Challenges in Implementing Trade Facilitation & e-Business over the Internet

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Former UN/CEFACT Vice-Chair
Contents

1. What is AFACT? – Asia Pacific Council for Trade Facilitation & e-Business
2. UN/CEFACT & its Vision
4. The World Before XML – Traditional EDI to XML/EDI
5. Future of Trade Facilitation & e-Business
1. AFACT is the Asia Pacific Council for Trade Facilitation and Electronic Business.
AFACT - Mission

- AFACT aims to support in the Asia Pacific region policies and activities, especially those promoted by UN/CEFACT (United Nations Center for Trade Facilitation and Electronic Business), dedicates to stimulate, improve and promote the ability of business, trade and administrative organizations, to exchange products and relevant services effectively in a non-political environment.
AFACT – Terms of Reference

The principles of the mission statement are to be achieved by:

- Analyzing and understanding the key elements of international transactions and working for the elimination of constraints;
- Developing methods to facilitate transactions, including the relevant use of information technologies such as UN/EDIFACT and ebXML;
- Promoting both the use of these methods, and associated best practices, through channels such as government, industry and service associations;
- Coordinating its work with UN/CEFACT and other relevant international, regional and non-governmental organizations; and
- Enhancing the cooperation among the AFACT members and promoting the objectives of the mission statement in the Asia Pacific region.
AFACT Structure

UN / CEFACET

Rapporteur

AFACT Plenary

Streeing Committee

Permanent Secretariat (Chinese Taipei)

Host Country Secretariat

Chairman : Kenneth Lim (Singapore)
Vice Chairman : Javed Naushahi (Pakistan)
Vice Chairman : Tran Thanh Hai (Vietnam)
HoD : Jong-Hee Kim (Korea)
HoD : Kamarudin Bin Tambi (Singapore)
UN / CEFACET Rapporteur : Sang-Won Lim (Korea)
UN / CEFACET Vice-Chair : T.A. Khan (India)
AFACT Secretariat : Jyh-Sheng Ke (Chinese Taipei)

Trade Facilitation & E-Business Group

Finance

TWG

Transportation

XMLWG

Customs

SCWG

Technical Assessment - to be suspended

Environmental Protection

- to be suspended

Supporting Group

Legal

Environment

Security

Business Collaboration Framework

Technical Assessment

Implementation & Conformance Group

Inter-networking Implementation

IIC
2. What is the global framework? UN/CEFACT Organisation

UN/ECE

CTIED
(Committee on Trade, Industry & Enterprise Development)

UN/CEFACT
(UN Centre for Trade Facilitation & Electronic Business)

Forum Management Group

UN/CEFACT Forum meets twice a year:

TBG (International Trade & Business Process Group)
ICG (Information Content Management Group)
ATG (Applied Technologies Group)
TMG (Techniques & Methodologies Group)
LG (Legal Group)
Organization of UN/CEFACT
Forum & Permanent Groups

ATG
- WG1 - EDIFACT
- WG2 - XML
- WG3 - Other Technologies

ICG
- WG1 - Meta Data
- WG2 - Libraries

LG
- WG1 - ODR
- WG2 - Cross Border Certification
- WG3 - RosettaNet

TBG
- WG1 - Supply Chain
- WG3 - Transport
- WG4 - Customs
- WG5 - Finance
- WG6 - AE&C
- WG7 - Statistics
- WG8 - Insurance
- WG9 - TT&L
- WG10 - Healthcare
- WG11 - SS, E&S
- WG12 - Accounting & Auditing
- WG13 - Environment
- WG14 - BPA
- WG15 - ITP
- WG16 - Entry Points
- WG17 - Harmonization & Documentation

TMG
- WG1 - Business processes
- TG1 - BCF/UMM
- TG2 - BPSS
- TG3 - UBAC (Jointly with LG)
- WG2 - Core Components
- WG3 - e-Business Architecture
United Nations Organisation

Trusteeship Council

Economic & Social Council

Security Council

International Court of Justice

Secretariat

General Assembly

Regional Economic Commission

ECA (Economic Commission for Africa)
ECE (Economic Commission for Europe)
ECLAC (Economic Commission for Latin America and Caribbean Sea)
ESCAP (Economic & Social Commission for Asia Pacific)
ESCWA (Economic & Social Commission for West-Asia)

Functional Committee
Sessional, Permanent, Ad hoc Committee

ICAO
UPU
ITU
WMO
IMO
WTO
WIPO
UNCTAD
UNCITRAL
UN/CEFACT Vision for Trade Facilitation & e-Business

- Its vision is to develop and promote simple, transparent, effective processes for global commerce
Objectives

- Its objective is to contribute to the growth of world trade by making practical contributions to trade facilitation and e-Business which measurably benefit developed, transition, and developing economies, and their enterprises, irrespective of the size of the enterprise.

- Established in Geneva in 1997, it has a global remit and encourages close collaboration between public organisations and private business.
Success or Failure?

Did EDI reach critical mass after 25+ years?

- **FORTUNE 10000**
  - 98% Using EDI
  - 2% EDI Capable

- **The rest of all Business that should be exchanging information electronically**
  - 95% EDI Capable
  - 5% Using EDI

(1000 in the top 10 Economies)
Costs for Trade Procedures

Sources:

The survey has been made in the US by DOT and NCITD (National Committee for International Trade Documents) in 1970-1971. And the Report of “Paper Work or Profits in International Trade” was published in November 1971.
Costs for Trade Procedures

- 46 enterprises/government agencies involved;
- 28 enterprises/one agency of 46 engaged in the export business of a single commodity;
- 125 documents in total used;
- Average 46 documents used for one unit of export/import business, and more than 360 copies produced;
- In the US, estimated that 828 million documents and 6.5 billion copies produced per year trade;
Costs for Trade Procedures (2)

- 64 man/hour used for an average unit of export/import procedures;
- In the US, 1 billion man/hour expended per year for producing documents of export/import, which equal to 144 million man/day works;
- Average document production cost: $351.04 per unit export/import business of trade ($375.77 for export & $320.58 for import);
- Estimating based on the total trade value, the total cost of document production reached 6.5 billion $ per year (equal to 7.5% of the US export/import total amount).
Costs for Trade Procedures in Japan
Based on Trade Statistics

Source: “The World 2004” by JETRO

495.9 + 403.3 = 899.1 Billion US$
899.1 X 5%=44.955 Billion US$
Electronic Business Today

- EDI - limited to large organizations
- Expensive implementations that many companies can’t afford
- High cost-of-entry; inflexible.
- No business communicates solely in its supply chain
  - need to exchange messages outside industry boundaries
- XML initiatives underway for specific industries
  - attempts at verbatim translation of EDI to XML
- Consensus required on common requirements
- No common infrastructure means incompatibility, reinvention and segregated pockets of communication
What is EDI?
(Electronic Data Interchange)

Application to Application
Between Companies
Based on Standardized Business Data

Company A

Company B

UN/CEFACT
The worldwide activity of the United Nations Economic Commission for Europe
Strong Points of EDI

- Cross sectorial standards
- Formalized data flows (messages/transaction sets)
- Open standards
- Secure and legal interchanges
- Available tools and service providers
- Proven business benefits
Weak Points of EDI

- Implementation Mechanics
- Maintaining and Updating the Standards
- Cost of Implementation, steep on-ramp
- Time to Implement
- No provision for process and information exchange, data only
Is There A Problem?

General consensus today that EDI implementation takes:

Too much time

Too much energy

Too much process
Why EDI is Not Being Taken Up Widely

- Why are they not implementing EDI by SMEs*?
  - cost
  - complexity
  - interchange agreements
  - different trading partners=different implementations
  - message instability
  - ambiguous benefits (cost justification)
  - legal reasons
  - security
  - future direction is unclear

* Small & Medium Enterprises
Trends of ICT Environment

- Hardware cost is reducing every year by the technological innovation,
- Internet is used widely in the world and covers everywhere, and it is easily connectable with trading partners in the world,
- Broadband is becoming popular, and
- Electronic Commerce and Electronic Business over the Internet is rapidly expanded.
# Internet Users Ranking
*(Top 10 in the World)*

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Internet Users Per 100 Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Falkland Islands</td>
<td>77.7</td>
</tr>
<tr>
<td>2</td>
<td>Iceland</td>
<td>64.9</td>
</tr>
<tr>
<td>3</td>
<td>Liechtenstein</td>
<td>58.5</td>
</tr>
<tr>
<td>4</td>
<td>Sweden</td>
<td>57.3</td>
</tr>
<tr>
<td>5</td>
<td>Korea, Republic of</td>
<td>55.2</td>
</tr>
<tr>
<td>6</td>
<td>United States</td>
<td>55.1</td>
</tr>
<tr>
<td>7</td>
<td>Japan</td>
<td>54.5</td>
</tr>
<tr>
<td>8</td>
<td>San Marino</td>
<td>53.1</td>
</tr>
<tr>
<td>9</td>
<td>Niue</td>
<td>52.9</td>
</tr>
<tr>
<td>10</td>
<td>Faeroe Islands</td>
<td>52.4</td>
</tr>
</tbody>
</table>

Unit: Per 100 inhabitants

## Internet Users Ranking (Top 25 in Asia)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Korea, Republic of</td>
<td>55.2</td>
<td>13</td>
<td>Indonesia</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Japan</td>
<td>54.5</td>
<td>14</td>
<td>Mongolia</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Singapore</td>
<td>50.3</td>
<td>15</td>
<td>Viet Nam</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Hong Kong, China</td>
<td>43.0</td>
<td>16</td>
<td>India</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Chinese Taipei</td>
<td>38.3</td>
<td>17</td>
<td>Bhutan</td>
<td>1.4</td>
<td></td>
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<tr>
<td>6</td>
<td>Malaysia</td>
<td>32.0</td>
<td>18</td>
<td>Sri Lanka</td>
<td>1.1</td>
<td></td>
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<tr>
<td>7</td>
<td>Macao, China</td>
<td>26.0</td>
<td>19</td>
<td>Pakistan</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Brunei Darussalam</td>
<td>9.9</td>
<td>20</td>
<td>Laos</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Thailand</td>
<td>7.8</td>
<td>21</td>
<td>Nepal</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Maldives</td>
<td>5.3</td>
<td>22</td>
<td>Bangladesh</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>China</td>
<td>4.6</td>
<td>23</td>
<td>Cambodia</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Philippines</td>
<td>4.4</td>
<td>24</td>
<td>Myanmar (Burma)</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>

Unit: Per 100 inhabitants

## Expanding Internet Population in the World

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Internet Users (#K)</th>
<th>Share %</th>
<th>Internet Users (#K)</th>
<th>Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>U.S.</td>
<td>160,700</td>
<td>24.13</td>
<td>10 India</td>
<td>16,580</td>
</tr>
<tr>
<td>2</td>
<td>Japan</td>
<td>64,800</td>
<td>9.73</td>
<td>11 Brazil</td>
<td>15,840</td>
</tr>
<tr>
<td>3</td>
<td>China</td>
<td>54,500</td>
<td>6.71</td>
<td>12 Russia</td>
<td>13,500</td>
</tr>
<tr>
<td>4</td>
<td>Germany</td>
<td>30,350</td>
<td>8.18</td>
<td>13 Australia</td>
<td>10,450</td>
</tr>
<tr>
<td>5</td>
<td>UK</td>
<td>27,150</td>
<td>4.08</td>
<td>14 Spain</td>
<td>10,390</td>
</tr>
<tr>
<td>6</td>
<td>South Korea</td>
<td>26,900</td>
<td>4.04</td>
<td>15 Chinese Taipei</td>
<td>9,510</td>
</tr>
<tr>
<td>7</td>
<td>Italy</td>
<td>20,850</td>
<td>3.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Canada</td>
<td>17,830</td>
<td>2.68</td>
<td>Top 15 Total</td>
<td>496,000</td>
</tr>
<tr>
<td>9</td>
<td>France</td>
<td>16,650</td>
<td>2.50</td>
<td>Worldwide Total</td>
<td>665,910</td>
</tr>
</tbody>
</table>

(Source: eTForecasts, Updated December 3, 2002)
4. The World Before XML

In-House Data

Value Added Network

EDI Message
eBusiness requires a paradigm shift

- Shift the focus on EDI standards to the business processes and the business practices behind them
- Decompose EDI business processes to the level of individual tasks that are more generic to the type of business
- Identify activities (i.e., transformations) and object classes that are likely candidates for standardization
5. Future of e-Business

ebXML™

“Creating a Single Global Electronic Market™”

ebXML enables anyone, anywhere to do business with anyone else over the Internet
Hundreds of participants from all over the world
Businesses, governments, academia, institutions
A global electronic market

where enterprises of any size, anywhere can:

- Find each other electronically
- Conduct business through the exchange of XML based messages
  - using standard message structures
  - according to standard business process sequences
  - with clear business semantics
  - according to standard or mutually agreed trading partner agreements
- Using off the shelf purchased business applications
ebXML Characteristics

- Participation was (is) free and open to anyone, anywhere
- Complement, not compete
  - UN/EDIFACT, X12,…
  - protect existing infrastructure investment
  - “extend-and-embrace” versus “rip-and-replace”
- Focus on needs of SME
  - easy, low cost, rapid development & deployment
  - plug and play shrink wrapped solutions
  - built on open, available, proven standards
- Modular and inclusive
  - implement what applies to you
1. Request ebXML specification
2. Build System
3. Send ebXML specification
4. Register company profile
5. Request Company X’s Scenario
6. Send Company X’s Profile
7. Send Company X’s Scenario
8. Query about Company X
9. Submit TPA
10. TPA Accepted
11. DO BUSINESS!

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**Company X**

**Company Y**

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ebXML Vision

Specifications
Profiles
Scenarios

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ebXML BO Library
ebXML BP Model
Main ebXML Concepts

- **Business Processes** – Defined as models, Expressed in XML
- **Business Messages** – Expressed in XML
- **Trading Partner Agreement** – Specifies parameters for businesses to interface with each other – Expressed in XML
- **Business Service Interface** – Implements Trading Partner Agreement – Expressed in XML
- **Transport and Routing Layer** – Moves the actual XML data between trading partners
- **Registry/Repository** - Provides a “container” for process models, vocabularies, and partner profiles.
Phase II – General Agreement

- OASIS and UN/CEFACT agreed:
  - to continue to advance the development, promotion, implementation and interests of ebXML.
  - to the following division of responsibilities:
    - **UN/CEFACT (Content & Context):**
      - Business Processes
      - Core Components
    - **OASIS (Infrastructure):**
      - Messaging (Transport, Routing and Packaging)
      - Registry and Repository
      - Collaboration - Protocol Profile and Agreement
      - Security
      - Conformance
    - **UN/CEFACT and OASIS:**
      - Technical Architecture
      - Marketing
Infrastructure Part of Technical Specs
ready to use (as of June 2004)

- ISO/DTS 15000-1 ebCPP ebXML Collaborative Partner Profile & Agreement
- ISO/DTS 15000-2 ebMS ebXML Messaging Service Specification
- ISO/DTS 15000-3 ebRIM ebXML Registry Information Model
- ISO/DTS 15000-4 ebRS ebXML Registry Services Specification
Contents Part of Technical Specs

- ebXML CCTS Core Component Technical Specification – submitted to the ISO/TC154 for voting under the fast track process
- ebXML BPSS Business Process Specification Schema – under reviewing in the UN/CEFACT environment
Enter ebXML

- Worldwide project to standardize the exchange of electronic business data
- XML-based infrastructure to enable consistent, secure and interoperable message exchange
- Supported by hundreds of industry consortia, standards bodies, companies and individuals from around the world
- Sponsored by OASIS and the United Nations CEFACT
ebXML enables anyone, anywhere to do business with anyone else over the Internet
Conclusion

- Current EDI and XML/EDI would be used in parallel in future;
- So, current EDI and XML/EDI must be interoperable;
- SMEs may prefer to use XML/EDI because its initial cost is lower than current EDI;
- Current form-based EDI will be replaced by Object Oriented-edi in near future; and
- Standards developed for the current EDI should be re-used under the XML/EDI over the Internet.
Thank you for your attention!

Questions & Comments

Global Collaboration

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Useful Web-sites URLs

- www.unece.org/cefact
- www.afact.org
- www.ebxml.org
- www.unmg.org
- www.iso.org/tc154