Slide 1

IBM

Balancing and Optimizing Trade Facilitation and Border Integrity

Platforms for Secure and Efficient Data Sharing

July 2004

Slide 2

IBM

Table of contents

1. **Border Management Issues and Value Drivers**

2. **Platforms for Secure and Efficient Data Sharing**

3. **Future Business Models and Technologies**

Slide 3

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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

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Slide 4

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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?

Create Strategies and Policies
Manage Knowledge and Risk
Manage Customer Service | Perform & Administer Clearance Processing | Manage Compliance, Targeting & Enforcement
Manage Operations

- How do we modernize IT cost-effectively and without disruptions of service?
- How do we attract and keep skilled professional staff?

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… as well as for external collaboration

Global Trading/Supply Chain

Buyer — Manufacturer / Supplier — Shipper / Freight Forwarder — Ports — Carriers: Air, Surface and Sea — Ports — Distribution Centre

Customs / Immigration — Customs / Immigration

- 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?

Slide 6

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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

Slide 1

Border Management agencies operationalise the core value drivers by modernizing in four areas

Leadership & Policies
- Risk management based compliance
- Integrated governance models
- Supporting legislative/ policy changes

Customer Focus
- Electronic submission & rules based processing
- Pre-clearance and pre-certification
- Integrated service delivery

Border Integrity

Trade Facilitation

Partnerships
- Public-Private trading systems
- Regional trade agreements & Initiatives

Information Technology
- Biometrics
- Data analytics and consolidation
- Virtual border clearance

Slide 2

An flexible, service oriented architecture provides the foundation for secure and efficient data exchange

CHANNELS

Citizens — Internet Kiosk
Private Sector — Telephony
Governments — Face to Face
— Wireless
Employees — Forms
— e-Mail Letters Fax Brochures
— External Systems

Portal Framework

Enterprise Services & Applications

Enterprise Service Delivery

Integration & Connectivity Services

Enterprise Intelligence

Government Systems — Adaptor

Private Sector Systems — Adaptor

Infrastructure

Demo

Slide 3

A Secure Trade Lane provides efficient and secure data exchange through an integrated, end-to-end platform

= accredited entity

= various sensors

TREC

signed evidence, documentation, location

Federated Portal
- Carrier
- Customs
- Distributor
- Other

| Manufacturer Distributor | Freight Forwarder | Ports / Customs / Immigration "A" | Carriers: Air, Surface & Sea | Ports / Customs / Immigration "B" | Distribution Centre |

(*) TREC= Tamper-Resistant Embedded Controller

Slide 4

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**

Slide 5

Balancing and Optimizing Trade Facilitation and Border Integrity

Slide 6

Demonstration Notes - 4 steps – cargo entering country

Step 1
- Ships captain request to dock..sends manifest and crew list to gov't – business logic process takes captains request 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 bill of lading
- 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 gov't agencies– triggers further searches to find if similar cargo problems have entered country
- Raises the alert level – record incident

Step 3
- Establish 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 account 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

2

Competitiveness of A Nation

- Logistics – Efficiency flow of Goods
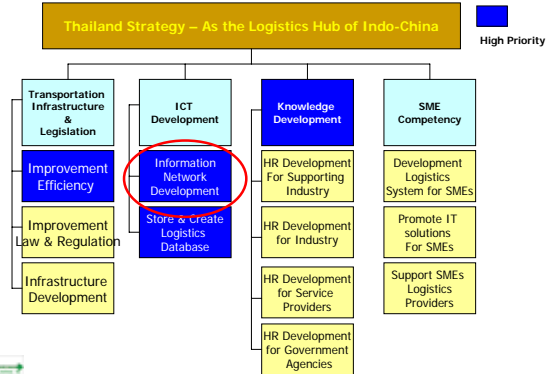- Logistics Cost in Thailand is quite high.

Current Logistics Cost/GDP

Thailand	~ 25-30%
Japan	~ 11%
USA	~ 10%
EU	~ 7%
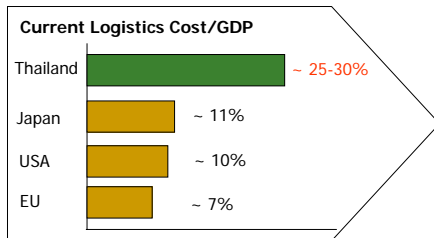
Cost reduction opportunity in Logistics
For example 5% of GDP ~ 7.5 Million USD

3

The Logistics Development Roadmap
by National Economic and Social Development Board

Thailand Strategy – As the Logistics Hub of Indo-China

High Priority

Transportation Infrastructure & Legislation	ICT Development	Knowledge Development	SME Competency
Improvement Efficiency	Information Network Development	HR Development For Supporting Industry	Development Logistics System for SMEs
Improvement Law & Regulation	Store & Create Logistics Database	HR Development for Industry	Promote IT solutions For SMEs
Infrastructure Development		HR Development for Service Providers	Support SMEs Logistics Providers
		HR Development for Government Agencies	

4

Organization

- Prime Minister
- **The Cabinet**
- National Competitiveness Committee (Ministers + CEO's)
  - *National Economic and Social Development Board*
- National Paperless Trading Subcommittee
  - Academic - Consulants
- PMO: Project Management Office
  Ministry of Information and Communication Technology

Subcommittees and Working Groups for special tasks

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Current Import/Export Environment

Exporting 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

Importing Country

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

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1

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

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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)
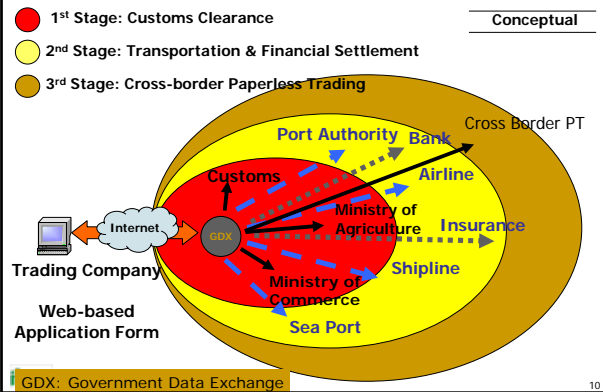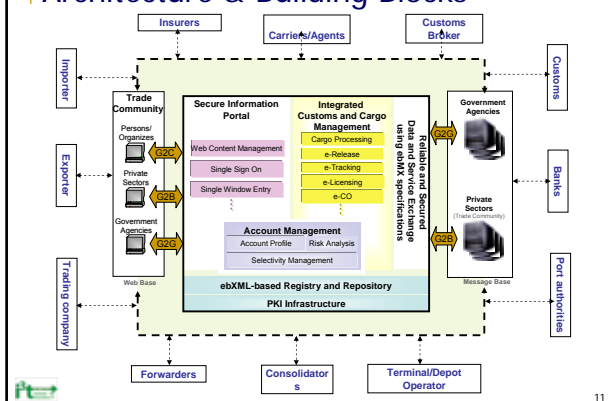4. ICT Competency Development in the country

8

Applications & Goals
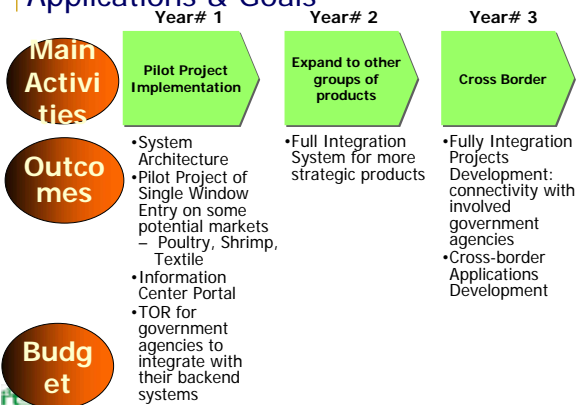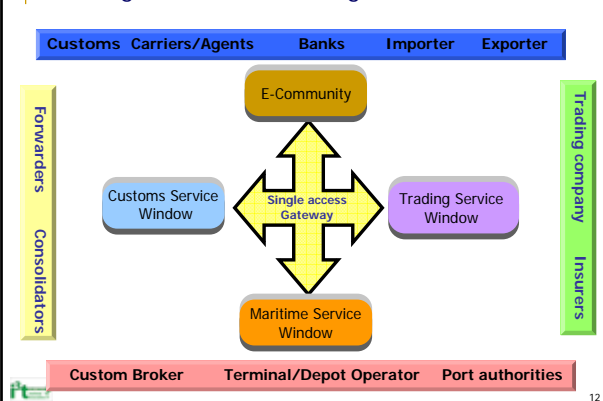

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Applications & Goals

10

Architecture & Building Blocks

11

A Single Window and Integrated Environment

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2

Implementation Plan

Phase 1

- **One-Stop Resource Center for Trade Facilitation and Logistics:** information consolidation about logistics & trade facilitation for importers & **Existing System Review:** Scenario Analysis & Assessment of Current Practices Including Costs
- **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

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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

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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**

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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

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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

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Thank you

Dr. Somnuk Keretho
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Chair – Thailand Paperless Trading Project Proposal Committee
Ministry of Information and Communication Technology

"ebXML for Internet
Paperless Trading and
Collaborative e-Business"

"Towards Adoption of ebXML in
Royal Customs Malaysia"

- Background of ICT implementation
- Proposed implementation of ebXML pilot

Towards Adoption of ebXML
in Royal Customs Malaysia

Asia-Pacific
Economic Cooperation

- Background of ICT implementation –
  phased approach
  - 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

Towards Adoption of ebXML
in Royal Customs Malaysia

Asia-Pacific
Economic Cooperation

- Background of ICT implementation –
  phased approach
  - Implementation proper
    - 1995 to 2000 (internet, e-mails, websites, online
      forums or GUI, local area network – LAN)
    - Continue pilot implementation, 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)

Towards Adoption of ebXML
in Royal Customs Malaysia

Asia-Pacific
Economic Cooperation

- Background of ICT implementation –
  phased approach
  - 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
      permits/ANCRB, intranet for some control files, etc.)
    - Link-ups with other parties (Statistics Dept.). More
      integration within applications

Towards Adoption of ebXML
in Royal Customs Malaysia

Asia-Pacific
Economic Cooperation

- Background of ICT implementation –
  phased approach
  - 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)

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Slide 1

Towards Adoption of ebXML in Royal Customs Malaysia

Asia-Pacific Economic Cooperation

- 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 cooperation and technical assistance, experience sharing - ASEAN, APEC, UN/APACT, UN/CEFACT, others
    - **ebXML pilot proposal** – **electronic invoice (ebXML Asia Committee)**

Slide 2

Why embark on ebXML ?

Asia-Pacific Economic Cooperation

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

Slide 3

Why embark on ebXML ?

Asia-Pacific Economic Cooperation

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

Slide 4

ebXML Initiatives

Asia-Pacific Economic Cooperation

KOREA:

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

Slide 5

ebXML Initiatives

Asia-Pacific Economic Cooperation

HONG KONG:

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

JAPAN:

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

Slide 6

ebXML Initiatives

Asia-Pacific Economic Cooperation

Other Asian countries:

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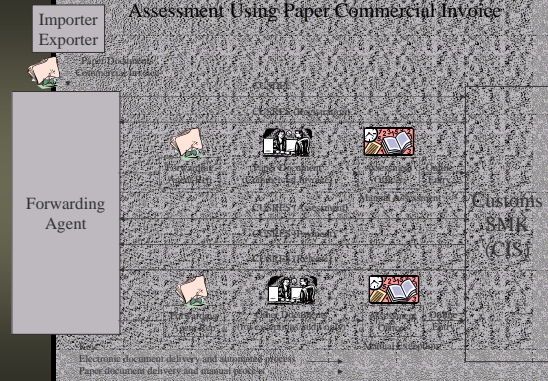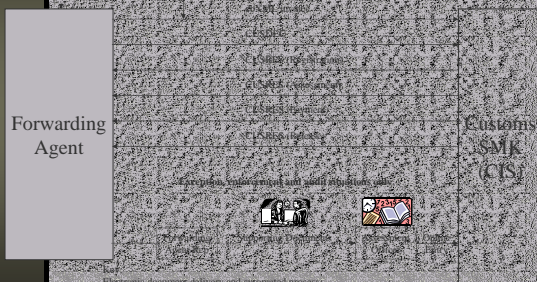
ebXML Initiatives in Malaysia

- 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))**

Asia-Pacific
Economic Cooperation

Business Case

- Enable fully automated and paperless processing of Customs declaration
- Current assessment process:
  - Uses paper commercial invoice documents
- Proposed assessment process
  - To use electronic commercial invoice document (when required)

Asia-Pacific
Economic Cooperation

Project Goals

- Proof-of-concept for improvement of business processes using ebXML standard
- Fully paperless processing
- Trade facilitation
- Collaborative effort of Malaysia Customs, Dagang Net and the trading community

Asia-Pacific
Economic Cooperation

Current Process: Customs Declaration Assessment Using Paper Commercial Invoice

Importer Exporter

Forwarding Agent

Customs SMK (CIS)

Proposed Process: Customs Declaration Assessment Using ebXML Electronic Commercial Invoice

Importer Exporter

Forwarding Agent

Customs SMK (CIS)

Electronic document delivery and automated process
Paper document delivery and manual process

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

Asia-Pacific
Economic Cooperation

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

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ebXML Pilot Project Systems Component Diagram
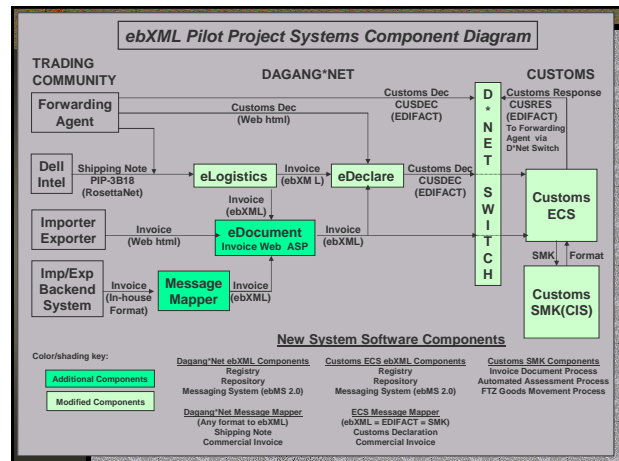
THANK YOU

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603-31764025