Implementing e-Business Open Standards for End-Users and Public Administration

Ulf Persson

Senior Product Manager, Axway

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a Sopra Group company

Using ebXML to Implement a North Asian Government Trading Community

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Today's Agenda

▼ **e-Government: The context**

▼ **A look back: e-Government initiatives in Hong Kong**

    ▼ Background and Business drivers

▼ **A look around: From EDI to XML - Implementations**

    ▼ Objectives and Requirements

    ▼ Architecture

▼ **A look forward: Summary and conclusion**

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e-Government: The context
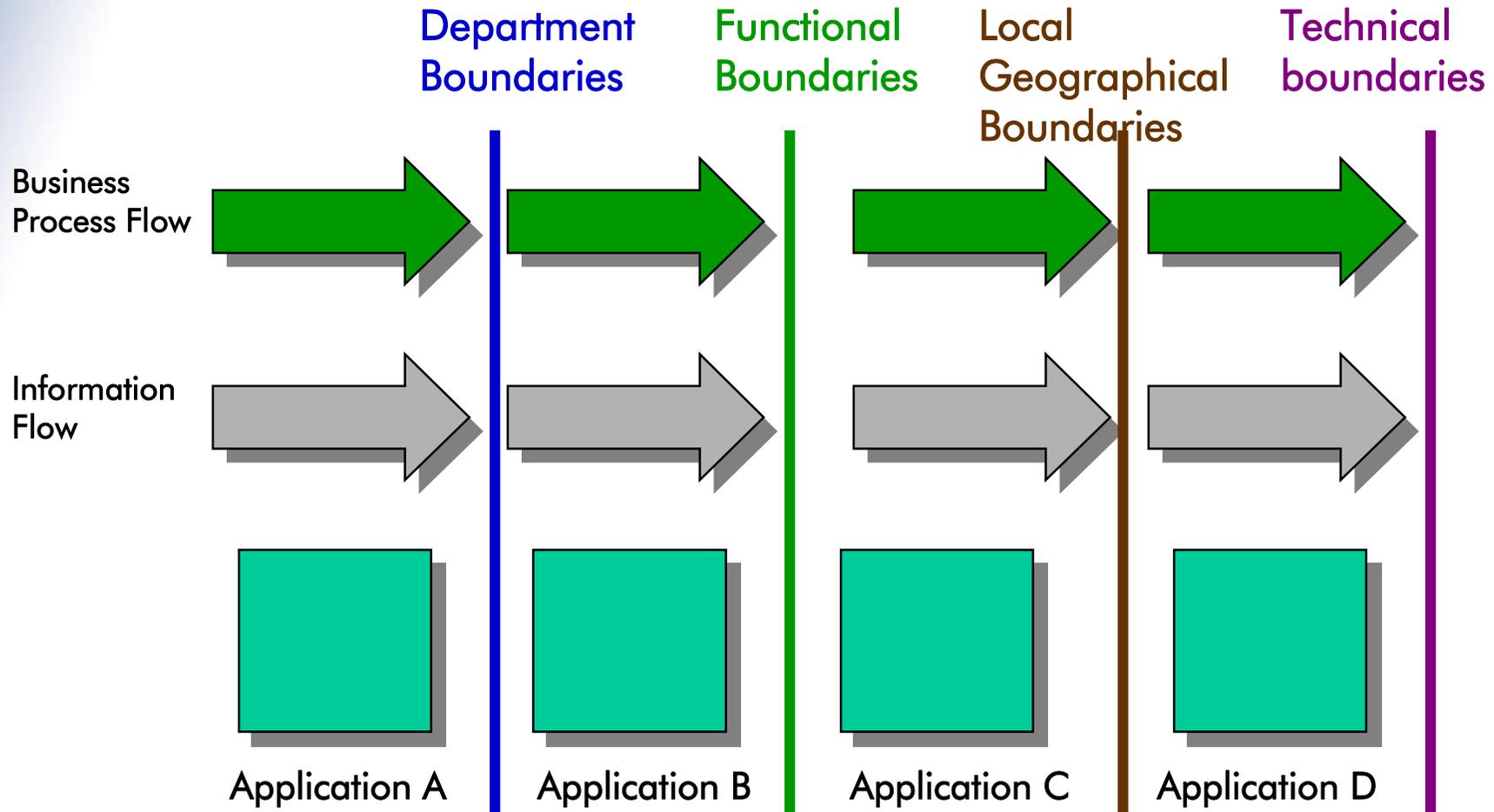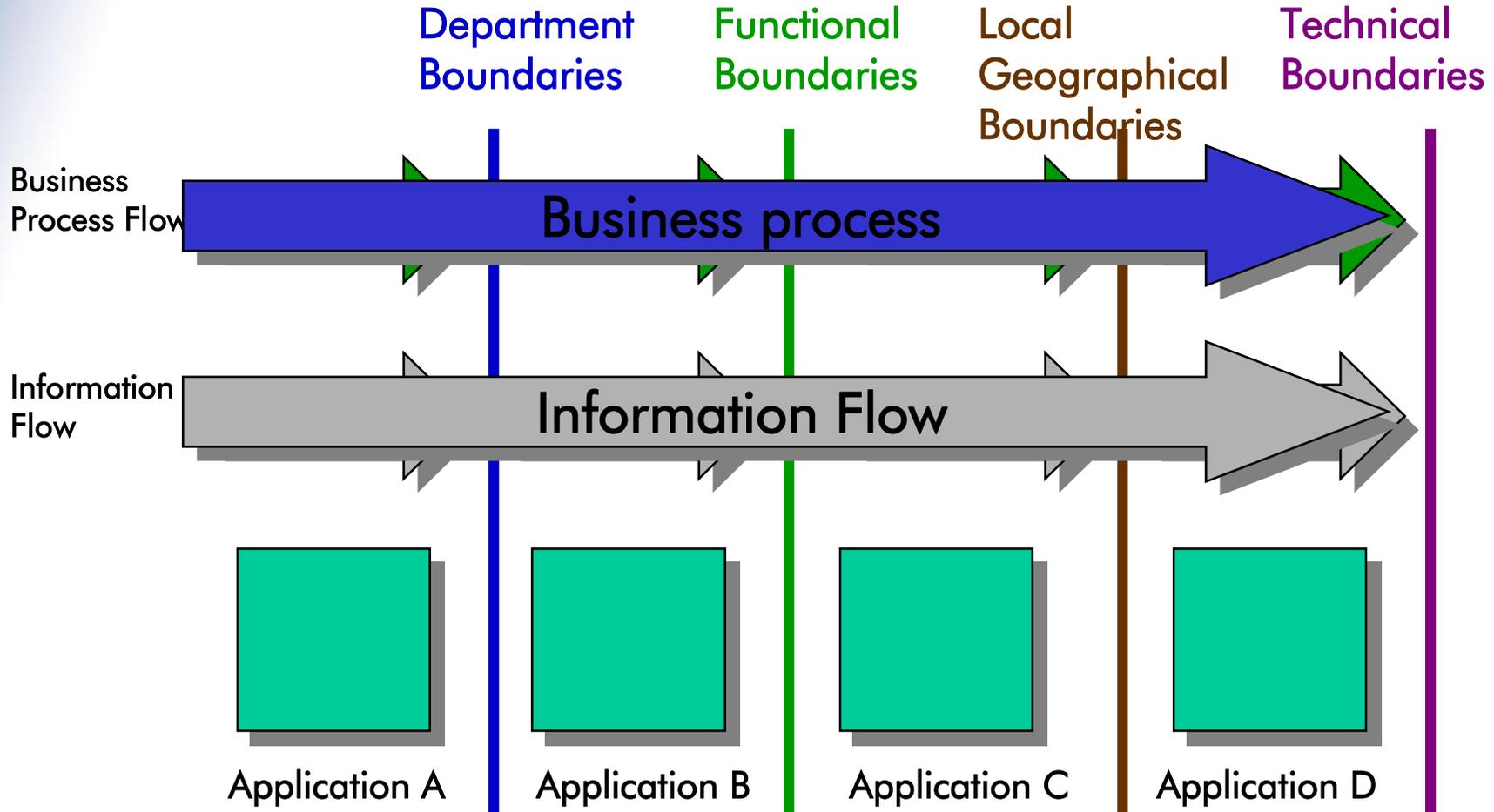
Assumptions behind e-Business and standards

◤ No task can be performed better than the information it is based on ...

◤ Organisations, enterprises and governments only work as fast as the information flow ...

◤ Use of open e-Business Standards is one of the founding pillars within your information integration infrastructure ...

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The usual situation within enterprises

	Department Boundaries	Functional Boundaries	Local Geographical Boundaries	Technical boundaries

Business Process Flow

Information Flow

Application A	Application B	Application C	Application D

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The Agile Enterprise

The Fast and Extended Enterprise

Department Boundaries

Functional Boundaries

cal ries

Business Process Flow

Infor Flow

Open e-business Standards and Messaging frameworks based, for example on XML, enable organisations and enterprises to take control of the rapid flow of information both inside and outside the organisation

...ration Infrastructure

Application A | Application B | Application C | Application D

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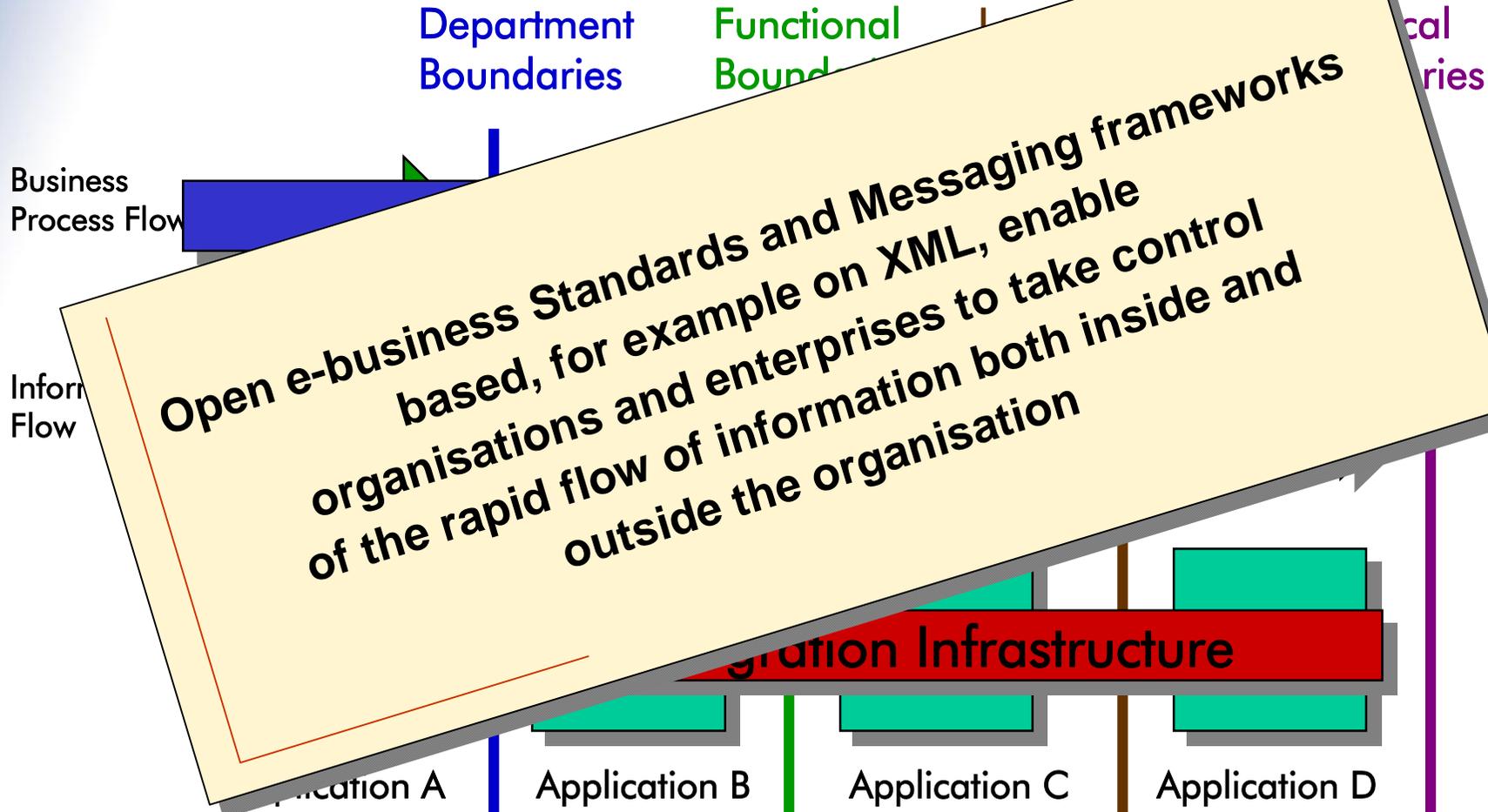
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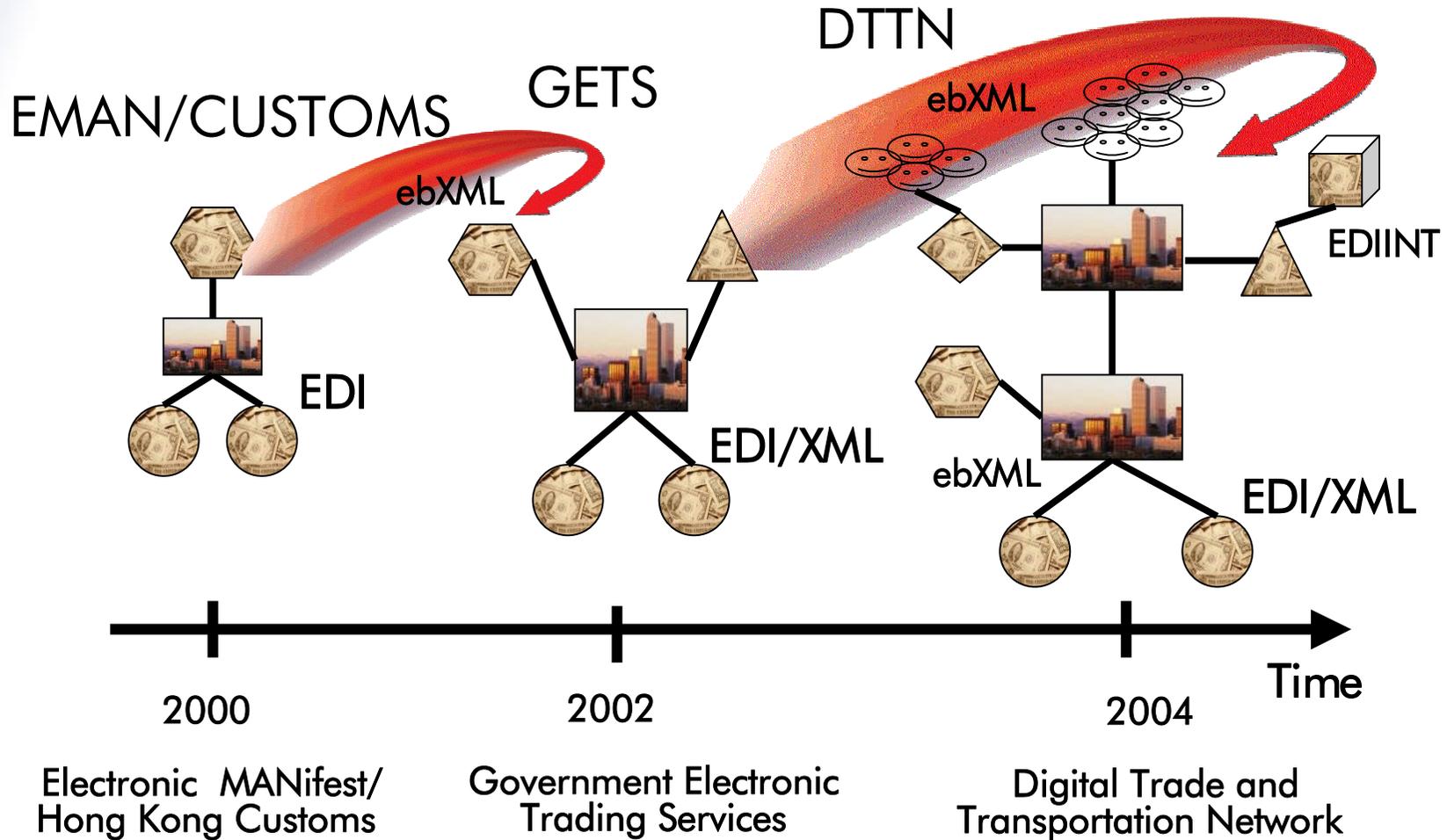
A look back: e-Government initiatives in Hong Kong

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Business drivers

◥ **Competitive environment**

◥ **Government to business (G2B)**

    ◥ The need for business collaboration within and between governments and enterprises, different industries such as trade facilitation, transport, logistics, etc.

◥ **Technology initiatives**

    ◥ XML (ebXML)

    ◥ Web Services

    ◥ ...

◥ **Open e-business organisations within the region**

    ◥ Center for E-Commerce Infrastructure Development (CECID), www.cecid.hku.hk

    ◥ Pan-Asian e-Commerce Alliance (PAA), www.paa.net

    ◥ ebXML Asia Committee (eAC), www.ebxmlasia.org

    ◥ ...

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Hong Kong Government e-Business initiatives – Three main phases

EMAN/CUSTOMS

GETS

DTTN

ebXML

ebXML

EDI

EDI/XML

ebXML

EDI/XML

EDIINT

Time

2000

2002

2004

Electronic MANifest/
Hong Kong Customs

Government Electronic
Trading Services

Digital Trade and
Transportation Network

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A look around: From EDI to XML - Implementations

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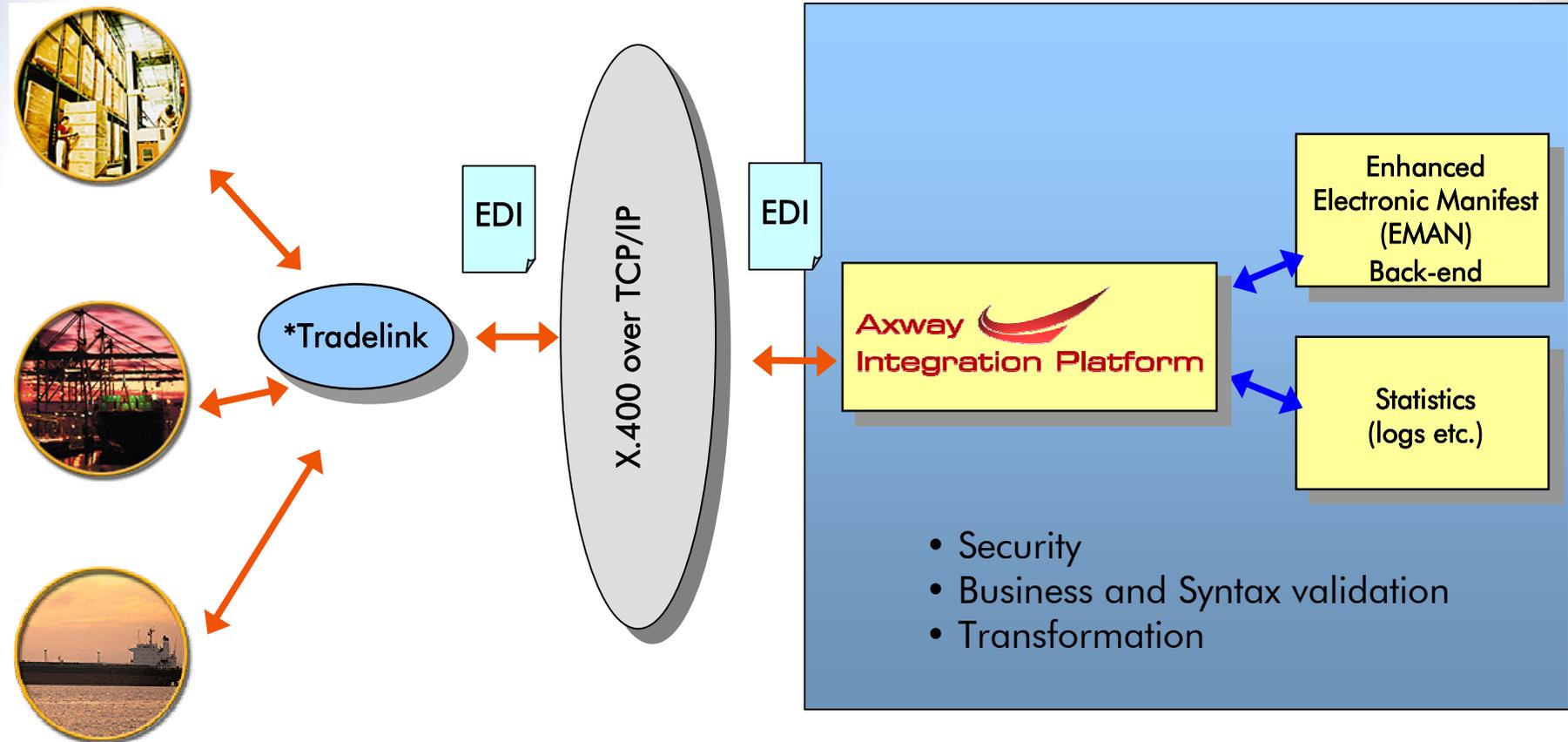
Phase 1: Electronic MANifest (EMAN) / Hong Kong Customs

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EMAN/Hong Kong Customs - Objective and requirements

◄ **Move towards one e-Infrastructure platform**

  ◄ Efficient, reliable and scalable

   • Ability to automate the process
   • Quick turnaround time
   • Ability to scale to increasing workload and new technological requirements

◄ **Seamless Integration between VANs / Service Provider and Customs EMAN (Electronic Data Interchange for Cargo Manifest) System**

◄ **Migration of EDI to XML (start of…)**

  ◄ Support business formats, such as

   • EDI
     • *EDIFACT (v3 and v4 of the EDIFACT syntax)*
     • *ANSI X.12*
   • XML

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EDI

EDI

X.400 over TCP/IP

*Tradelink

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Integration Platform

Enhanced
Electronic Manifest
(EMAN)
Back-end

Statistics
(logs etc.)

- Security
- Business and Syntax validation
- Transformation

Logistics, Ports, Shipping,
Importers/Exporters, etc.

*Until the end of 2003, Tradelink was the only trade service provider for HK Govt

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Phase 2. Government Electronic Trading Services (GETS)
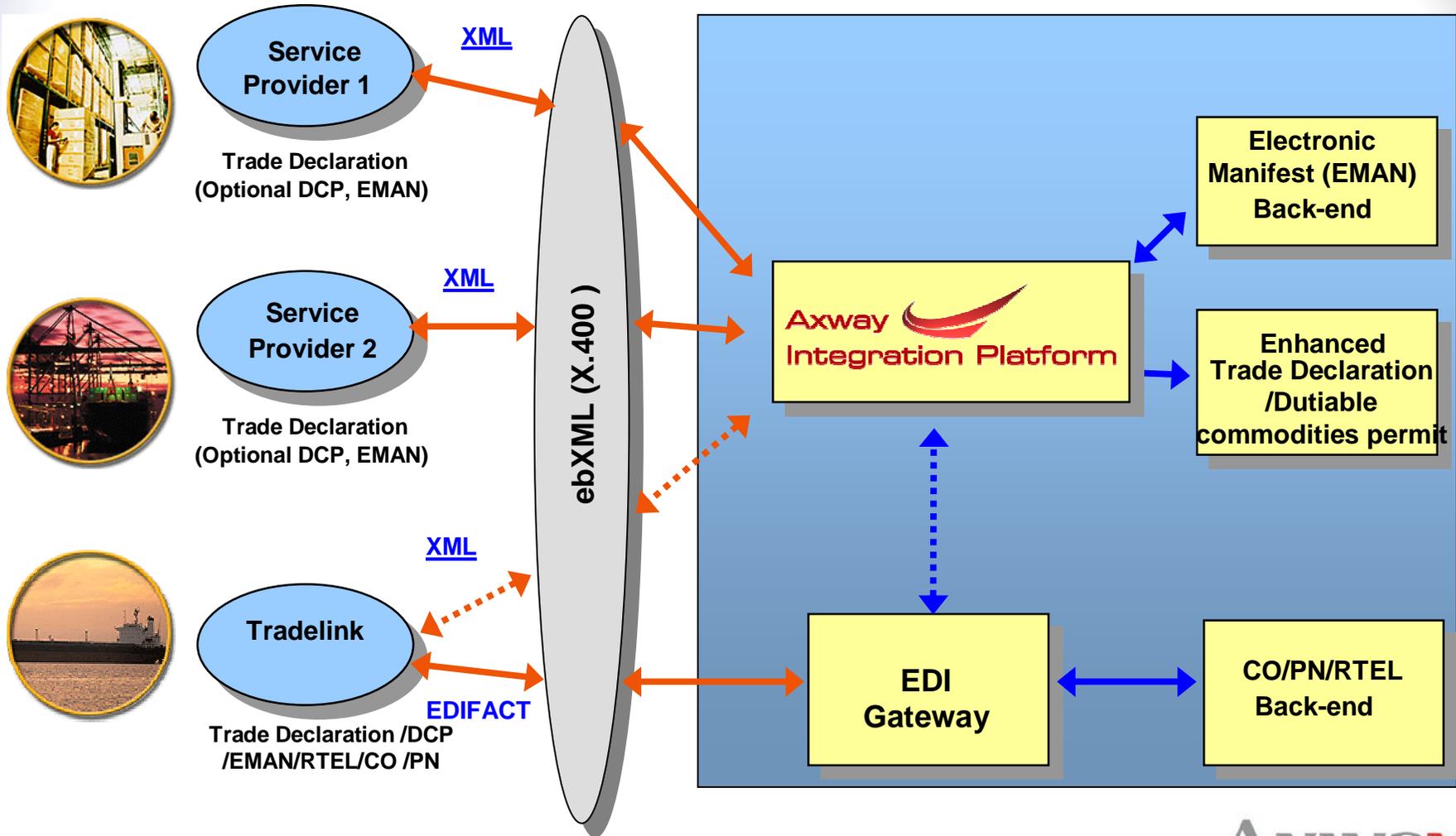
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GETS – Objective and Requirements

◣ **Increase quality (through competition)**

  ◤ GETS will help establish new front-end services for processing certain Government official trade-related documents

◣ **Introduction of open e-Business Standards like ebXML**

◣ **Replace EDI with XML**

  ◤ Import and export declarations

  • For the trade-related information, the ISO 10646 standard will be adopted for processing traditional and simplified Chinese characters, including Hong Kong Supplementary Character Set

  ◤ Dutiable commodities permit

  ◤ Cargo manifest (excluding the road mode of transport)

◣ **High available and scalable platform including**

  ◤ Authentication

  ◤ Validation

  ◤ Transformation

  ◤ Logging

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GETS - Architecture

Customs, Logistics, Ports, Shipping, Importers/Exporters, etc.

Service Provider 1

Trade Declaration (Optional DCP, EMAN)

XML

Service Provider 2

Trade Declaration (Optional DCP, EMAN)

XML

Tradelink

Trade Declaration /DCP /EMAN/RTEL/CO /PN

XML

EDIFACT

ebXML (X.400)

Axway Integration Platform

Electronic Manifest (EMAN) Back-end

Enhanced Trade Declaration /Dutiable commodities permit

EDI Gateway

CO/PN/RTEL Back-end

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Phase 3. Digital Trade and Transportation Network (DTTN)
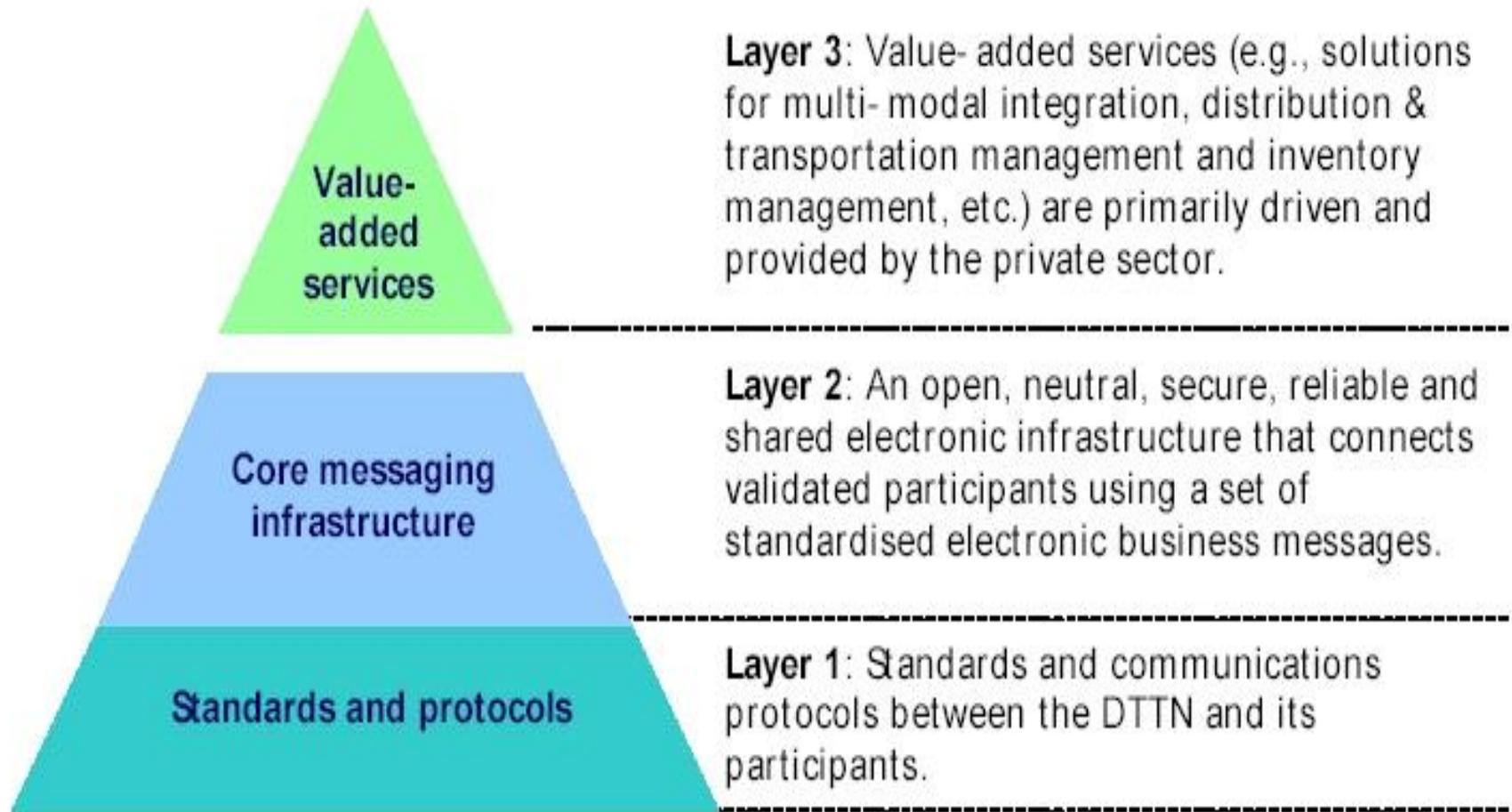
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"With Hong Kong's excellent transportation facilities and the Pearl River Delta (PRD)'s high productivity, together we can develop into a logistics hub to link the Mainland with the world.

We can promote the development of an inter-modal system and consider other supporting facilities to speed up the flow of goods and information. The provision of integrated services will also strengthen Hong Kong's competitive advantages as a supply-chain base."
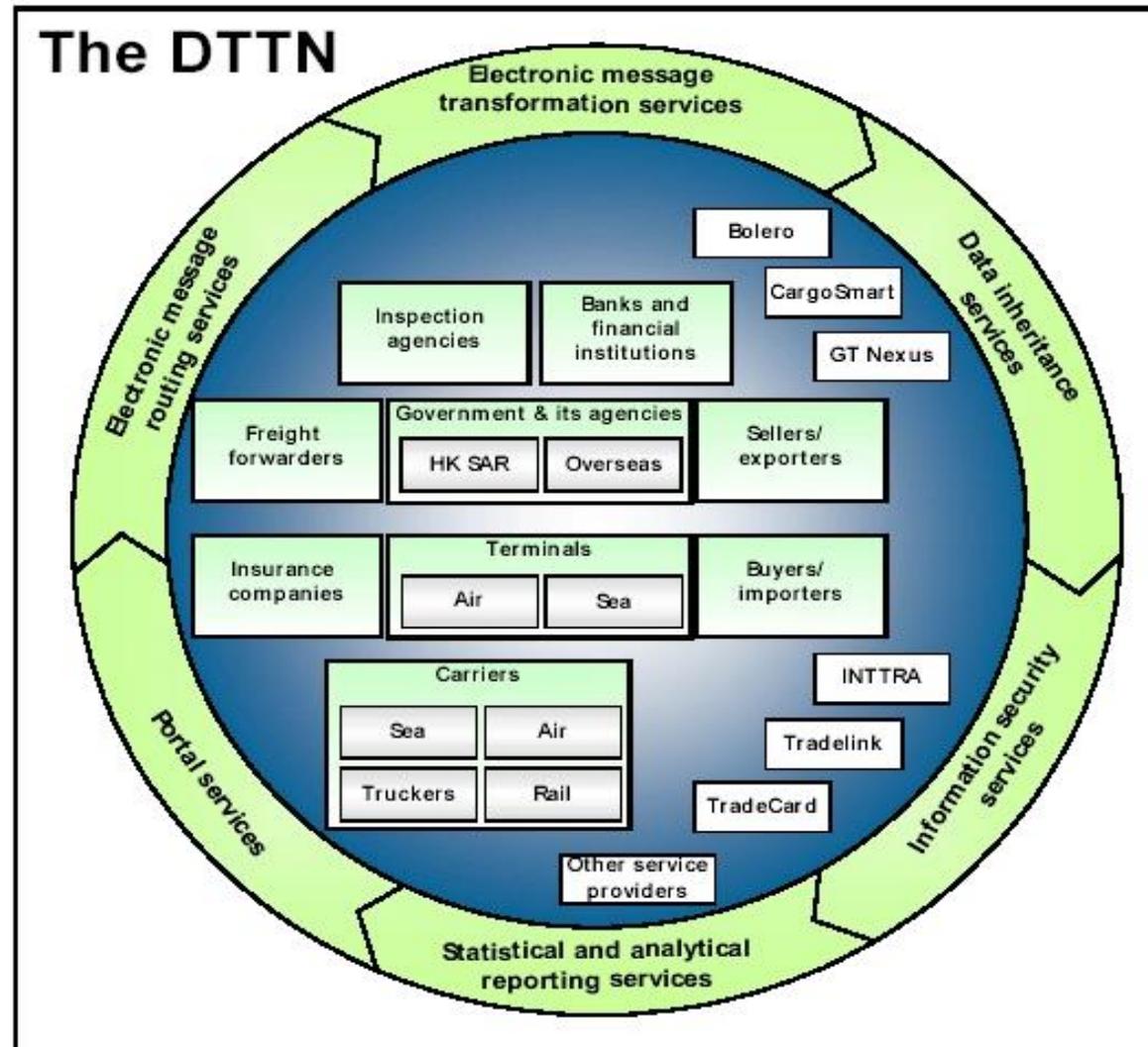
- 2001 Hong Kong Government Policy Address

Source:
Study for the Development of a Digital Trade and Transportation Network (DTTN) System to Support the Development of Hong Kong as an International Logistics Hub, Final report November 2002

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DTTN - Layered Model

Layer 3: Value- added services (e.g., solutions for multi- modal integration, distribution & transportation management and inventory management, etc.) are primarily driven and provided by the private sector.

Value-added services

Layer 2: An open, neutral, secure, reliable and shared electronic infrastructure that connects validated participants using a set of standardised electronic business messages.

Core messaging infrastructure

Layer 1: Standards and communications protocols between the DTTN and its participants.
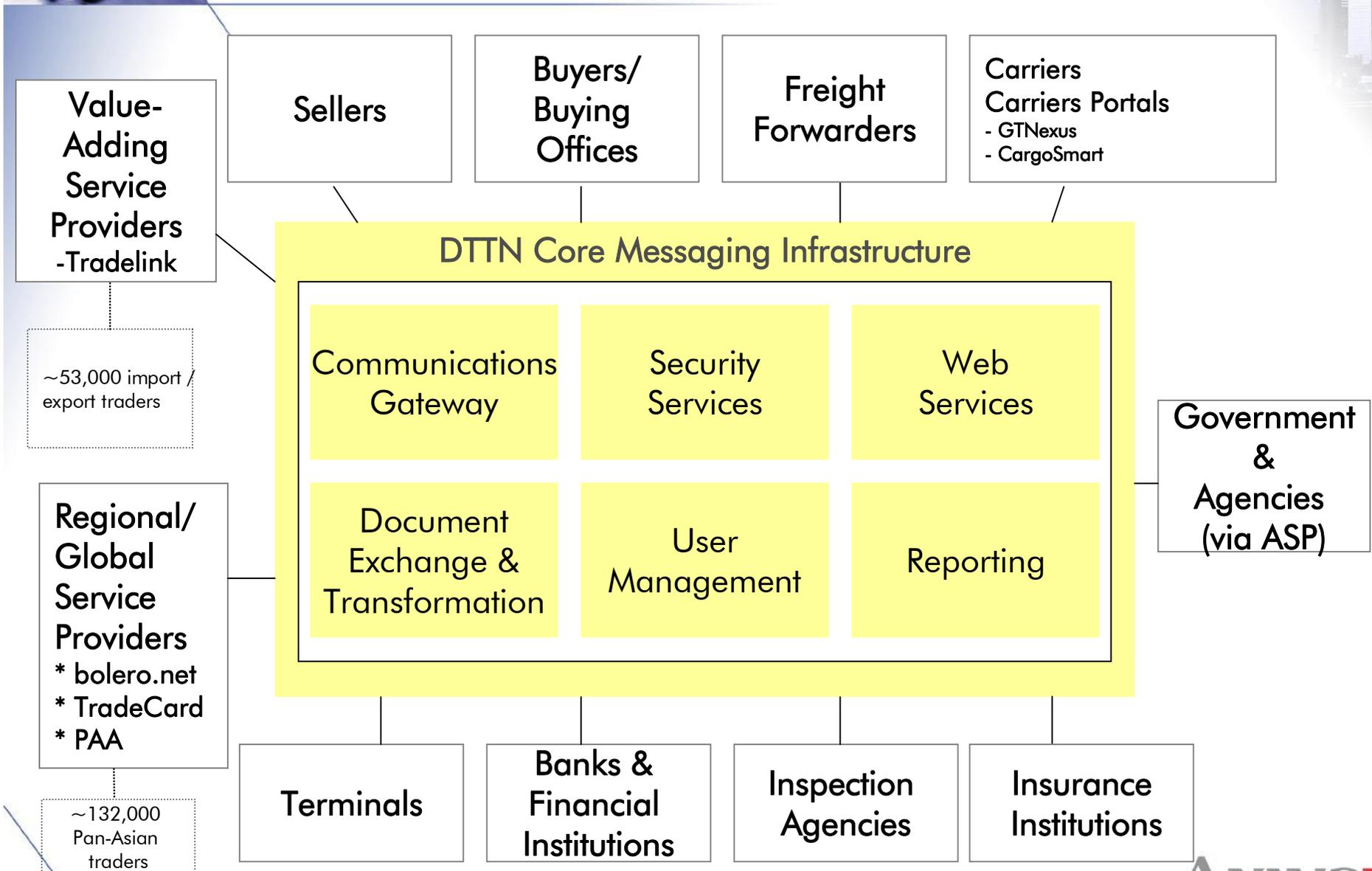
Standards and protocols

Source:
Study for the Development of a Digital Trade and Transportation Network (DTTN) System to Support the Development of
Hong Kong as an International Logistics Hub, Final report November 2002

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Source:
Study for the Development of a Digital Trade and Transportation Network (DTTN) System to Support the Development of
Hong Kong as an International Logistics Hub, Final report November 2002

Community Role of the DTTN

Value-Adding Service Providers
-Tradelink

~53,000 import / export traders

Sellers

Buyers/ Buying Offices

Freight Forwarders

Carriers Carriers Portals
- GTNexus
- CargoSmart

DTTN Core Messaging Infrastructure

Communications Gateway	Security Services	Web Services
Document Exchange & Transformation	User Management	Reporting

Regional/ Global Service Providers
* bolero.net
* TradeCard
* PAA

~132,000 Pan-Asian traders

Government & Agencies (via ASP)

Terminals

Banks & Financial Institutions

Inspection Agencies

Insurance Institutions
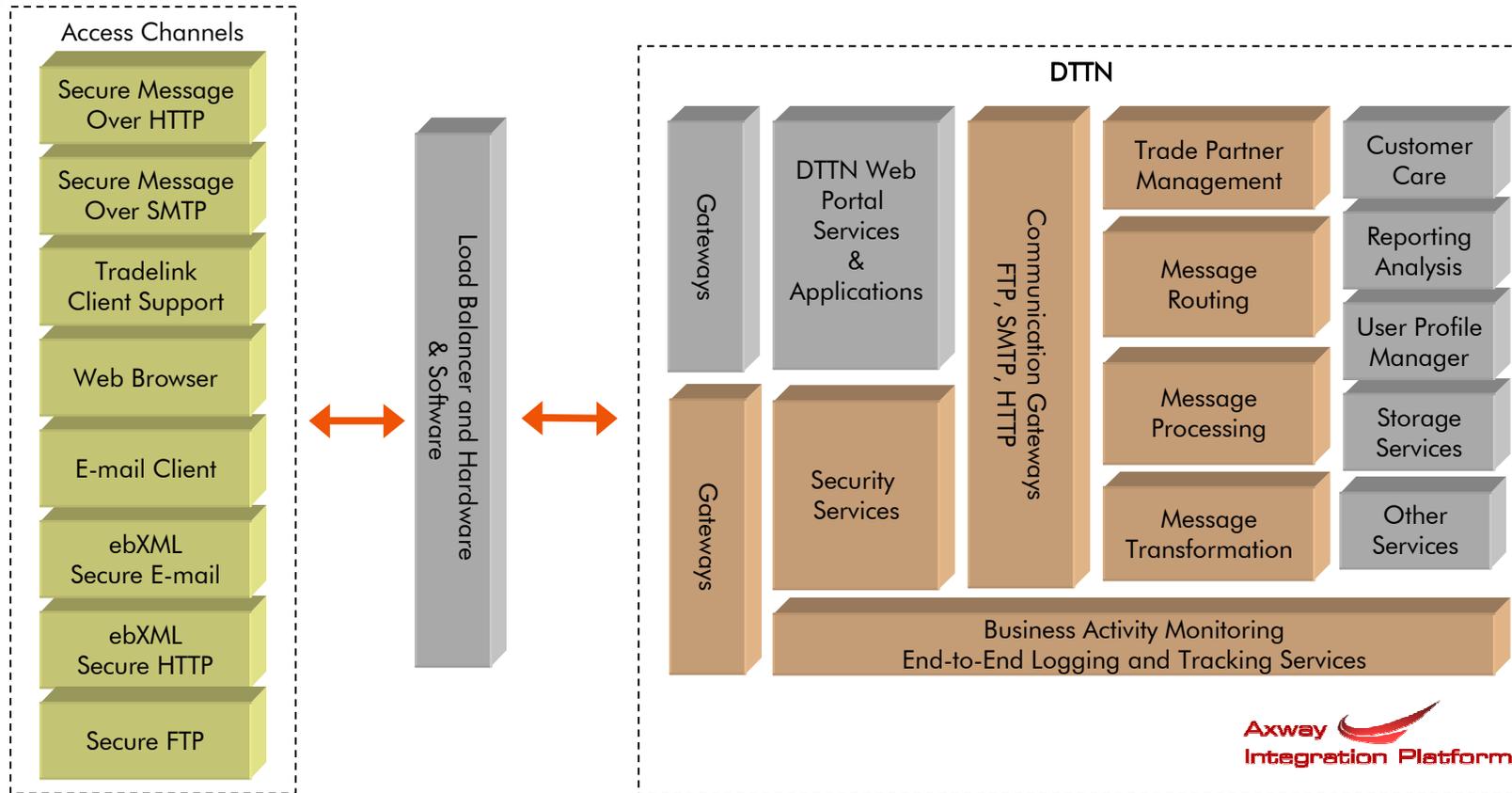
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DTTN - Interoperability

Message format standard	Character encoding standard	Identification standard	Communications protocol	Security standard	Application integration standard
• UN/EDIFACT • ANSI X12 • Cargo-IMP[8] • XML v1.0 • Microsoft Excel • Text in CSV[9] format • SMS[10]	• ASCII[11] • ISO8859-1 • Big5 • GB2312-1980 • GB18030-2000 • ISO10646 • HKSCS[12]	• DUNS[13] • GLN[14] • GTIN[15] • SSCC[16] • SITC[17]	• HTTP • SMTP • FTP	• SSL • TLS[18] • LDAP • XML Encryption • XML Signature • S/MIME • PKI[19]	• ebMS v2.0 • SOAP[20] v1.1

Supported message format (sender)	Canonical message format (the DTTN)	Supported message format (recipient)
• XML v1.0 • Microsoft Excel • Text in CSV format • UN/EDIFACT • ANSI X12 • Cargo-IMP	• XML v1.0	• XML v1.0 • Microsoft Excel • Text in CSV format • UN/EDIFACT • ANSI X12 • Cargo-IMP • SMS

Source:
Study for the Development of a Digital Trade and Transportation Network (DTTN) System to Support the Development of Hong Kong as an International Logistics Hub, Final report November 2002

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DTTN - Architecture

Access Channels

- Secure Message Over HTTP
- Secure Message Over SMTP
- Tradelink Client Support
- Web Browser
- E-mail Client
- ebXML Secure E-mail
- ebXML Secure HTTP
- Secure FTP

Load Balancer and Hardware & Software

DTTN

- Gateways
- Gateways
- DTTN Web Portal Services & Applications
- Security Services
- Communication Gateways FTP, SMTP, HTTP
- Trade Partner Management
- Message Routing
- Message Processing
- Message Transformation
- Customer Care
- Reporting Analysis
- User Profile Manager
- Storage Services
- Other Services

Business Activity Monitoring
End-to-End Logging and Tracking Services

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Integration Platform

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DTTN - Business Benefits

◤ Improve operational efficiency

◤ Enable new business opportunities

◤ Compete on value, not just cost

◤ Integrate with global initiatives

◤ Integrate with Mainland China

◤ Induce changes to improve IT literacy of the industry

◤ Respond to competitive challenge

◤ Improve Hong Kong's image

◤ Shield the industry from frequent upgrades

Source:
Study for the Development of a Digital Trade and Transportation Network (DTTN) System to Support the Development of
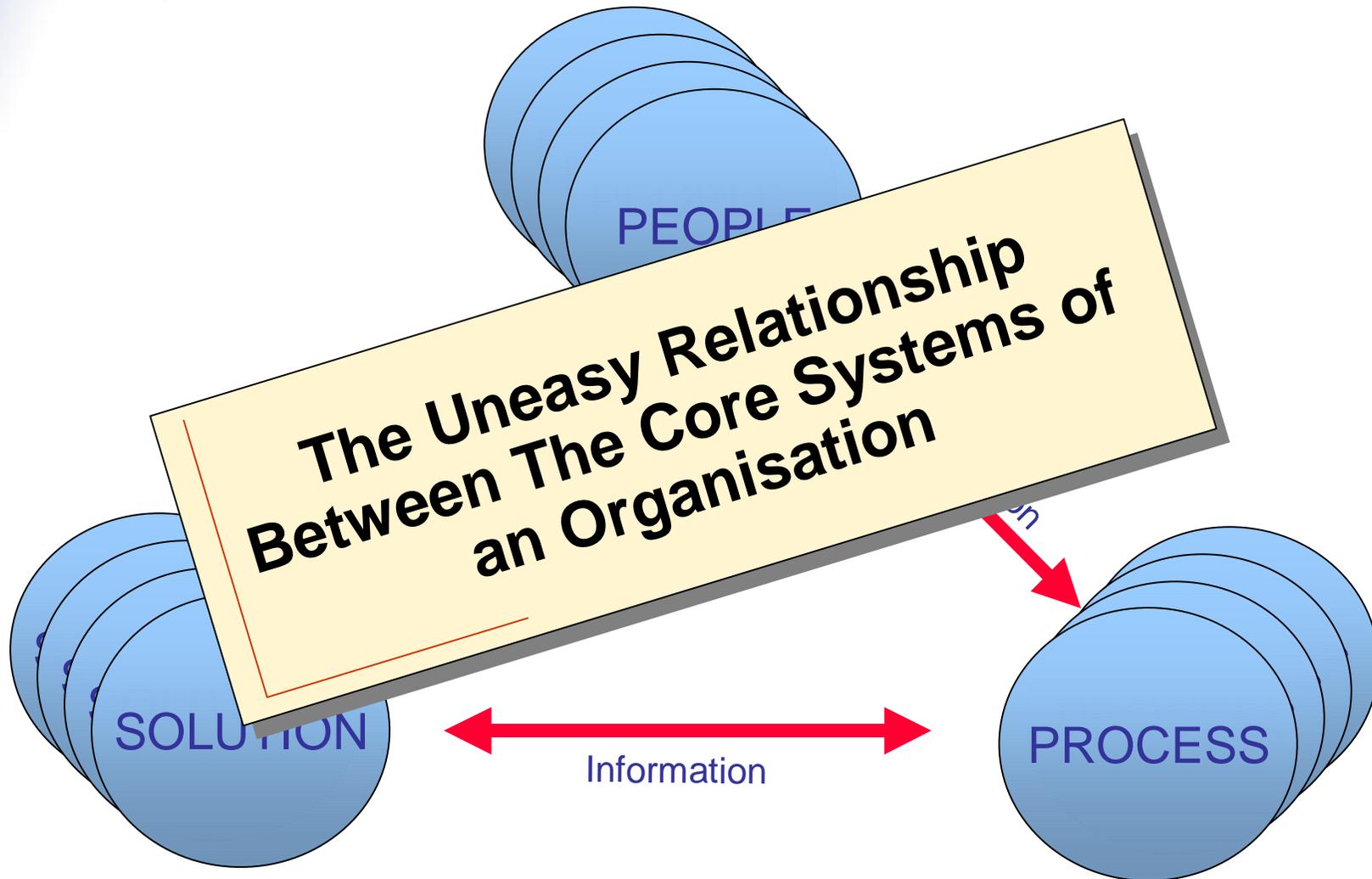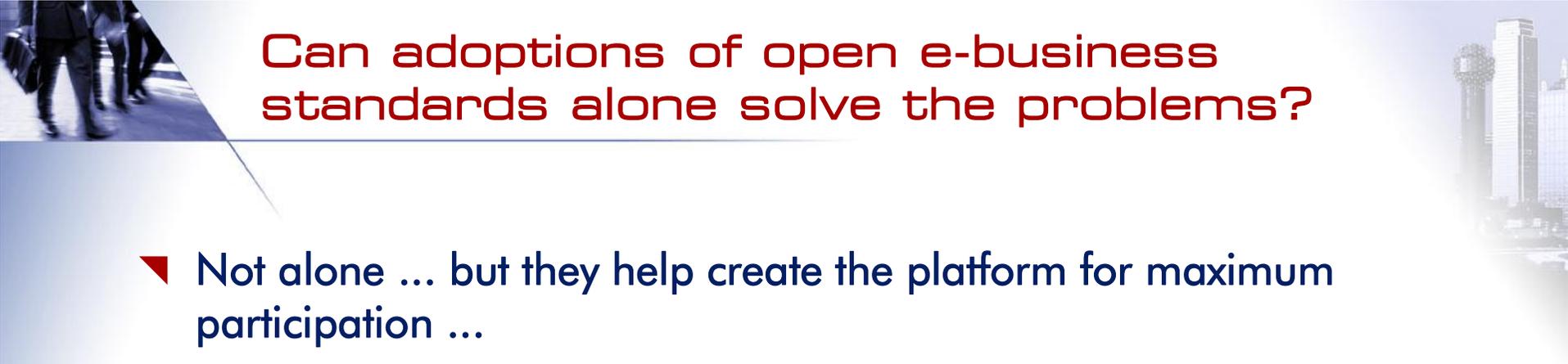Hong Kong as an International Logistics Hub, Final report November 2002

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A look forward: Summary and conclusion

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PEOPLE

SOLUTION

PROCESS

Information

The Uneasy Relationship Between The Core Systems of an Organisation

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Can adoptions of open e-business standards alone solve the problems?

◥ **Not alone … but they help create the platform for maximum participation …**

- ◥ e-business standards should be used together and with a robust and scalable B2Bi solution.

- ◥ Business Activity Monitoring is the cornerstone in monitoring & managing "Events" across applications and enterprises for e-Government initiatives.

- ◥ End-Users must be encouraged to participate in the collaboration; it is important that all parties - irrespective of size - engage in electronic business.

Initiatives such as those undertaken by OASIS, go a long way to making sure that standards are accessible to Governments and End-Users

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Some final words of advice ...

BE FOCUSED

BE FASTER

BE FLEXIBLE

BUT... BE FRUGAL

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Ulf Persson

Senior Product Manager, Axway

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