WCO Data Model connects trade stakeholders

In recent years, there has been increased activity around the WCO Data Model among WCO Members and international organizations. But if most Customs IT systems seem to be, by and large, compatible with the Model, the question of their full conformity remains open. This article presents the latest information available on the adoption of the Model by WCO Members as well as future developments of this major WCO tool.

Over the years, core Customs automated systems and Electronic Data Interchange (EDI) facilities have been developed and operated based on national requirements. These requirements arose from national legislation and local operational needs. Even though all Customs administrations require the same information on the same goods, a multitude of forms, data elements and electronic templates were adopted in various countries at different points in time, resulting in non-uniform, non-standard usage and handling of information.

International standards for electronic data requirements, such as the UN Trade Data Element Directory (UN/TDED) and the UN EDI for Administration, Commerce and Transport (UN/EDIFACT), were developed but they were core and generic – not tailor made for Customs. There were no international data dictionaries in existence for the Customs domain that would both harmonize and simplify Customs data requirements.

If UN/EDIFACT standard electronic messages for Customs purposes, such as CUSDEC for the import and export goods declaration and CUSCAR for the cargo manifest, did represent an organized approach in this area, there were no underlying conceptual data models governing the ongoing maintenance of these messages.

To respond to the challenge of non-standard systems of data, the WCO developed a Data Model. It contains a collection of carefully selected items of information – referred to as data elements – that are standardized, based on globally accepted norms, and organized in order to minimize the effort and cost to trade. The Model explains the business of Customs in terms of data submitted by traders and transporters for clearing goods across borders.

To explain the flow of data between trade and government, the WCO Data Model relies on the pattern of procedures followed globally by Customs, which are described in the WCO Revised Kyoto Convention. The most recent version of the Model – version 3.0 – goes a step further and covers data requirements of other government agencies for their respective border procedures.

Renewed interest

In recent years, there has been increased activity around the WCO Data Model among WCO Members and international organizations.

The launch of Version 3.0 of the Model and the efforts undertaken by the WCO to encourage more and more countries to adopt the instrument produced results: most governments are clear about the benefits of rationalization and simplification of regulatory information and the value of harmonizing data across border agencies in the context of a Single Window.

This renewed interest has also arisen from:

- The growth in the number of projects to establish Single Window solutions.
- The entry into force in several countries of a mandate on advance cargo reporting, notably via the implementation of Authorized Economic Operator (AEO) programmes.
- The fact that providers of information technology (IT) solutions for regulatory trade compliance are trying to build 'pipelines' to support the seamless flow of trade data.
- The WCO initiative on Globally Networked Customs which envisages close cooperation between Customs administrations through real-time exchange of commercial information.

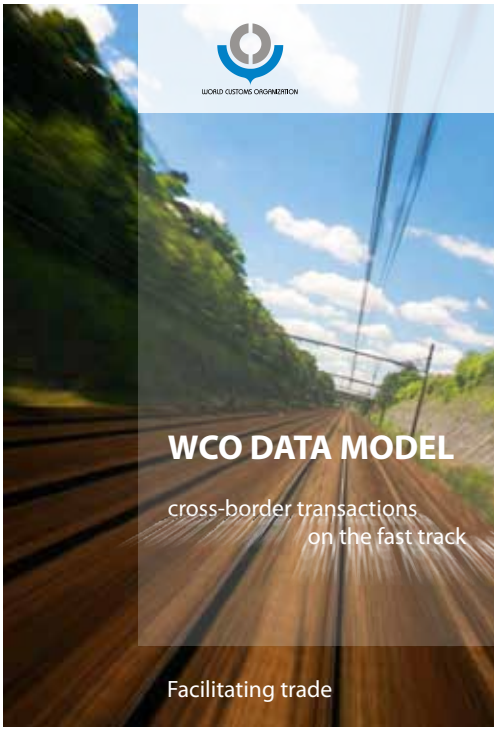
In all these initiatives, the WCO Data Model, which provides an 'end-to-end' view of regulatory information in the international supply chain, is a key enabler for governments and trade.

Who is adopting the Model?

Directors General of Customs often ask the question about the number of countries that are 'implementing' the WCO Data Model, that is to say who is adopting the specifications of the Model. Unfortunately, this is not a question the WCO can answer with certainty yet.

Information collated by the WCO suggests that different countries are at different stages of adopting the Data Model. This was assessed by WCO experts through capacity building field missions. Moreover, the 20 to 30 delegates of the WCO Data Model Project Team provide briefs periodically on the status of adoption of the Model in their respective countries.

Recently, the WCO conducted a global survey on Single Window developments, which revealed that 25 of the 60 respondents have adopted a version of the WCO Data Model. In addition, based on information shared by UNCTAD with the WCO, and analysis carried out by both organizations, it appears that the 'ASYCUDA World' system broadly uses data elements that are in line with Version 3.0 of the WCO Data Model.



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It is, however, impossible to make an informed assessment until formal conformance testing is carried out by experts on a country-by-country basis and validated independently. The assessment would typically involve semantic comparisons between national data sets, code lists and information structures with those recommended by the WCO Data Model.

What does adoption involve?

Adopting the WCO Data Model means replacing or modifying information models, which are at the core of any IT system.

The ideal time for any party to adopt the WCO Data Model is when new systems development or large-scale overhaul is taking place. It is indeed possible for countries to make gradual, incremental changes to their software applications to bring them in line with the WCO Data Model. Such changes can be brought in at the time when routine software upgrades are being performed, for example.

The WCO Data Model has been developed as the maximum framework. Therefore, countries need not adopt the Model in toto, but may customize it to create profiles that are in full conformity with national legislation and make adjustments within the constraints of existing data policies and practices.

One has to be aware of the impact of the modification made in a Typical IT sys-

Non-conformant	Compatible	Conformant
• Uses proprietary data structures. • Does not follow international standards. • Too many deviations from the WCO Data Model. • Work-around not possible to meet data exchange requirements. • Direct Trader Input is the predominant mode of entry. • Costly for the trader to operate and maintain. • Major obstacle to participation in Customs-to-Customs information exchange. • Single Window development is infeasible.	• Largely follows the WCO Data Model but has few variations in usage. • Variations in usage can be overcome with minor but significant adjustments using 'adaptors' or 'translators'. • The larger the number of adaptors, the more expensive it is for the trader to maintain software applications and to operate. • Does not stop the country's participation in international data exchange, but may be limited due to expensive and complicated work-arounds. • Development of a Single Window would entail serious challenges and high levels of effort.	• Follows the WCO Data Model for all practical purposes of information exchange. • National models are nearly true subsets of the WCO Data Model. • Deviations from the WCO Data Model are either non-existent or are immaterial. • Translators and adaptors do not play a significant role. • Offers cost savings to the trader in terms of information re-use and access to low cost compliance solutions. • Facilitates participation in Globally Networked Customs. • Facilitates the building of a Single Window environment.

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tem that is connected to other IT systems belonging to international trade stakeholders. Customs administrations share information with all participants in the clearance process, such as other government agencies, banks, or port authorities. It is therefore a whole community that will have to adopt the changes. To deal with issues of compatibility, interfaces that are called 'translators' or 'adaptors' will have to be set up.

In order to adopt the WCO Data Model within its information systems, a country needs to assess its current state of alignment with the instrument. This assessment is a step-by-step activity to be carried out with support from facilitators who are experts on information standards, including the WCO Data Model. The assessment would help place the country's data model into one of three categories, namely 'non-conformant', 'compatible' and 'conformant'. The table above provides the broad implications of each category.

Countries that are non-conformant should replace their IT systems, countries that are compatible should gradually implement the Model, and countries that are conformant should publish statements illustrating how their national model conforms to the WCO Data Model. For this purpose, the WCO has developed data harmonization guidelines aimed at producing national data sets that can work like a correlation table, which can be used as a statement of conformance.

Transparency and collaboration

Invariably, Customs administrations publish detailed information on the electronic interfaces to their Customs

and Single Window systems, allowing trade and transport actors to build their respective IT systems to interchange regulatory and operational data. Even though this type of information is publicly available, knowledge about functioning national systems is still very local and is limited to a few consultants who sell their services to enterprises that provide software solutions to local traders and brokers. Alignment of national systems with the WCO Data Model would render this type of information in globally recognizable notations and references.

The direct beneficiaries would be software solution providers who could simplify and rationalize their software solutions for international trade. Internal software development and maintenance costs could be reduced when the complex, country specific requirements are rationalized into a package of requirements based on the WCO Data Model which will, while varying from country to country, still greatly simplify the effort involved in the management of requirements. This will encourage software providers to develop packages that can be used around the world.

Indirect benefits will occur to traders who will not only have access to cheaper software solutions but also be able to re-use upstream information in the supply chain, thus reducing time and the direct costs of regulatory reporting.

Collaboration between governments and software providers would bring down the costs of acquisition of information for all users. The users of the WCO Data Model should work closely to supply commonly used technical information to each other for mutual advantage. Interested parties could come together to solve business and technical challenges through the adoption of the Data Model, and thereby take advantage of technological advancements to further speed-up the deployment of IT solutions.

Derived products

The WCO Data Model Project team has developed several 'profiles' from the WCO Data Model. These profiles are forms, templates or other regulatory documents that are produced automatically by the system. For example, the Single Administrative Document, forms used by the International Maritime Organization (IMO) Convention on Facilitation of International Maritime Traffic, templates for electronic TIR Carnets and similar regulatory documents are being produced as profiles of the Data Model. The calculation of the value of a transaction is also covered. Additionally, it will help in ensuring uniform interpretation of the WTO Agreement on Customs Valuation.

Future development

Future development of the WCO Data Model involves publication of annual releases aimed at overcoming problems reported by individual countries adopting the Model. In relation to any new versions, it has been suggested that there should be no big-bang approach but rather an annual incremental growth of the Data Model.

It is recognized that adding any new functionality to the WCO Data Model should be based on agreed criteria, for example it should simplify reporting for trade, or it should remove obstacles that prevent a country from adopting the Model. In other words, projects to update the Data Model will be taken-up in manageable, annual cycles. Such an approach would further deepen the engagement of countries interested in upgrades.

Experts anticipate that the WCO Data Model will remain stable since no major change is foreseen to the core of the Model, even as new functionalities and features are added.

More information

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