Single Window (SW) and Paperless Trade Implementation

Success Factors, Lessons Learned & Emerging Trends

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ESCAP-ARTNET/ITD Regional Workshop on Trade Facilitation for Sustainable Development
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United Nations Conference Centre, Bangkok
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 Transform
  ▪ DevOps Environment
  ▪ Cloud Computing & Data Analytics
Trade Facilitation (SW/Paperless trade implementation) = Trade Process Reform =

1. Capturing the as-is process, e.g. strength, weaknesses, Improvement opportunities

2. Recommending better “to-be” process

3. Implementing the new “to-be” process

4. Adopting the change

Continuous Improvement in Process Reform (for better, faster, less cost trading across borders)
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**

**Information/Documents** (up to 300 document types*)

- **Traders**
- **Banks**
- **Importers**
- **Traders**
- **Exporters**
- **Customs Brokers**
- **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**

**Our Improvement Opportunities**

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

* Refering to “Thailand Case”
## WB Trading Across Border Indicators (2018)*

<table>
<thead>
<tr>
<th>Economy</th>
<th>Trading Across Borders DTF</th>
<th>Trading Across Borders rank</th>
<th>Time to export: Border compliance (hours)</th>
<th>Cost to export: Border compliance (USD)</th>
<th>Time to export: Documentary compliance (hours)</th>
<th>Cost to export: Documentary compliance (USD)</th>
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<tbody>
<tr>
<td>East Asia &amp; Pacific</td>
<td>69.97</td>
<td>102</td>
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<td>387.5</td>
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<td>112.1</td>
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<td>Europe &amp; Central Asia</td>
<td>83.96</td>
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<td>28.0</td>
<td>191.4</td>
<td>27.9</td>
<td>113.8</td>
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<td>Latin America &amp; Caribbean</td>
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<td>101</td>
<td>62.5</td>
<td>526.5</td>
<td>53.3</td>
<td>110.4</td>
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<td>Middle East &amp; North Africa</td>
<td>58.07</td>
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<td>62.6</td>
<td>464.4</td>
<td>74.3</td>
<td>243.6</td>
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<td>OECD high income</td>
<td>93.92</td>
<td>25</td>
<td>12.7</td>
<td>149.9</td>
<td>2.4</td>
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<td>South Asia</td>
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<td>59.4</td>
<td>369.8</td>
<td>77.0</td>
<td>179.5</td>
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<td>Sub-Saharan Africa</td>
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<td>100.1</td>
<td>592.1</td>
<td>87.8</td>
<td>215.1</td>
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<td>Korea, Rep.</td>
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<td>13</td>
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<td>11</td>
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<td>Thailand</td>
<td>84.10</td>
<td>57</td>
<td>51</td>
<td>223</td>
<td>11</td>
<td>97</td>
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<tr>
<td>Myanmar</td>
<td>47.67</td>
<td>163</td>
<td>142</td>
<td>432</td>
<td>144</td>
<td>140</td>
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</tbody>
</table>

* of 187 economies
Tools – UNESCAP Trade & Transport Facilitation Monitoring Mechanisms Guide

Towards a National Integrated and Sustainable Trade and Transport Facilitation Monitoring Mechanism: BPA+

BPA + TRS + TCD Methodology

A Business Process Analysis

Time-Procedure Chart

Day

1. Pay - 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

The model

Transport to port of origin
Transport to sea port
Wait at sea port
Wait at border crossing/change transport mode

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

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

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

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

1. Registration
2. Applications
3. Verification
4. Task Scheduling
5. Inspection
6. Payment
7. Issuance of Certificate

- **Phase 1:** Develop the system to cover e-Registration, e-Applications Submission, and e-Verification information systems.

- **Phase 2:** Extend further to cover Task Scheduling, and Inspection Report submission electronically with Internet-enabled Mobile Tablets.

- **Phase 3:** Extend to e-Payment of services and fees

- **Phase 4:** Issue electronic Phyto-Sanitary Certificates

* Phasing can be designed as appropriated.
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 and quota validation.
Exchanging of e-Permits and e-Certificates Information from other regulatory agencies with Customs Department

Coordinated inter-agency border clearance

Customs Dept.

Dept. of Agriculture
Dept. of Fisheries

Bank
1
2
3

Payment Instruction
Invoice

Import Customs Declaration

Traders

e-Permit/e-Cert Information

e-Permit and e-Cert Information
e.g. e-CITES Import Permits, e-PC, Fertilizer Import e-Permits ....

Paper-base Flow
Electronic Information Flow
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
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.
### Inter-agency Process Re-design: for Sugar Export Procedures

**Export** (13 Laws and Regulations)

<table>
<thead>
<tr>
<th>Process Reduction</th>
<th>Paper Reduction</th>
<th>Time Reduction</th>
<th>Cost Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>37%</td>
<td>100%</td>
<td>55%</td>
<td>96% (บาท/ครั้ง)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>As-Is</th>
<th>To-Be</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Steps</td>
<td>17</td>
</tr>
<tr>
<td>Form Docs</td>
<td>154-156</td>
</tr>
<tr>
<td>Days</td>
<td>67</td>
</tr>
<tr>
<td>Transport Cost</td>
<td>5,260</td>
</tr>
<tr>
<td>Paper cost</td>
<td>58</td>
</tr>
</tbody>
</table>

**5 Government Agencies**
- MOC: Dept. of Foreign Trade
- MOAC: Dept. of Agriculture
- MOI: Sugar and Sugar Cane Commission
- MOF: Customs Department
- MOST: Institute of National Nuclear Technology

**4 Business Entities**
- Thai Chamber of Commerce
- Thai Chamber of Industry
- Sugar Factory
- Surveyor

**Case 2.3**

A Case Example
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**

1. **Send Form D Request**

2. **Forward Form D Request**

3. **Approved Form D**

4. **Forward Form D**

5. **Forward Form D**

6. **Send Import Declaration**

7. **Forward Import Declaration**

8. **Declaration No & Inspection Result**

9. **Send Form D Utilization**

10. **Forward Form D**

11. **Forward Form D Utilization**

**Exporting Country**

**Other ASEAN Country**

**Importing Country**

**Thailand**

**Customs**

**Reference Files (Form D)**

**e-Custom Systems**

**ATIGA = ASEAN Trade in Goods Agreement**

* Ref: ASEAN Single Window*
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 KTNet.
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.

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.
Table of Content

- 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
The proposed Framework for Cross-border SWI
composing of 5 critical components

A. Mutual Benefits/
Business Needs

B. Policy/
Legal Interoperability

C. People/
Organizational Interoperability

D. Process/
Data Interoperability

E. Platform/
Technical Interoperability
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

- Hugh 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
Challenges in Process Reform & Software Development

Like diving in a cave
Even with the lamp, we can barely see what is ahead in the coffee-like water.

Like waking in a rough terrain
Even with a guiding rope, we slowly move through narrow and winding paths
How can we be successful?

- No single method to completely solve this challenge
- We need a good combination of methods, tools, techniques, and mostly importantly human collaborative spirit.
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

* e.g. high-level policy decision makers, legal experts, process owners/domain experts, software developers working together
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 happen), e.g.
  - National-level policy decision makers (e.g. NTFC)
  - Authorized policy management with PMO support
  - Designated inter-agency working groups, etc.

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**Enterprise Architecture** is a guideline to build foundation for digital transformation

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Q & A

Thank You

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

Related Work