IBM Confidential

Balancing and Optimizing Trade Facilitation and Border Integrity

Platforms for Secure and Efficient Data Sharing

July 2004

Table of contents

1. Border Management Issues and Value Drivers
2. Platforms for Secure and Efficient Data Sharing
3. Future Business Models and Technologies

Customs, Ports and Immigration agencies are driven by a complex and changing global environment

- Expanding multi-mission charter requires agencies to ‘do more with the same – or less’ financial and human resources
- The new realities of global terror have altered operational focus and investments
- Global competitiveness requires a border management infrastructure that efficiently and securely copes with increased trade volume and complexity
- The private sector expects improved clearance efficiencies with integrated and seamless data sharing among government and private sector organisations

These drivers produce tactical challenges for internal operations....

- How can we better manage the gap between increasing trade volumes and available resources?
- What new programs are needed to combat our greatest risks?
- What clearance services will the trading community value?
- How should we organize and deploy officers to be most effective?
- How do we modernize IT cost-effectively and without disruptions of service?
- How do we attract and keep skilled professional staff?

Modernization efforts simultaneously balance and optimize the twin goals of trade facilitation and border integrity through four core value drivers

Border Integrity

Compliance

Clearance Speed

Productivity

Cost of Trading

Trade Facilitation

... as well as for external collaboration

Global Trading/Supply Chain

- How can we ensure security of global trading and supply chain?
- How can we more effectively share information?
- How do we enforce international regulations and mandates?
- How do we protect public health, safety, citizen welfare and environment?
- How can we collaborate with the private sector to facilitate economic development?
A Secure Trade Lane provides efficient and secure data exchange through an integrated, end-to-end platform

The future of border management modernization

Business models will evolve
- Public-private partnerships enable governments to focus on core functions
- Governments use variable funding models
- Collaborative government processes and cultures – real e-Government not just EDI

Technology exploitation can drive new vision of operations
- Pervasively optimized and secure global supply chain
- Mobile field operations enabled by wireless devices
- Portal evolution from transparency programs for trade to knowledge management for analysts and officers

Demonstration Notes - 4 steps - cargo entering country

Step 1: Ships captain requests to dock, sends manifest and crew list to government – business logic process takes over – ship’s logic processes takes control and seamlessly interacts with all applications to either provide permission or take action
- Determine a potential problem through risk assessment program – e.g. Match manifest to allow of loading
- Discrepancy requires physical inspection – customs official receives notification via wireless device

Step 2: Conduct physical inspection and determine that contamination of the cargo exists
- Issue the alert to government agencies – triggers further searches to find if similar cargo problems have entered country
- Raises the alert level – record incident

Step 3: Establish incident response team with team room to allow SMEs to collaborate
- Team decides what actions to take

Step 4: Notify appropriate agencies – health, law enforcement
- Notify private sector – recall material from shelves
- Publish accounts and actions taken via web and to news agencies
- Citizens can pull out content
Thailand Approach Towards Internet Paperless Trading

Dr. Somnuk Keretho
Director - Institute for Innovative IT
Kasetsart University
Chair - Thailand Paperless Trading Project Proposal Committee
Ministry of Information and Communication Technology

Table of Contents
- National Competitiveness
- e-Government Guiding Principles
- Applications & Goals
- Architecture & Building Blocks
- Implementation Plan
- Cost/Benefits Analysis
- Recommendation to APEC

Competitiveness of A Nation
- Logistics - Efficiency flow of Goods
- Logistics Cost in Thailand is quite high.

Current Logistics Cost / GDP
- Thailand: 25-30%
- Japan: ~11%
- USA: ~10%
- EU: ~7%

Cost reduction opportunity in Logistics
For example 5% of GDP ~ 7.5 Million USD

The Logistics Development Roadmap
by National Economic and Social Development Board

Organization
Prime Minister
The Cabinet
National Competitiveness Committee (Ministers + CEO's)
National Economic and Social Development Board
National Paperless Trading Subcommittee
Academic - Consultants

PMO: Project Management Office
Ministry of Information and Communication Technology
Subcommittees and Working Groups for special tasks

Current Import/Export Environment

Exporting Country
- Manifest
- Invoice
- Bill of Lading
- Packing List
- C/O
- L/C
- Declaration Form
- Health Certificate
- Insurance Document

Importing Country
- Manifest
- Invoice
- Bill of Lading
- Packing List
- C/O
- L/C
- Declaration Form
- Health certificate
- Insurance Document

Transport

30 parties
40 documents
200 data elements
60-70% data re-keying
Single-Window & Integrated Environment

To develop a single window system as a facility that allow 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. (UN/CEFACT Recommendation no. 33)

To provide an integrated environment that can provide efficient flow of information in the logistics/supply chain with information/e-service exchange and streamlining processes among public agencies (~29) and private sectors (>10)

For example – a single window service for exporters of poultry – reducing transaction cost/time from 8-10 days to less than 1 days

Applications & Goals

Year# 1
- Pilot Project Implementation
  - System Architecture
  - Pilot Project of Single Window Entry on some potential markets - Poultry, Shrimp, Textile
  - Information Center Portal
  - TOR for government agencies to integrate with their backend systems

Year# 2
- Expand to other groups of products
  - Full Integration System for more strategic products

Year# 3
- Cross Border
  - Fully Integration Projects Development: connectivity with involved government agencies
  - Cross-border Applications Development

Government Guiding Principles

1. Citizen-Centric e-Services
   - Single-Window System (e-Services Portal)
   - Focusing on Customer Accounts, Not Only on Transaction
   - Inter-Agency Task Force to provide a group of services

2. Business Process Review/Re-engineering and Streamlining the Processes
   - Revolution
   - Continuous Improvement
   - Architecture-driven Incremental Build

3. Standardization, Harmonization & Interoperability
   - Standardization on common data elements, business process
   - Standardization on e-Services Interchange (Interoperability)

4. ICT Competency Development in the country

Applications & Goals

1st Stage: Customs Clearance
- Customs
- Carriers/Agents
- Banks
- Importer
- Exporter

2nd Stage: Transportation & Financial Settlement
- Customs
- Shipline
- Airlines

3rd Stage: Cross-border Paperless Trading
- Customs
- Trading Company

Architecture & Building Blocks

A Single Window and Integrated Environment

<table>
<thead>
<tr>
<th>Services</th>
<th>Carriers/Agents</th>
<th>Banks</th>
<th>Importer</th>
<th>Exporter</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Community</td>
<td>Single Window Service</td>
<td>Trading Service Window</td>
<td>Maritime Service Window</td>
<td>Customer Service Window</td>
</tr>
<tr>
<td>Customs</td>
<td>Forwarders</td>
<td>Consoliation Agents</td>
<td>Port authorities</td>
<td></td>
</tr>
<tr>
<td>E-Community</td>
<td>Single Window Gateway</td>
<td>Trading Service</td>
<td>Maritime Service</td>
<td>Customer Service</td>
</tr>
<tr>
<td>Customs</td>
<td>Forwarders</td>
<td>Consoliation Agents</td>
<td>Port authorities</td>
<td></td>
</tr>
<tr>
<td>E-Community</td>
<td>Single Window Gateway</td>
<td>Trading Service</td>
<td>Maritime Service</td>
<td>Customer Service</td>
</tr>
</tbody>
</table>
Implementation Plan

Phase 1
- Process & Management Re-engineering, & Business Model Development
- Proof-of-Concept & Architecture/Framework Design Projects: for the first group of agencies, at least for three champions products
- Detailed TOR Development
- Awareness & Training: Marketing, Rules & Regulations

Implementation Plan

Phase 2
- Implementation Projects
  - Requirement Lists, and Business Scenarios
  - Process Re-engineering
  - Detailed Architecture Design, Implementation & Deployment
- Project Operations, Maintenance & Monitoring, Measurement & Analysis
- Auditing Systems
- Awareness & Training: Marketing, Rules & Regulations

Implementation Plan

Phase 3
- Fully Integration Projects Development: connectivity with involved government agencies (~26 agencies)
- Cross-border Applications Development
- Project Operations, Maintenance & Monitoring, Measurement & Analysis
- Auditing Systems
- Awareness & Training

Cost/Benefits Analysis
- Investment: ~US$ 31 million in three years
- Targeted Benefits: not less than .5% of Import/Export Volume
  - Costs saving – >US$ 0.7 billion annually

Recommendation to APEC
- Encourage member economies to establish a single-window and web-based system that covers all import and export-related procedures.
- Develop and maintain National Interoperability Framework
- Develop and maintain XML schema design rules and management guide
- Work with each industry to define common data elements and business processes
- Incrementally build the system with business objectives and IT architecture alignment

Thank you

Dr. Somnuk Keretho
Director - Institute for Innovative IT
Kasetsart University
Chair - Thailand Paperless Trading Project Proposal Committee
Ministry of Information and Communication Technology
Towards Adoption of ebXML in Royal Customs Malaysia

Background of ICT implementation– phased approach

1) Formative years
   - 1989 to 1994
   - Focus on backroom automation, mainframe and dumb terminals, EDI, UN/EDIFACT standards, value added network - VAN, exploratory years for internet

   - Feasibility studies & ICT master plan
   - Procurement process; Infrastructure installation; Pilot implementation

2) Implementation proper
   - 1995 to 2000
   - Internet, e-mails, websites, online forums, PC GUI, local area network - LAN
   - Continue pilot (incremental); New requirements; Additional training
   - Began participating in UN, WCO activities (standards, recommendations, best practices, UN/AFACT, UN/CEFACT, ASEAN, APEC)
   - Started data exchange project (Asia Region Customs EDI Project – under the UN/AFACT IIC)

3) Spin-offs, enhancements, extensions
   - 2001 to 2004
   - Web services, application servers, client-server, electronic government - MSC flagship applications
   - New modules, new features (paperless environment, gate control system, electronic excise system, centralized K8 (transshipment/movement), online permit(SANCRT), intranet for some control files, etc.)
   - Link-ups with other parties (Statistics Dept.); More integration within applications

4) Future
   - 2005 and beyond
   - Take stock; Save investment as much as possible
   - Add-on/value add (self assessment system, deferred payment, customs golden client, customs portal, internal taxes on-line, certificate of origin, revised Kyoto convention – regulatory/legal changes; Procedural changes)
Background of ICT implementation – phased approach

Future (2005 and beyond)

- Embark on new technologies, techniques, recommendations (XML services, single window)
- Adopt more open system features
- More regional/international co-operation and technical assistance; experience sharing: – ASEAN, APEC, UN/AFACT, UN/CEFACT, others

ebXML pilot proposal – electronic invoice (ebXML Asia Committee)

Towards Adoption of ebXML in Royal Customs Malaysia

Why embark on ebXML?

- Q 40th Meeting of the Customs Information Management Sub-committee (IMSC) in Brussels in Jan 2001 - World Customs Organization (WCO) will adopt ebXML standard.
- Q Global manufacturers and retailers adopt XML as the backbone of their new data exchange standard for B2B trade
- Q To keep up with the latest e-Business automation solutions spawned by the rise of the internet

Why embark on ebXML?

- UN/CEFACT and OASIS international initiative:
  - Q UN/CEFACT and OASIS international initiative
  - Q Launched in September 1999 to develop an open XML based framework
  - Q Completed in May 2001 following an international standardization process
  - Q The ebXML specifications (Technical Architecture & Core Components Technical Specifications) are in place
  - Q UN/CEFACT Plenary in May 2003 have endorsed the ebXML specifications

ebXML Initiatives

KOREA:
- Q ebXML promotion activities by KIEC - formed ebXML committee
- Q ebXML POC project - B2B integration between steel and automotive industries, implementation of R&R for B2B industries
- Q adoption of ebXML in financial institutions exchange
- Q Developed XML/EDI & ebXML guidelines

ebXML Initiatives

HONG KONG:
- Q Govt. formed ebXML R&D center, Center for e-Commerce Infrastructure Development (CECID) to establish ebXML infrastructure in Hong Kong

JAPAN:
- Q Formed XML/EDI Standardization Committee and XML/EDI Promotion WG
- Q ECOM - chair of eAC

Other Asian countries:
- Q eASEAN community looking into adopting ebXML solution for Government initiatives such as Customs System
- Q PAA members (China, Taiwan, Korea, Japan, HK, Spore, Malaysia, Macau & Indonesia) adopted ebMS V2.0 for Cross-Border Transaction Services
- Q Formation of Interoperability and Core Components Task Groups in ebXML Asia Committee (eAC):
**ebXML Initiatives in Malaysia**

- TC4 (Industry Standard Committee, SIRIM) looking into development of ebXML Message Guidelines
- Customs, Dagang Net, EC Partners are members in eAC
- MEC’s ebwg initiating ebXML Pilot Project (Malaysia Customs ebXML Pilot (SMK-Invoice Project))

**Business Case**

- Enable fully automated and paperless processing of Customs declaration

**Project Goals**

- Proof-of-concept for improvement of business processes using ebXML standard
- Fully paperless processing and trade facilitation
- Electronic submission of documents and automated assessment

**Current Process: Customs Declaration Assessment Using Paper Commercial Invoice**

- Importer
- Exporter
- Forwarding Agent
- Customs
- SMK (CIS)
- Paper Documents
  - Commercial Invoice
  - CUSDEC
  - CUSRES (Registration)
- Paper Document (Commercial Invoice)
- Assessment Officer
- Forwarding Agent Rep
- CUSRES (Assessment)
- CUSRES (Payment)
- CUSRES (Release)
- Online Entry
- Other Documents (for exceptions/audit only)

**Proposed Process: Customs Declaration Assessment Using ebXML Electronic Commercial Invoice**

- Importer
- Exporter
- Forwarding Agent
- Customs
- SMK (CIS)
- Commercial Invoice (non-electronic option)
- ebXML invoice
- CUSRES (Registration)
- CUSRES (Assessment)
- CUSRES (Payment)
- CUSRES (Release)
- Support Documents
- Assessment Officer
- Forwarding Agent Rep
- Online Entry
- Manual Exception

**Key Benefits**

- Removes the last of paper documents used for Customs declaration processing
- Fully electronic document exchange and automated processing
- Customs assessment officer can work far more effectively
- Handle exception cases only, based on risk assessment criteria
- Focus on enforcement and audit
- Potential for future Single Admin. Document (SAD)
- ebXML interoperability with existing UN/EDIFACT
Pilot Implementation

- Education and Awareness Campaign
- Business Process Study
- General and Detailed Functional Specifications
- System Development
- System Integration Test (Provisional Acceptance)
- Pilot Test (Final Acceptance)
- Live Implementation and Roll-out
- Operations and Technical Training

Dell
Intel
eLogistics
Forwarding Agent
eDeclare
Importer
Exporter
D*Net

Customs ECS
Customs SMK(CIS)
eDocument
Invoice Web ASP
Customs ECS ebXML Components
Registry
Repository
Messaging System (ebMS 2.0)
ECS Message Mapper
(ebXML = EDIFACT = SMK)
Customs Declaration
Commercial Invoice

EBXML Pilot Project Systems Component Diagram

THANK YOU

ROYAL CUSTOMS MALAYSIA
SITI AMINAH ABDULLAH
tpknsel@tm.net.my
603-31764025