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Data Analysis for Effective Border Management

INTERNATIONAL & INDUSTRY LIAISON UNIT

TRADE BEAT

Inside this issue:

Effective border management requires both the facilitation and the control of commodities, people and conveyances that move across international frontiers. Critical to the facilitation and control of trade is the collection and analysis of data. The international customs community regards data analysis as a key element for customs modernization programmes, and calls upon members of the World Customs Organization (WCO) to promote their efforts and initiatives in this sector.

In order to promote visibility and facilitate best practices among its administrations, the WCO's annual theme for 2017 was ***"Data Analysis for Effective Border Management."***

This theme remains one of the most topical in the Customs community globally, as Customs administrations seek to find ways to harness and leverage the big data they collect daily, and integrate it into their risk management systems, to help effectively and efficiently protect their borders, facilitate legitimate trade and collect revenue due.

This trend towards being more technology driven will continue into 2019 and beyond, as Customs evolves to manage current and future reality.

"Data Analysis for Effective Border Management" follows the theme for 2016, "Digital Customs: Progressive engagement", which was used to encourage the global customs community to exploit enabling technologies and leverage the potential of information technology to effectively pursue its mandate. Members were encouraged to implement and use available technologies such as big data, telematics and the cloud to enhance efficiency and coordinate with partners such as traders and other government agents. Today, these areas are even more relevant, with topics such as blockchain technology and cross border e-commerce being added to the trends that Customs must keep up with.

The WCO has garnered support over the years from other international organizations, as well as private entities in providing IT solutions specific to enhancing customs efficiency. Significant research has also been conducted on border management by the private sector, e.g. Customs 2020 and Borders 2020 prepared by IBM. The United Nations has also invested heavily in IT solutions such as the Automated System for Customs Data (ASYCUDA) which processes customs data electronically, enhancing efficiency.

Data Analysis for Effective Border Management

What is Data?

A general definition of data refers to raw information, usually in an unorganized form, represented by facts or statistics collected together for reference or analysis. Data may also be defined as things known or assumed as facts, that forms the basis of reasoning or calculation. Data only has value when it is used efficiently and effectively, therefore, without a purpose or an objective data may not be very useful.

What is Data Analysis?

Data analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data[1].

Why is data analysis important for Customs?

Customs administrations leverage data on a day to day basis to fulfil most operations. As such, data analysis is essential in encouraging compliance as well as facilitating trade, which contributes to overarching objectives of border protection, trade facilitation and the collection of both revenue and trade statistics.

Customs Data is derived from multiple sources including :

- submissions from the trading process;
- other cross border regulatory agencies;
- commercially available databases and
- open source information platforms such as digitized global public records and multilingual news sources.

Challenges to effective data use can be due to:

- lack of qualitative data;
- data that has not been integrated or merged,;
- lack of harmonization of data across border agencies;
- lack of skilled resources;
- lack of IT infrastructures ;
- cultural challenges and
- lack of appropriate legislation.

How data analysis can improve customs operations

Data analysis may be used to:

- improve risk management which supports enhanced detection of irregularities, illicit consignments, the suspicious movement of people and financial flows, and the facilitation of legitimate trade;
- learn from historical activity to predict trader or passenger behaviour;
- engage with other government agencies to leverage their experience and expertise;
- conduct quantitative research for purposes of building knowledge and
- enhance performance measurement to improve officer practices and integrity.

"To achieve these benefits, Customs administrations should make data analysis a strategic priority and acquire cutting-edge technology, establish appropriate automation policies, and recruit experts to collect and analyse data, and act upon the data-driven insights"

WCO Secretary General Kunio Mikuriya

1. Responsible Conduct of Research (RCR) website at Northern Illinois University, definition of data analysis taken from responsible conduct in data management. https://ori.hhs.gov/education/products/n_illinois_u/datamanagement/datopic.html

WCO Tools for Data Analysis

WCO Customs Enforcement Network (CEN)

Conceived out of the need for effective intelligence, the WCO Customs Enforcement Network (CEN) application assists the Customs enforcement community in gathering data and information for intelligence purposes. Information forms the basis of intelligence which is an essential element of enforcement. The CEN acts as a central depository for enforcement-related information, providing a database of seizures, offences and photo analysis capabilities to combat the trafficking of illicit substances.

A communication component facilitates cooperation between users at the international level, while the CEN website allows users to access various enforcement-related publications such as alerts, analytical reports and informational bulletins. The CEN is user-friendly and updatable with content compatibility to Microsoft excel and access in which it can be used as an analytical tool. Information can be downloaded from the CEN, allowing the data to be converted to tangible results. Users of the CEN are able to mine data to inform strategic options, establish risk indicators and identify trends.

A study to measure the time required for the release of goods should be divided into three phases:

Phase 1 – Preparation of the Study

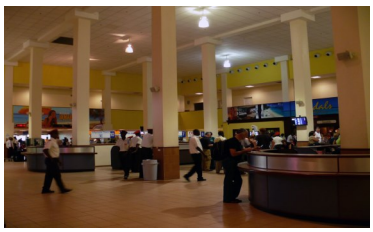
Phase 2 – Collection and Recording of Data

Phase 3 – Analysis of Data and Conclusions.

WCO Time Release Study (TRS)

The WCO Time Release Study (TRS) is a unique tool and method used to measure the actual performance of Customs activities as they directly relate to trade facilitation at the border. As it relates to imports, exports and in transit movements, the TRS measures standard processing times linked to operational procedures which are carried out by Customs and other regulatory actors to determine efficiency. The TRS seeks to accurately measure elements of trade flow with an objective of enhancing performance and devising strategies to increase efficiency. Various methodologies may be adopted for execution of the TRS dependent on the specific goal or objective of the administration.

Coordinated Border Management (CBM) is one such approach used to identify the constraints affecting Customs release that are linked to other border control agents or their functions executed by Customs. Granting of authorizations or permits, the application of other laws outside of customs, and the inspections carried out by other services are some of the activities that may affect customs release. The TRS enables the contemplation of corrective actions through cooperation with other parties and the possible solutions that may be selected through coordinated efforts. The measurements of such activities produces data which can be quantified, analysed and managed. The results derived from the TRS can be effectively utilized by Customs administrations, other border agencies and the wider business community. The necessary measures can then be taken to improve compliance, enforcement and effectively manage the borders.



Data Analysis for Effective Border Management

WCO Mirror Analysis

This tool is primarily used by the WCO to reduce revenue risks and decrease the revenue gap experienced by customs. Mirror analysis uses the data from the Harmonised System (HS) to compare the imports (or exports) of a country, with the exports (or imports) reported to the country by its trading partners. In order to increase compliance levels, a focussed risk assessment strategy is recommended for customs administrations through the use of specific tools recommended by the WCO. In mirror analysis, the HS code is used to compare imports and exports, and to detect gaps or anomalies in terms of quantity, weight or the value of commodities. Trade statistics of the same products can also be compared over the same period to identify possible undervaluation or misclassification of goods, which may reveal fraudulent trade flows or practices.

An accurate quantification of potential revenue loss is also particularly difficult for customs to determine. However, to minimize this challenge, the WCO provides assistance to its members by way of a guide on the use of mirror statistics for analysing trade-related discrepancies. The guide is compiled based on customs import and export data, and is based on existing literature and analysis of trade data from countries worldwide. The guide also contains testimonials from WCO members in the form of case studies showcasing the use of statistical analysis of data to target and identify fraudulent practices.

The WCO Performance Measurement Contracts Guide

"The Why and the How of Performance Measurement Contracts" is a WCO guide to improve Customs procedures and integrity through the use of performance measurement. The guide defines performance measurement as the practice by a customs authority to regularly analyse data which is extracted from automated customs clearance systems like ASYCUDA, to describe and understand the activities and practices of a specific entity (frontline Customs officers, importers, etc.) in connection with Customs procedures. The objective of the guide is to aid customs administrations in achieving efficiency and combating corrupt practices through access to pertinent data. The guide details the performance measurement approach piloted in a series of Customs administrations and describes the innovative approach taken to targeted improvements in Customs controls applied at the borders.

The WCO Data Model

The WCO Data Model is a maximum set of carefully combined and harmonized data requirements derived from cross-border regulation. It supports data analysis by improving data collection and enabling the sharing of data between government agencies. These requirements are mutually supportive and will be updated on a regular basis to meet the procedural and legal needs of cross-border regulatory agencies such as customs, controlling export, import and transit transactions. The WCO Data Model is based on the Revised Kyoto Convention which requires customs administrations to request minimal data to ensure compliance with customs laws. Customs administrations will therefore, at most, require the data elements they have listed for each customs procedure in the respective data sets. These self-imposed limits discourage future increases in data requirements, which if required, is subject to a thorough needs assessment and should be aligned with international standards for data elements.

JCA Tools for Data Analysis

The Jamaica Customs Agency (JCA) has been consistently using data analysis to effectively manage the borders, taking a progressive and innovative approach to border management. As a member of the WCO, the JCA acknowledges the various tools recommended for data analysis, and has utilized many of them, in their entirety or has implemented aspects of specific tools depending on the objective. The TRS is one such tool which the JCA has used to measure performance, evaluating customs release activities for persons and commodities, at both the air and sea ports. The TRS provided the JCA with practical data in terms of clearance times, leading to strategic policy decisions geared at even greater efficiency. 2019 will see the conduct of an even more comprehensive TRS, as the JCA strives to ensure it is performing optimally.

Apart from the WCO recommended tools for data analysis, the JCA has utilized existing systems such as ASYCUDA World, to analyse personal credentials, prior to the arrival of passengers. The Advance Passenger Information (API) tool is facilitated through ASYCUDA and is based on partnership with the Passport, Immigration and Citizenship Agency (PICA) and the Joint Regional Communication Centre (JRCC). The Tableau application is also being utilised by the JCA and is able to perform intense data analysis, with graphical presentation of the analysed data being an option.

Data analysis tools used specifically at the borders include the Container Tracking System (CTS), which analyses risk factors of containers, and the i2 which is an intelligence gathering border protection tool. Data analytics goes beyond the realms of customs operations and are used primarily for strategic purposes.

ASYCUDA Performance Management (ASYPM), is also being implemented by the JCA over its ASYCUDA platform. It seeks to significantly improve the JCA's capacity to measure operational performance metrics by integrating supply chain data with information on customs procedures to track and measure end to end trade transactions.

Data Analysis for Effective Border Management

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The International and Industry Liaison Unit is committed to raising the level of awareness on topics relating to the Caribbean Community, as well as issues concerning the wider topic of international trade, to both our internal and external stakeholders. Our monthly newsletter seeks to highlight global trade topics and their importance to Customs Administrations worldwide and specifically how they affect the Jamaica Customs Agency. As we realize our vision of becoming a modern Customs administration delivering excellent service, we recognize the importance of knowledge transfer in delivering our objectives and use this forum as our way of contributing to the vision of the JCA. The International Liaison Unit is located at the Myers Wharf head office and our officers are available to respond to your queries and clarify any points of concern.

Prepared by: The International Liaison Unit