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UN/CEFACT'S STRATEGY FOR ELECTRONIC BUSINESS

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Submitted by the UN/CEFACT Steering Group(CSG)*

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UN/CEFACT's Strategy for Electronic Business

An aide-memoire issued by the UN/CEFACT Steering Group

Introduction

The aim of this paper is to put the various strands of UN/CEFACT's work in Electronic Business in context with each other and with trends in Trade Facilitation and Information Technology. Written in a non-technical manner, it is designed to be an aide–memoire for UN/CEFACT delegations and its wide spread dissemination is encouraged.

Background

It is over twenty years since the United Nations published its recommendation on the UN Layout Key and the supporting Trade Data Element Directory. In conjunction with subsequent recommendations this work has become the cornerstone of trade facilitation.

It is ten years since the United Nations published the first UN/EDIFACT message, the Invoice. Since then UN/EDIFACT has become the international EDI standard of choice for the exchange of commercial and administrative data across all sectors of business. For example, UN/EDIFACT messages have been implemented by customs administrations as the preferred means of declaring goods, by transport operators for the transfer of commercial and operational information related to cargo movements, by the travel sector as the preferred means for communicating passenger details, by the construction industry for progressing and monitoring building projects and by banks to exchange financial data. Further, UN/EDIFACT is endorsed by many key international organisations including the: World Customs Organization (WCO), International Maritime Organization (IMO), International Air Transport Association (IATA), International Chamber of Shipping (ICS), Society for Worldwide Interbank Financial Telecommunications (SWIFT) and the International Article Numbering Association (EAN). The UN/EDIFACT directories collectively represent a unique and comprehensive information source to support the exchange of business data among both large and small trading entities. UN/EDIFACT's acceptance and usage worldwide underlines its relevance to current and future business practices.

During the twenty years since these trade facilitation measures were first started, much has changed in the business environment. Consider three examples: Firstly, in many parts of the world there is now a computer on every office desk and a computer in many homes. As a result, there is an expanding use of electronic means to exchange business and administrative data. Secondly, the cost of telecommunications has fallen dramatically. The use of mobile and satellite communications is becoming commonplace. Thirdly, the burgeoning growth of the Internet has opened up new ways for administrative bodies, companies and consumers to do business. Recent Internet based network technologies now allow large volumes of data to be a readily shared resource between organisations, whereas ten years ago this was not the case. The advent and growth of Electronic Commerce is indicative of these new business trends and directions.

The UN Recommendations and UN/EDIFACT standard are being enhanced to meet these new challenges and opportunities. As an integrated and coherent set of tools to support the exchange of data, UN/CEFACT will ensure that these tools continue to maintain their relevance and take into consideration the special needs of small to medium sized enterprises.

Developments can be broadly divided into those driven by technology advances and those driven by the need to simplify complex and diverse business processes.

Business Process Driven Trends

Business data requirements determine business data definitions. In this regard there is a growing trend to use data modeling to define business requirements using a top-down approach. In turn, this discipline provides a means to analyse business processes and hence enables the simplification and harmonization of business data requirements.

There are several important activities that support the requirement for simplification and harmonization within UN/CEFACT. One example is the International Trade Transaction Model which aims to define the documentation involved in international trade. Simpl-EDI is another which demonstrates that if business processes can be rationalised then data transfer requirements can be simplified.

Simplification is further enhanced through complementary efforts to harmonise EDI message implementations across different sectors in order to ensure consistency. Similarly, related trade facilitation initiatives that make use of Web forms consistent with the UN Layout Key, again support a simplified approach.

These emerging trends have two factors in common: they are all cross-sectoral in nature and they all utilise UN/CEFACT's core expertise in business and administrative data definitions.

Moreover these initiatives demonstrate that UN/CEFACT is taking active steps to apply over twenty years of implementation experience, in order to deliver recommendations and standards that are relevant to the way in which modern business is being conducted.

Technology Driven Trends

From a technological perspective there have been significant advances that impact the world of business. The development of UN/EDIFACT arose from the requirement to enable trade facilitation solutions based on Information Technology.

The UN/EDIFACT standard comprises three base components. First and foremost, it provides a comprehensive set of business data definitions as represented by the UN/EDIFACT data element and code directories. Secondly, it provides a flexible and precise technique for relating business data as represented by the UN/EDIFACT composite data element, segment and message directories. Thirdly, the UN/EDIFACT syntax provides a set of rules for the structuring of the data.

The first component - data elements and codes - is UN/EDIFACT's core expertise; no other organization worldwide can claim the same level of expertise in attributing definitions to business data. Collectively, hundreds of person-years of investment effort are encapsulated in these data definitions which are linked to the original UN Layout Key.

The second component - relating business data - concerns grouping data into predefined constructs (messages, segments, composite data elements) and is largely dependent on methodology.

The third component - the UN/EDIFACT syntax - now jointly developed and maintained with the ISO (ISO 9735), is a proven and widely implemented technique that allows for the unambiguous transfer of the data, and in many respects is related to the choice of technology.

It is crucial that investment in UN/CEFACT data definitions is protected. These definitions are a powerful information source and can be considered independent of the underlying transfer structure. However, given the advances in information technology and the emergence of new techniques and methodologies to transfer data, the UN/EDIFACT community needs to evaluate these developments and, where appropriate, use them. Examples of these developments include XML/EDI, Simpl-EDI, and Object Oriented-edi. XML/EDI is an alternative transfer mechanism based upon Internet technology. Simpl-EDI, though largely business process driven, has the potential to support Web forms based on the UN Layout Key. Object Oriented-edi takes advantage of an open and distributed computing environment.

These new techniques and methodologies are being considered alongside the conventional UN/EDIFACT approach for structuring and relating data. The data definitions defined in UN/EDIFACT and the UN Trade Data Elements Directory form the basis of all the methods (see table below). UN/CEFACT's strategy is to preserve the core investment in data definitions whilst ensuring that the use of alternative techniques and methodologies can be supported.

Taking recent XML developments as a case in point, the principle of preserving the core investment while pro-actively working with new technologies has led to the establishment of a global initiative for Electronic Business XML (ebXML). To this end UN/CEFACT has joined forces with OASIS to initiate a worldwide project to standardize XML business specifications and to develop a technical framework that will enable XML to be utilized in a consistent manner for the exchange of all electronic business data[1]. Industry groups currently working on XML specifications have been invited to participate in the 18-month project, a move that has been welcomed by standards organisations and the software industry alike. One of the main objectives of the ebXML initiative is to lower the barrier of entry to electronic business in order to facilitate trade, particularly with respect to small- and medium-sized enterprises (SMEs) and developing nations. This will be achieved by building upon the foundation stones laid by UN/CEFACT for business data exchange according to the trade facilitation practices that have been developed over the last twenty years.

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[1] For further information on ebXML and OASIS, visit the web site http://www.ebxml.org

Method	Business Data Definitions (Data Elements and Codes)	Data Structuring Technique	
		Data Construct	Syntax
1. UN Layout Key	UN/TDED (ISO 7372)	UN Layout Key	
2. Conventional UN/EDIFACT	UN/EDIFACT	UN/EDIFACT (Messages, Segments, Composites)	EDIFACT (ISO 9735)
3 Simpl-edi	UN/EDIFACT	UN/EDIFACT (Messages, Segments, Composites)	EDIFACT (ISO 9735)
4. XML/EDI	UN/EDIFACT	Document Type Definitions	
5. OO-edi	UN/EDIFACT	Objects	

Conclusion

UN/CEFACT's vision is to provide "simple, transparent and effective processes for global commerce". In order to realize this goal UN/CEFACT must exploit advances in information technology and adopt new approaches to trade facilitation based on simplification and harmonization of business processes. It is impossible to predict whether the technologies that support the next era will be based upon Object Oriented techniques or on XML, or, indeed, another technology yet to emerge. What is possible, however, is to ensure that UN/CEFACT carries forward the data principles and expertise, many of which are technology-independent, into the future. The vast breadth of knowledge captured in the data definitions and the associated recommendations provides a solid infrastructure to support current and future trade facilitation requirements. Commitment to this strategy will take UN/CEFACT into the next era of trade facilitation.

Further Information

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