Data harmonization for Single Windows: a case study from Oman

"The Directorate General of Customs of the Royal Oman Police in the Sultanate of Oman is in the process of developing a new Customs system and Single Window based on international best practices, and using WCO Data Model version 3.3 as the basis for the messaging and data components. CrimsonLogic is providing valuable assistance and expertise as we engage with our partner government agencies to capture and document their requirements and in developing a standardized data set for Oman. The challenge lies in capturing all of the requirements and accurately documenting the processes and data involved in their 'business-to-government' (B2G) processes."

Colonel Yahya Al-Maimani
CUSTOMS PROJECT DIRECTOR
DIRECTORATE GENERAL OF CUSTOMS
ROYAL OMAN POLICE

By Ian Hogg, Manager,
TRADE FACILITATION CENTRE OF EXCELLENCE,
CRIMSONLOGIC

TWENTY YEARS AGO, the idea of a standardized Customs data set was almost unheard of. For those of us who were around at the time, being compliant with international standards simply meant implementing UN/EDIFACT messages such as the Customs Declaration (CUSDEC), the Customs Cargo Report (CUSCAR) and the Customs Response (CUSRES). These were common terms within the Customs world – even those who knew very little about information and communications technology (ICT) had a basic understanding of what CUSDEC, CUSCAR and CUSRES were. In those days, a lot of people believed that implementing international standards would somehow make them 'interoperable' with other Customs authorities.

The world moved on. Along came the WCO Data Model, and everyone was talking about it. There were those who believed that if you had already implemented CUSDEC, CUSCAR, CUSRES, etc., you were compliant with the WCO Data Model. Others believed that to be compliant with the WCO Data Model, you had to at least 'map' your data elements to it or better still, use the code lists recommended by the WCO. In reality, few people understood how to be compliant with the WCO Data Model, although they still believed that being compliant with it would make them more interoperable with other Customs authorities. Then in July 2005, the United Nations Economic Commission for Europe (UNECE) published Recommendation No. 33 – "Recommendation and Guidelines on establishing Single Window", and suddenly the WCO Data Model seemed to have a more practical use.

While all of this was happening CrimsonLogic was quietly working behind the scenes, developing and implementing Single Window systems around the world: Singapore (1989), Mauritius (1994), Ghana (2002), Saudi Arabia (2002), Madagascar (2007), Ivory Coast (2008), Qatar (2008), Trinidad and Tobago (2010), Mozambique (2010), Chile (2012), Brunei Darussalam (2012), Kenya (2012), Oman (2013) and, most recently, Panama (2013). All of these systems have made use of international standards in one way or another, and perhaps most notably, the systems in Singapore and Mauritius were used as case studies for UNECE Recommendation No. 33.

We already have the know-how to implement Single Windows at CrimsonLogic, which makes it easier for us to see the benefits in complying with international standards, particularly the WCO Data Model. At the same time, as the focus of Single Windows is on 'trade facilitation', not only are we interested in the data required by Customs, we must also understand the data required by other border control agencies such as the Ministries of Commerce, Trade and Industry, Health, and Agriculture. In Singapore for example, our Single Window system integrates all border control agencies involved in cargo clearance, including Customs.

Nevertheless, version 3.3 of the WCO Data Model has already proven to be a very useful tool for us. More recently, as part of Oman's new Integrated Customs Management System (ICMS) and Electronic Single Window (ESW), we have developed our own 'Data Harmonization' methodology. It is based on another UNECE Recommendation, No. 34 – "Data Simplification and Standardization for International Trade". This Recommendation describes the process and objectives of data harmonization as follows:

"Following the simplification and standardization process described in the Recommendation guidelines, a government should be able to reduce the regulatory and official information requirements through the elimination or duplication of submissions and the removal of redundant data elements. The outcome of the process should be a more efficient and effective exchange of information between Trade and Government."

Our methodology recognizes that every country is different and you cannot simply implement the WCO Data Model without customization. As outlined in UNECE Recommendation No. 34, we need to capture,

define, analyse and reconcile every document and every data element used during the cargo clearance process. For example in Oman, we captured 110 key documents where we defined 3,783 data elements and produced our first draft of a standardized data set, which included exactly 200 data elements. Of these, we were able to map 190 data elements to WCO Data Model v3.3, and for the remainder we are helping the Directorate General of Customs, which falls under the jurisdiction of the Royal Oman Police, to submit them to the WCO as Data Maintenance Requests (DMRs). In fact, some of our DMRs were approved at the recent Data Model Project Team (DMPT) meeting, and we are looking forward to making further contributions to the development of the WCO Data Model this year.

But it does not end there. We still need to understand the structure of and relationships between the data elements within our standardized data set. In order to do this, we use a third party software product called GEFEG.FX. The software leverages on a new concept within WCO Data Model v3.3, known as 'Information Packages'. By mapping our standardized data set to these information packages using GEFEG.FX, we can

easily define the relationships between our data elements; this, together with the data types, sizes, formats and recommended code lists (where applicable), forms the basis for our Single Window design.

Of course, this all sounds too easy. It helps when you have years of experience behind you, whether it is working in Customs, having an information technology (IT) background or, better still, both. In terms of Customs data, it does not take long to develop information packages for the 'Declaration' and 'Response', provided you have the right expertise to do so. Once you have a standardized data set, by using GEFEG.FX you can develop your own subsets for the different regimes – for example, import, export, transit, etc., and also conveyance reports, Customs cargo reports, and so on. One of the main challenges is the non-Customs data, i.e., the data required by other border control agencies. In addition to the 'Declaration' and 'Response', WCO Data Model v3.3 also includes an information package called 'LPCO', which is an abbreviation for Licences, Permits, Certificates and Others. We believe that these are essential for Single Windows, or at least those that aim

to provide a 'one-stop-shop' for import/export cargo clearance.

In conclusion, based on our experience, the WCO Data Model provides a very rich Customs data set as a result of years of data analysis work done by WCO Members. Moreover, the LPCO package, which has only just become available in recent versions of the WCO Data Model, looks set to become a useful tool for administrations seeking to facilitate cross-border regulatory functions through IT. When you look at the World Bank's latest 'Doing Business Report 2014', as many as 73 countries claim to have implemented a Single Window, yet only 18 have integrated all of the border control agencies. This represents a golden opportunity for governments to further enhance their border regulatory procedures by bringing more border control agencies into existing and emerging Single Window systems. Hopefully, as more governments move towards trade facilitation, they will contribute to the WCO Data Model so that it becomes an even more useful data harmonization tool for Single Windows in the future.

More information
ianhogg@crimsonlogic.com