INTERNATIONAL & INDUSTRY LIAISON UNIT

TRADE BEAT

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BIG DATA
Leveraging the Power of Analytics for Customs

The mandate of the Jamaica Customs Agency (JCA) centres around three core functions: The equitable collection of revenue, the protection of Jamaica's borders against illicit imports and the facilitation of trade. Most Customs administrations around the world have at least one of these mandates at the core of its operations. In order to fulfil the Administration's mandate, customs operations must be executed as effectively and as efficiently as possible. To achieve this, Customs has to operate at a high standard and remain current in its approach to customs control measures while balancing trade facilitation.

Operating a modern customs administration is an ongoing task, with operational changes attributed to a dynamic global trade environment and a rapid growth rate of technological advancements. To be efficient, Customs is often required to match its methods of control to the latest trade trends, and employ the most contemporary tools to achieve its objectives. Tools such as Blockchain, and Big Data applications are being explored by several customs administrations to fulfil their respective mandates, demonstrating the change from traditional methods of customs control to the most current best practices.

What is a Big Data?

'Big Data' is an evolving term that broadly defines any category of data or datasets whose size or type is too complex to be handled by traditional data-processing applications to mine information. Simply put, when data size grows beyond storage capacity it is called Big Data. Big data applications are used to reconcile data or data sets that cannot be fully exploited due to their size and volume. As such, Big Data requires more advanced technologies used in parallel to process the information required. With an increase in internet enabled devices such as smart phones, smart TVs, and tablets, Big Data can be derived from almost anywhere. Content can range from textual documents to multimedia applications, and can be harnessed from several platforms, including social media.

Big Data applications are used by both private and public entities to extract pertinent information that may optimize an organization's performance. Similarly, Big Data can potentially improve the efficiency of Customs operations, where information extracted, can be used to execute a more targeted approach to Customs control. For example, Data derived from appropriate sources can be transformed into intelligence, enabling Customs to identify, assess and manage risks, thereby increasing the effectiveness of risk management operations.

BIG DATA

Big data for Risk Management

Traditionally, risk management for Customs officials was largely based on his/her intuition, coupled with knowledge acquired from real-life experiences. For Customs nowadays, risk management requires identifying, evaluating and analysing the full range of diverse threats and risks which occur along the entire supply chain. Comprehensive data on goods moving across borders, as well as an appropriate strategy, is therefore required by Customs to conduct effective risk assessment. A critical component to the strategy is the need for high performing information systems, with capabilities of extracting huge volumes of data, provided by economic operators within the supply chain. Additionally, Customs should be equipped with advanced electronic systems to identify, evaluate, analyse and mitigate the entire range of potential risks along the supply chain, as well as risks to the economic or financial interests of Customs and the individual country. Threats to security comes from several sources and may vary from the smuggling of contraband items such as narcotics and weapons, to more devastating threats, such as explosives posing imminent threats to supply chain conveyances. The use of Big Data enables greater risk analysis capabilities which should be strengthened by individual customs authorities, in order to address such challenges which could lead to enhanced intelligence-led enforcement. Linking different datasets relevant to the supply chain process and sourcing data from industries such as logistics, financial, tax and open sources, would also be critical for an effective risk management strategy.

Risk Management has long been promoted by the World Customs Organization (WCO) as a best practice for customs modernization efforts. The use of sound Risk Management by Customs administrations is therefore encouraged by the WCO, and features prominently in most of its international instruments and tools that support Customs modernization. The potential of Big Data for Customs is burgeoning and several WCO instruments have been updated to reflect its use, especially in the context of supply chain security and risk management.

WCO Instruments Related to Big Data

BIG DATA

Big Data: Expanding on 3 fronts at an increasing rate.
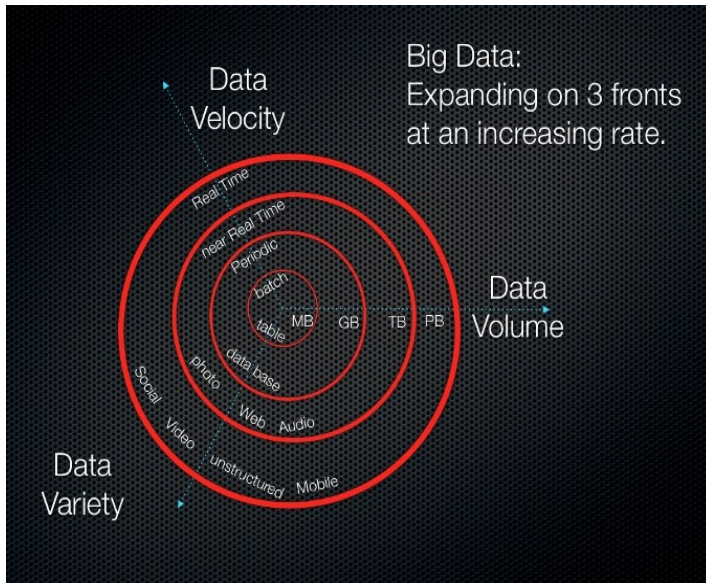
What is Data Analytics?

Data analytics is a general term used to describe any type of processing that examines historical data over time using specialized computer systems to extract meaning from raw data. These systems transform, organize and model the data to draw conclusions and identify patterns. While data analytics can be simple, the term has evolved to reflect Big Data analytics which presents unique challenges in analyzing data of high volume, velocity and variety. The 3 vectors or 3Vs of Big data, as they are called, refer to volume, velocity and variety. Volume refers to the massive size of data, velocity refers to the flow of data or the speed at which data is transmitted and variety speaks to the diversity of the data. The 3Vs describe the data to be analyzed, where analytics is the process of deriving value from the data.

WCO Data Analytics Workshop

A one-day Workshop on Data Analytics was held at the WCO Headquarters in Brussels, Belgium on January 9, 2017. The inaugural event was organized to explore and discuss the potential use of data analytics in Customs. The aim of the Workshop was to discuss the ways in which Customs could increase efficiency at both the strategic and operational levels, by taking greater advantage of the use of data analytics in Customs.

It was concluded that the massive amount of data generated by Customs is currently being underused. To harness the value from this underutilised data, the use of Big Data applications and data analytics can be leveraged by Customs to improve overall Customs performance. Data analytics is seen as an extremely powerful tool that has the potential to service all future policy-making processes in Customs.

The WCO reported that participants in the Workshop included representatives from academia and international organizations, as well as practitioners from Customs administrations. The discussions and presentations delivered at the Workshop focused on Customs and trade data, as well as data analysis methods that could be used to help Customs gain a better understanding of themselves and the work they do, thus shaping the way towards more efficient and effective Customs administrations.

The WCO Secretary General, Dr. Kunio Mikuriya, shared his views on the need for Customs to develop data analytics skills and encouraged WCO Members to make greater use of data analytics as a key tool for more robust analyses. It was agreed, at the end of the Workshop, that the available data provided by some Customs administrations would be used to produce research papers, as well as being collated and summarized for inclusion in a book for the Customs community.

"Enhancing Customs' ability to perform increasingly sophisticated analytics using the available data will become even more crucial in all future policy-making processes."

Kunio Mikuriya
WCO Secretary

BIG DATA

With the ever-evolving nature of Big Data applications, the potential for operational change within the Customs landscape is inevitable, particularly with regards to a more risk based approach to Customs control measures. The concept of Big Data and data analytics is not static and will continue to evolve as organizations find innovative ways to harness its use. As Customs enforcement becomes smarter, intelligence led capacities will increase and enhance the ways that Customs field officers perform their duties.

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Country Above Self

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.

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