Integrated Single-Window e-Logistics Trends

Presented by
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Chief Operating Officer, NCS
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Agenda

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

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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."

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### International Examples of Single Window

<table>
<thead>
<tr>
<th>Country</th>
<th>System</th>
<th>Sealing with</th>
<th>Linked to</th>
<th>Status</th>
<th>Costs of introduction</th>
<th>Costs of operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>TradeLink</td>
<td>Customs, Statistics, Trade community</td>
<td>Unclear of precise links but system appears well developed with multiple internal links within government and direct links abroad.</td>
<td>LIVE</td>
<td>Est. at 35 million Australian dollars. Users charged on a per transaction basis.</td>
<td>Can not be quantified.</td>
</tr>
<tr>
<td>Korea</td>
<td>KT Net</td>
<td>Customs clearance, export &amp; import permissions, LCs, Bills of Exchange, Bills of lading</td>
<td>Unclear of precise links but system appears well developed with multiple internal links within government and direct links abroad.</td>
<td>LIVE</td>
<td>Not quantified.</td>
<td>Canada Electronic Release</td>
</tr>
<tr>
<td>Mauritius</td>
<td>TradeNet</td>
<td>Full single window based on Singapore system.</td>
<td>Ports authority, Cargo handling corporation, Chambers of commerce and industry, Customs, Banking, all government agencies, Trade, Insurance, Bills of lading, authorities.</td>
<td>LIVE</td>
<td>Equipment software and staff (low initial costs).</td>
<td>One time costs for registration and software, then charge per customer transaction.</td>
</tr>
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<tr>
<td>Japan</td>
<td>One Stop Shop</td>
<td>Sea traffic clearance</td>
<td>Authority, Customs</td>
<td>LIVE</td>
<td>One time fee of JPY 1000 and yearly maintenance fees of around JPY 1500. Pays JPY 350 per transaction.</td>
<td>Not quantified.</td>
</tr>
<tr>
<td>USA</td>
<td>ITDS</td>
<td>All international trade</td>
<td>About 100 government agencies, bureaus and offices involved in international trade. Three groups over all: 1. Admissibility and export control agencies; 2. Data collection and statistical agencies; 3. Statistical only agencies.</td>
<td>UNDER DEVELOPMENT</td>
<td>Total programme costs estimated at $256 Million US, including development, deployment and operation.</td>
<td>Customers incur connection fees and software costs, some maintenance fees are expected.</td>
</tr>
</tbody>
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### Single Window e-Logistics

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

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Asia / Pacific</td>
<td>2,179</td>
<td>2,324</td>
<td>2,433</td>
<td>2,534</td>
<td>2,672</td>
<td>2,857</td>
<td>4.22%</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>301</td>
<td>337</td>
<td>366</td>
<td>427</td>
<td>457</td>
<td></td>
<td>6.33%</td>
</tr>
<tr>
<td>Japan</td>
<td>1,753</td>
<td>1,901</td>
<td>1,958</td>
<td>2,034</td>
<td>2,123</td>
<td>2,214</td>
<td>3.09%</td>
</tr>
<tr>
<td>Latin America</td>
<td>669</td>
<td>713</td>
<td>768</td>
<td>853</td>
<td>952</td>
<td>1,081</td>
<td>8.68%</td>
</tr>
<tr>
<td>Middle East &amp; Africa</td>
<td>274</td>
<td>293</td>
<td>319</td>
<td>343</td>
<td>388</td>
<td>395</td>
<td>6.10%</td>
</tr>
<tr>
<td>North America</td>
<td>6,782</td>
<td>6,972</td>
<td>7,286</td>
<td>7,666</td>
<td>8,154</td>
<td>8,721</td>
<td>4.58%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>3,067</td>
<td>3,232</td>
<td>3,287</td>
<td>3,355</td>
<td>3,419</td>
<td>3,468</td>
<td>1.42%</td>
</tr>
<tr>
<td>Total</td>
<td>15,055</td>
<td>15,772</td>
<td>16,418</td>
<td>17,180</td>
<td>18,114</td>
<td>19,194</td>
<td>4.00%</td>
</tr>
</tbody>
</table>

Source: Gartner Dataquest (December 2003)

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### 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.

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### Integrated Single Window e-Logistics

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

**Illustration of Current Typical Trade Transaction**

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### Integrated Single Window e-Logistics

**Illustration of Current Typical Trade Transaction**
Types of Services and Solutions Offered to achieve Integrated Single Window Logistics:

- Software / IT
- Mgmt Consulting
- In-house staffing
- Core carrier programs
- Distribution Network
- Outsourcing
- Auctions
- Marketplaces
- Process Improvement
- Internet IT
- Internet Logistics Operator (ILO)

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.

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.
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).

Analysis of 113 private and public trade exchanges deployed in discrete manufacturing - Feb 2003

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.

Trends - Integrated e-Logistics

Generic Extended Enterprise Architecture Framework
Architectures- Integrated e-Logistics

- 2 Major Categories of Enterprise Architecture:
  
  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

- 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
Examples of emerging technology:

- RFID
- Web Services

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.
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

About NCS - Overview

NCS Group of Companies

- Australia
- China
- Hong Kong
- India
- Malaysia

NCS Int'l (IPACS)

IT Group
NCS Comms Engg
**About NCS**

**Regional Reach**
- 14 locations in 6 countries across the Asia-Pacific
- Global presence in more than 20 countries through SingTel

**About NCS**

**The NCS Difference**
- People Developer Award
- Largest pool of Certified Project Managers
- 3000 IT Workforce

**Knowledge**
- ISO9001 Certification
- ISO9001: 2000 for Suzhou subsidiary
- Data centre services - BS7799 certified

**Technology**
- Gartner Dataquest (Sept 03)
- 24th in Singapore
- 10th in Asia Pacific for IT Professional Services
- Develop and implement large scale projects
- Choice partner for over 1000 projects and counting

**About NCS → NCS Experience**

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

**Others**
- MediNET2
- NCS DC experience

**About NCS → NCS Experience**

**TradeNet**
- Warehousing
- Company
- E-filing
- Offences
- Classification
- GST Payment
- Clearance
- CA Processing
- Admin Workflow
- Analysis & Statistics
- TradeNet
About NCS → NCS Experience

Hong Kong CSI

To transmit advance cargo information received from HK carriers/NVOCCs to US ports by online screening of the received advance cargo information at computer workstations.

Leased line

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
About NCS → NCS Experience

**MediNET2**

- Connects over 50 hospitals, institutions and agencies.
- MOH foundation for future applications.
  - Longitudinal Medical Record.
  - Public Health Surveillance.
- Key applications.

**NCS Global Processing Centre**

**Overview**

- Infrastructure
  - 12,000 sq ft
  - Structured Cabling
  - 2×400kVA UPS
  - 7.5kN / sqm floor loading
  - Big Connectivity
  - Redundancy
    - Parallel redundant UPS
    - Dual PowerGrid source
    - N+1 precision air conditioners
    - 1.25 MVA standby power generator

**Reliability**

- 24x7 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
Paperless Trade and Trade Facilitation in China

Ma, Jianchun
Ministry of Commerce, P.R. China

World Trade and Globalization

1. The contribution of the world trade to the globalization
2. The Economies of APEC play a very important role in the world trade

WTO---Trade Liberalization

APEC---Attached more importance in trade facilitation

--- E-commerce: moving forward by leaps and bounds
--- Paperless: one of the Best Way on the utilization of information and communication technologies in the world trade
The process of cross-border trade

Paperless helps us to improve trade efficiency.

The Efforts China has made

Paperless helps us to make the possibilities to realities in the using of E-Commerce.
The Efforts China has made

-----EDI: the beginning of Paperless in trade

-----E-Government projects have build-up country wide.

-----Golden Gate project: a complete electronic data exchange system.

-----Efforts in the harmonization of the Standards.

-----Management in cross border trade by the Trade Administrative Department: License, Export quota bidding, Etc.

-----More and more enterprises use the E-exhibitions and other E-means to contact the customers.

-----Customers Clearance project: welcomed by the business and entrepreneurs for cross-border trade.

-----Quality Inspection and Quarantine has entered an E-age.

-----The international cooperation has initiated by enterprises.
The Issues Should Be considered in Creating Paperless Environment

-----The role of the transnational companies.
-----The relationship between government and business.

-----The Cyber Security should be regarded.
-----The team work spirit should be enhanced.

The Issues Should Be considered in Creating Paperless Environment

-----Training is also important.
-----Harmonization and Cooperation between economies in APEC is quite necessary. E-Commerce can not be conducted closely.

Thank You!

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