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Item 4 of the provisional agenda

STAKEHOLDER PERSPECTIVES: SECTORS

Draft proposal by the UN/CEFACT Bureau

This document is one of three background documents for strategic discussions concerning UN/CEFACT stakeholder perspectives of countries, sectors and standards development organizations Supporting documentation:
- TRADE/R.650/Rev.4 Mandate, Terms of Reference and Procedures for UN/CEFACT
- E/ECE/1434/Rev.1 Work Plan on ECE Reform
- ECE/TRADE/C/2006/3 Implementation of the UNECE Reform and Follow -up to the 2006 Session of the Commission
- ECE/TRADE/CEFACT/2006/10 Recommendations for approval: Consolidated Document Set
- Memorandum of Understanding between the International Electrotechnical Commission, the International Organization for Standardization, the International Telecommunications Union and the United Nations Economic Commission for Europe concerning standardization in the field of electronic business
- Global Facilitation Partnership for Transportation and Trade (GFP): Constitution and Operating Modalities
- Single Window Common Standards and Interoperability

I. Purpose

1.   This background note has been prepared to support the second of three working sessions concerned with the importance of UN/CEFACT's activities from three perspectives: (1) countries, (2) sectors and (3) standards development organisations. It is provided as a draft and will be updated to reflect the exchange of views that takes place during this item on the agenda.

2.   UN/CEFACT exists within the context of mandates articulated and approved by UN Member States (TRADE/R650/Rev 4). This session takes the opportunity to foster awareness-building about current and envisaged relevance of UN/CEFACT from various sectors in the stakeholder community, with a view to defining an appropriate UN/CEFACT strategy and a timely work programme that will deliver relevant products and services to its constituencies.[1]

3.   During the exchange of views involving Plenary participants, the discussion is expected to focus on broad and specific ways of using UN/CEFACT products and services within and across various sectors to reduce costs by building on the UN/CEFACT semantic interoperability framework. In particular, Plenary participants are encouraged to focus on ways to strengthen Centre's contribution to sectoral and cross-sectoral efficiencies, particularly on near and medium-term priorities.

4.   A short list of topics appears at the end of this background note in order provide a starting point for input to the working session involving all Plenary participants.

II. BACKGROUND

5.   Businesses, governments, non-governmental organizations and individual experts worldwide have supported the work of UN/CEFACT for over 25 years by dedicating the resources to develop open electronic business standards. The result has been standards and recommendations through which various sectors have benefited, facilitating significant efficiencies in business and trade.

UN/CEFACT instruments

6.   In the 1960s, UN/CEFACT developed tools for reducing, simplifying and standardizing international trade documents, which became a United Nations Recommendation and international standard, ISO 6422 – United Nations Layout Key (UNLK), the standard form for paper documents, and ISO 7372 – United Nations Trade Data Elements Directory (UNTDED).

7.   Many more UN Recommendations, for the use of standards or best practice, are used extensively by many sectors. UN/CEFACT instruments also serve as reference documents for national activities. These Recommendations help to steer national, regional or industry developments of business process and information models and they also provide methods to

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[1] The results of this session will serve as a contribution, together with those of the subsequent sessions, to the Plenary exchange of views about strategy and work programme that will begin to be taken up under Agenda item 6 (see supporting draft document "Towards an Integrated Strategy for UN/CEFACT").

achieve increased data consistency within implementations. For example, in the air transport industry where UN/CEFACT products & services add value by providing a standard, consistent approach to implementation of e-commerce. The exchange of electronic information reduces the need to re-key information from paper copies and facilitates the provision of that information to other parties, e.g. Customs, when required.

8.   An important contribution UN/CEFACT has provided to industry for many years is the Electronic Data Interchange For Administration, Commerce & Transport (UN/EDIFACT). This international Electronic Data Interchange standard and its underlying EDIFACT syntax - ISO 9735 has consistently provided significant cost savings to many international and domestic sectors.

9.   In today's world, probably all the Fortune 500 companies have EDI links in place with their suppliers. Many of the medium- and larger-sized companies have also implemented some form of EDI and we can say with confidence that this technology has reached the point of maturity. Looking closely at the current EDI, practices we can see that a level of sophistication has been attained, as EDI has become an integral and essential part of many business operations.

10.   Experts from the various business and government sectors involved in international supply chains develop and maintain UN/CEFACT's products and services. They analyze and work towards the elimination of

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GS1 Spain Paperless Invoicing project

An e-invoice is an invoice document sent by electronic means where integrity and authenticity is provided which complies with legal regulations and substitutes the paper document.

As specified in the European Directive 2001/115/CEE there are two different ways to electronically send an invoice document (paperless invoice):

- By means of digital signatures. In this case any document that can be considered as an "invoice document" (i.e. the content of the document constitutes an invoice) may be digitally signed and transmitted electronically.
- By means of any other technique if authenticity and integrity is provided. In this case, it is mandatory to prove that both authentication and integrity are guaranteed by the underlying technology.

GS1 Spain has not only defined all functionalities regarding digital signatures for GS1 eCom messages according to European Directive 2001/115/CEE, but they have also defined additional requirements for EDI-software such as certificate management and the acknowledge receipt message.

GS1 Spain has worked hard with Agencia Tributaria (Spanish Tax Authority) to define the best way to implement the EU Directive in Spain.

Companies involved
More than 4000 companies are using Digital Invoice today in Spain including use of the EANCOM format.. This implementation drive has been driven mainly by 2 committees of GS1 Spain:
- Efficient Administration Committee -> related to the paperless invoice process
- EDI Systems Committee -> related to EDI exchanges

The Committees of GS1 Spain are constituted by retailers and suppliers like: El Corte Inglés, Carrfour, Alcampo, Procter&Gamble, Nestlé, Henkel, ... and many others

The results
More than 4,000 companies are using e-invoice in Spain today providing very significant savings for all the parties in the supply chain.. 2 million invoices are exchanged monthly through Spanish Networks or across the Internet and around 95% of these invoices are exchanged with Digital Signatures

Main savings resulting from the implementation of e-Invoicing are:

Supplier	1 €/invoice
Retailer	2.8 €/invoice
Cost saving(annual) for the whole sector	76 Million €/year for the whole sector
Space reduction	>10 Km of paper storing space
People	3,000 jobs with more added value
Environment	More than 10,000 trees saved

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constraints across all international trade, commercial and governmental processes. In particular, the following sectors have contributed to the development of UN/CEFACT products and services:

- The International trade facilitation sector covers identification, simplification, harmonization and alignment of public and private sector practices, procedures and information flows relating to international trade transactions for goods and related services.

- The supply chain and e-procurement sector covers the purchasing, material management and product development areas of the international supply chain reference model.

- The transport sector covers the modal and inter-modal movement of goods representing the activities and interests of carriers, freight forwarders and related operational parties involved in the transport chain over the world.

- The Customs sector covers the development and maintenance of EDI messages exchanged between Trade , Transport and Customs.

- The Finance sector covers all electronic information exchange standards for banking and finance.

- The Travel, Tourism and Leisure sector support and promote the exchange of travel industry data.

- The Accounting and Auditing sector covers the development and maintenance of messages for accounting entries recording, processing, control and financial reporting towards the enterprises, the private and public collection bodies, etc.

- The Environmental Management sector covers environmental data exchange activities that are of relevance to the international environmental community.

11.   For each of the above sectors, experts capture and document data exchange and trade facilitation requirements, which are then analyzed, generalized, harmonized and then defined as UN/CEFACT standards which are published and communicated They identify trade facilitation requirements and the priorities of governments and business in order to develop implementation recommendations such as Rec.18 – Trade Facilitation Measures.

The electricity market moves to the application of UN/CEFACT standards.

Some years ago the Nordic electricity market (Norway, Sweden, Finland and Denmark) decided to align its electronic data interchange processes with UN/EDIFACT messages. This is now fully operational and a significant number of EDIFACT messages are exchanged on a daily basis. EDIFACT messages are used more sporadically in other markets without such a concerted implementation.

At the beginning of 2000, ETSO, the European Transmission System Operators organisation that regroups all the electricity system operators in Europe, decided to formalise its information exchanges in order to facilitate the opening of the European electricity market.

This effort was focused on the wholesale market. The majority of the involved parties used at that time no uniform EDI standard and so it was decided to implement the exchanges using the latest technologies. XML was chosen as the main syntax in this effort.

In order to ensure a lasting standard, ETSO aligned on the emerging ebXML standards by developing core components, making use of UML and harmonising the generation of the XML syntax. This work was developed using all the baseline UN/CEFACT documentation available.

The information exchanges are now operational throughout a major part of Europe and will soon cover all the major electricity operators. The standards are applying all the UN/CEFACT principles and ETSO is currently investigating the opportunity to present these standards to UN/CEFACT as Business Requirements Specifications.

III. NEW CHALLENGES

12.   Current upwards trends in international manufacturing production and cross-border trading have increased the need for trade facilitation and electronic business. Examples include:

- ➢ emergence of global supply chains
- ➢ just-in-time delivery and reduction in stockholding
- ➢ increasing use of air and maritime container cargo movements
- ➢ development of multi-modal transport services
- ➢ increasing use of outsourcing
- ➢ growth of lower cost electronic communications including via the Internet and the increasing use of e-commerce techniques.

13.   For any product to remain competitive in foreign markets, the costs associated with the commercial and transport transactions must be kept as low as possible. Supply Chain Management tools which offer to support the whole range of activities involved in the international trading of goods, are essential in this regard. Trade and transport sectors are working together to apply this total transaction approach in order to continually strive for the improvement of end-to-end business processes.

14.   While security has always been an important consideration for trade, the focus has shifted in recent years from threats to trade (piracy, fraud, theft, etc) to the threat from trade (for example, the possible delivery of a "dirty bomb" in a container into a port). This has resulted in the introduction of additional security procedures.

15.   Governments and trade have established, over time, an extensive range of regulatory and operational requirements, often without sufficient consideration of the effect of such changes on the overall trading system. This has resulted in a plethora of outmoded, incompatible or inefficient regulations, information requests and controls. In recent years, with the liberalization of world trade and the requirements for faster information delivery, this lack of coordination has become a more prominent issue. The ability to handle data efficiently has become a key element in international competitiveness and trade facilitation.

16.   In summary, many of the aforementioned trends combined with current trade security measures and proposals, have greatly increased the need for new trade facilitation and eBusiness standards to support the new requirements whilst ensuring that they do not adversely affect economic activity. In order to develop the required Business Standards, Recommendations Trade Facilitation Instruments, it is necessary to take full advantage of the available information and communication technology. The adoption of the UN/CEFACT standards by software developers is very important as this will make these standards more widely available, especially for small and medium-sized enterprises.

17.   Information and Communication technology has continued to progress and this progression has offered many new possibilities to simplify and improve eBusiness practices. The joint UN/CEFACT and OASIS ebXML initiative (2000-2001) has introduced a new way for the codification of processes and the design of messages. These initiatives based on the new technologies, where sectors model their business processes and determine what and when they need to exchange data with their partners, provides traders and governments with the tools to respond to these new challenges. These modern techniques include use of the Unified Modelling Language (UML) and extensible Markup Language (XML).

IV. FUTURE DEVELOPMENTS FOR THE CENTRE'S PRODUCTS AND SERVICES

18.   After many years of hard work the Forum has now delivered a solid Core Component Technical Specification (CCTS), UMM (UN/CEFACT Modelling Methodology), and a basic set of Core Components (CCs) as well as Collaborative Business Processes (CBPs).

19.   UN/CEFACT is building a comprehensive ebusiness standards framework (reference document TRADE/CEFACT/2006/10) that encompasses its cornerstone methodologies for Business Process modelling (UMM), and Information data modelling (CCTS), the Core Component Library, the Business Requirements Specifications (BRS), the Registry/Repository and probably more.   This Framework will be the foundation for responding to the modern challenges of international trade, not just for UN/CEFACT, but also for other standardization organizations. An important element of this Framework is that it expresses the business processes and data modelling in a syntax-neutral manner; whilst implementation formats can be derived as UN/EDIFACT messages, XML documents, webServices, UNeDocs UNLayout-Aligned paper and/or electronic forms. This encapsulates the power of the UN/CEFACT approach.

20.   As a result some new sectors have been established, new initiatives embraced and new responsibilities developed within the UN/CEFACT Forum.

21.   The Agricultural sector covers the development of business models and information exchange in the agricultural and food processing production and trade chain for food safety, animal health and plant sanitation as well as tracking and tracing is an important aspect of these business models.

22.   The e-Government sector covers the development of common electronic business solutions that support the use of electronic communication services to improve the relation between administrations, citizens, economic and society actors.

23.   The financial industry can be defined as a 'horizontal' industry, which serves all other (vertical) industry sectors. The most well known service offered to all industries is the 'payment' service. Enabling end-to-end e-processing of a payment from the initiator to the beneficiary throughout the financial system requires harmonisation/interoperability with the other industry sectors. Using a common approach (methodology, central dictionary, process) to develop models and derived transactions and messages will ensure this end-to-end straight-through processing of payments. UN/CEFACT offers the opportunity for all the involved parties to speak the same language or at least to ensure interoperability between the dialects of each parts of the industry.

24.   The transport industry is seeking to develop a complete set of readily available implementable standards for business users especially for the SMEs, embracing not only the conceptual business models but also the user guides for specific business sectors. The TBG3 Transport Group has been pioneering in this area since 1995 with its sub-group ITIGG – International Transport Implementation Guidelines Group.

25.   The air transport industry is seeking integration of the IATA e-freight programme with UNeDocs, along with definitions of the following Document Types, in UN/EDIFACT and XML messages: (Import Cargo Declaration, Export Cargo Declaration, Import Quota Certificate, Export Quota Certificate, Cites Import Permit, Cites Export Permit, Shippers Declaration for Dangerous Goods Live Animals, Shippers Declaration, Health Certificate (vetinary/phytosanitary), Certificate of Exportation, Certificate of Impor tation Vaccination, Certificate Carnet de Passage en Douanes, International Express Waybill, Transport Insurance Certificate, Fumigation Certificate, Export License, Import License, Security Declaration, Letter of Credit, Intransit Permit, ATA Carnet, Cons ular Invoice, Cargo Manifest Road (CMR), Customs Preferential Document).

26.   Mapping of data elements to other standards such as xml/cargo-imp, support for the implementation of national, regional or industry specific customisations of UNeDocs and improved dissemination of information regarding the role of UN/CEFACT and its deliverables are considered important outputs. With the assumption that UN/CEFACT has gained a recognised professionalism and leadership in its core activities of developing Technical Specifications, Business Standards and Recommendations, additional steps could now be taken in the development of implementation methodologies, capacity building programmes including support and training materials for implementers.

27.   Much of the information that is input into the regulatory cross-border processes originates from the private sector stakeholders in the international supply chain processes. Currently, much of this data has to be reformatted by the traders into the formats required by the legal regulations or conventions of the different authorities. This reformatting and the consequential re-keying of data is highly inefficient and does not meet today's enhanced security requirements. In the future, administrations will increasingly seek to obtain data in electronic format directly from the systems of the data providers. This will require the facility for the data interchange between B2B (Business to Business) component of UNeDocs and the WCO Data Model. This will be enabled through future collaboration between UN/CEFACT and the WCO in order to define a common harmonised CCTS compliant reference data model.

28.   The Harmonization activity now has a wider remit to provide consistent harmonisation of business process models and core components across business sectors and sectors, thereby contributing to a concise and well-defined glossary of business terms, business data semantic definitions, and structuring of data exchanges.

29.   The improvement of quality control and harmonization of cross-sector processes such as e-invoicing and accounting/audit are considered important, along with the acceleration of the delivery of products and services from the Centre. The development and maintenance of catalogues and libraries are seen as a tool for facilitating the convergence of activities. For eGovernment this is particularly true, because several "eGov" requirements can be met with additions to existing Business Standards either developed or being developed under the umbrella of other sectors.

30.   Other Standards Development Organizations (SDOs) are now approaching UN/CEFACT. All these groups have studied CCTS and have come to the conclusion that CCTS offers a uniquely common methodological approach, which offers the best chance for increased semantic interoperability at a global level. These groups each represent large groups of users that have, in many cases, already made steps towards individually defined XML standardization, which has led over the past three years to an increased fragmentation of XML standards approaches in the marketplace. It is considered that it could be very beneficial if UN/CEFACT can offer an environment for the fostering of increased alignment between these different XML approaches through the adoption of CCTS.

V. SOME TOPICS FOR AN EXCHANGE OF VIEWS: A STARTING POINT

31.   Plenary participants may wish to focus their attention on the following topics, or they may wish to contribute other topics, aimed at providing input on the relevance and importance of UN/CEFACT work from the perspective of individual sectors:

        (a)   How sectors specifically benefit from UN/CEFACT work, particularly to enable greater efficiencies and the facilitation of international trade

        (b)   Where UN/CEFACT priorities should be focused in the near and medium-term

        (c)   Important benefits that would be offered by the collaboration of UN/CEFACT and WCO to define the proposed Common Reference Data Model

      (d)   Opportunities for enhanced benefits to be gained from cross‑sector collaboration through UN/CEFACT activities

      (e)   Opportunities for broader sectoral participation and involvement of national and governmental operational experts in UN/CEFACT

      (f)   Requirements for and the benefits offered by increased cooperation/collaboration with other standards development organizations

      (g)   Steps for UN/CEFACT to increase awareness, promotion of its work and implementation of its deliverables

      (h)   Possible missing pieces to complete the UN/CEFACT eBusiness Standards Framework

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