

## Current APEC Initiatives on Paperless Trading

### - Benefits and Challenges

## Benefits



- Savings to business
  - Communication charges
  - Fewer errors
  - Lower interest payments on trade finance
  - Efficient supply chains
  - Electronic Certificates
- Savings for government agencies, banks, insurers and shipping companies

## Recent APEC initiatives



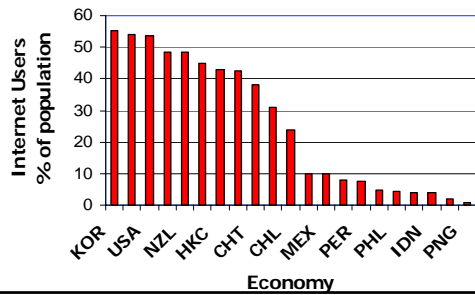
- E-APEC Strategy 2001
  - Universal internet access by 2010
- Cybersecurity Strategy 2002
  - Secure Trade in the APEC Region
- Leaders' Statement on Trade and the Digital Economy

## e-Business - Progress to date

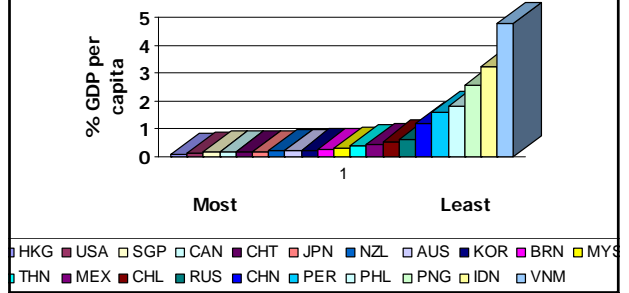


- Improved internet access
- Lower internet charges
- New technologies and systems
- Supportive legal and regulatory regimes
- Privacy and security of electronic transactions

## Internet Access 2003



## Affordability of internet services in 2002



## Paperless Trading Goals

- Reduce or eliminate paper documents by 2005/2010
- A sound legal and regulatory framework
- Secure and interoperable technology
- Responsive to business
- Capacity building

## APEC Paperless Trading Environment

- Public-private partnerships
- Institutional arrangements and capacity building programs
- Pathfinders
- Common standards and procedures
- A balance between trade facilitation and security

## Current APEC Programs



- E-procurement
- On-line customs clearance
- Electronic Certificates of Origin
- Electronic SPS Certificates

## e-Procurement



- Survey of e-Procurement systems and online tendering
- Implementing e-Procurement strategies
- e-Procurement guidelines
- e-Procurement technologies

## Paperless customs administration



- SCCP Paperless Trading Collective Action Plan
- Self assessment and technical needs analysis to identify areas to improve customs practices
- Provision of capacity building assistance

## Electronic customs administration



- Electronic customs clearance systems
- Common Data Elements
- Kyoto Protocol Pathfinder
- WCO Customs Data Model

## Electronic Certificates of Origin



- APEC Pathfinder Initiative
  - Confidentiality, authenticity and non-repudiation
  - Potential savings of \$US100/certificate
- Challenges
  - Acceptance of ECOs by financial institutions
  - Agreement on standards for ECOs
  - Not required in a post-transaction compliance regime

## Electronic SPS Certification



## Case study findings



- The internet is an excellent platform
- XML is superior to EDI
- Data must be accessible to all members of the supply chain
- Data sets are more practical than sets of documents in electronic format
- Work is needed on Letters of Credit, Bills of Lading and Inspection Certificates

## Challenges



- Capacity building
- Global e-business interoperability
- Mutual recognition of PKI domains
- International standards
- Participation in e-Pathfinders
- E-Carnets, e-LCs and e-Bills of Lading

## Paperless single window systems



- Single window systems multiply the benefits of paperless trading
- UN/CEFACT Draft Recommendation No 33
- Benefits to government and business
- Experience of Singapore and the United States

## Possible policy responses



- International standards for ECOs and e-SPS
- UN/CEFACT single window systems
- Including e-Commerce in FTAs
- Digital certificates and PKI domains
- Internet environment – SPAM, IPV6
- Electronic Letters of Credit, Bills of Lading
- New Pathfinders – express consignments; e-Carnets

Thank you

Bruce Bennett  
BB@apcc.org

Asia-Pacific Economic Cooperation

**ebXML**

Establishment of Interoperability and Standardization for Implementing Domestic and Cross-Border Paperless Trading

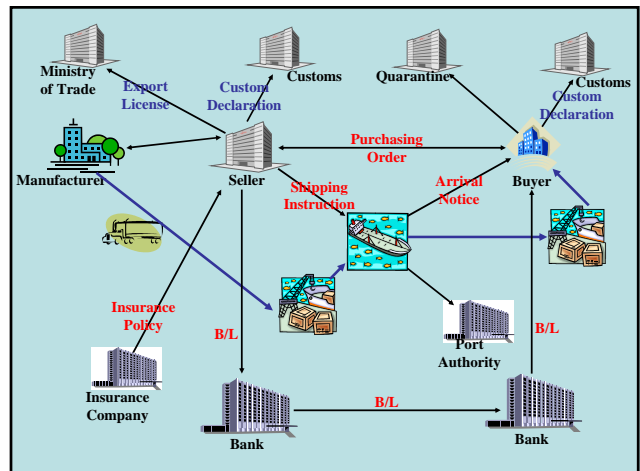
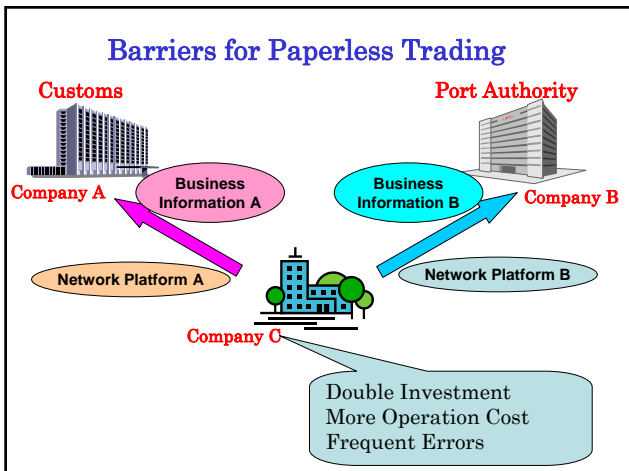
21<sup>st</sup> of July, 2004  
 ebXML Asia Committee  
 Hisanao Sugamata ( ECom )

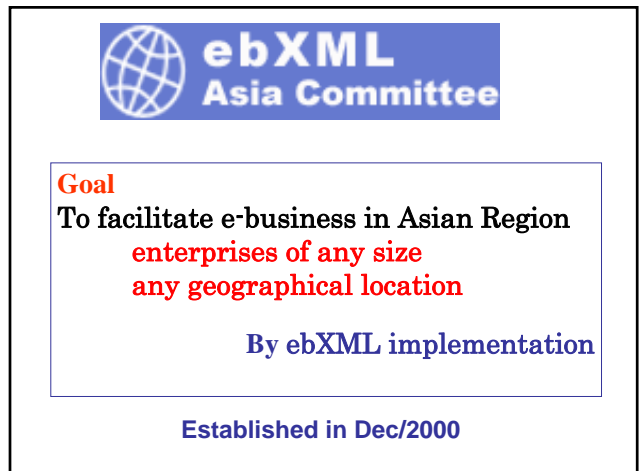
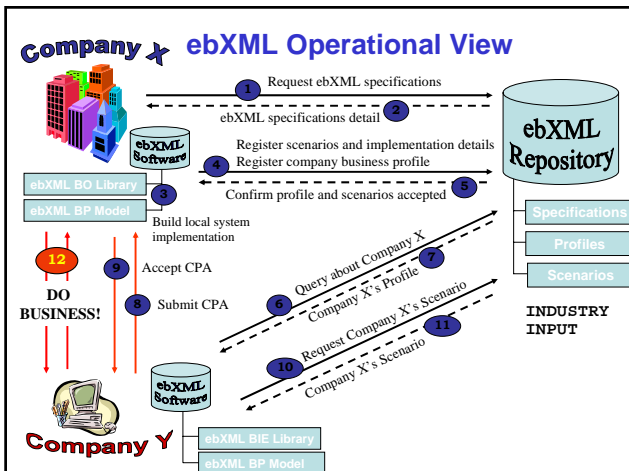
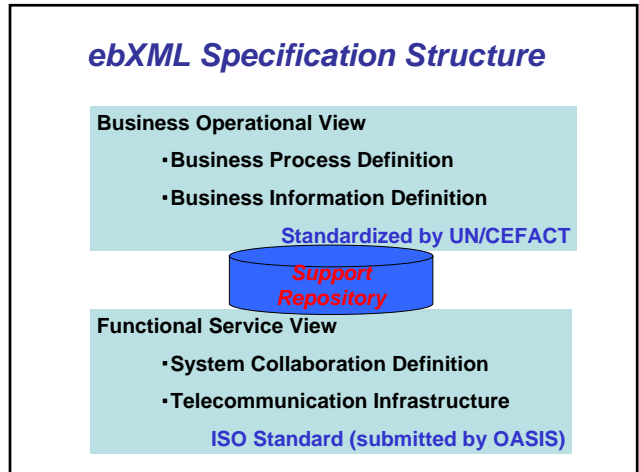
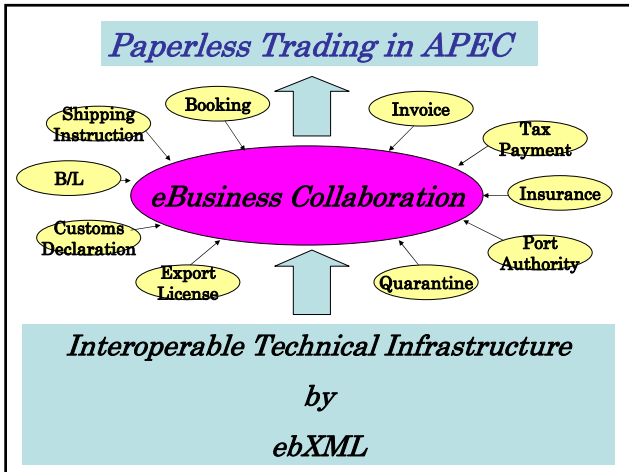
**ebXML Asia Committee**

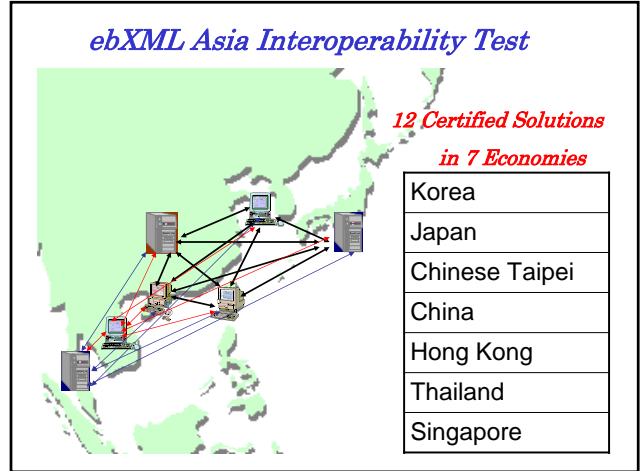
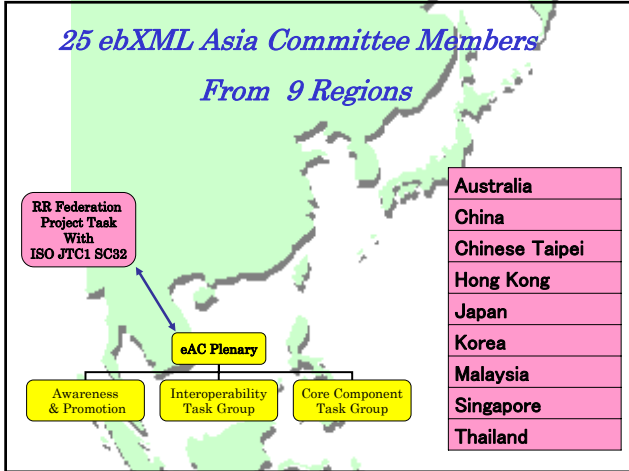
**EDI is essential for the current business**

Electronic Data Interchange

Improved Business Processes  
 Enabled BP Reengineering (JIT, VMI)

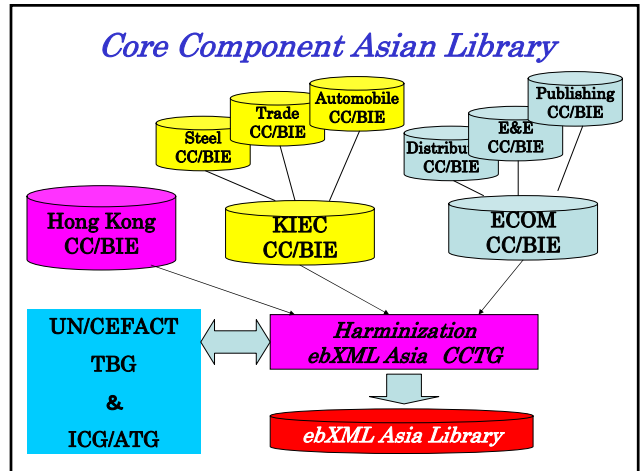




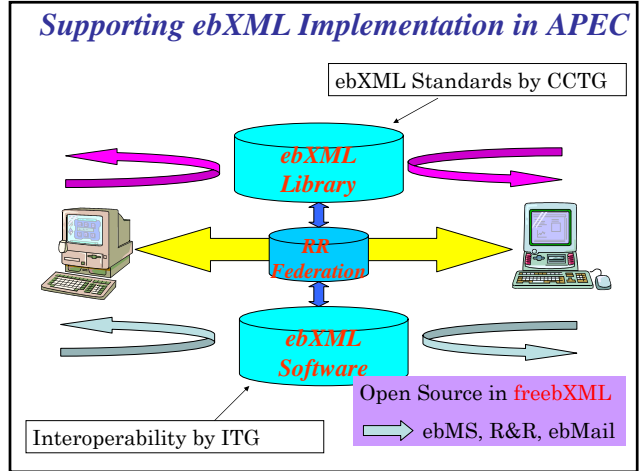
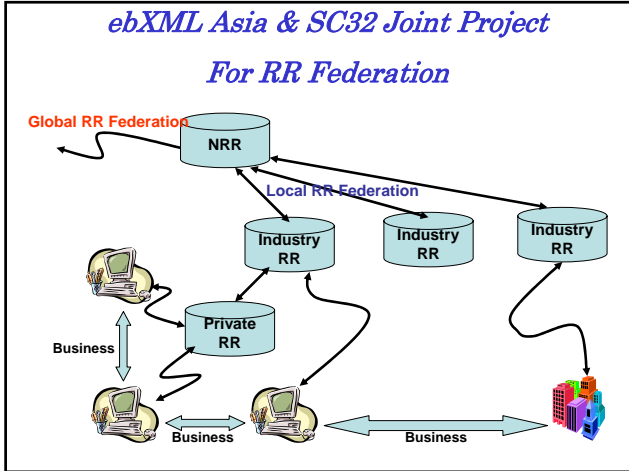


### ebXML Interoperability Certification

	Aug / 2003	May / 2005
Level 2 Certificate	CECID (Hong Kong) CrimsonLogic (Singapore) Fujitsu (Japan) GCOM (Taipei) Hitachi (Japan) IIT (Thailand) Innodigital (Korea) KINET (Korea) NEC (Japan) POSDATA (Korea) Samsung SDS (Korea) SKLSE (China)	Algo21(Japan) B2B Internet (Korea) CJS (Japan) Dasan (Korea) ETRI (Korea) Infoteria (Japan) NTT Data (Japan)
Level 3 Certificate		CECID (Hong Kong) CrimsonLogic (Singapore) Fujitsu (Japan) Infoteria (Japan) IIT (Thailand) Innodigital (Korea) KINET (Korea) NEC (Japan) SKLSE (China)
Reliability		
Security		







**Recommendation**  
**Promote ebXML Standards**

**Model BP/BI based on the Common Component**

- ◆ Utilize the ebXML Asia Libraries

**Make the Sharable solutions use of**

- ◆ Use the ebXML Asia Certified Solutions
- ◆ Utilize the freebXML Open Source

**Establish RR federated with APEC regions**

- ◆ Utilize the POC Project experience

**For Paperless Trading in APEC**

**Join US!**

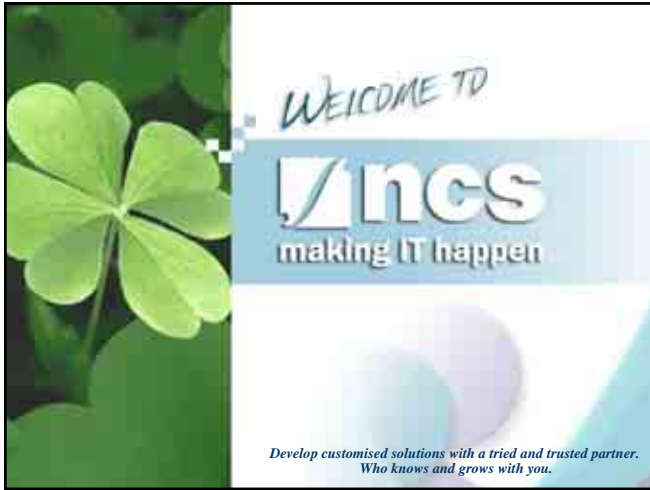
The next ebXML Asia Committee Meeting  
will be held in Seoul (Korea)  
27<sup>th</sup> ~ 29<sup>th</sup> / October / 2004

**Contact Information**

E-mail: [sugamata@ecom.jp](mailto:sugamata@ecom.jp)

ebXML Asia Committee Web Site: [www.ebxmlasia.org](http://www.ebxmlasia.org)

ECOM Web Site: [www.ecom.jp](http://www.ecom.jp)



WELCOME TO

**ncs**  
making IT happen

*Develop customised solutions with a tried and trusted partner.  
Who knows and grows with you.*



GREETINGS

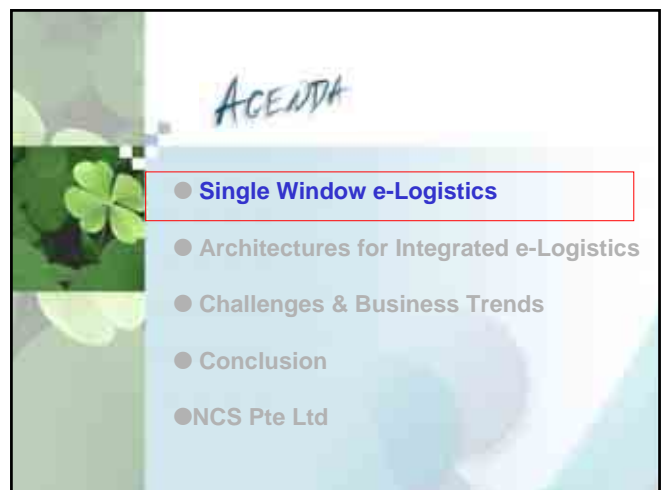
## Integrated Single-Window e-Logistics Trends

*Presented by*  
Dr Chong Yoke Sin  
Chief Operating Officer, NCS  
21 July 2004



AGENDA

- Single Window e-Logistics
- Architectures for Integrated e-Logistics
- Challenges & Business Trends
- Conclusion
- NCS Pte Ltd



AGENDA

- Single Window e-Logistics
- Architectures for Integrated e-Logistics
- Challenges & Business Trends
- Conclusion
- NCS Pte Ltd

## E-Transportation & E-Logistics

### E-Transportation & E-Logistics

- Asia/Pacific markets are directly tied to global trade and logistics e-marketplace creation and management. The region remains the very center of the world's industrial output (approximately 50%).
- Trend :  
The electronic exchanges that successfully combine robust front-end inter-enterprise integration tools, multi-mode information support and target specific virtual private networks and narrowly-focused vertical communities will serve most of the global e-trade community.



ncs CONFIDENTIAL  
Copyright 1996-2004

## Single Window e-Logistics

### • Definition of a Single Window by WCO

“ A facility enabling the provision of standardized information with a single body to fulfil all import, export and transit related regulatory requirements. If information is electronic then individual data elements should only be submitted once.”

ncs CONFIDENTIAL  
Copyright 1996-2004

## International Examples of Single Window

Country	System	Dealing with	Linked to:	Status	Costs of introduction	Costs of running
Australia	TradeGate, ImportNet and ExportNet	Customs clearance, being expanded to link to other	Statistics, Quarantine and inspection, Tax, Permit issuing authorities	Live	Estimated at \$5 million Australian dollars. Users charged on a per transaction basis.	
Canada	Electronic Release	Customs clearance	Foreign affairs and international trade, Food Inspection agency	Live	Not quantified.	
Finland	TYVI	Company tax reporting	Tax, Customs, Statistics, Pension insurance companies, Trade unions, Employers unions	Live since 1997	"very minimal"	Charge made per transaction, but paid by authorities, not customers.
Hong Kong	TradeLink	EMAN	Customs, Statistics, Trade community	Live	Not quantified.	
Korea	KT Net	Customs clearance, export & import permissions; LCs; Bills of Exchange; Insurance; Bills of lading	Unclear of precise links but system appears well developed with multiple internal links within government and direct links abroad.	Live		
Mauritius	TradeNet	Full single window based on Singapore system.	Ports authority, Cargo handling corporation, Chambers of commerce and industry, Customs, Ministry of Co-operatives, Freepport authority, Banks, Registrar General, National transport authority	Live	Equipment software and staff	Communications, maintenance and staff. One time costs for registration and software, then charge per customer transaction.

ncs CONFIDENTIAL  
Copyright 1996-2004

Source : SITPRO 2004

## International Examples of Single Window

Country	System	Dealing with	Linked to:	Status	Costs of introduction	Costs of running
Singapore	TradeNet	International Trade clearance	35 government agencies and departments	Live	20 million Singapore dollars in 1987.	One off fixed fee of 1500 Sing. Dollars and yearly maintenance fees of around \$1200. Pays S\$6.50 per transaction.
Thailand	One Stop Shop	Sea traffic clearance	Port authority, Customs	Live		
USA	ITDS	All international trade	About 100 government agencies, bureaus and offices involved in international trade. Three groups cover all: 1. Admissibility and export control agencies; 2. Data collection and statistical agencies; 3. Statistical only agencies	Under development	Total programme costs estimated at \$256 Million US, including development, deployment and operation. Customers incur connection fees and software costs, some maintenance fees are expected.	

ncs CONFIDENTIAL  
Copyright 1996-2004

Source : SITPRO 2004

## Single Window e-Logistics

Logistics Services Sector IT Spending : Worldwide, 2002-2007 (Millions of Dollars)

Region	2002	2003	2004	2005	2006	2007	CAGR 2002-2007
Asia / Pacific	2,179	2,324	2,433	2,534	2,672	2,857	4.22%
Eastern Europe	301	337	367	396	427	457	6.33%
Japan	1,753	1,901	1,958	2,034	2,123	2,214	3.09%
Latin America	699	713	768	853	952	1,081	8.68%
Middle East & Africa	274	293	319	343	368	395	6.10%
North America	6,782	6,972	7,286	7,666	8,154	8,721	4.58%
Western Europe	3,067	3,232	3,287	3,355	3,419	3,468	1.42%
<b>Total</b>	<b>15,055</b>	<b>15,772</b>	<b>16,418</b>	<b>17,180</b>	<b>18,114</b>	<b>19,194</b>	<b>4.00%</b>

Source : Gartner Dataquest(December 2003)

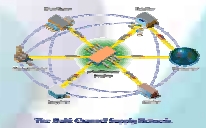
ncs CONFIDENTIAL Copyright 1996-2004

## Integrated Single Window e-Logistics

### • Definition of a Integrated Single Window e-Logistics

A Single Window System which applies IT in innovative and productive ways to maximize the business value of IT within cargo and logistics operations. It integrates the enterprise systems of the trade community and government agencies and supports the delivery of key strategic business objectives by increasing information velocity, visibility and accuracy.

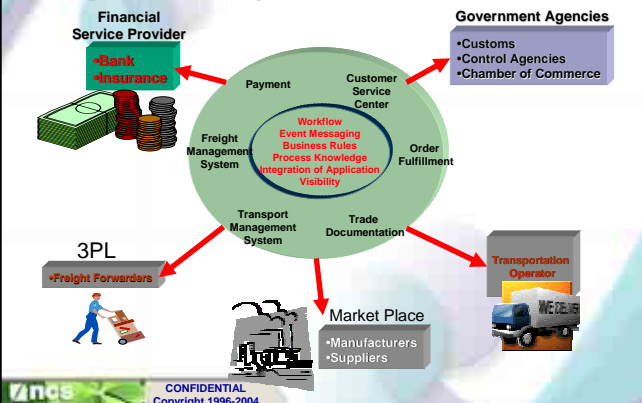
- E-Heart & E-Soul of Trade, Logistics and Supply Chain
- Government Owned or Run and Owned by 4PL Provider.



ncs CONFIDENTIAL Copyright 1996-2004

## Integrated Single Window e-Logistics

### Integration is the Key to Success for e-Commerce



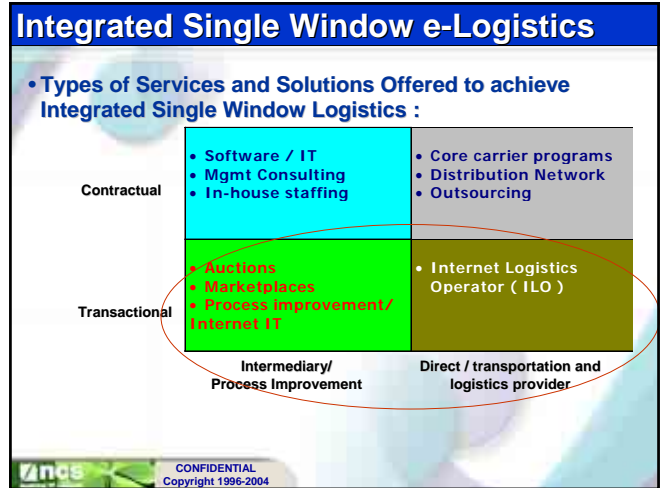
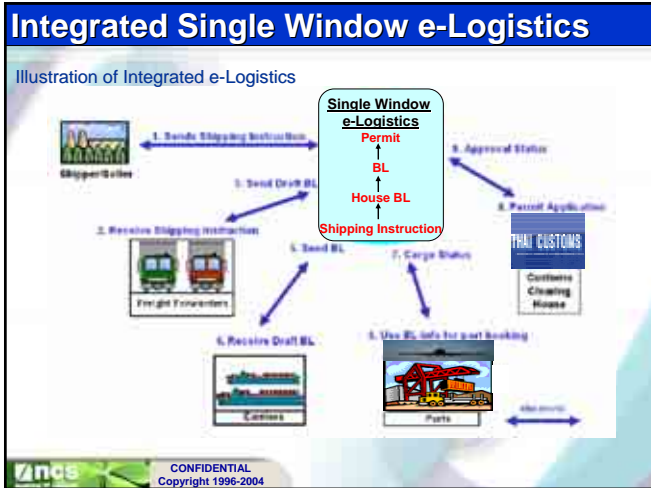
ncs CONFIDENTIAL Copyright 1996-2004

## Integrated Single Window e-Logistics

### Illustration of Current Typical Trade Transaction



ncs CONFIDENTIAL Copyright 1996-2004



- ### Integrated Single Window e-Logistics
- Characteristics of **Contractual Approaches**
    - Long-term and expensive investment. Hence only big companies (in Fortune 500) with huge customer bases can justify.
    - Good for “Core Carrier” who can leverage volume to lower prices for customers.
    - May not fulfill the real promise of e-commerce as not all Small and Medium Enterprises are able to link up.
- CONFIDENTIAL  
Copyright 1996-2004

- ### Integrated Single Window e-Logistics
- Characteristics of **Transactional Approaches**
    - Brings Buyers and Sellers together to execute individual transactions.
    - Facilitates comparison of pricing for transportation and logistics services within a single window.
    - To be successful, need to attract high volume of carriers and shippers to create a competitive marketplace (competitive pricing).
    - End-to-end services for customers – includes financing, insurance, freight and regulatory transactions.
- CONFIDENTIAL  
Copyright 1996-2004

# AGENDA

- Single Window e-Logistics
- **Architectures for Integrated e-Logistics**
- Challenges & Business Trends
- Conclusion

## Architectures - Integrated e-Logistics

### Enterprise Architecture Focusing on Private or Public Trade Exchange :

- **< 5%** of all architectures address complex collaboration processes such as Product Design, Engineering Change Management, Program Management, Supply Chain Planning & Optimization.
- **~ 20%** are dedicated to collaborative processes that are repeatable in nature (e.g. auctioning, bidding, and procurement of direct materials, as well as maintenance, repair and overhaul).
- **> 70%** concentrate on the spot and indirect materials markets (e.g. excess inventory, after-market parts, office supplies and equipment).

Source: D.H. Brown Associates Inc.  
Analysis of 113 private and public trade exchanges deployed in discreet manufacturing - Feb 2003

ncs CONFIDENTIAL Copyright 1996-2004

## Architectures- Integrated e-Logistics

- **2 Major Categories of Enterprise Architecture:**
  - 1 Extended Enterprise Architecture**
    - Relies heavily on common business relationships and ignores differences between partners.
    - Expensive infrastructure.
    - Participants share a common instance of data repository that prescribes a collaborative workflow.
    - Collaboration is achieved by adopting technology that serves a single enterprise internally, and extending the same approach to link autonomous organization entities.

ncs CONFIDENTIAL Copyright 1996-2004

## Trends - Integrated e-Logistics

- **Generic Extended Enterprise Architecture Framework**

ncs CONFIDENTIAL Copyright 1996-2004

## Architectures- Integrated e-Logistics

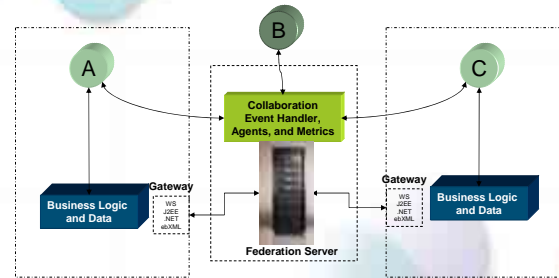
- 2 Major Categories of Enterprise Architecture:

- ② **Federated Enterprise Architecture**

- Combination of External and Internal Criteria to gain value.
- Participants maintain their own internal workflow.
- Framework which manages shared objectives across several autonomous organizations.
- No/little duplication of data.
- Enables partners of the same spectrum to achieve common business objectives.

## Trends - Integrated e-Logistics

- Generic Federated Enterprise Architecture Framework



## Architectures- Integrated e-Logistics

### Federated Architecture – Key Requirements

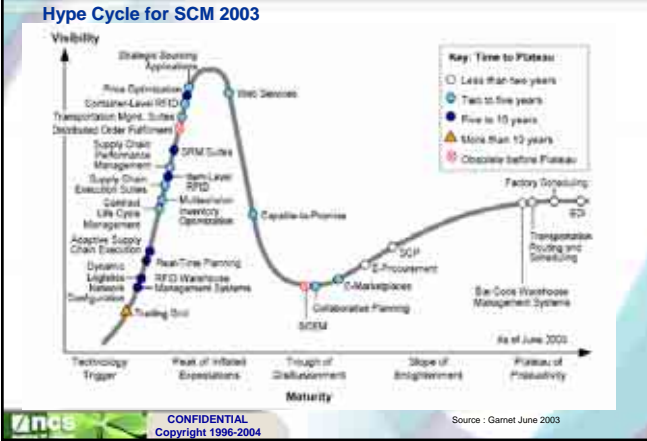
- **Participants' system(s)**  
Each participant must be able to deploy an open Standard gateway based on Web Services or other XML-based standard of choice that will expose its internal data to a structured interface.
- **Connectivity to federation architecture**  
Participants who wish to publish and/or subscribe to a set of collaborative events have to understand the meta-schema design that will be used in collaboration. Once the understanding of meta-schema is achieved, local gateways can connect using an interoperability standard such as XML, SOAP, and web services.
- **Collaborative workflow adoption**  
Participants must understand their internal processes to enable the collaboration of workflow in a Federated Architecture.

## Technology for Integrated e-Logistics

### Some e-Logistics Standards

- **Enterprise Solution** – Enterprise Resource Planning(ERP), Warehouse Management System(WMS), Transport Management System(TMS), etc.
- **Integration Tools** - Web Services, Integration Suite
- **Messaging formats & Protocol Methods** - XML, ebXML, EDIFACT, X12, AS2, etc.
- **Solutions & Technology** - E-Procurement, E-Marketplace, Portals, RFID

## Technology for Integrated e-Logistics



## Technology for Integrated e-Logistics

### Examples of emerging technology :

- RFID
- Web Services



### AGENDA

- Single Window e-Logistics
- Architectures for Integrated e-Logistics
- **Challenges & Business Trends**
- Conclusion
- NCS Pte Ltd

## Challenges for Single Window e-Logistics

- Customers unwilling to pay for or trust such services/transactions.
- Some doubts on the return on investment for integration technology (which can be expensive).
- Policy issues – Data Protection, Pricing, Service Standards, enforcement, etc.
- Getting the agreement of all stakeholders including Governments, Suppliers, Customers, 3PL Parties, Banks and Insurance Companies.
- Lack of a globally accepted suite of integration technologies and standards.




*AGENDA*

- Single Window e-Logistics
- Architectures for Integrated e-Logistics
- Challenges & Business Trends
- **Conclusion**
- NCS Pte Ltd

## Benefits -Single Window

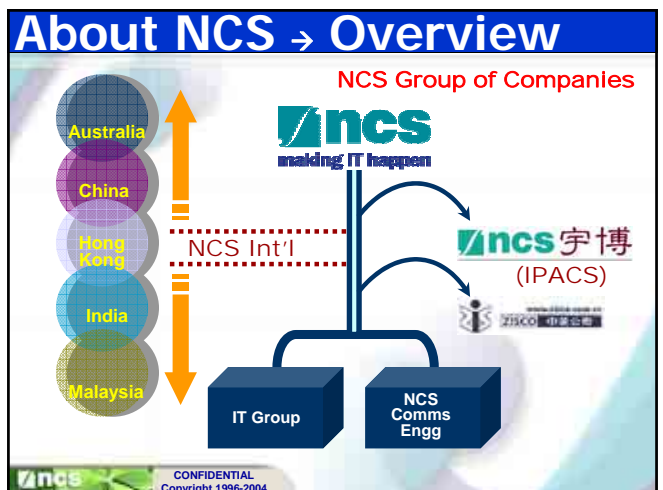
- **Key Benefits of Integrated Single Window e-Logistics**
  - increased trade revenue
  - streamlined procedures
  - seamless experience for traders
  - reduced business cost
  - increased productivity
  - fast turnaround (cost and process)
  - empowered customers
- **Example of Benefits**
  - Realized Lower Freight Costs
  - Improved Order Cycle Times
  - Reduced Inventory
  - Enhanced Customer Service
  - Focus on Core Competencies



**ncs** CONFIDENTIAL Copyright 1996-2004

*AGENDA*

- Single Window e-Logistics
- Architectures for Integrated e-Logistics
- Challenges & Business Trends
- Conclusion
- NCS Pte Ltd



## About NCS



## About NCS

### The NCS Difference

**People**  
People Developer Award  
Largest pool of Certified Project Managers  
3000 IT Workforce

**Process**  
Singapore Quality Class  
ISO9001 Certification  
ISO9001: 2000 for Suzhou subsidiary  
Data centre services - BS7799 certified  
1to1 Innovators Award for established CRM processes  
Top 100 Superbrands

**Technology**  
Gartner Dataquest (Sept 03)  
2<sup>nd</sup> in Singapore & 10<sup>th</sup> in Asia Pacific for IT Professional Services  
Develop and implement large scale projects  
Choice partner for over 1000 projects and counting

**CONFIDENTIAL**  
Copyright 1996-2004

## About NCS → NCS Experience

### Customs and Trade

- Singapore Customs
- Logistics & Supply Chain (IPACS)
- Jurong Port (JP-Online)
- Hong Kong Customs (EMAN & CSI)

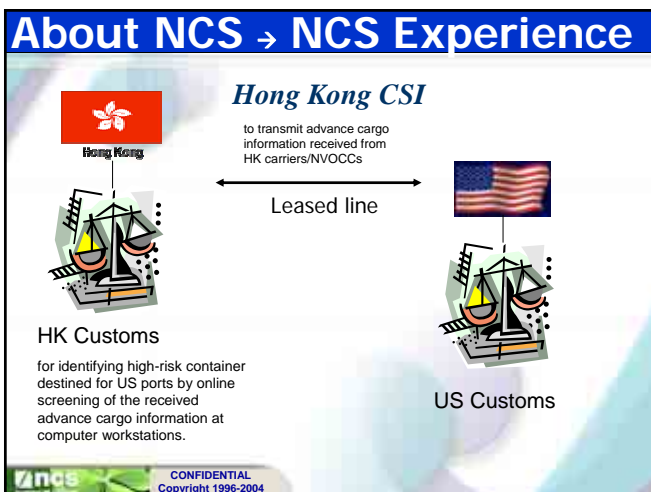
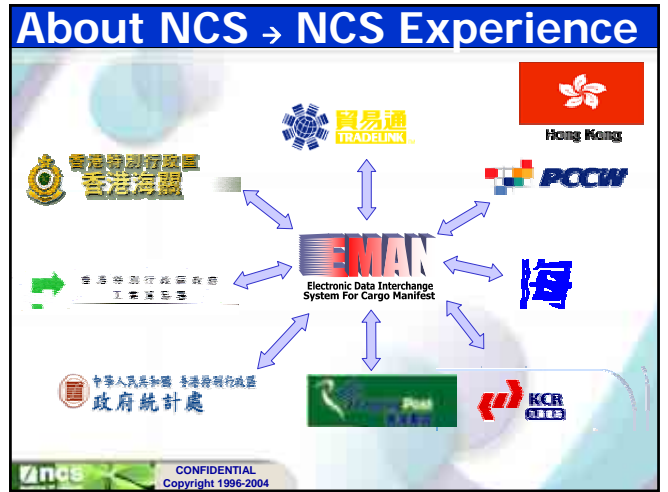
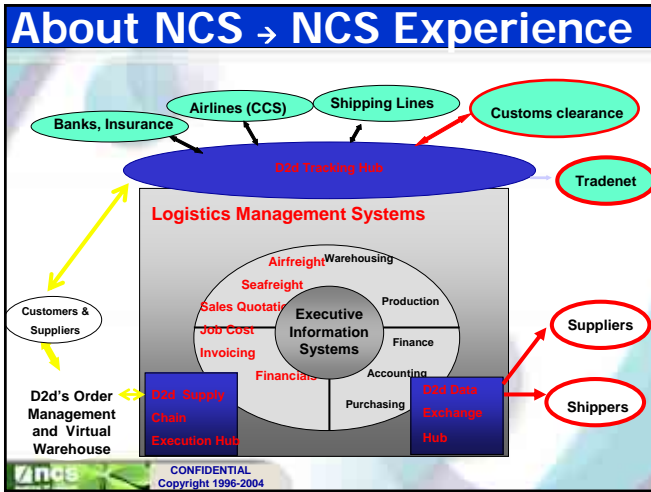
### Others

- MediNET2
- NCS DC experience

**CONFIDENTIAL**  
Copyright 1996-2004

## About NCS → NCS Experience





### About NCS → NCS Experience

#### JP - Online

- A portal for customers to do online electronic transactions on:
  - container tracking
  - berth application
  - vessel scheduling
  - bookings and listings etc
- With hyperlinks to government agencies

- Port Planning Tools
  - Ship Planning
  - Berth Planning
  - Yard Planning
  - Resource Planning
- Port Management Applications
  - Container Terminal Management
  - Marine Management
  - General & Bulk Cargo Management
  - Auto Gate Management
  - Fleet Management
  - Integrated Billing & Financial System

CONFIDENTIAL  
Copyright 1996-2004

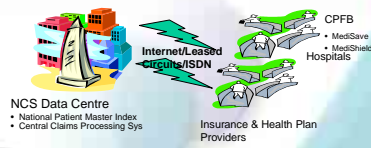
## About NCS → NCS Experience

### MediNET2

### MediNET2



- Live since Oct 2002.
- connects over 50 hospitals, institutions and agencies
- MOH foundation for future applications
  - \* Longitudinal Medical Record
  - \* Public Health Surveillance.
- Key applications



**nsc** CONFIDENTIAL  
Copyright 1996-2004

## About NCS → NCS Experience

### NCS Global Processing Centre Overview

- Infrastructure**
- 12,000 sq ft
  - Structured Cabling
  - 2x400kVA UPS
  - 7.5kN / sqm floor loading
  - BIC Connectivity
  - Internet Connectivity



#### Reliability

- 24 x 7 monitoring
- Environmental Monitoring
- VESDA Smoke Detection
- FM200 Fire suppression

#### Security

- 24x7 security guards @ entrance
- 2 factor authentication for access
- CCTV at strategic location

#### Redundancy

- Parallel redundant UPS
- Dual PowerGrid source
- N+1 precision air conditioners
- 1.25 MVA standby power generator

**nsc** CONFIDENTIAL  
Copyright 1996-2004