



Open Source Software with Java: Catalyst for Open Standards Adoption



Patrick Yee

**Center for E-Commerce Infrastructure Development
The University of Hong Kong**

Java Technology Forum 2004
5 Oct, 2004



Who We Are



- ◀ Center for E-Commerce Infrastructure Development (CECID)
 - ◀ An e-commerce R&D center in University of Hong Kong
 - ◀ ~20 full time staffs
- ◀ Primarily funded by R&D grants from Hong Kong Government
 - ◀ Project Phoenix: Establishment of ebXML Software Infrastructure in HK
 - ◀ Project Pyxis: eBusiness Interoperability Software Platform based on Open Standards
- ◀ Innovation, industry collaboration, technology transfer

Open Source Software and Open Standards

- ◀ **Open standards → interoperability?**
- ◀ Challenges for wide adoption of an open standard
 - ◀ Correctness
 - ◀ Applicability
 - ◀ FUD (Fear, Uncertainty, and Doubt)
- ◀ Open source implementation proves usability of and promotes adoption of a open standard
 - ◀ Software transparency – easy to spot interoperability problems
 - ◀ 'Free' to use and distribute software and modify source code – kick-start adoption
 - ◀ Code base for commercialization
- ◀ www.FreebXML.org = Free ebXML software initiative



Menu

- [About Us](#)
- [Projects](#)
- [Downloads](#)
- [Deployment Cases](#)
- [Vendor Products](#)
- [News](#)
- [Forum](#)
- [FAQ](#)

Project Highlights

- [ebxmlrr Registry Implementation](#)
- [Hermes MSH](#)

Latest News

- [freebXML Website Launched to Host 'free' ebXML Development Projects](#)
- [CECID releases Hermes MSH](#)

We Support



freebXML
Gears for Global eCommerce

Mission

freebXML is an initiative that aims to foster the development and adoption of **ebXML** and related technology through software and experience sharing.

Objectives

- to create a centralized site for the sharing of 'free' **ebXML** code and applications as well as development and deployment experience
- to promote **ebXML** as an e-commerce enabling technology

Organization

freebXML.org is sponsored by the **Center for E-Commerce Infrastructure Development** and the **Department of Computer Science & Information Systems** at the **University of Hong Kong**. **Founding members** include technical leaders from international technology firms, government organizations, standardization bodies and academic institutions.

Java Platform and Open Standards

- ◀ The essence of open standards: allows different systems to talk to each others regardless of the implementation details
 - ◀ JDBC, JNDI, RMI, etc.
 - ◀ Web Services
- ◀ Java + Open Standards
 - ◀ Allows applications to be interoperable regardless of the **hardware architectures, operating systems, application servers** and **programming technologies** used

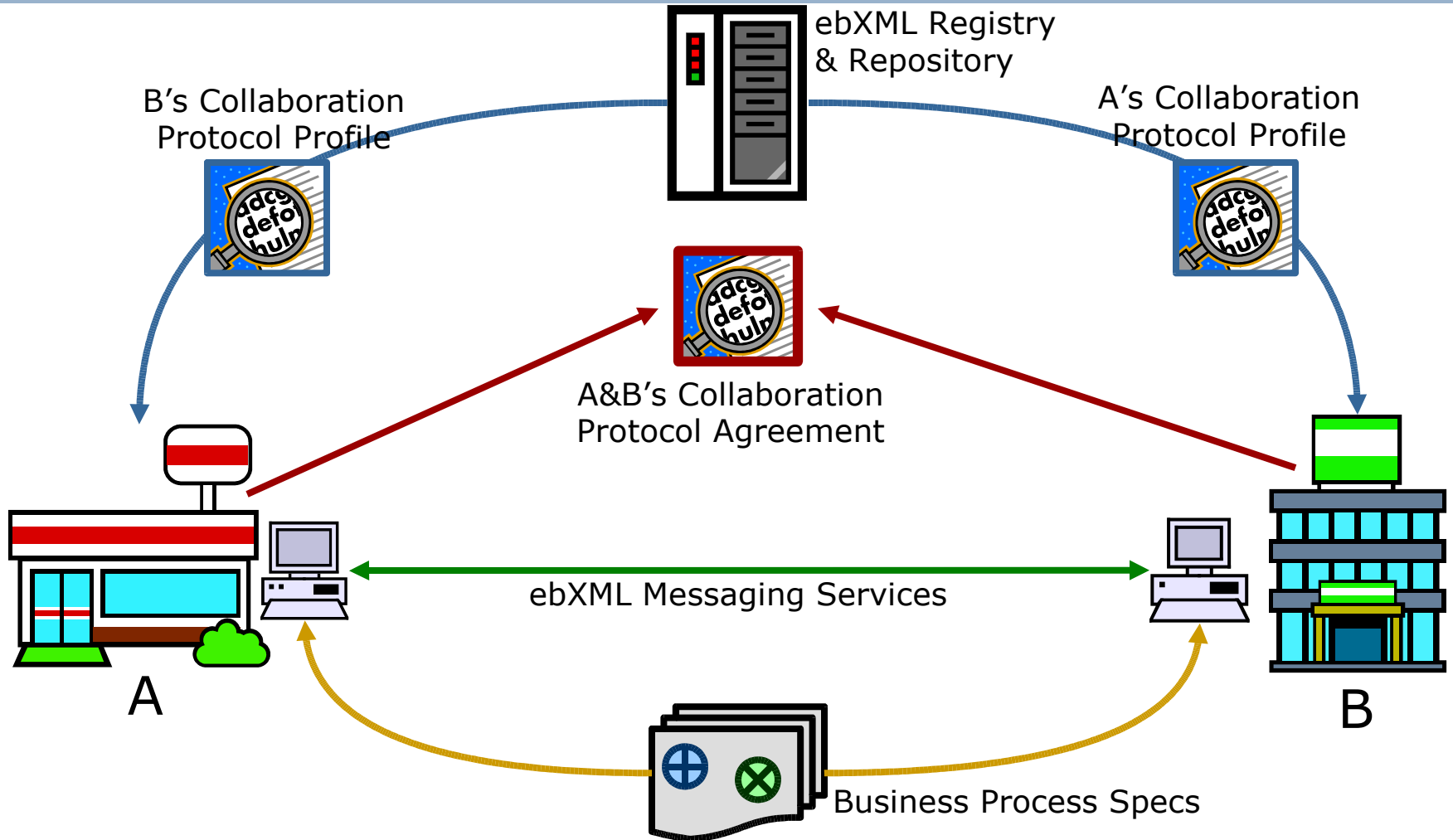


A Case Study: ebXML and Hermes



From Open Source to Adoption

ebXML Architecture



ebXML Adoption in HK

- ◀ Developed core ebXML technology
 - ◀ **Hermes** – ebXML Message Service Handler
 - ◀ **ebMail** – ebXML-based e-mailer for small businesses
 - ◀ **ebXMLRR** – contributed to TC members' development
 - ◀ **TranXnet** – BPSS implementation
 - ◀ **XML Schema Design and Management Guide** – customized ebXML Core Component Technical Specification for e-government application
- ◀ Pilot and production projects
- ◀ Digital Trade and Transportation Network

Hermes ebMS Handler

- ◀ Implemented **ebXML Messaging Service V2**
- ◀ Open-sourced since September 2002
 - ◀ Recorded downloads from 60+ countries
- ◀ Passed **ebXML Asia Committee Interoperability Test**
- ◀ Developers from an European vendor taking Hermes to enter Europe Interoperability Test
- ◀ Next version aims at multiple protocol: ebXML + WS-Reliability
- ◀ Many production cases in Hong Kong and overseas
 - ◀ Sony Music and HMV: procurement of CDs, VCDs and DVDs
 - ◀ HKSAR Govt and shipping companies (e.g. OOCL): submission of dangerous goods manifests to HKSAR Govt
 - ◀ Spherion in Australia: transaction of training services with Telstra
- ◀ Some international vendors use Hermes to develop commercial products

Sony Music

HMV

4

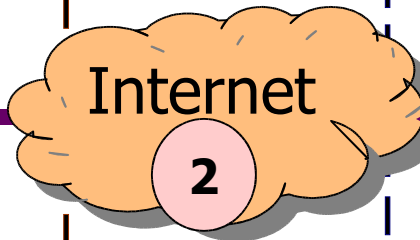


3



Hermes ebMS Gateway

ebXML Messaging Service over HTTP/S



2

1

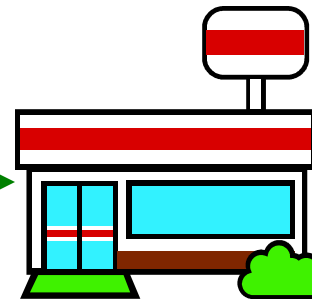
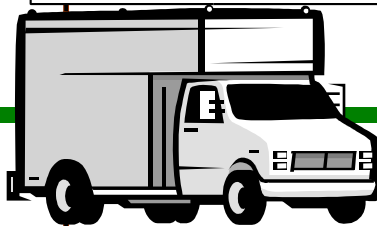


Hermes ebMS Gateway

5

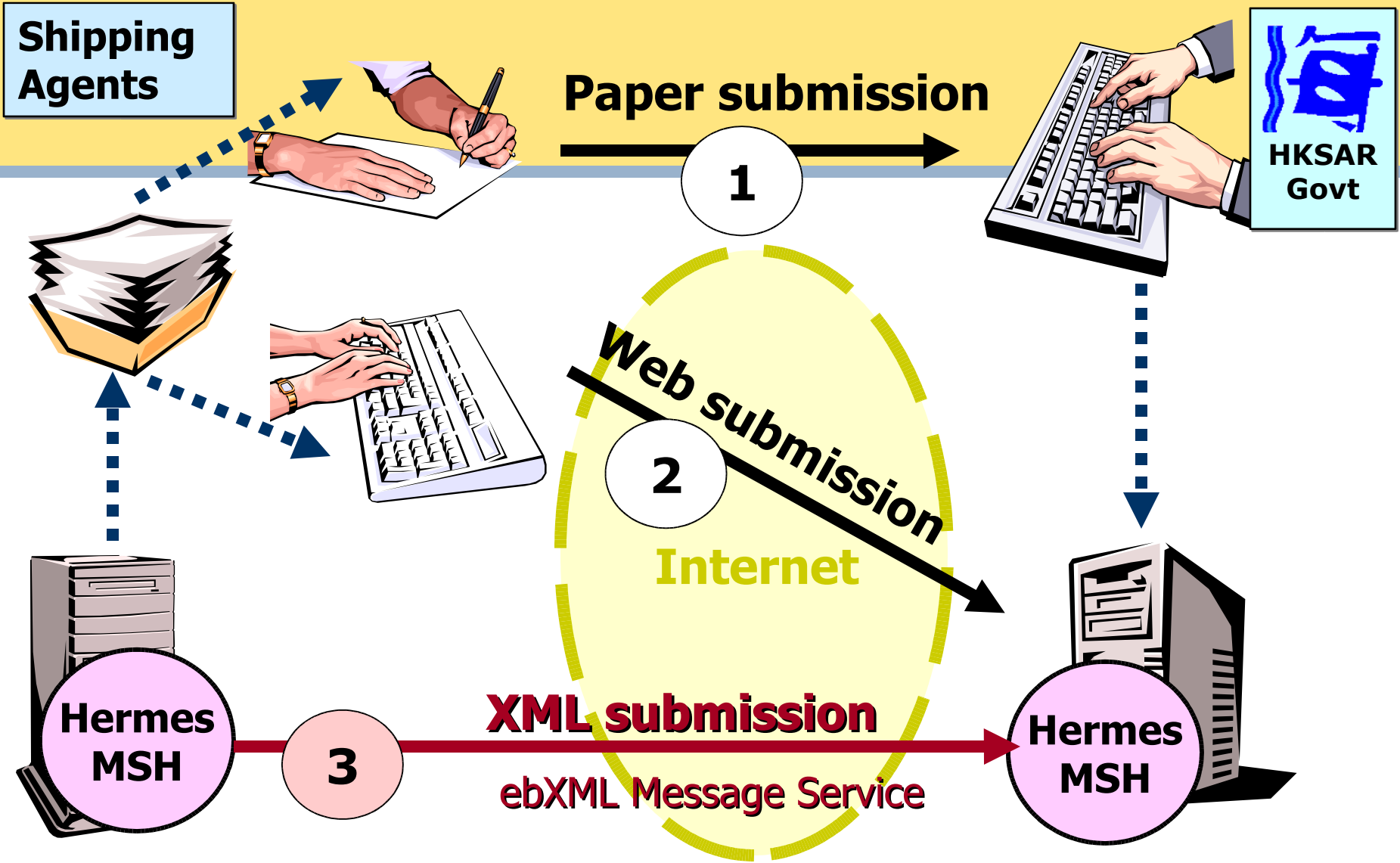


Delivery of CDs



Streamlined procurement process

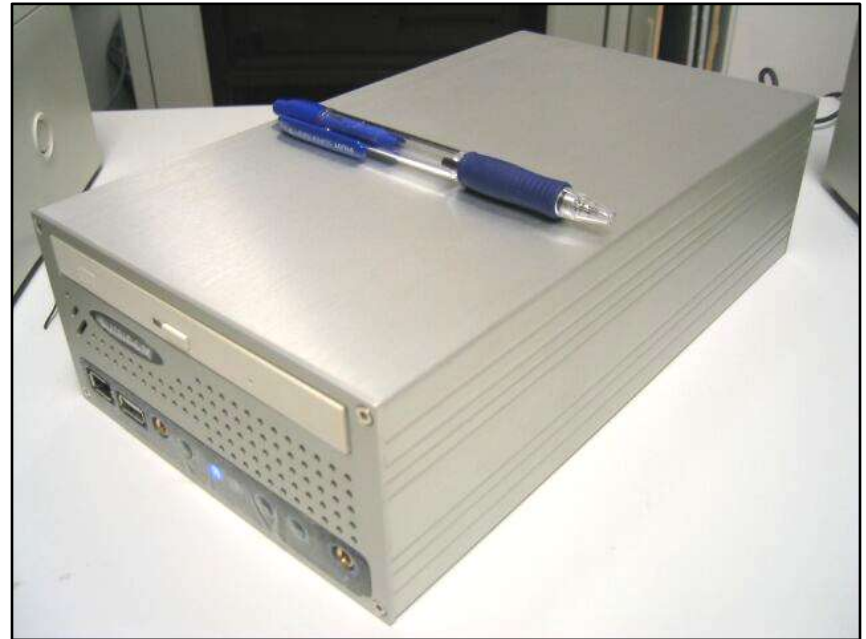
Dangerous Goods Declaration with ebXML



Standardized DG manifest in XML

B2B Connector (Project Elf)

- ◀ Standalone device for B2B exchange
- ◀ **Plug-and-play**, Internet-based, low-cost
- ◀ Support conversion between different e-doc standards
- ◀ Extensible through plug-in modules
 - ◀ New standards and converters
- ◀ Core technology:
ebXML + UBL



◀ **eBusiness Router**

XML Schema Design and Management Guide for HKSAR Govt

- ◀ XML schema modeling methodology for developing **e-govt applications**
- ◀ Based on **ebXML Core Components & UBL approach**
- ◀ Standardized **Common Schemas**
 - ◀ person's name, HKID#, address, etc.
- ◀ **Central Data Registry**
 - ◀ www.xml.gov.hk
- ◀ Already applied in real cases
 - ◀ Center for Health Protection
 - ◀ Dangerous goods declaration
 - ◀ Weather info publishing
- ◀ One of OASIS eGovernment best practices
 - ◀ <http://egovernment.xml.org>



XML SCHEMA DESIGN AND MANAGEMENT GUIDE
PART I: OVERVIEW

[G55-1]

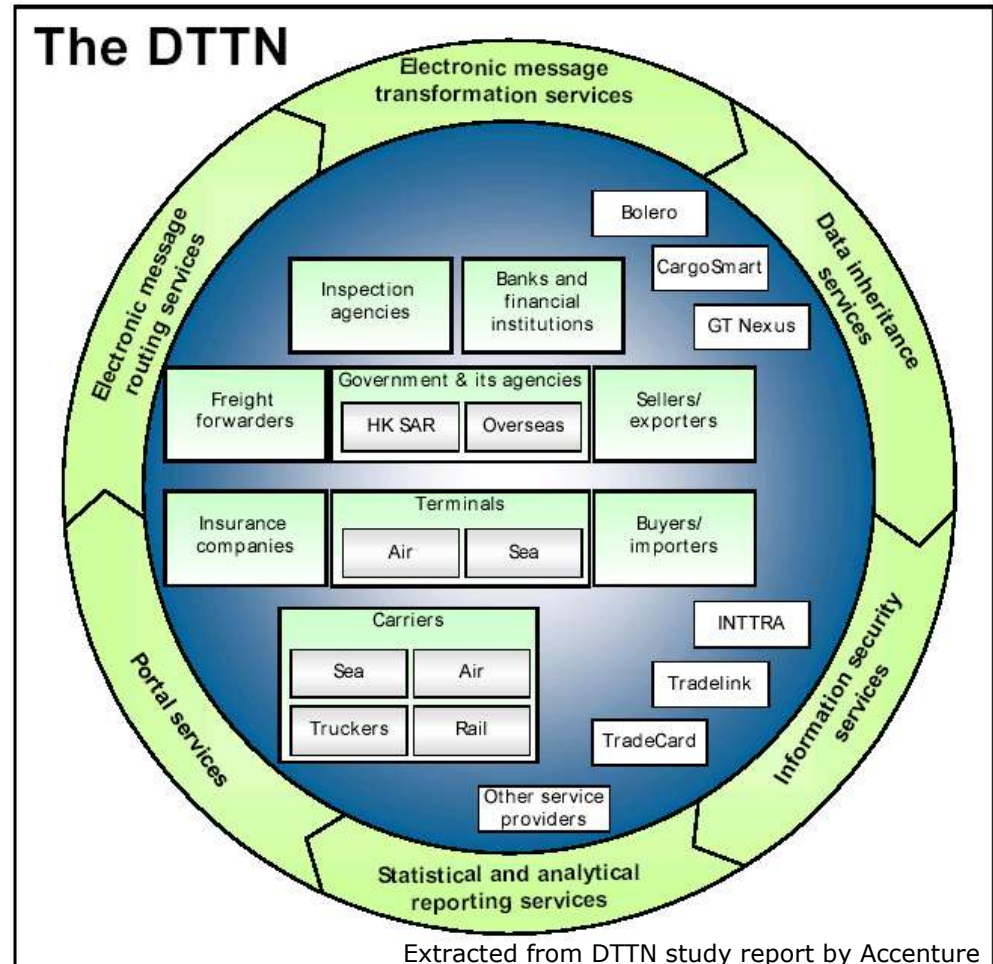
Version 1.0

Nov 2003

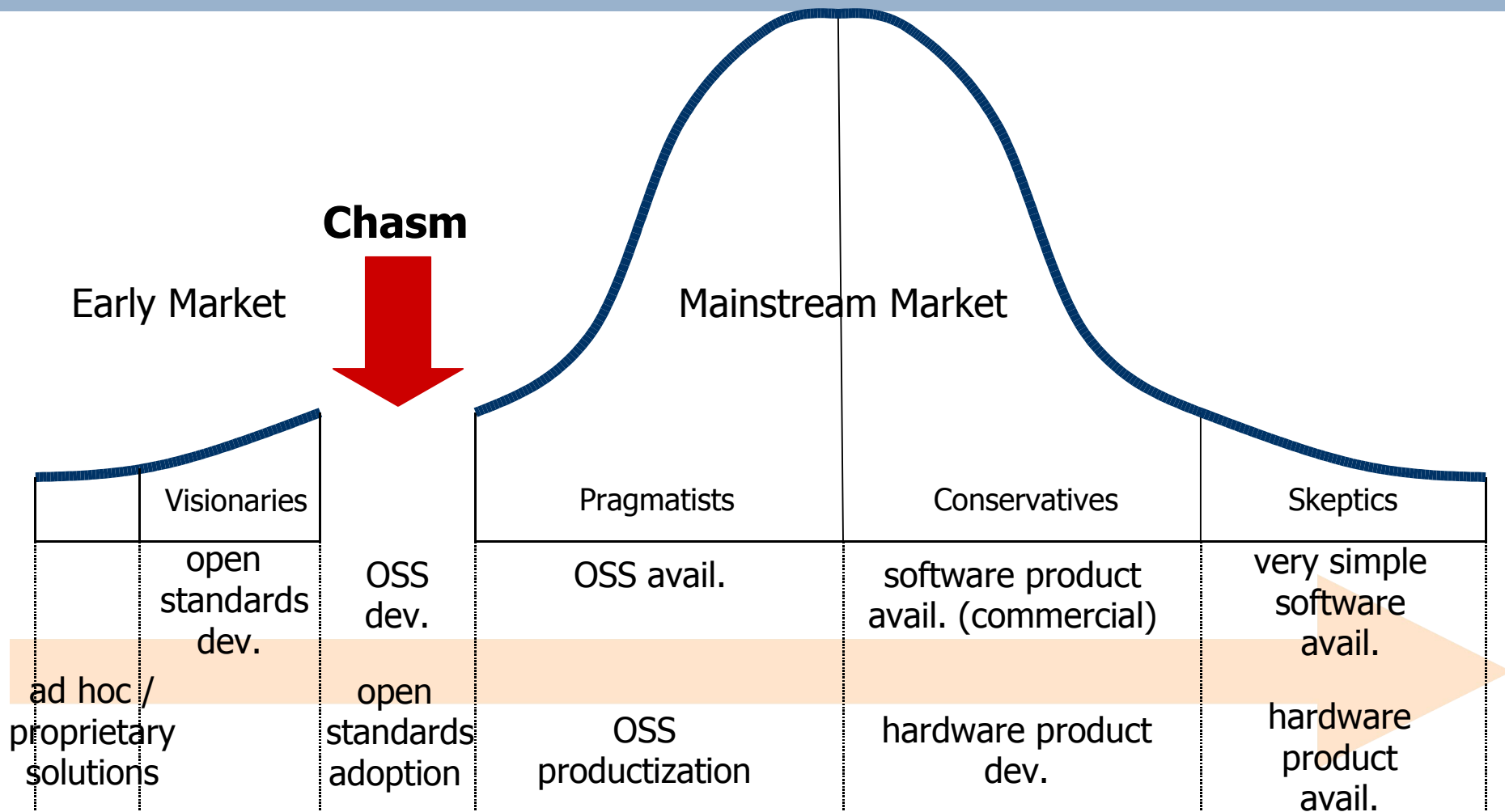
© The Government of the Hong Kong Special Administrative Region

Digital Trade and Transportation Network in Hong Kong

- Electronic platform to enable **efficient and reliable data exchange** between logistics players in 9 industries
- To enhance HKSAR's competitiveness as a transportation and logistics hub in the region
- Accenture report estimates
 - Investment of HK\$3 billion over 17 years
 - Benefits of HK\$11.8 billion
- Messaging infrastructure:
 - ebXML + Web Services**
 - 60 business docs and 10 workflows identified



Technology Adoption Life Cycle



We Believe B2B E-Commerce...

- ◀ Will take off when mature standards and software are available in 1-2 years
- ◀ Will pervade large and medium businesses through **network routers** and **very simple software** in 4-5 years
- ◀ Will eventually become as easy-to-use and widespread as **fax machine**

ELF becoming **EL**ectronic document **F**ax machine?



Questions?



Thank You!

kcyee@cecid.hku.hk

<http://www.cecid.hku.hk>

<http://www.freebxml.org>

