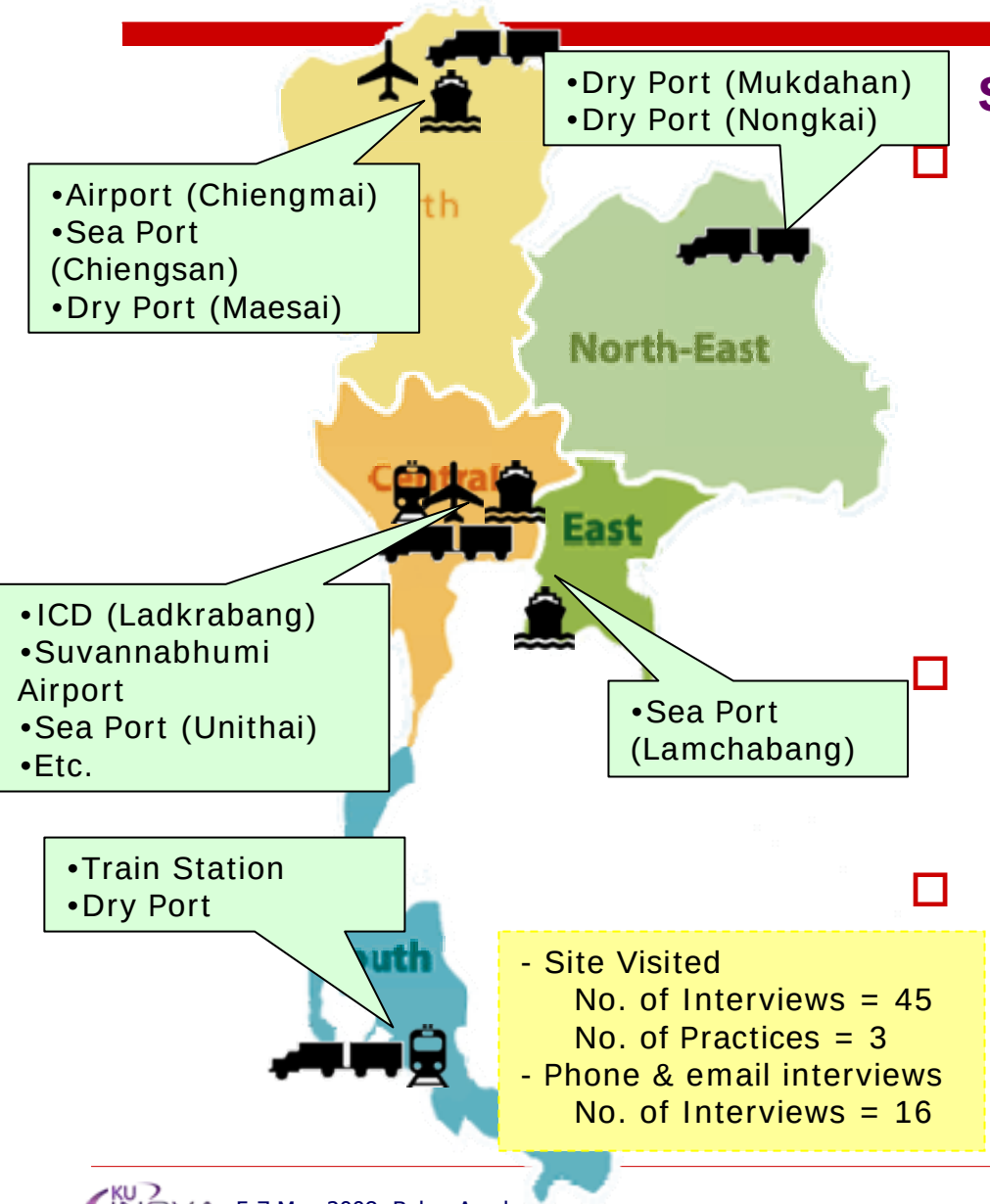
Step by Step towards e-Single Window



Steps for Process Analysis and Simplification



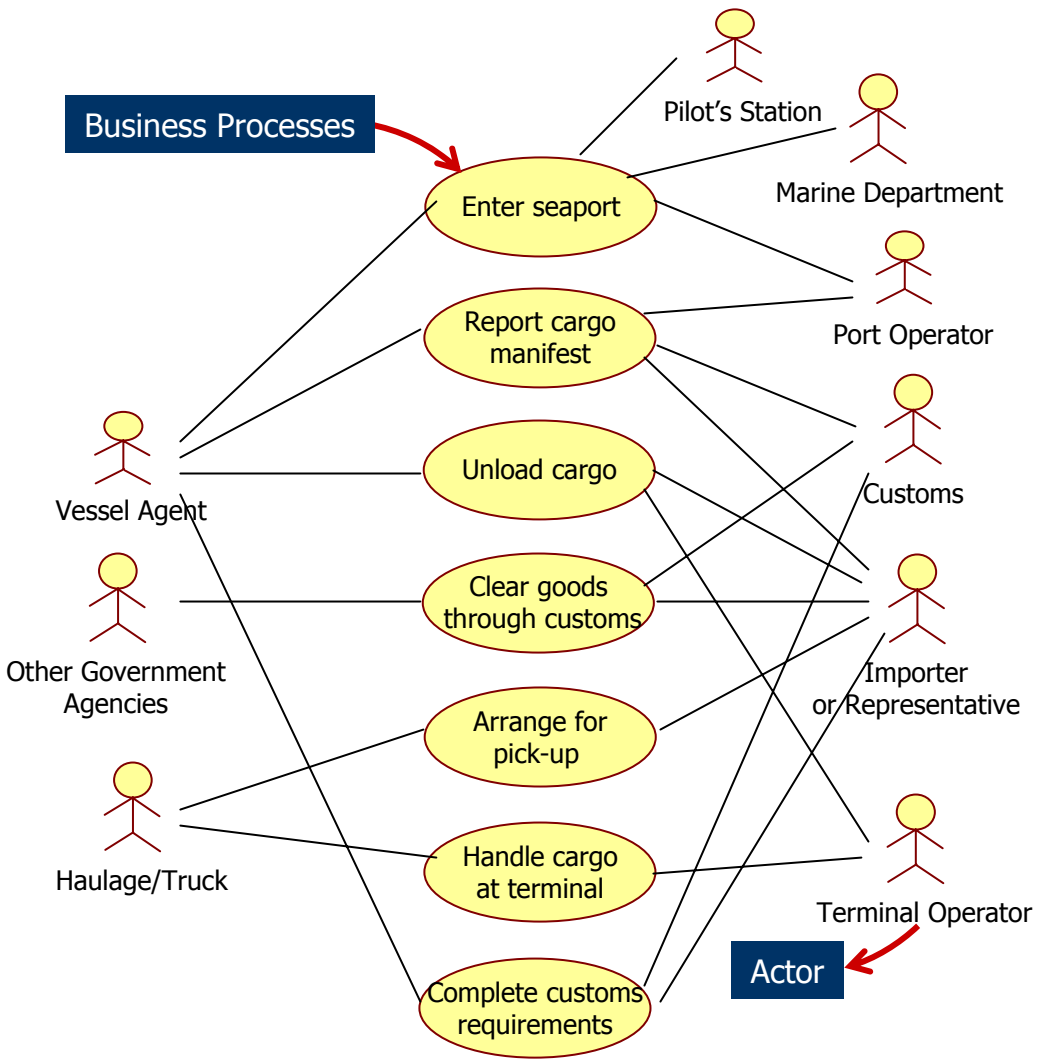
1. Define Project Scope



Scope Example

- Regulatory and business requirements related to the operation and management of port before, upon, and after the movement of containerized *import and export ordinary cargoes* through all modes of transportations (***road, rail, air, and sea***)
  - Carrier scheduling for port use
  - Cargo handling
- Import
  - Starting point: when a carrier enters port
  - Ending point: when cargo is picked up and transferred to an importer
- Export
  - Starting point: when purchase order issued
  - Ending point: when cargo is on board and ready to be transferred to the country of importer

1. Setting Scope for Implementation:
Importation by Sea



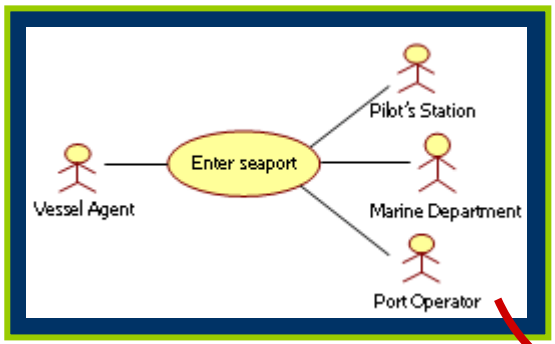
Draw a **use case diagram** to illustrate the business domain with process areas and high-level business processes as well as stakeholders associated with each of them

Examples: Capturing the Stakeholders who're involved in Importation by Air

- Vessel Agent
- Pilot's Station
- Marine Department
- Port Operator
- Customs
- Other Government Agencies
- Importer or Representative
- Terminal Operator
- Haulage/Truck

2. Process Definition

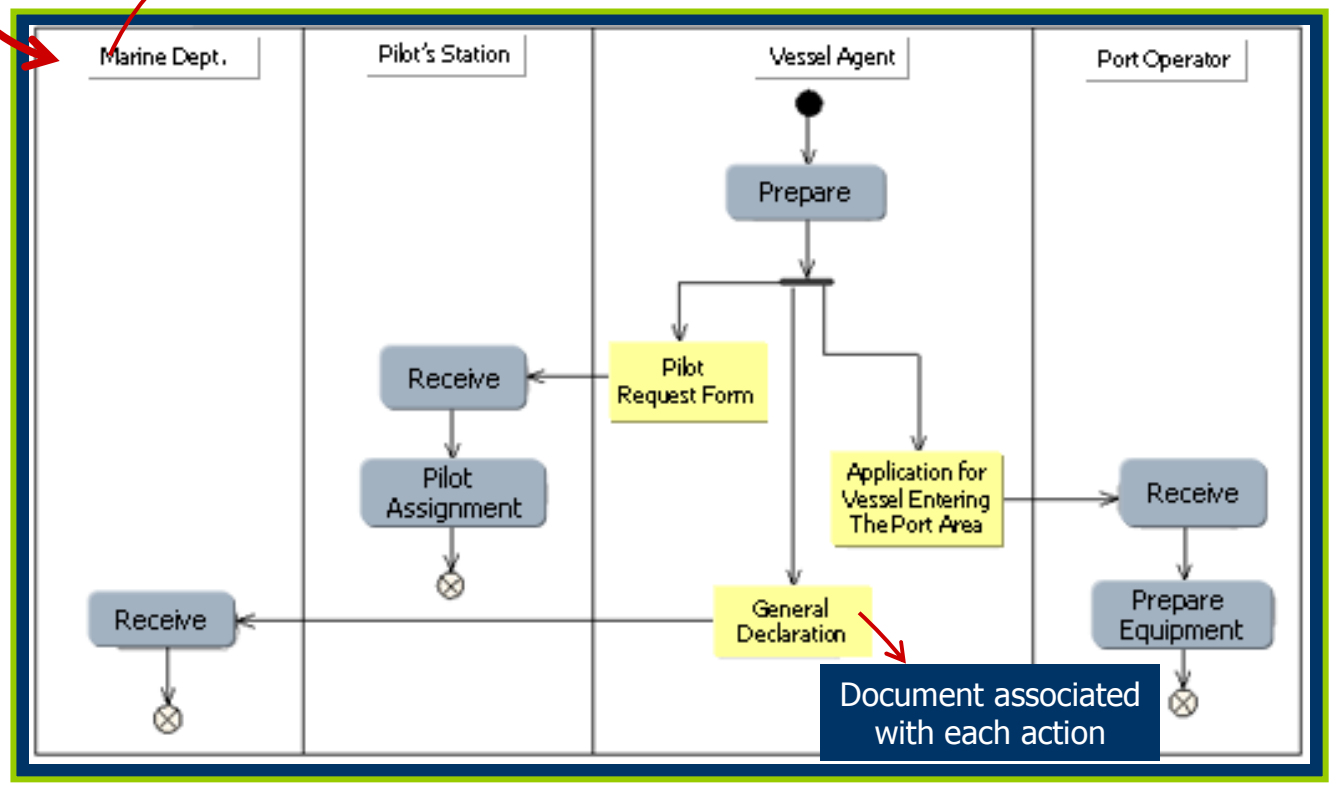
A Vessel Entering the Seaport (existing)



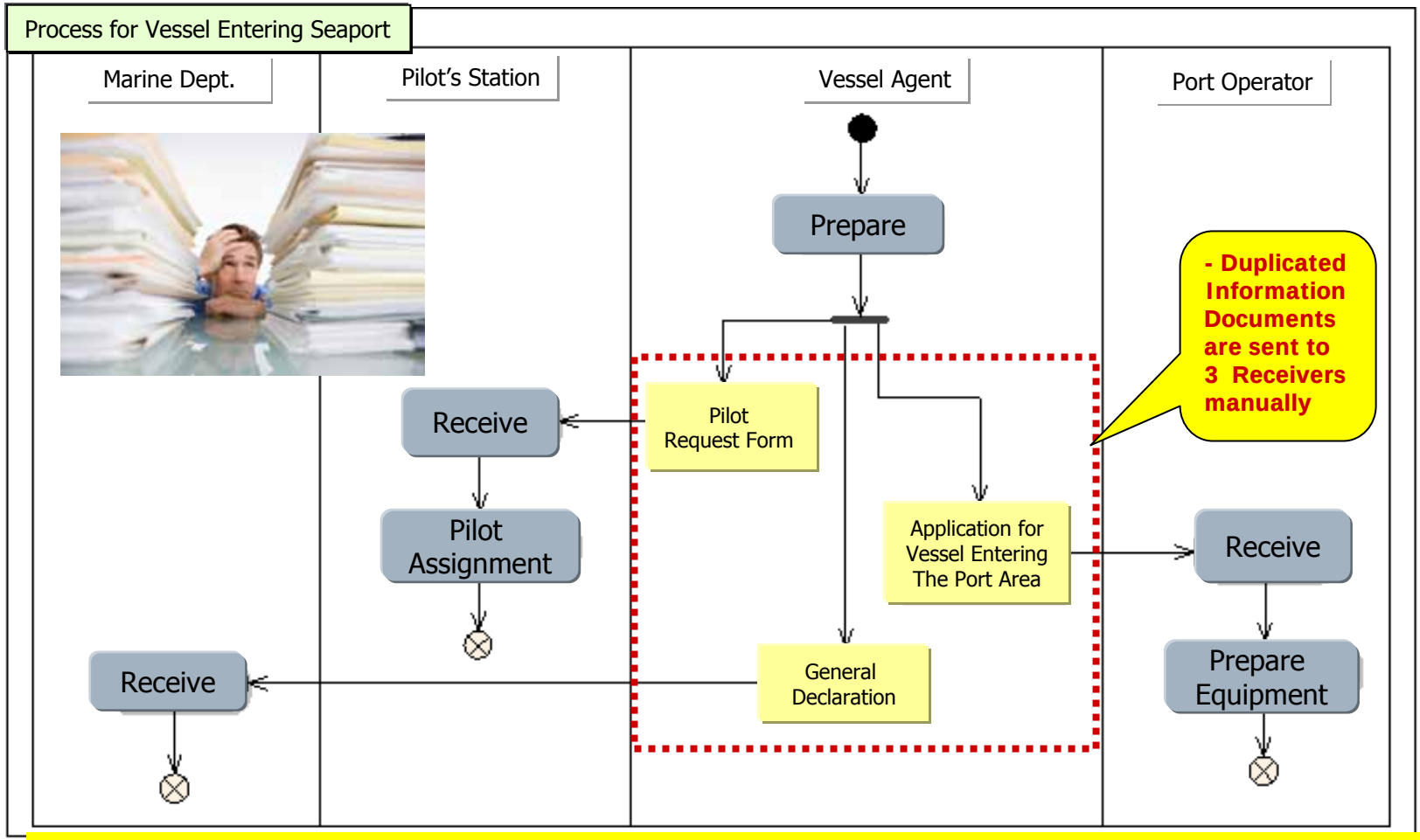
For each process, draw an **activity diagram** that describes activities and associated documentary requirements

Swimlane shows a boundary of activities to be carried out by a responsible actor.

Sequence of actions carried out to achieve a specific goal



3. Problem Analysis:
A Vessel Entering the Seaport (existing)

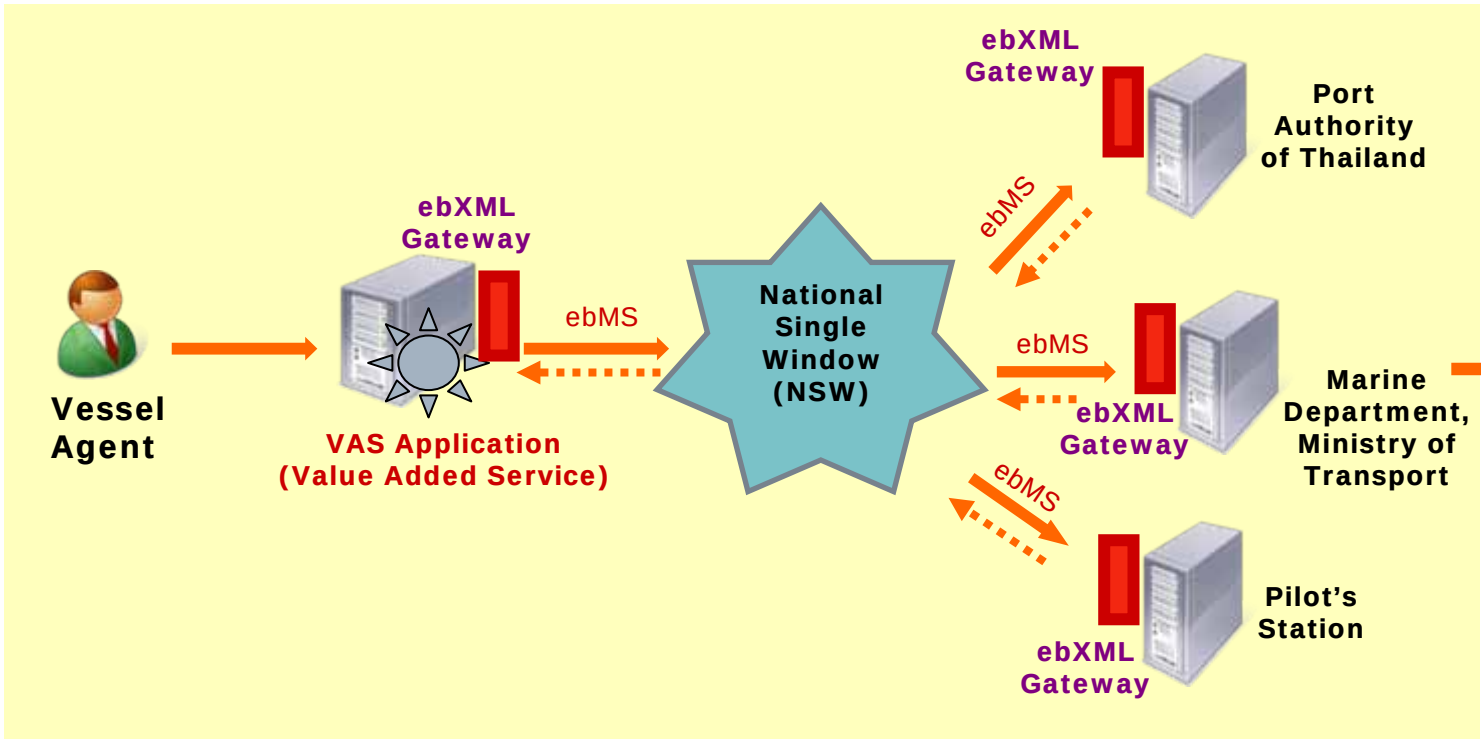


Problems :

- **Duplicated Information**
- **High Cost and Time for sending and receiving documents**
- **Data Inconsistency**

4. Recommendation Development:
Automation of Vessel Entering the Seaport Process

(e.g. reducing the number of steps, or number of documents, …establishing a system that supports e-document submission, and e-document exchange between agencies)

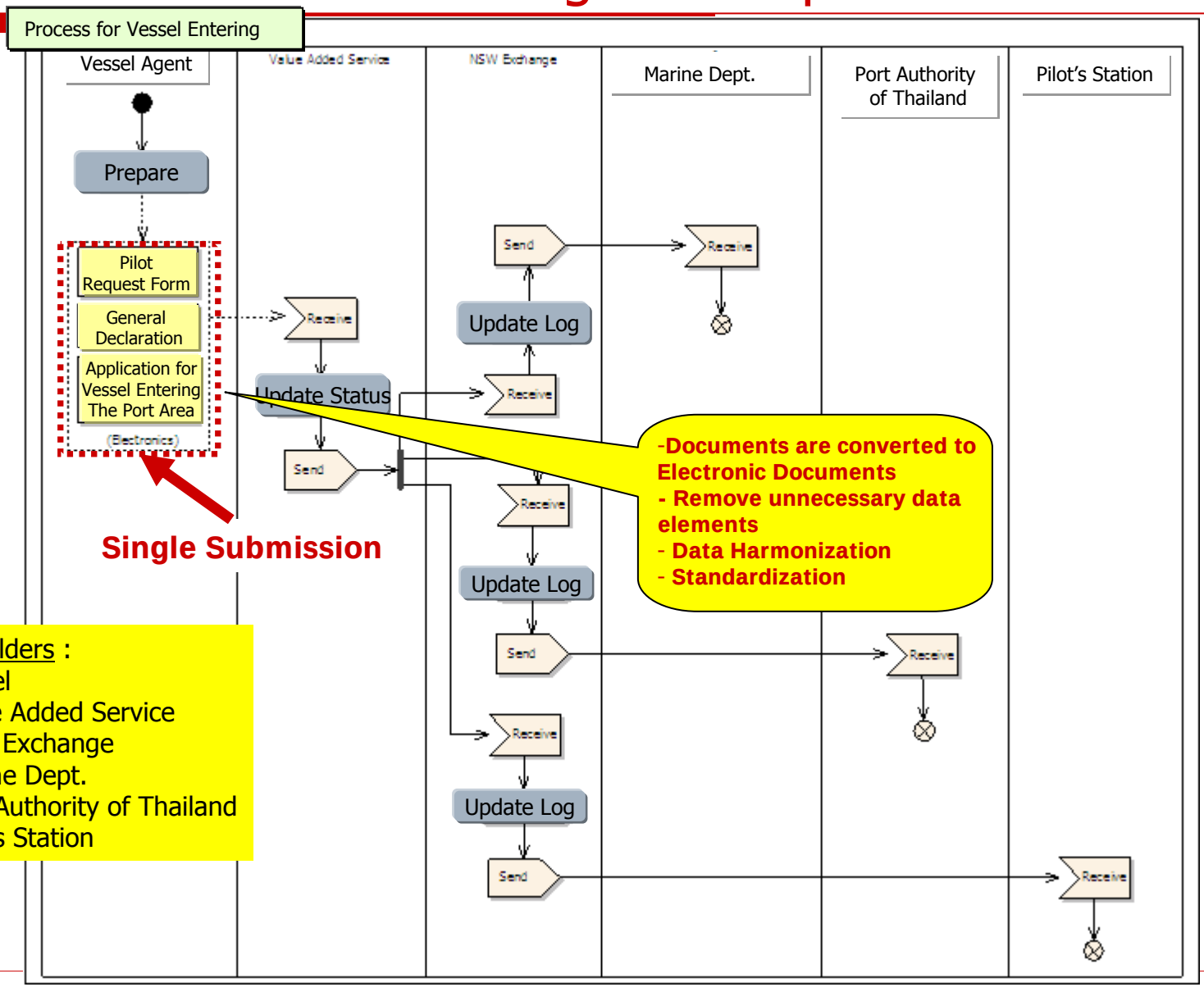


Business to Government (B2G) – *One to Many*

- **Government to Government (G2G) Data Exchange**
- **Automatic e-Document Workflow**
- **National Single Window Exchange**

4. Process Simplification:

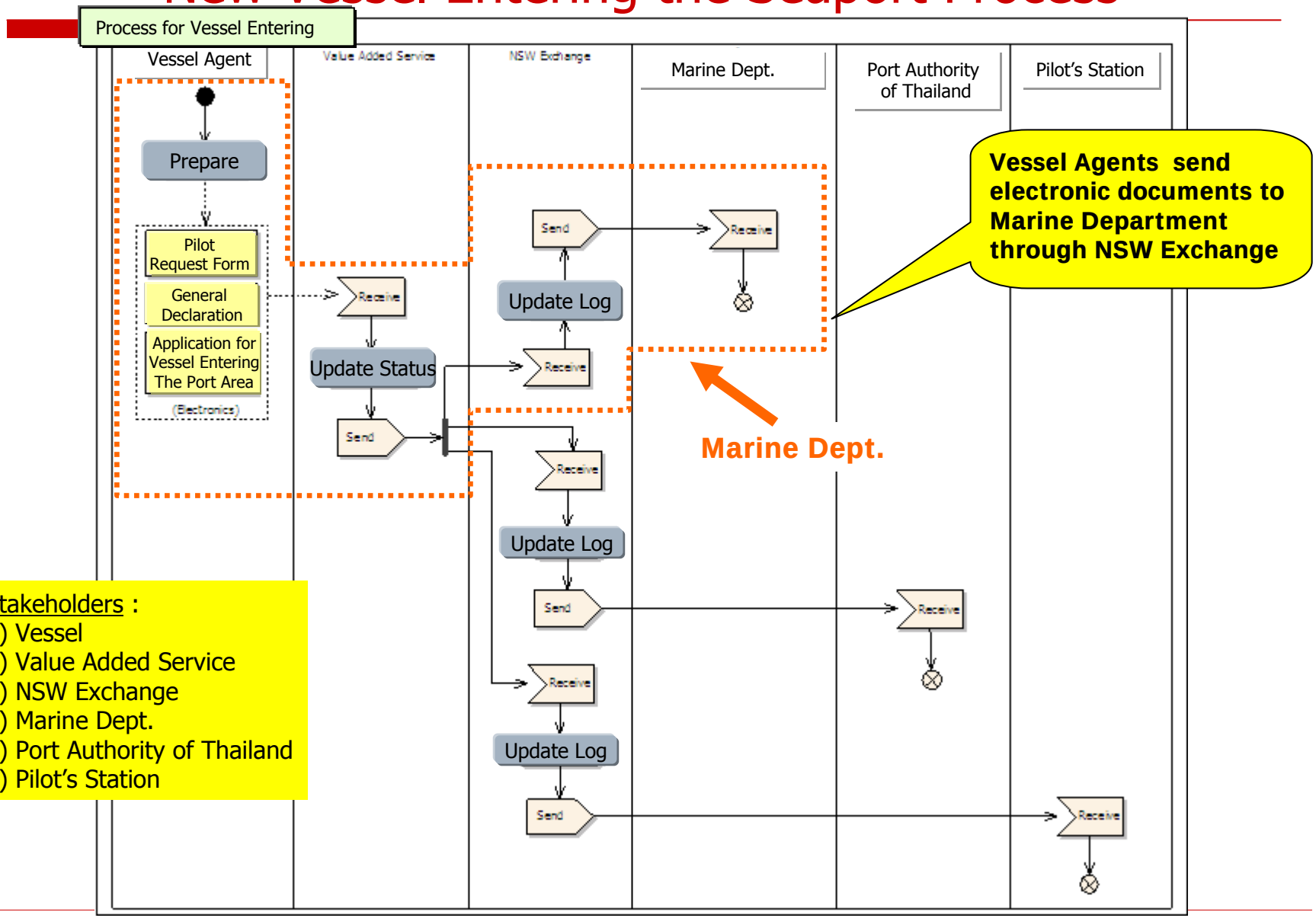
New Vessel Entering the Seaport Process



Stakeholders :
1) Vessel
2) Value Added Service
3) NSW Exchange
4) Marine Dept.
5) Port Authority of Thailand
6) Pilot's Station

4. Process Simplification:

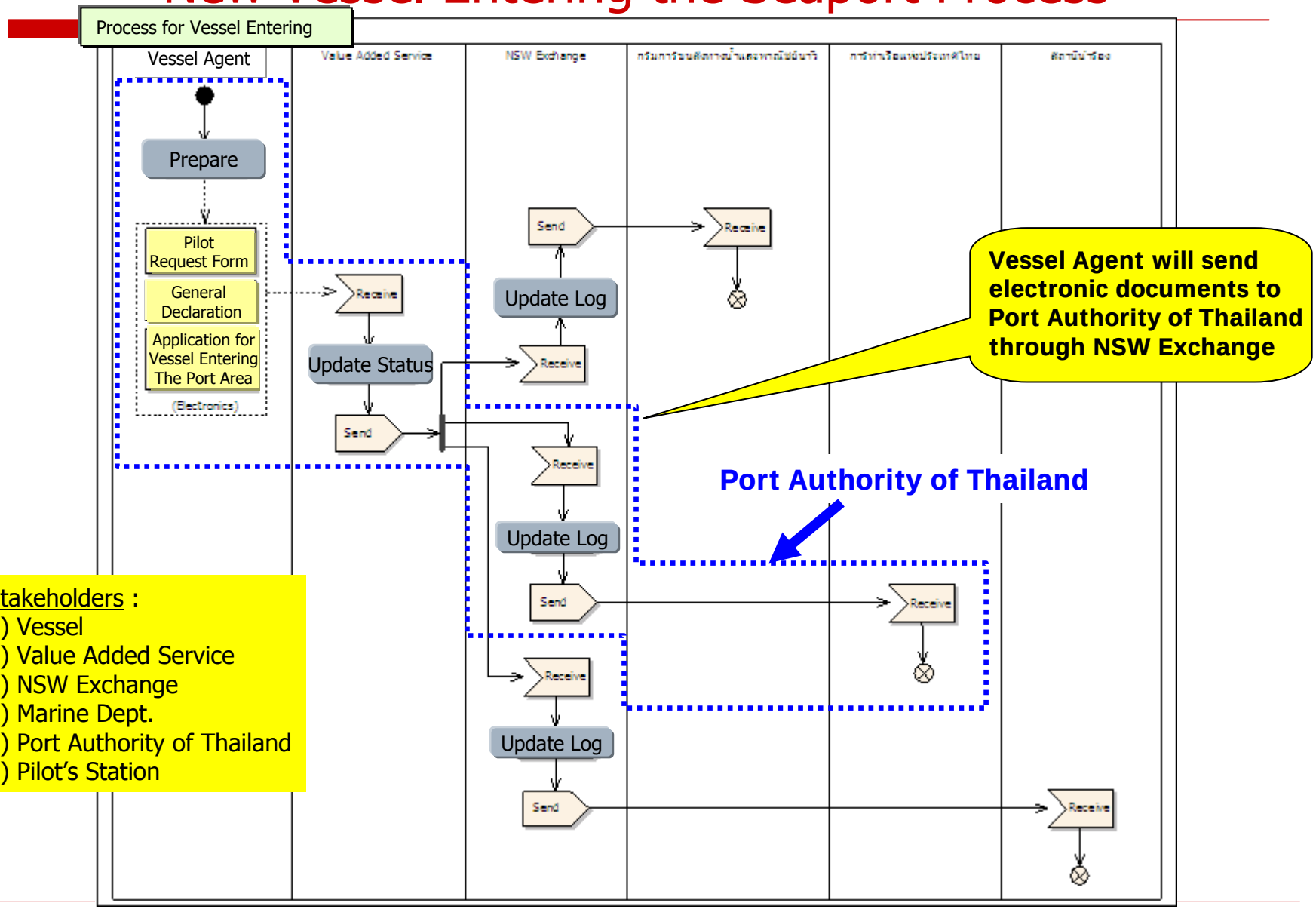
New Vessel Entering the Seaport Process



Stakeholders :
1) Vessel
2) Value Added Service
3) NSW Exchange
4) Marine Dept.
5) Port Authority of Thailand
6) Pilot's Station

4. Process Simplification:

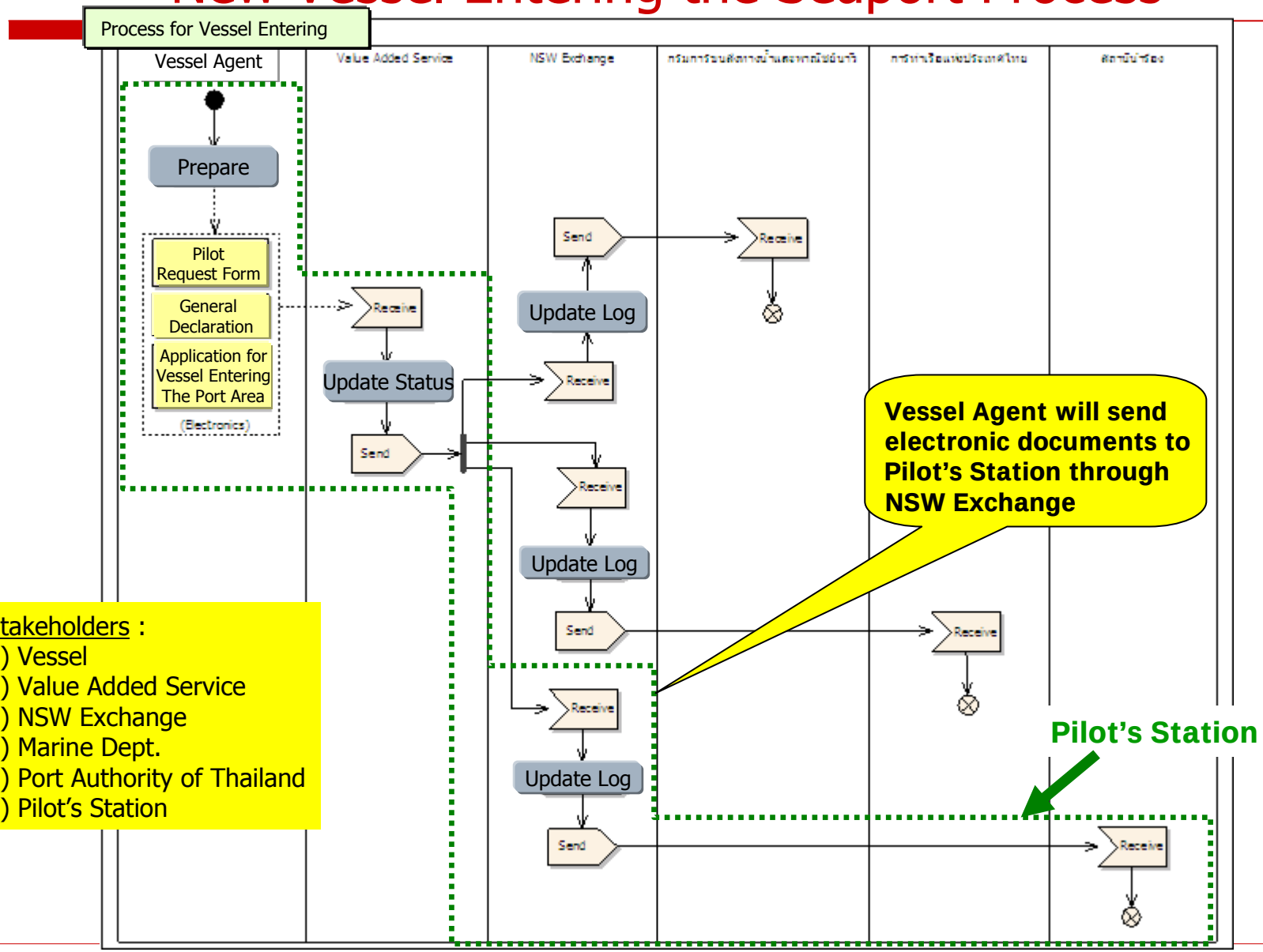
New Vessel Entering the Seaport Process



Stakeholders :
1) Vessel
2) Value Added Service
3) NSW Exchange
4) Marine Dept.
5) Port Authority of Thailand
6) Pilot's Station

4. Process Simplification:

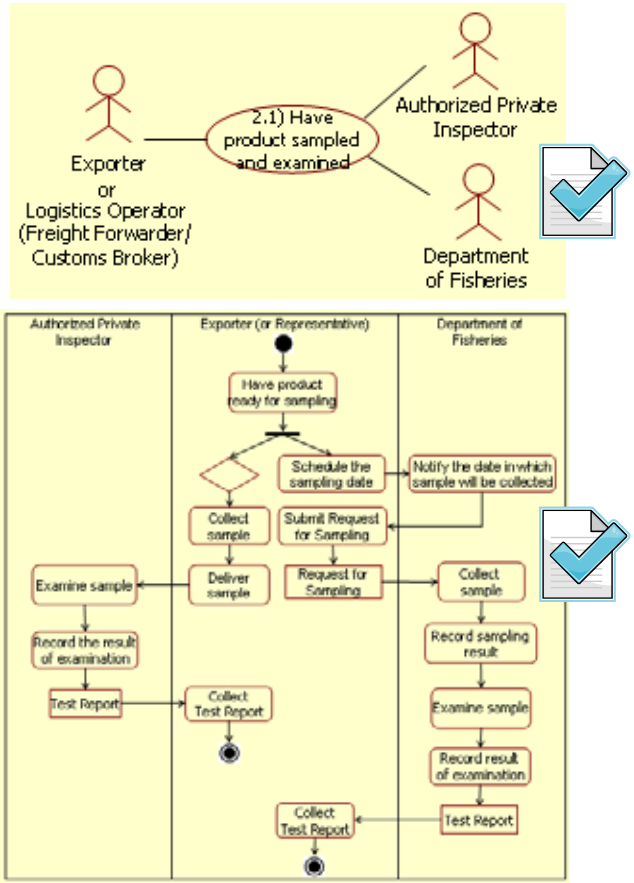
New Vessel Entering the Seaport Process



Stakeholders :
1) Vessel
2) Value Added Service
3) NSW Exchange
4) Marine Dept.
5) Port Authority of Thailand
6) Pilot's Station

Verification and Validation

e.g. through several rounds peer reviews of experts, practitioners and stakeholders



Reviewing and Approving

Stakeholders

Summary of a study: Number of Steps Export*

Transport Mode	No. of Actions (Existing)	Expected No. of Actions (Future)	Expected No. of reduced Actions	Expected No. of reduced Actions (%)
Export by Ship	**54**	**47**	**7**	**12.96**
Export by Airplane	**85**	**65**	**20**	**23.53**
Export by Truck	**35**	**16**	**19**	**54.29**
Export by Train	**49**	**18**	**31**	**63.27**
Export from ICD	**79**	**57**	**22**	**27.85**

* A process analysis study commissioned by Thailand Ministry of Transport, 2008 including the study of relevant rules, regulations and normal practices.

* Remark : No. of Actions = No. of Manual Actions of Business Process for Export

Summary of a study: Usage Time for Export

Transport Mode	Existing Usage Time (day)	Expected Usage Time (day)	Expected Reduced Time (day)	Expected Reduced Time (%)
Export by Ship	**22**	**15**	**7**	**31.82**
Export by Airplane	**12**	**9**	**3**	**25.00**
Export by Truck	**12**	**7**	**5**	**41.67**
Export from ICD	**11**	**9**	**2**	**18.18**

** Criteria
- Reduce time for Traveling, Sending and Receiving Documents by humans
- Reduce time for Preparing Documents for next step
- Reduce time for Making Payment
- Reduce time for Searching Information
- Reduce time for Verifying Information

Summary of a study: Number of Steps for Import

Transport Mode	No. of Actions (Existing)	Expected No. of Actions (Future)	Expected No. of reduced Actions	Expected No. of reduced Actions (%)
Import by Ship	**68**	**34**	**34**	**50.00**
Import by Airplane	**96**	**45**	**51**	**53.13**
Import by Truck	**17**	**13**	**4**	**23.53**
Import by Train	**53**	**25**	**28**	**52.83**
Import by ICD	**73**	**46**	**27**	**36.99**

* Remark : No. of Actions = No. of Manual Actions of Business Process for Export

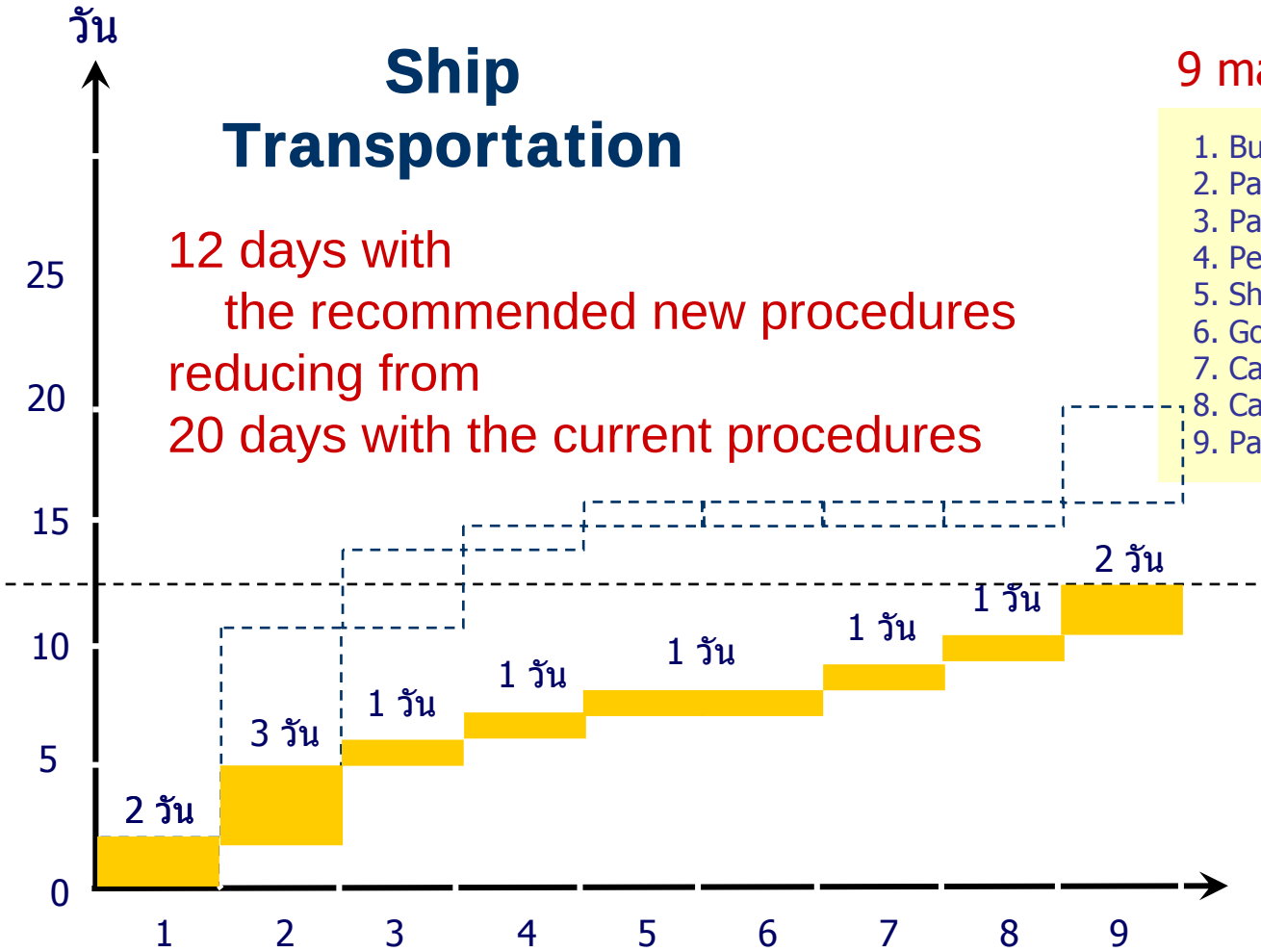
Summary of a study: Usage Time for Import

Transport Mode	Existing Usage Time (day)	Expected Usage Time (day)	Expected Reduced Time (day)	Expected Reduced Time (%)
Import by Ship	**20**	**12**	**8**	**40.00**
Import by Airplane	**10**	**8**	**2**	**20.00**
Import by Truck	**10**	**7**	**3**	**30.00**
Import by Train	**11**	**9**	**2**	**18.18**

** Criteria (following UN/CEFACT Recommendation No 18, and other)
- Reduce time for Traveling, Sending and Receiving Documents by humans
- Reduce time for Preparing Documents for next step
- Reduce time for Making Payment
- Reduce time for Searching Information
- Reduce time for Verifying Information

Time and Procedure Chart

illustrating number of days and main procedures needed for exporting through trucks across a border

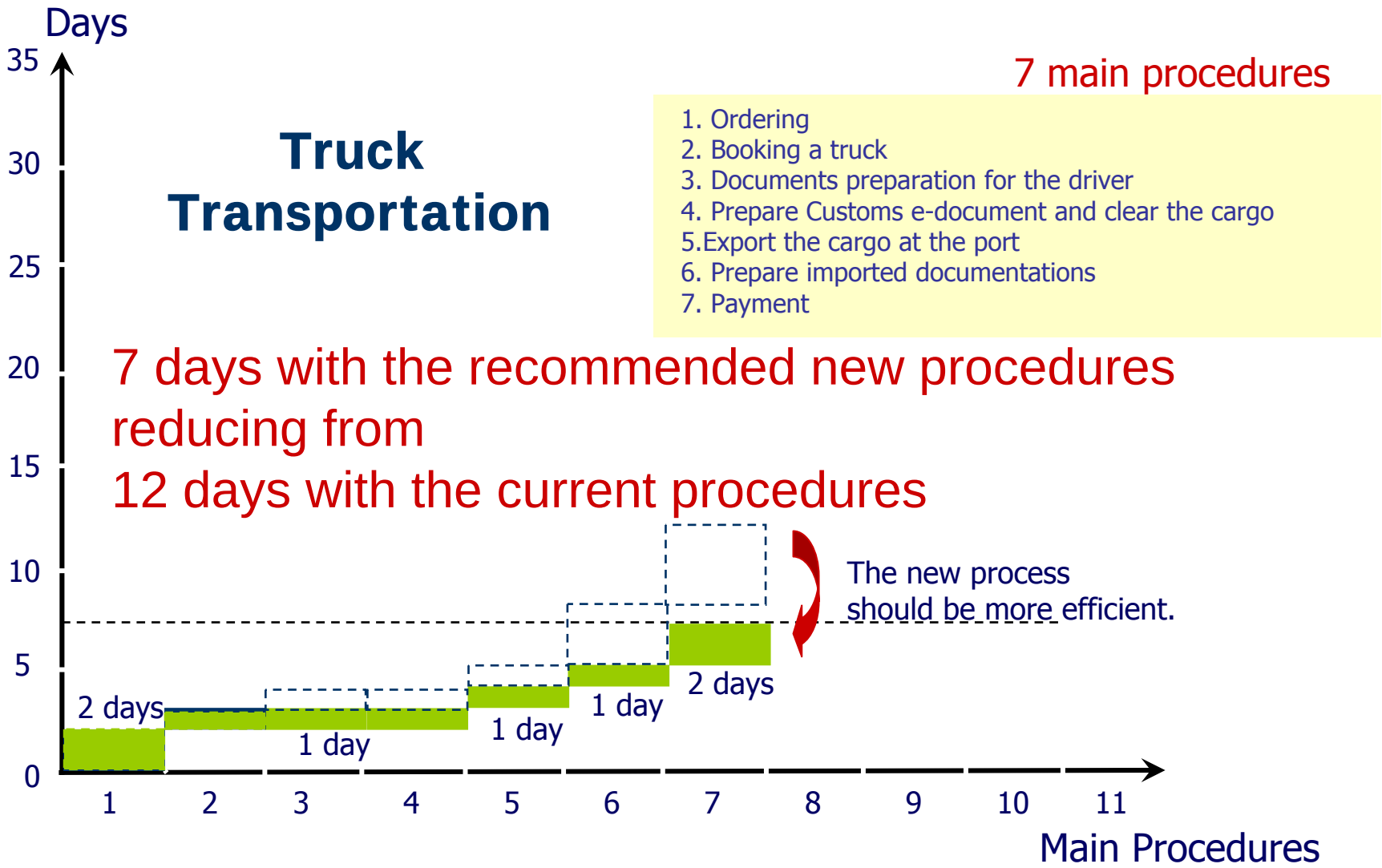


9 main procedures

1. Buy (order)
2. Paper preparation before import
3. Paper work during the import
4. Perform cargo insurance
5. Ship docking at the sea port
6. Goods on the ship reporting
7. Cargo Checking on board
8. Cargo Clearance
9. Payment Handling

Time and Procedure Chart

Illustrating number of days and main procedures needed for exporting through trucks across a border



Benefits from Process Analysis & Simplification

- Understanding of our own current situations
- Benchmarking with oneself or other better practices
- Raising issues and priorities for further improvement
- Guiding IT Development for related government agencies and business sectors, and also National Single Window Development
- Providing an expectation or impact of the new process recommendations and its IT-supported systems
- Guiding elimination of duplicated data

Recommendations

The concept

- Assessing the current situations of our own organization (processes and documents required for import/export goods across the border),
- And always looking for opportunities to improve
- Securing resources and team for this exercise

Recommendations

The practices

- Process Analysis & Simplification should be an important exercise on a regular basis (e.g. annually)
- Process Analysis Components should be considered
  - Process Scope Setting
  - Process Definition
  - Process Analysis
  - Process Improvement/Recommendations
- Visualizing those processes with diagrams (pictures), e.g. Activity Diagram using UML notations, tables showing indicators, time-procedure chart
- Verification and Validation of the process analysis results is very crucial for correction and completeness
- Using UN/CEFACT Recommendation 18 and other for Process Improvement/Simplification Measures

End

sk@ku-inova.org