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**REALISATION OF THE UN/CEFACT VISION
FROM AN E-BUSINESS STANDARDS STRATEGY**

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Submitted by the UN/CEFACT Steering Group (CSG)

This document is submitted to the Centre for approval.

REALISATION OF THE UN/CEFACT VISION FROM AN E-BUSINESS STANDARDS STRATEGY

Introduction

The purpose of this paper is twofold. Firstly, it confirms the fundamental UN/CEFACT vision to provide “simple, transparent and effective processes for global commerce”, as expressed in the aide-memoire¹ issued by the UN/CEFACT Steering Group (CSG). Secondly, it explores a series of issues that affect UN/CEFACT’s ability to continue as a key partner in the e-business environment and expands that original vision through a strategy recommendation that will enhance UN/CEFACT’s role in the global community. More specifically, the paper provides a series of recommendations for Plenary adoption that will permit UN/CEFACT to better position itself with respect to the rapidly evolving business and technology environment.

The CSG has undertaken an extensive examination of the many factors influencing the global marketplace and proposes a judiciously integrated strategy emphasising equally the maintenance of existing standards development practices and adoption of new operating policies and practices that will support next generation standards development. *However, because this paper represents a significant paradigm shift from traditional UN/CEFACT practices, the CSG recommends that it be read and evaluated in the context of a single, integrated strategy, rather than a series of individual initiatives.* Additionally, the CSG wishes to emphasise that nothing in this paper should be construed as a decline in advocacy for ongoing trade facilitation and standards development efforts. Rather, the following discussion proposes an enhanced foundation for expanding this work based upon business and technology projections.

Vision - setting the stage

If UN/CEFACT is to reposition itself to address the needs of the next generation of e-business standards, it must adapt to its evolving environment. The strategy for achieving this goal may be better appreciated when considered in the context of two anecdotes.

- ◆ Encyclopaedia Britannica has long been recognised internationally as one of the most respected data content references ever published. However, an early corporate decision was taken to consider multi-media publication as only an ancillary alternative to traditional paper volumes. Subsequently, Microsoft adopted multi-media techniques for Encarta publication, and in so doing, captured a major share of the marketplace, including an entire generation of new users. Most people viewed the Britannica content to be superior, but in the end commercial reality won the day - Microsoft provided a product that met the expectation of a market driven by new technological requirements.
- ◆ Hewlett Packard restructured organisationally to separate its portable computer and printer organisations so that each could sharpen its strategic focus without being encumbered by the operating requirements of the other. Each new organisation was thus able to move independently, faster and more decisively in meeting customer needs, while permitting both to operate under one of the world’s most recognised and respected brands.

This paper strongly advocates that change within UN/CEFACT is required. However, careful attention to managing the overall change and ongoing operational processes within the context of

¹ UN/CEFACT’s Strategy for Electronic Business, An aide-memoire issued by the UN/CEFACT Steering Group, TRADE/CEFACT/2000/21, 16 February 2000

a comprehensive, integrated strategy will dramatically enhance the opportunities for success.

Current environment

In order to better appreciate the recommendations presented herein, one must establish a baseline, first considering those critical issues that impact the existing environment.

UN/CEFACT

The United Nations, through UN/CEFACT, supports activities dedicated to improving the ability of business, trade and administrative organisations, from developed, developing and transitional economies, to exchange products and relevant services effectively. Its principal focus is on facilitating international transactions through the simplification and harmonisation of processes, procedures and information flows, and so on contributing to the growth of global commerce. The publication of UN Recommendations and standards, such as the United Nations Layout Key (UNLK), UN/EDIFACT, etc., represent major steps towards meeting this objective in both a paper and electronic environment.

Despite UN/CEFACT's many noteworthy accomplishments, however, electronic data interchange (EDI), while successful in many cases, has been slow to achieve the universal level of implementation originally anticipated. One respected industry leader, GE Global Exchange Services, recently estimated that 120 billion transactions are exchanged between companies annually, mostly via phone and fax. However, only 5 billion are truly automated. Complexity, expense, changes in the "user community", and evolving alternative technologies represent a series of issues that must be addressed by UN/CEFACT if it is to retain a position of relevance in tomorrow's business environment.

Business environment

Businesses world-wide are transforming themselves daily to leverage the power afforded by e-business opportunities. No business practice or strategy is protected. But while process simplification is the objective, the pace of business change is drawing resources away from standardisation activities.

Dynamic pricing, quick access to information, rapid responsiveness, and customer service are increasing in importance. The dizzying pace of change is complicated by the formation of coalitions or consortium e-marketplaces, all of which are having difficulty in connecting technology alternatives (e.g. e-markets) to back-end legacy systems. Sector alliances and value chain relationships greatly extend the information requirements of the enterprise. Evolving technologies, and their declining lifespan, also compound the change management process.

A key element which is missing is timely enterprise-level software based on common standards that will support evolving information requirements. Standardisation and harmonisation of data, procedures, and business practices that would support such software development, although highly desirable, are difficult to achieve given the daily pressures for conducting business.

Trade facilitation

Trade facilitation continues at a stable pace. However, as the recent UN/CEFACT name change exemplifies, there are two key elements to the strategy – trade facilitation and electronic business. Tools to support trade facilitation will be increasingly dependent on technology developments. Thus, significant future improvements in trade facilitation will result from the adoption of e-business capabilities. To maximise opportunities requires the expansion of simplified and harmonised procedures and the development of "plug-and-play" software solutions available to Governments and involved parties.

Information technology and standards

Unprecedented information technology advancements offer heretofore unimaginable opportunities. In the ideal world standards are truly desirable, but in the fast paced world of e-

business, the pressure to be first to the market and to carve out a niche marketplace has led vendors and users to create or adopt a disparate array of “standards” which are often incompatible with one another. E-business enterprises cannot afford to wait for a common standard when their window of opportunity is about to slam shut. The incompatibilities between the pace of technology and the time scales traditionally associated with standards development are reflecting more significant conflicts. Solutions must therefore do more than provide for agreements about communications. Time-sensitive interoperability between trading parties requires not just interoperable syntax (e.g., communication capabilities), but interoperable semantics (e.g., business knowledge).

Conclusions

The existing strengths of today’s UN/CEFACT are not enough to fulfil the future vision. In many respects, UN/CEFACT has been moving towards a new image for some time, however, the CSG believes that a more proactive approach is now warranted. In short, the CSG suggests that the vision for UN/CEFACT must be augmented to add several new elements:

- ◆ Cross-sectoral analysis of business processes and data flows in the public and private sector (to promote interoperability and supply chain synchronicity)
- ◆ Business process and information modelling (to capture user requirements and promote syntax independence)
- ◆ New syntaxes as they emerge (e.g., extensible markup language (XML), object oriented (OO), etc.)
- ◆ A financial strategy that will enable timely and responsive development practices
- ◆ New organisational dynamics that facilitate new relationship development.

By combining all elements of the new vision together, along with the important objective of supporting the current UN/EDIFACT standards development and implementation, UN/CEFACT will be able to utilise the same business models and the same data definitions for any language or syntax of the future.

UN/CEFACT transformation strategy

The proposed new elements to UN/CEFACT’s vision are simply stated, but will have profound consequences on the nature of UN/CEFACT’s end deliverables (the *what*), the delivery process (the *how*), and the resources required for production (the *who*). All are inextricably linked and must be so considered in approaching any transformation strategy.

Customers

One major failing of any EDI standard today is the shortage of “plug-and-play” software availability for end-users. If this is to be addressed, then the first-line customers for the next generation of e-business standards will not be end-users, rather they will be software providers. Instead of a bipartite relationship between standards makers and end-users, this will extend to a form of tripartite relationship which includes software providers as an equal and valued partner. This must be achieved in a non-biased manner generating publicly accessible standards, so that solutions do not favour one provider over another. This is essential if the shortage of off-the-shelf packages for small and medium-sized enterprises (SMEs) to implement e-business is to be effectively addressed by UN/CEFACT.

Products

The software industry has converged around the use of the Unified Modelling Language (UML) as an important mechanism for describing business processes and capturing user requirements. Without doubt, UN/CEFACT’s key deliverable for the next generation of e-business standards will be business and information models. The use of UML to develop business models:

- ◆ Ensures an auditable approach for capturing user requirements
- ◆ Provides a common language between standards makers, software developers, and users
- ◆ Facilitates the rationalisation and simplification of trading processes (i.e., trade facilitation)
- ◆ Provides the basis for syntax neutrality, thus feeding any prospective syntax solution
- ◆ Determines a rigorous approach for the naming and definition of resultant data items.

Acceptance of this position does not lessen the value of the existing UN/EDIFACT standards. To the contrary, UN/EDIFACT is and will remain a viable business alternative for large sectors of the global business community in the foreseeable future. Additionally, UN/CEFACT has long maintained a “dual track” policy for both existing and new standards development. Thus, UN/CEFACT may use models to:

- ◆ Continue to support the development of UN/EDIFACT messages
- ◆ Play a major role in the development of XML solutions
- ◆ Investigate the possibility for developing other syntax solutions (i.e. OO-eb²).

The next generation of standards clearly represents a more sophisticated product that requires an expanded support infrastructure and resource requirement.

Resources

If models are the key UN/CEFACT next generation e-business deliverable, then modelling expertise is required for next generation standards development. Therefore, the three types of experts required in the future will be:

- ◆ Business domain experts
- ◆ Modelling experts
- ◆ Syntax experts (e.g., UN/EDIFACT, XML, OO-eb, etc.)

It is not necessary, nor feasible, to train all business experts to be modellers. Certainly, business experts should be trained to *read and understand* models, but skilled modelling experts must be available. One of UN/CEFACT’s most important short term goals is to identify modelling resources.

Physical resource priorities must be directed toward identifying how models can best be developed, stored, retrieved, and maintained. For model development UML tools are required for all of the UN/CEFACT working groups and their sub-groups. For central storage, retrieval, and maintenance specific repository hardware and software platforms will be required. Such capabilities are quite sophisticated and will require substantial financial investment for acquisition as well as maintenance and operation. It should be emphasised that both cost and operational support exceed any existing or projected capacity within the United Nations secretariat.

² OO-eb is the abbreviation for the term Object Oriented-electronic business.

Finances

Today, UN/CEFACT operates as a “volunteer based” organisation that is subject to the fluctuating availability of qualified personnel and their respective contributions. Current procedures provide no overarching, open and accountable funding mechanism to support modernisation and expansion of UN/CEFACT operations. All initiatives must rely on contributions from the working membership or completely uncoordinated offerings from interested organisations. Existing United Nations policy and regulations regarding funds administration, contributions-in-kind, and branding mean that it is difficult for the United Nations, as it is not best suited on its own to meet the evolving dynamic requirements of UN/CEFACT management practices.

As specifically regards the matter of branding, strict limitations apply to the use of the United Nations logo. However, an initial investigation of the matter by representatives of the Legal Working Group indicates that the matter of United Nations logo use may be a viable opportunity to pursue with appropriate United Nations offices. This latter point notwithstanding, any meaningful effort to expand the work of next generation standards development requires that UN/CEFACT systematically plan for the consistent availability of financial resources through the development of a sound financial management strategy. Key aspects of the strategy must include:

- ◆ A contributions-in-kind policy
- ◆ A “branding” policy
- ◆ Parameters for use of the UN/CEFACT logo
- ◆ Fee-based participation for parties, organisations, or other entities involved in the next generation standards development process
- ◆ Consistency with United Nations rules and guidelines for co-operation between the United Nations and the Business Community (see below)³.

It is strongly emphasised that any fee-based methodology would be structured in such a way as to ensure that no individual or organisation need be excluded from participating. Although no details have been worked out, it is expected that a progressive fee schedule will be developed that considers all economic factors and establishes a reasonable and appropriate participation fee.

The existing UN/CEFACT Mandate and Terms of Reference constitute the essence of our strategic vision and provide a framework within which fiscal policy can be developed to permit organisational goals and objectives to be achieved.

In particular, it should be noted that the United Nations recognises the mutually beneficial relationship that exists between the United Nations and the business community and has issued a series of guidelines describing how improved collaborative arrangements can be pursued to the benefit of both parties. These guidelines provide substantial support to the development of a comprehensive and well-structured UN/CEFACT financial strategy.

External relationships

The financial argument alone should lead to a consideration of establishing partnerships with organisations that have the skills and resources to provide needed and correctly targeted contributions-in-kind. It should not be assumed, however, that since the United Nations secretariat currently maintains a database for UN/EDIFACT messages that it should also manage and maintain a repository for business and information models. A far different set of physical resources, skill sets, and operating capabilities will be required than exists at present. If this can best be achieved through a partnership agreement then that is the route that should be adopted.

³ “Guidelines, Cooperation Between the United Nations and the Business Community”, issued by the Secretary-General of the United Nations, 17 July 2000.

With respect to standards development, it is doubtful that UN/CEFACT could assemble the requisite number of participants and sectoral representation to fully develop the next generation of standards. Instead, it is most likely that a significant portion of the input to such an effort will come from trade associations, consortia, joint ventures, trading communities, etc. In such cases a key responsibility for UN/CEFACT lies in a harmonisation role rather than a developmental role. The current relationship with the Organization for the Advancement of Structured Information Standards (OASIS) through the Electronic Business XML (ebXML) initiative⁴ typifies the type of relationship that must be developed to support next generation standards development. UN/CEFACT must address the reality that international businesses are currently facing: If expertise lies elsewhere, it should not be re-invented, it should be harnessed. This also aligns quite precisely with the need to build a tripartite community between standards makers, software providers, and end-users.

Further, it should be emphasised that additional guidance is available from the United Nations to support, where appropriate, a closer relationship between the United Nations and external organisations by permitting non-governmental organisations (NGOs) to become members of UN/CEFACT.⁵ Additionally, the United Nations Global Compact represents an initiative intended to promote social responsibility and citizenship in the new global marketplace. It is an open-ended experiment intended to identify, disseminate and promote good practices based on universal principles⁶

Time scale

Historically, UN/CEFACT processes have often been considered too lengthy and slow to respond to business needs. The speed of technology change and its implications for business mean that solutions must be forthcoming within comparable timeframes. To the extent that UN/CEFACT cannot meet these timeframes, simple economic pressures will dictate that businesses seek other solutions. As a practical matter this will tend to limit the use of open information exchange specifications and minimise the viability of UN/CEFACT in the global marketplace. Thus, the future success of UN/CEFACT will depend largely on the development of a sound operational capability which is responsive to the needs of its constituency.

Organisational structure

The foregoing discussion suggests the existing UN/CEFACT organisational schema cannot support the expanse of requirements for next generation e-business standards development. In no way should this be construed to reflect negatively on the existing organisational structure. It has well-supported existing trade facilitation and e-business development and will continue to do so into the future. In addition, it is quite likely that major contributions will be forthcoming from existing organisational entities, e.g., the Business Process Analysis Working Group (BPAWG), UN/EDIFACT Working Group (EWG), etc., as input to the development and expansion of next generation standards development.

Nevertheless, customer, product, resource, finance, external relationship, and time-scale issues create a compelling case for identifying a new organisational paradigm within which the e-

⁴ UN/CEFACT and OASIS joined forces to initiate a worldwide project to standardise XML business specifications. UN/CEFACT and OASIS established the 18 month ebXML initiative to develop a technical framework that will enable XML to be utilised in a consistent manner for the exchange of all e-business data. A primary objective of ebXML is to lower the barrier of entry to e-business in order to facilitate trade, particularly with respect to SMEs and developing nations.

⁵ Refer to ECOSOC Resolution 1996/31 and "Guidelines: Association between the United Nations and Non-Governmental Organisations (NGOs)". Both documents can be located at the following Internet address: <http://www.un.org/esa/coordination/ngo/>

⁶ Refer to the following Internet address for additional information: <http://www.unglobalcompact.org/>

business standards development process will operate. The recent experience and “lessons learned” gained through the collaborative ebXML effort with OASIS substantiate this requirement.

During the November 2000 CSG meeting Terms of Reference were approved for the CSG Electronic Business Team (EBT). The primary function of this group is to pursue the development of a collaborative relationship with the business community towards establishing and operating an organisational structure that is permanently managed, adequately resourced, and technologically capable of meeting operational support requirements. Although the UN/CEFACT organization may very well follow a different schema, it is fully expected that it will continue to operate in name and purpose as a UN/CEFACT Working Group.

Summary

The preceding discussion suggests that substantial change is necessary to support continued UN/CEFACT viability and leadership in the development of next generation e-business standards. This change must follow a disciplined, integrated approach. Next generation standards:

- involve a new customer constituency
- require a considerably different mix of technical and functional resources
- must have a dependable source of operating capital
- must be co-ordinated with numerous entities outside the United Nations purview
- must act in a timely and responsive manner to support user needs
- must be developed in a organisational setting that differs from today’s UN/CEFACT organisational structure.

Further, the discussion also suggests that maintenance of a longer-term view is required to support current planning and execution efforts in determining the next series of activities that must be pursued.

Next steps: the way forward

Clearly, UN/CEFACT must address its role in tomorrow’s e-business standards development environment. The resultant decisions could dramatically alter today’s organisational structure and functionality. UN/CEFACT members are invited to consider and approve the following recommendations related to UN/CEFACT’s future e-business strategy. Short-term recommendations should be completed within six months and long-term recommendations should be completed within two years.

Short-term recommendations

The CSG is instructed immediately to initiate activity that will result in achievement of the following recommendations:

1. Adopt the Techniques and Methodologies Working Group (TMWG) recommendations for a modelling methodology⁷.
2. Work closely with appropriate offices within the United Nations to develop a comprehensive financial strategy that includes the basis for sourcing and administering operating capital; pursuing authority for use of the United Nations logo, to include developing a United Nations approved branding strategy; and defining a contributions-in-

⁷ CEFACT/TMWG/N090, *UN/CEFACT Modelling Methodology*, latest version. [Note. Although currently in the final stages of completion, the document is sufficiently completed to adopt in principle at the current time and permit the further refinement to remain a matter of TMWG technical responsibility. Once approved by UN/CEFACT the document would be maintained and available electronically through appropriate web sources.]

kind strategy that meets the operating objectives of existing and future UN/CEFACT working groups.

3. Define a comprehensive list of deliverables and products to be forthcoming from the next generation of e-business standards development work and allocate responsibility to the appropriate working groups.
4. Confirm UN/CEFACT support for the CSG Electronic Business Team to review and analyse the requirements for UN/CEFACT to implement its vision within the framework of United Nations rules for the next generation of electronic business standards development. This should include the review of the current UN/CEFACT working groups structure to ensure that the organization meets the needs of its users and participants.
5. Designate champions responsible for developing a comprehensive implementation plan and monitoring the establishment of a next generation e-business standards development organisation.
6. Develop a training and educational product for UN/CEFACT heads of delegation, partners, and working groups to explain the implications of and directions for next generation e-business standards development.

Long-term recommendations

The CSG is instructed to develop a plan and initiate activity that will result in achievement of the following recommendations:

1. Develop a marketing plan to elicit and expand participation in UN/CEFACT trade facilitation and e-business standards development initiatives, targeting non-governmental organisations and other organisations, as well as current members with low levels of participation.
2. Develop a transition methodology and migration plan for any appropriate previously developed standards that might be transformed into the next generation standards environment.
3. Develop strategic and tactical plans for extending UN/CEFACT operations, relationships and influence, as required, beyond the existing traditional enterprise boundaries, to include the necessary support infrastructure, role of working groups, relationships with customers and external organisations, and services and products provided.
4. Establish benchmarks, evaluation procedures, and measurable criteria, as appropriate, to ensure that UN/CEFACT remains a valued partner in the international business marketplace.

Conclusion

Dramatic changes to the technology landscape are creating requirements for radical change throughout the global business community. UN/CEFACT is not immune to the requirement for change. The vision for “simple, transparent and effective processes for global commerce” requires refinement and expansion in order to retain a position of respect and preeminence and to carry a viable strategy forward into the next era of trade facilitation.

The mark of an organisation can be defined in the way it faces up to the challenges posed by a changing world. Change can either be viewed as a threat or as an opportunity. It is the CSG view that UN/CEFACT has a great opportunity to see its current products, services and personnel

augmented by new products, services and personnel to meet the twin goals of trade facilitation and electronic business for the next generation of developments.

The magnitude of the issues addressed herein far exceeds the content of the paper. A sense of urgency as well as a measure of due diligence should be applied to the confirmation of a comprehensive, integrated operating strategy. However, failure to adopt an aggressive, proactive position could seriously jeopardise UN/CEFACT's credibility and relevance to future standards development and trade facilitation initiatives.
