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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
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- 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.

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."

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 35 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 abroard.	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, Freeport 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.

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.	

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%
Total	15,055	15,772	16,418	17,180	18,114	19,194	4.00%

Source : Gartner Dataquest(December 2003)

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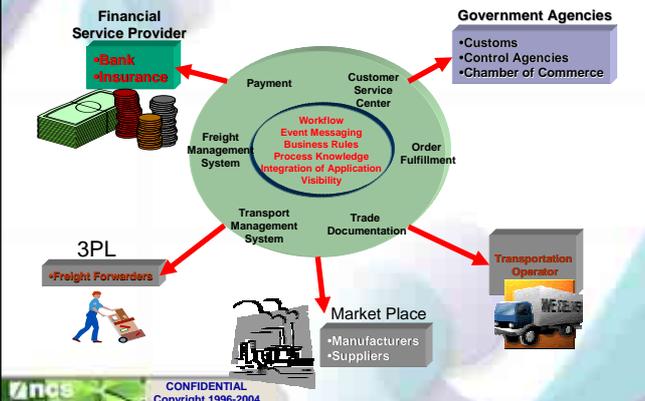
  - E-Heart & E-Soul of Trade, Logistics and Supply Chain
  - Government Owned or Run and Owned by 4PL Provider.

Integrated Single Window e-Logistics

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

Integrated Single Window e-Logistics
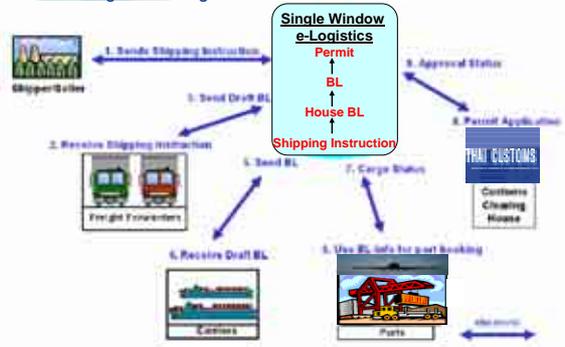
Illustration of Current Typical Trade Transaction

Integrated Single Window e-Logistics

Illustration of Integrated e-Logistics

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Integrated Single Window e-Logistics

- **Types of Services and Solutions Offered to achieve Integrated Single Window Logistics :**

	Intermediary/ Process Improvement	Direct / transportation and logistics provider
Contractual	• Software / IT • Mgmt Consulting • In-house staffing	• Core carrier programs • Distribution Network • Outsourcing
Transactional	• Auctions • Marketplaces • Process improvement/ Internet IT	• Internet Logistics Operator (ILO)

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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.**

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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.**

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Slide 1 (Agenda)

AGENDA

● Single Window e-Logistics

● **Architectures for Integrated e-Logistics**

● Challenges & Business Trends

● Conclusion

Slide 2

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

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Slide 3

Architectures- Integrated e-Logistics

• **2 Major Categories of Enterprise Architecture:**

❶ **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.

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Slide 4

Trends - Integrated e-Logistics

➡ **Generic Extended Enterprise Architecture Framework**

B

A

C

Collaboration of Workflow

Business Logic and Data

API EDI

Business Logic and Data

Private or public Exchange

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Architectures- Integrated e-Logistics
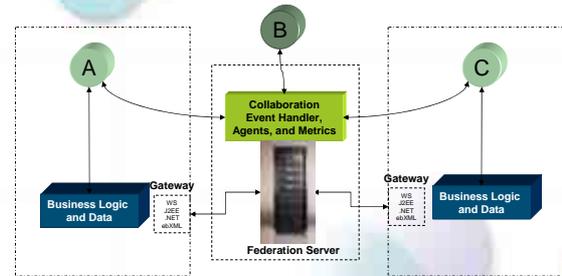
- **2 Major Categories of Enterprise Architecture:**

  - ❷ **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

Hype Cycle for SCM 2003

Source : Garnet June 2003

Technology for Integrated e-Logistics

Examples of emerging technology :

➤ **RFID**

➤ **Web Services**

Legacy System

Integration Suite   Web services

Web services Applications

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.

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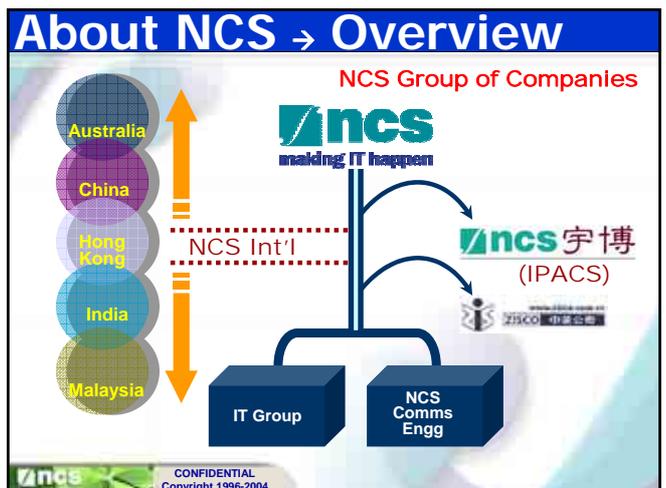- NCS Pte Ltd

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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

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About NCS → Overview

NCS Group of Companies

ncs
making IT happen

Australia
China
Hong Kong
India
Malaysia

NCS Int'l

ncs 宇博
(IPACS)
ZISCO 中冶公司

IT Group

NCS Comms Engg

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About NCS

Regional Reach

- 14 locations in 6 countries across the Asia-Pacific

- Global presence in more than 20 countries through SingTel

Locations shown: Fuzhou, Beijing, Shanghai, Guangzhou, Suzhou, China, Hong Kong, Chengdu, India, Malaysia, Singapore, Australia

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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) 2nd in Singapore & 10th in Asia Pacific for IT Professional Services
- Develop and implement large scale projects

Knowledge

- Choice partner for over 1000 projects and counting

About NCS → NCS Experience

Customs and Trade

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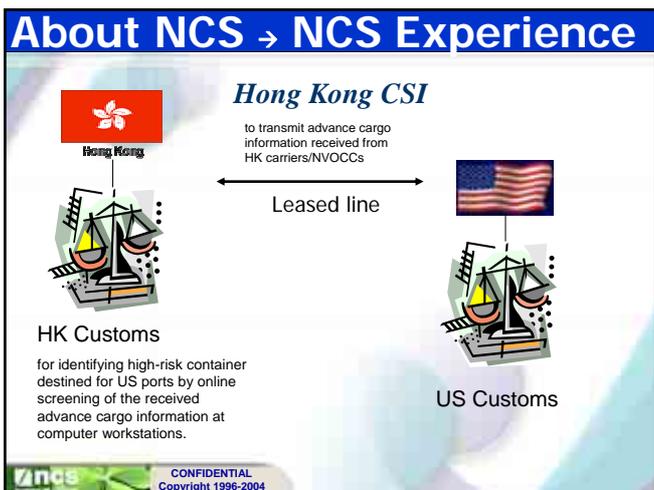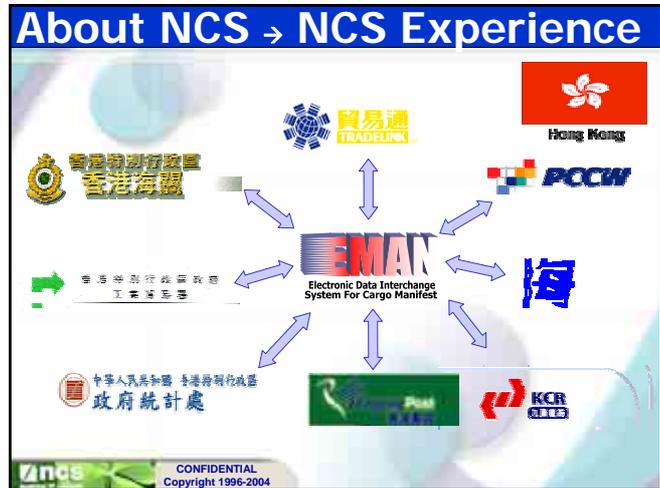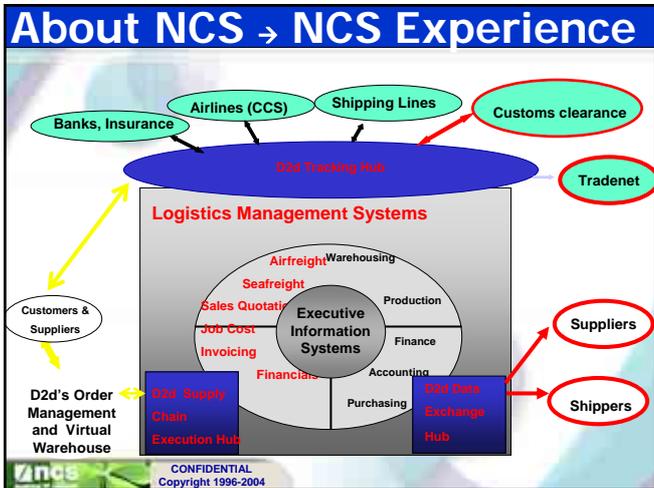
Others

- MediNET2
- NCS DC experience

About NCS → NCS Experience

9

Logistics Management Systems slide showing Banks/Insurance, Airlines (CCS), Shipping Lines, Customs clearance, Tradenet, Suppliers, Shippers, Customers & Suppliers, D2d's Order Management and Virtual Warehouse, Executive Information Systems (Airfreight, Seafreight, Sales Quotation, Job Cost, Invoicing, Financials, Warehousing, Production, Finance, Accounting, Purchasing), D2d Supply Chain Execution Hub, D2d Data Exchange Hub

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About NCS → NCS Experience

EMAN — Electronic Data Interchange System For Cargo Manifest

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About NCS → NCS Experience

Hong Kong CSI

to transmit advance cargo information received from HK carriers/NVOCCs

Leased line

HK Customs

for identifying high-risk container destined for US ports by online screening of the received advance cargo information at computer workstations.

US Customs

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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

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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

Internet/Leased Circuits/ISDN

CPFB
  - MediSave
  - MediShield
Hospitals

NCS Data Centre
  - National Patient Master Index
  - Central Claims Processing Sys

Insurance & Health Plan Providers

About NCS → NCS Experience

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

NCS Global Processing Centre Overview

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

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

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
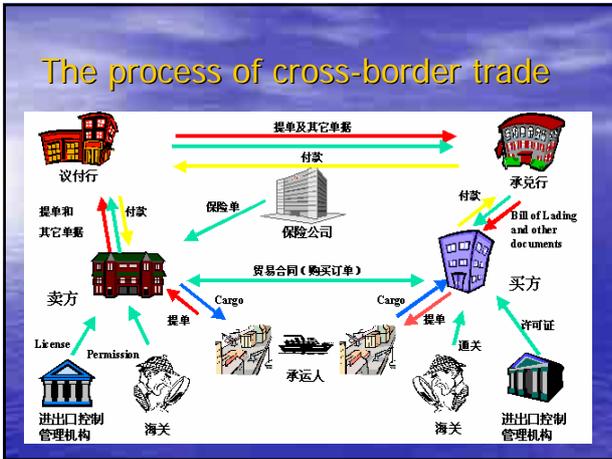2. The Economies of APEC play a very important role in the world trade

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WTO---Trade Liberalization

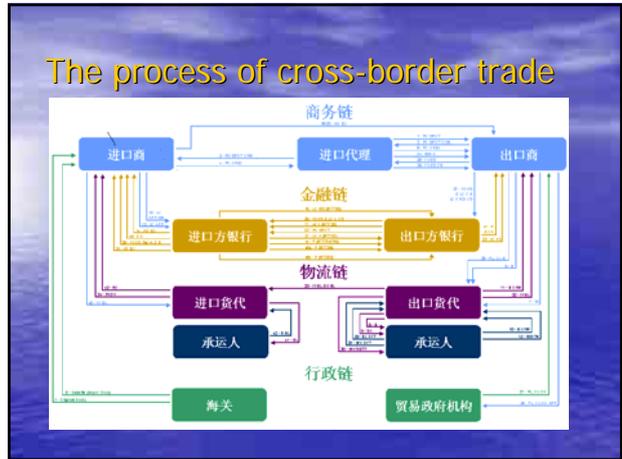APEC---Attached more importance in trade facilitation

---

---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

The process of cross-border trade

----- Paperless helps us to improve trade efficiency.

----- Paperless helps us to make the possibilities to realities in the using of E-Commerce.

The Efforts China has made

The Efforts China has made

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

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

The Efforts China has made

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

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

The Efforts China has made

-----E-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 Issues Should Be considered in Creating Paperless Environment

-----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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