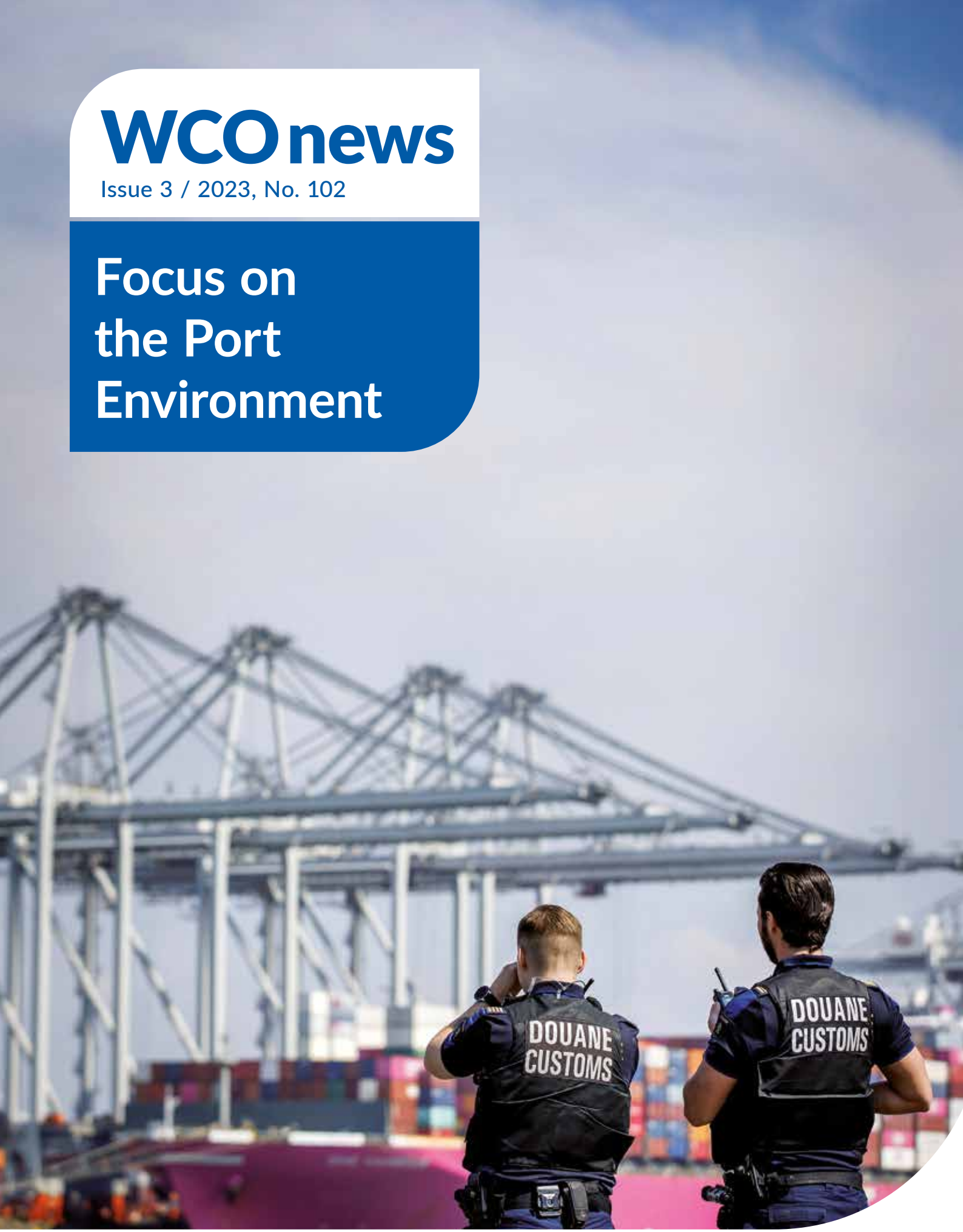
WCO news
Issue 3 / 2023, No. 102

Focus on the Port Environment



World Customs Organization
mag.wcoomd.org

TABLE OF CONTENTS

4 FLASH INFO

4 Operation Arena Blanca: Customs administrations of the Americas and Caribbean region mobilize to counter IED production

9 WCO launches its Performance Measurement Mechanism

12 WCO Council adopts three HS Recommendations

13 Must read: How will the State think with the assistance of ChatGPT?

15 Customs officials' papers are published in the Borders in Globalization Review

16 Unveiling the WCO DM Version 4.0.0

18 DOSSIER: FOCUS ON THE PORT ENVIRONMENT

18 Reviving cooperation between Ports and Customs

22 Customs-Ports partnership and engagement in Abu Dhabi

27 Implementing the principles of "Smart Borders" at a medium-sized port

33 Integrating ports and Customs information systems in a cloud environment: a game changer for digital transformation

36 Georgia Ports and US Customs and Border Protection – a partnership that works

38 Tackling corruption in maritime trade

44 Combating the infiltration of criminals in the maritime supply chain: an overview of Operation TIN CAN

48 PANORAMA

48 Transforming trade: how Dubai Customs is harnessing AI for enhanced trade facilitation and border control

52 The Czech Customs laboratory is 100 years old and more relevant than ever

56 Jordan Customs equips patrol officers with body-worn cameras

58 How Indian Customs leverages data analytics for efficient risk management

62 Diary of a WCO Professional Associate

65 Cameras: one way of making traffic controls more efficient

69 POINT OF VIEW

69 Elevating partnerships between Customs brokers and Customs authorities – the way forward

73 Leveraging AI for Customs classification purposes

76 How Smart Containers could contribute to Customs operations efficiency

78 Identifying chemicals precisely through trace analysis is now a reality, opening new doors for Customs officers

81 The importance of data in DHL Express

84 The invisible paper chain in today's Customs document flow and how to break it using Artificial Intelligence

Editor / Writer Laure Tempier

Publication Assistant Sylvie Degryse

Online edition: mag.wcoomd.org

Online subscriptions

http://www.wcoomd.org/en/media/wco-news-magazine/subscriptions.aspx

Advertising

B&B

Bernard Bessis bernard.bessis@bb-communication.com

Publisher

World Customs Organization

Rue du Marché, 30, B-1210 Brussels, Belgium
Tel.: +32 (0)2 209 94 41 - Fax: +32 (0)2 209 92 62

communication@wcoomd.org

www.wcoomd.org

Editorial note

WCO News is distributed free of charge in English and in French to Customs administrations, international organizations, non-governmental organizations, the business community, and other interested readers. Opinions expressed in WCO News are those of the contributors and do not necessarily reflect the official views of the World Customs Organization. Contributions in English or French are welcome. The WCO reserves the right to publish, not to publish, or to edit articles to ensure their conformity with the magazine's editorial policy and style. The WCO Communications Service is available to answer all requests for submission of contributions, subscriptions, and any other enquiries relating to WCO News.
Please email communication@wcoomd.org.

Copyright © World Customs Organization

All rights reserved. Requests and enquiries concerning translation, reproduction and adaptation rights should be addressed to copyright@wcoomd.org.

Acknowledgements The Editorial Team wishes to express its sincere thanks to all who contributed to this publication.

Illustrations Our thanks also extend to all who provided photos, logos and drawings to illustrate this issue.

Photo cover © Koen van Weel / ANP MAG / ANP via AFP

Design www.inextremis.be

inextremis
Distinctive Communication

20 DOSSIER **Customs-Ports partnership and engagement in Abu Dhabi**

25 DOSSIER **Implementing the principles of "Smart Borders" at a medium-sized port in Bulgaria**

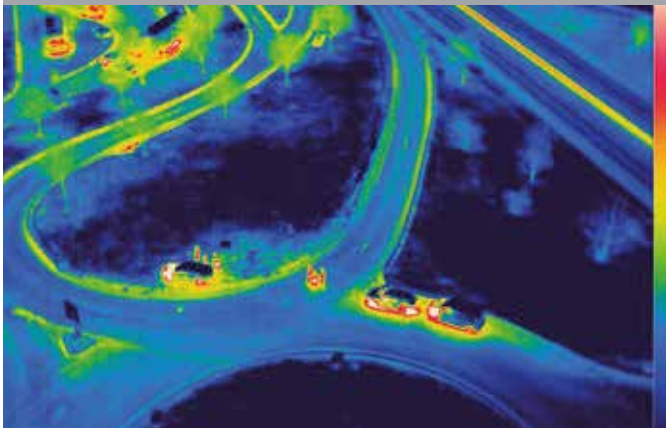
© AdobeStock

42 DOSSIER **Combating the infiltration of criminals in the maritime supply chain: an overview of Operation TIN CAN**

56 PANORAMA **How Indian Customs leverages data analytics for efficient risk management and management skills**

© AdobeStock

60 PANORAMA **Cameras could make traffic controls more efficient**



Operation Arena Blanca: Customs administrations of the Americas and Caribbean region mobilize to counter IED production

By the Programme Global Shield team, WCO Secretariat

20,000 detonators were discovered by Ecuador Customs in the luggage of a Peruvian passenger travelling on a coach from Peru to Ecuador, during a routine control.

The threat of an improvised explosive device (IED) attack is a global problem. Although not a recent phenomenon, the use of IEDs in modern warfare and by terrorist groups has grown exponentially in the 21st century. Part of the reason that IEDs are so prevalent is that they are cheap and relatively easy to manufacture. They can be made from a range of materials, including commercially available chemicals such as ammonium nitrate and potassium chlorate - two chemicals used in the production of fertilizers. Most of the attacks carried out with IEDs have a cross-border component, meaning that some of the materials used to manufacture the IEDs were sourced outside of the country in which the attack occurred.

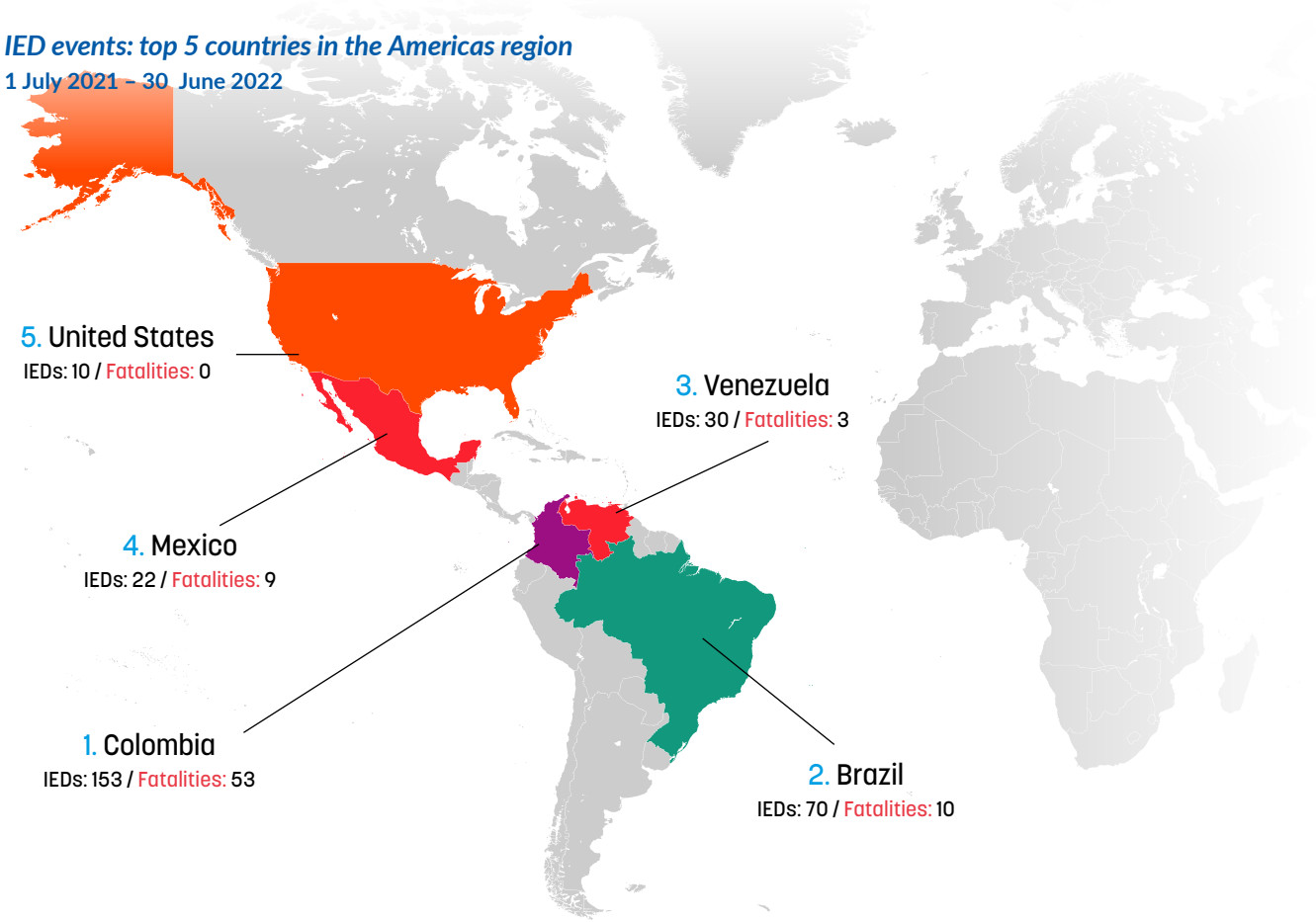
To help Customs identify and stem the diversion of these chemicals, the WCO established Programme Global Shield. One of the activities carried out under the Programme is to organize regional and global enforcement operations. Such operations take stock of a Customs administration's capacity to carry out efficient controls and to work with its counterparts to that end. These operations also enable administrations to learn from each other's strategy and to share information such as modi operandi. This article introduces the Programme as well as the results of the enforcement operation conducted a few months ago with countries of the Americas and Caribbean region to establish tighter controls over materials and components used for making IEDs.

Programme Global Shield (PGS)

Launched in 2010, PGS is an initiative aimed at building Customs capacity to monitor the licit movement and counter the illicit trafficking and diversion of explosive precursor chemicals and other components of IEDs.

The team in charge of the Programme at the WCO Secretariat supports Customs administrations by undertaking an assessment of their enforcement capacities, promotes cooperation among Customs and Police, engages with private industry, trains Customs officers in detecting and handling precursor chemicals, shares information on the composition and production methods of captured IEDs, facilitates investigations, and organizes enforcement operations. It does so in partnership with INTERPOL and the United States Defense Threat Reduction Agency (DTRA), as well as with many experts from Customs and other enforcement agencies.

PGS is also aimed at increasing information exchange between Customs administrations and



- The Americas region counted 286 incidents (4.8% of total IED events) resulting in 139 fatalities (2% of total fatalities) from 1 July 2021 to 30 June 2022.
- The top five countries with highest number of IED events in the region were Columbia, Brazil, Venezuela, Mexico and the United States.

Data from the Armed Conflict Location & Event Data Project, https://acleddata.com

the WCO Secretariat to enable comprehensive analysis of licit and illicit trade. To achieve this objective, Customs administrations have been called upon to appoint PGS National Contact Points (NCPs).

Finally, Customs administrations are encouraged to reach out to private stakeholders in the chemical industry in order to increase awareness of the dual-use capability of the precursor chemicals they manufacture, distribute or retail.

Threats posed by IEDs in the Americas and Caribbean region

Between February 2022 and January 2023, 138 IED attacks resulting in 47 fatalities were reported within the region. They were perpetrated by various groups.

In Colombia, on 2 September 2022, seven Police officers were killed in an attack by members of the Dagoberto Ramos Mobile Column, a dissident group of the demobilized Revolutionary Armed Forces of Colombia (FARC). The perpetrators ambushed the Police unit by opening fire on them after detonating an explosive device.

In Venezuela, on 6 November 2022, members of the Scientific, Criminal and Criminalistic Investigation Service Corps (CICPC) of the national Police clashed with members of the El Zorrito gang in the city of Barcelona. Three suspects were killed in the shootout, including the gang's leader. One had threatened to use an explosive device against the officers before he was shot.

In Mexico, on 4 January 2023, there was a clash between armed individuals and military forces in the town of Guaymas. Four military officers were injured. The armed individuals threw an explosive device at the officers.

Operation Arena Blanca

To support the countries of the region in reducing the illegal diversion of chemical precursors and additional IED components, the WCO Secretariat organized two workshops in October and November 2022, conducted an IED threat analysis, and coordinated a two-week enforcement operation called Operation Arena Blanca.

Thirteen precursor chemicals, identified by industry experts as posing the greatest threat in terms of their use in IEDs, were the focus of these various activities, along with detonators and transmitting devices, one type of metal (aluminum), and commercial drones (Harmonized System (HS) subheading 8525.80). Aluminum paste, powder or flakes can enhance the explosion capability of IEDs, while commercially available drones can be used either for the delivery of IEDs or as IEDs in themselves, set to detonate when picked up or examined.

Precursor chemicals	Chemical Abstracts Service (CAS) number	Harmonized System (HS) Code
Ammonium Nitrate	6484-52-2	3102.30
Nitromethane	75-52-5	2904.20
Sodium Nitrate	7631-99-4	3102.50
Potassium Nitrate	7757-79-1	2834.21
Sodium Chlorate	7775-09-9	2829.11
Potassium Chlorate	3811-04-9	2829.19
Potassium Perchlorate	7778-74-7	2829.90
Acetone	67-64-1, 7217-25-6	2914.11
Hydrogen Peroxide	7722-84-1	2847.00
Ammonium Calcium Nitrate double salt	15245-12-2	3102.60
Calcium Ammonium Nitrate	15245-12-2	3102.90
Nitric Acid	7697-37-2/43625-06-5/13587-52-5	2808.00
Urea	57-13-6	3102.10

800 kg of undeclared potassium nitrate were seized at Balboa seaport by Panama Customs. The shipment was hidden in a container of ammonium nitrate.

In cooperation with the United States DTRA and the Regional Intelligence Liaison Office for Central America, the WCO Secretariat's PGS team conducted a regional and national threat assessment, analysing trading patterns, transport systems, commercial and industrial activities, levels of development, areas of instability, and the presence of violent organizations in some countries.

In line with the *Guidelines on the implementation of WCO operations at national level*, participating administrations were also requested to conduct trade and threat analyses, draft national implementation plans and risk profiles, identify other government agencies to join the Operation (e.g. Police, licensing or permit-issuing authorities), conduct training, set up joint control units at selected border points wherever possible, and set up an NCP hub consisting of representatives of all partner agencies.

During the operational phase of the actual Operation, participating Customs administrations and partner agencies were asked to strengthen controls on all cross-border operations (importation, transit, exportation) involving the targeted goods and to enhance targeting capacities to identify smuggling attempts. They were also to conduct end-user audits to ensure legal usage of the materials, and report any suspicious movements or usage to enable follow up investigations. Information related to such controls, whether or not they resulted in a seizure, was to be reported via the WCO's secure operational communication platform, known as CENcomm.

Results

Some 24 administrations of the Americas and Caribbean region participated in the Operation and 1,788 licit shipments were reported during the operational phases. Among all PGS monitored goods, urea was the most prominent traded commodity in the region for both importation and exportation, followed by ammonium nitrate and hydrogen peroxide. Mexico imported the most targeted precursor chemicals and

IED components, followed by Guatemala and Costa Rica. Brazil exported the highest amount of targeted precursor chemicals and IED components, followed by Honduras.

The following commodities were seized:

- 830 kg of chemical precursors, including 800 kg of undeclared potassium nitrate seized at Balboa seaport by Panama Customs. The shipment was hidden in a container of ammonium nitrate. The Customs check was based on risk profiling.
- 20,000 detonators discovered by Ecuador Customs in the luggage of a Peruvian passenger on an Ecuadorian coach during a routine control. Investigations are ongoing, but it is worth noting that detonators are regularly smuggled into Ecuador for illegal mining.

Some administrations also reported seizures of other illicit commodities including:

- 14,969 kg of methamphetamine mixed with tequila, found in a consignment which was due to be exported from Mexico to the Netherlands.
- 11,892 MDMA-ecstasy tablets, discovered in the luggage of a passenger who had arrived in Paraguay from Panama.
- 236 air guns concealed in furniture in a container imported into Guatemala from the United States.
- 300 rounds of ammunition at a Mexican land border crossing, discovered in a truck travelling from the United States.
- 1,060,000 cigarillos at a port in Panama, discovered in a container shipped from Vietnam.
- 6,695,000 pieces of goods suspected of infringing intellectual property rights, found in a consignment imported into Ecuador from Panama.
- 5,650 kg of undeclared bottles of mineral water in a consignment imported into Costa Rica from France.

Gaps identified and recommendations for Customs

This was the first time that the PGS team had worked with Customs of the Americas and Caribbean region on IED precursors and other components. It offered a unique opportunity for the Secretariat to identify capacity building needs and enhancement opportunities, some of which are listed below.

Licensing schemes covering all targeted precursor chemicals need to be established

Countering the diversion of precursor chemicals and other IED components requires the establishment of comprehensive licensing procedures, including end-user certificates which certify that the buyer is the end-user of the products, as well as post-clearance audits for licensed companies. Only a few countries in the Americas and Caribbean region have established such schemes for all precursor chemicals covered during the Operation; however, these schemes will enable them to improve their risk assessment and profiling capacities.

More data is needed on the licit movement of the goods concerned

Customs administrations were asked to submit data on the goods concerned ahead of the Operation, but some faced issues in obtaining the requested information. This data is critical to gain a better understanding of the movement and end use of the targeted products, so as to enhance the efficiency of controls. PGS NCPs should consider working closely with their national statistics or IT services to ensure submission of the data on a monthly basis.

Conducting thorough risk assessments

Conducting risk assessments and profiling to avoid the diversion of legal products requires a great deal of effort. This process includes undertaking comprehensive licence checks and post-clearance audits, as well as sharing intelligence with other relevant agencies.

Engaging with the chemical industry and with end-users

Customs administrations are encouraged to reach out to private stakeholders in the chemical industry in order to increase awareness of the dual-use capability of the precursor chemicals the latter manufacture, distribute or retail. They should also collaborate with legitimate end-users, such as the mining industry, and ensure that they secures their stocks in order to prevent their products from falling into the wrong hands.

Strengthening Customs-Police cooperation

Only a few administrations confirmed that they had engaged with their national Police, and no information or intelligence was submitted by Police services during the Operation. Thought should be given to participation by Police representatives in future WCO workshops.

Boosting reporting capacity

Although training on the use of the CENcomm was provided and templates developed to reduce data entry workload, some administrations faced problems in sharing information via the platform. As reporting is set to continue using the CENcomm PGS platform, countries must ensure that their reporting procedures are effective.

Way ahead

Subject to the availability of funds, a number of activities could be conducted by the PGS team to support countries in the Americas and Caribbean region. Customs training capacities could be strengthened by accrediting experts and trainers from the region. The team could also provide assistance with amending the regulations in place and with implementing comprehensive licensing procedures, such as those followed by the United States and the European Union. Finally, the team could help with the development of industry outreach programmes.

More information

enforcement@wcoomd.org

Guidelines on the implementation of WCO operations at national level

The Guidelines list the basic steps that Customs administrations should take when considering whether to participate in an enforcement operation, when preparing for it, when implementing the various activities requested of all participants, and when evaluating the results and follow-up actions. Among other things, they include a detailed outline of the national operational plan.

WCO launches its Performance Measurement Mechanism

By Valentina Ferraro and Maka Khvedelidze, WCO Secretariat

© AdobeStock

A common approach to performance measurement

The WCO has developed many self-assessment tools over the years, to enable Customs administrations to determine where they stand with respect to the adoption of WCO standards and recommended practices, to monitor how the Customs clearance service is being carried out, as well as to measure the impact of reforms and programmes on border processes.

For a long time, however, there was no tool to assess Customs efficiency and effectiveness in a comprehensive manner, and hence Customs administrations were using various methodologies to do this. With evaluation being at the centre of discussions among the players in international development aid, including at the WCO, where Customs administrations have been repeatedly asking the WCO Secretariat to measure the quality of its interventions, the WCO decided in 2019 to set up a Working Group on Performance Measurement (WGPM) with the aim of developing a comprehensive WCO Performance Measurement Mechanism (WCO PMM) for Customs.

WCO Performance Measurement Mechanism

The WCO Performance Measurement Mechanism (WCO PMM) was endorsed by the Council in June 2023. It pivots around four dimensions: Trade Facilitation and Economic Competitiveness; Revenue Collection; Enforcement, Security and Protection of Society; and Organizational Development. Each is divided into expected outcomes with corresponding Key Performance Indicators (KPIs). A progressive approach has been taken regarding the development process for the KPIs and the first version of the WCO PMM (PMM v.1) includes only a limited set of 23 expected outcomes with the corresponding KPIs (51 in total). The KPIs included in the first version of the PMM relate to Customs administrative data. Many administrations already have a national performance measurement system in place and therefore just need to add those KPIs that are not yet covered by their system. Customs administrations can choose not to use a KPI if it cannot be measured due to national specificities.

Customs administrations are also able to decide whether to make information on the results of the assessment public, to share it with other Customs administrations, or to keep it confidential. Conducting a PMM assessment is voluntary and is to be divided into two consecutive

phases. First the administration is to conduct self-assessment, organized in a biennial cycle. Second, WCO experts are to carry out a peer review, upon request, thus ensuring the credibility of the assessment process and its quality. Once an initial assessment has been carried out, it will have to be repeated on a regular basis. In other words, KPIs will have to be monitored over time. Guidance material has been developed and the WCO Secretariat will offer continuous support during the process.

Benefits

The implementation of the WCO PMM will enable Customs administrations to identify areas where capacity needs to be built or strengthened, including through the intervention of the WCO Secretariat.

The effective implementation of the WCO PMM is expected to lead to several other benefits. For the WCO Secretariat, it will provide an indication of the impact of its interventions, which will enable it to adapt and enhance its capacity building programmes and to mobilize funding.

The WCO PMM also aims to build capacities for the proper interpretation of results and, in the long run, to enable Customs to build their own evaluation capabilities, making evaluation the standard practice.

Online platform

By the end of 2023, WCO Members will be invited to participate in the first phase of the WCO PMM by submitting data via the WCO PMM online platform. Reporting has been standardized, and

Performance measurement: Canada's perspective

By Sean P. Borg, Director, Policy Integration, Planning and Performance Oversight Division, Trade and Anti-dumping Programs, Canada Border Services Agency (CBSA)

Crafting a performance measurement system

Measuring performance shows a commitment to transparency, accountability, and effective governance. For a nation embarking on this path, the approach of the CBSA may offer guidance. A wise move would be to establish a small oversight team, akin to the five-person planning and performance oversight unit I oversee at the CBSA, to provide direction and consistency in practices.

The team should craft a performance measurement system by taking the following steps:

1. Outlining objectives: taking a cue from the CBSA's approach, start by outlining objectives when it comes to Customs operations including revenue optimization, integrity preservation, and continual refinement.

2. Harvesting relevant data: identify relevant data sources and points. This could include Customs operations data, revenue collection statistics, and trade figures.

3. Harmonizing with global practices: consider integrating KPIs from the WCO PMM. These KPIs establish a universal framework for assessing Customs performance, allowing for thorough analysis and comparative evaluations.

Embarking on programme oversight

Oversight refers to the actions taken to review and monitor policies, plans, programmes, and projects, to ensure that they are achieving expected results, represent good value for money, and are in compliance with applicable policies, laws, regulations, and ethical standards.

Individuals or teams in charge of oversight activities should:

1. Understand the fabric of Customs operations from the ground up. This requires conducting comprehensive assessments of existing practices.

2. Design an oversight framework that designates dedicated oversight teams or individuals responsible for monitoring the performance of Customs operations according to the measurement system KPIs.

data will be presented in the form of tables and diagrams.

The platform is accessible to WCO Members only. A letter has been sent to the Directors General of WCO Member Customs administrations asking them to nominate a WCO PMM coordinator who will be responsible for managing access to the platform at the national level based on the following roles: National Contact Point(s) (NCP), who will enter data, and National Read-Only (NRO) users, who will only be able to view data.

Data has been divided into three categories according to the applicable level of protection: national-level data (national NCP and NRO, as well as peer reviewers), WCO-level data (WCO Members and Secretariat staff) and public data.

Maintenance

As the WCO PMM aspires to be the global mechanism to measure Customs performance, changes to it must follow a robust amendment procedure. A Performance Measurement Mechanism Project Team (PMMPT) has been set up to enforce the procedure, review the quality of the data submitted through the online platform, measure the extent to which WCO tools and instruments are applied, collaborate with other WCO working bodies on the elaboration of new KPIs to measure the implementation of the main WCO tools and instruments, organize and monitor the peer reviews, and provide capacity building assistance.

More information

https://www.wcoomd.org/en/topics/capacity-building/instrument-and-tools/pmm.aspx

© CBSA

3. Fuse data by combining oversight data with performance data. This synergy paints a nuanced picture of Customs operations' intricacies.

Using the WCO Performance measurement mechanism

The WCO PMM and CBSA performance measurement model are similar. This is no coincidence, given the collaborative approach adopted by the Customs administrations who participated in the WCO Working Group on Performance Measurement.

For a Customs administration taking its first steps towards performance measurement and programme oversight, the WCO PMM and its guidance materials provide an excellent starting point and platform. Committing to continuous improvement, integrating PMM KPIs, fostering collaboration, and nurturing effective governance paves the way for Customs operations that are transparent, efficient, and accountable.

The engagement of CBSA in the work of the WCO brought me to Kingston, Jamaica in January 2023, where I partnered with the WCO Secretariat to deliver a performance measurement planning workshop to the Jamaican Customs Agency (JCA). The Agency had been striving to develop a national assessment system to assess the outcomes and impact of its various units' activities. Thanks to the workshop, participants understood the linkages between performance measurement data, strategic decision-making and the betterment of their agency and were all enthusiastic at the prospect of using the WCO Performance Measurement Mechanism.

A Performance Measurement Mechanism Project Team (PMMPT) has been set up by the WCO to maintain and develop the mechanism and CBSA will continue working on performance measurement with the Customs community through this new working body. I hope many other administrations will join as well.

WCO Council adopts three HS Recommendations

Three HS Recommendations were adopted by the WCO Council in June 2023 . These Recommendations relate to expected amendments and invite Parties to the HS Convention to insert new subheadings in their national statistical nomenclatures as an interim measure until the next version of the HS enters into force on 1 January 2028.

Waste oils

Parties are invited to insert under the 6-digit subheading 2710.91 a national subheading for waste oils containing polychlorinated biphenyls (PCBs) at a concentration level of 50 mg/kg or more, and another national subheading for the other waste oils containing polychlorinated terphenyls (PCTs) or polybrominated biphenyls (PBBs), whether or not also containing polychlorinated biphenyls (PCBs) at a concentration level of less than 50 mg/kg.

The current subheading 2710.91 covers waste oils containing polychlorinated biphenyls (PCBs), polychlorinated terphenyls (PCTs) or polybrominated biphenyls (PBBs), without any specific concentration.

These new provisions will assist countries to collect data on the transboundary movement of these goods and to meet their commitments towards the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal which characterizes "waste oils containing, consisting or contaminated with PCBs at a concentration level of 50 mg/kg or more" as hazardous (they fall within Annex VIII to the Basel Convention).

New OPCW schedule 1 and 2 chemicals

Parties are invited to insert national subheadings for new (as of 7 June 2020) Schedule 1 entries to the Chemical Weapons Convention (CWC) Annex of Chemicals as well as recently identified most traded Schedule 2 chemicals. Schedule 1 chemicals are particularly hazardous and pose a high risk. They have been developed, produced, stockpiled and used as chemical weapons and have little or no use for activities not prohibited by the CWC. Schedule 2 substances are chemicals that are feasible to use as chemical weapons themselves but which have small-scale applications outside of chemical warfare and so can be legitimately manufactured in small quantities.

Two chemicals newly controlled under the Rotterdam Convention

Parties are invited to insert, within the 6-digit subheadings 2903.89 and 2930.90, national subheadings for hexabromocyclododecanes (HBCDs) and phorate (ISO) respectively. Since September 2019, the two substances have been added to Annex III of the Rotterdam Convention which lists pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons.

More information

https://www.wcoomd.org/en/about-us/legal-instruments/recommendations/hs_recommendations.aspx

Next HS edition to come out in 2028

The 7th HS review cycle has been prolonged by one year. As a result, the next edition of the HS will come out in 2028. The additional year will allow time to finalize complex proposals which will add substantive value to the next iteration of the HS and will provide additional time to Contracting Parties which have not yet implemented HS 2022 to do so (as of September 2023, about two-thirds of the Contracting Parties were using HS 2022).

© AdobeStock

Must read: How will the State think with the assistance of ChatGPT?

The Foundation for International Development Studies and Research has published a working paper,[1] written by Thomas Cantens of the WCO Secretariat's Research Unit, that examines the implications of the use of generative artificial intelligence (GAI) in the field of public administration. This article provides a brief summary of the content of that paper.

GAI is a branch of artificial intelligence that uses machine-learning algorithms trained on data to generate content (images, video, text, etc.) autonomously. The ChatGPT[2] conversational tool is the best-known example (GPT stands for generative pre-trained transformer). This chatbot, developed by OpenAI and first made available to the general public for testing in November 2022, provides answers to questions by analysing large quantities of previously viewed textual data, known as large language models (LLMs).

The "language-centric" nature of GAI distinguishes it from other exclusively "number-centric" forms of AI that have, to date, been deployed in the public administration sector. The paper therefore raises questions about the implementation of GAI-based solutions in public administration: what are the specific benefits, risks and limitations of GAI, and what effects will it have on the relationship between officials and machines?

The author begins by analysing the potential specific benefits of GAI for Customs administrations: machine translation, creation of computer code for data analysis, uniformity and correctness of administrative language, content creation, assistance in drafting policy documents and assistance in fraud detection.

If such benefits were to be realized, it would first be necessary to develop a training corpus specific to Customs in order to ensure that the GAI responses are as accurate as possible. A fine-tuning process is furthermore offered by a number of GAI companies, making it possible to customize the LLM according to the user's needs.

1 *https://ferdi.fr/en/publications/how-will-the-state-think-with-the-assistance-of-chatgpt-the-case-of-customs-as-an-example-of-generative-artificial-intelligence-in-public-administrations*
2 *https://openai.com/blog/chatgpt*

If this corpus were to be shared, it could lead to an increase in the quantity and quality of the analyses performed by Customs officers, not least because they would be able to draft reports in their native language. The dissemination of this information in other languages would help eliminate any disparities in intellectual production between states and provide all civil servants with access to the same corpus of knowledge, regardless of the language in which it is originally produced.

The author then attempts to deconstruct the underlying reasons for the widespread mistrust of GAI. He explains, for example, that, while the use of AI in decision-making commits the administration in the form of a decision for which the latter must be able to provide an explanation, GAI is limited to an advisory or assistance role in thinking and writing. Another question is: should people be informed that they are conversing with a GAI agent in the context of their relations with a public administration? After all, civil servants are expected to act in an impartial, objective and rational manner, not unlike a machine, and people expect an answer to be binding on the administration, whether it comes from a human or a machine. Accordingly, it is the responsibility of the administration itself to determine the legal value of the machine's answers.

The author then proceeds to review the technical limitations of this conversational tool: the GAI-driven conversational agent does not quote its sources, it draws its responses from a corpus of information that is subject to time limitations, it does not always respond in the same way to the same queries, and it makes mistakes. Although ways of overcoming these limitations have been found, one important constraint on the use of GAI by Customs is perhaps more difficult to resolve: the need to preserve the confidentiality of the information and workflows of the administration. Some of the corpus and many of the questions asked by officials in sensitive areas are confidential. The solution for administrations lies in internalizing GAI and fine-tuning LLMs as described above. Nevertheless, the author does warn that, while sharing data with other departments can have its advantages, it also raises specific concerns – especially about protecting the confidentiality and security of data – and, in some cases, may even be prohibited.

The final part of the paper explores what thinking with the assistance of a language-based GAI tool would mean in the Customs context, as well as the question of whether GAI will replace Customs officials. In response to this last question, the author reassuringly maintains that, strictly speaking, GAI cannot be used to replace civil servants. It is more a question of officers having to incorporate into their day-to-day work tasks that would previously have been outsourced. This will require civil servants to work a little more autonomously, to do their own translations and proofreading with the assistance of GAI, and to focus their efforts on specific parts of the thought process. Officers will need to improve their writing skills in order to meet the specific objectives of their administration, cultivate their critical vigilance and develop their critical thinking, creativity and ability to think outside the box, particularly with regard to issues where the development of a strategic vision is a highly complex and detailed process.

Despite the many concerns raised by the use of GAI, along with its technical limitations and the uncertainty over the structure of its economic model, GAI is set to become, in the not too distant future, a routine work tool, integrated into professional practices in the same way as the internet and search engines. To maintain control of the machine and ensure that it helps Customs officers to become better experts, Customs administrations will need to increase their appetite for knowledge and their officers' ability to conduct a critical examination of the written material produced.

More information

https://ferdi.fr/en/publications/how-will-the-state-think-with-the-assistance-of-chatgpt-the-case-of-customs-as-an-example-of-generative-artificial-intelligence-in-public-administrations

Customs officials' papers are published in the Borders in Globalization Review

As part of its PICARD Programme, the WCO Secretariat has established a partnership with the Borders in Globalization (BIG) research programme of the University of Victoria, Canada, enabling some of the Customs officials who have submitted academic or policy research papers to the WCO Secretariat to be supervised by professors/lecturers of the University, and to publish their papers in the Borders in Globalization Review. The Spring & Summer 2023 edition of the Review includes two such articles, which are introduced briefly below.

Using "nudges" to enhance compliance

Veasna Yong from the Cambodian General Department of Customs and Excise wrote an article entitled *Nudging Voluntary Compliance in Border Customs*. "Nudging" is persuading or encouraging someone to do something in a way that is gentle, rather than forceful or direct. It implies the use of means of communication, such as forums or media campaigns. The author explains that the *WCO Voluntary Compliance Framework* should recommend the use of norm nudges (which emphasize a sense of morality, situating compliance as a social norm by informing taxpayers of what should be done and what others are doing), and deterrence nudges (which raise concerns over detection and sanctions by warning of non-compliance consequences). She explains, in particular, that such tools would be likely to be beneficial in encouraging compliance among individuals declaring their goods at border crossings.

Optimizing the impact of digitalization through enhanced risk analysis and controls arrangements

Mary Isabel Delgado Caceres, a lawyer specialized in international trade law, wrote a paper entitled *Trade Facilitation at the Peru-Chile Land Border*, analysing the impact of the digitalization of Customs clearances and the obligation to provide Customs declarations in advance, on the efficiency of cross-border processes. She argues that although controls have been expedited, simplified and modernized, additional measures could be taken on both sides of the border. The first measure is to develop risk analysis capacities and data exchange, especially through the use of blockchain technology. The second is to modify and upgrade existing infrastructures of the border post together with other agencies, and the way controls are arranged.

Thanks to funding provided by Korea Customs, Customs officials from non-OECD countries can also be eligible to participate in the BIG Summer Institute and take one of the following week-long courses (online or in-person): Modern Border Management: Trade and Customs, or Artificial Intelligence in Border Management.

More information

https://journals.uvic.ca/index.php/bigreview/issue/view/1582
https://biglobalization.org/summer-institute

© AdobeStock

Unveiling the WCO DM Version 4.0.0

The WCO has just released Version 4.0.0 of the WCO Data Model (WCO DM v4). A compilation of clearly structured, harmonized, standardized and reusable sets of data definitions and electronic messages to meet the operational and legal requirements of cross-border regulatory agencies, the WCO DM is a critical tool, enabling IT systems' interoperability, enhancing data quality and promoting the adoption of a data culture within Customs administrations.

One of the standout features of WCO DM v4 is the introduction of the WCO DM App[1], a free, interactive web-based application that allows users to easily view, search, and compare data elements in the WCO DM, without needing to navigate multiple platforms. The WCO DM App has significantly improved the WCO DM publication, which was previously available only in spreadsheet format. The app includes access to user-friendly guidance materials in wiki format to help users with the necessary know-how to drastically reduce the time required to perform key implementation tasks such as data mappings.

In order to simplify its architecture, the components of the WCO DM are organized into small building blocks called information packages (IP). Each information package is a subset of the WCO DM and is relevant to a specific context. The WCO DM App includes a WCO DM mapping tool that allows WCO DM users to map their national dataset to the WCO DM. The mapping tool helps translate the national dataset into a My Information Package (MyIP) which describes how the WCO DM is implemented at the national level. The MyIP indicates the level of conformity of the national dataset to the WCO DM.

Version 4 also improves the quality of the WCO DM by resolving data redundancies and inconsistencies. It enhances the clarity of data definitions and eliminates ambiguity. Simplified structures and building blocks are also provided, making the WCO DM more user-friendly and easier to understand and implement.

There have been technological developments in Information and Communications Technology (ICT) systems, with software platforms communicating with each other's systems using API, a set of programming instructions and standards for accessing web-based software applications. API transactions use data-serialization formats for information, such as JSON, which provides a light data interchange format that is easily readable by machines, as well as by humans. Its main feature is that it has been devised to support very large volumes of information. The lingua franca for everything API is named OpenAPI, an initiative which aims to provide a new way to describe electronic services in an agnostic form of the programming language or of the technology supporting such services. It

1 https://datamodel.wcoomd.org/#/

offers the possibility to build services which are technologically independent from one another but which remain compatible and interoperable.

WCO DM v4 enables users to harness the latest electronic message formats and exchange protocols with the support of the JSON message format and OpenAPI. It includes a set of Guidelines on JSON and on OpenAPI, respectively, providing a basic set of rules for developers to implement the WCO DM using the two data exchange formats and message protocols.

In addition, the WCO DM App has been equipped with functionality to generate syntax documents from a MyIP. The supported syntax documents include an OpenAPI document, JSON example message, XML example message, XML Schema and XML Schema dataset. The WCO DM App syntax generation capability makes MyIP an essential component of the steps to be taken by Customs administrations which are considering the adoption of the WCO DM (the steps have been described in an article published in March 2022 in this magazine[2]).

The WCO DM reaffirms its role as the key tool in Customs modernization and digitalization initiatives by providing several new features and enhancements with the release of version 4. In addition, the WCO DM provides flexibility to existing users by allowing them to migrate to the latest release when they are ready. Version 4 provides the ability to quickly identify changes from a previous version to help users consider if they have a need to migrate. Existing users should only migrate to v4 if they determine there is a technical or business need.

More information

http://datamodel.wcoomd.org

2 *See article in WCO News*
https://mag.wcoomd.org/magazine/wco-news-97-issue-1-2022/making-digital-collaboration-possible-the-wco-data-model-latest-developments-and-implementation-guidance/

Dossier: Focus on the port environment

Reviving cooperation between Ports and Customs

By Dr. Kunio Mikuriya, WCO Secretary General

Maritime transport carries 90 percent of global merchandise trade[1], and impediments to ports' logistical chains have tangible repercussions in terms of higher trade costs and even shortages of goods and materials. The chains include numerous entities, spanning shipping lines, carrier agents, terminal operators, freight forwarders, road haulage operators, train operators, Port State Control, as well as Customs administrations and other regulatory authorities.

Port authorities, be they government or private, play a key role in ensuring coordination between this large number of players which may have divergent – sometimes even opposing – interests, but are dependent to some degree on the activities and actions of others in the chain. On the one hand, ports must implement the law enforcement measures imposed by cross-border regulatory agencies; on the other, they have to avoid obstructing businesses in terms of costs and cargo clearance times.

When a ship comes into port, a whole range of administrative tasks begin, including, but not limited to: Customs declarations for cargo and ships' stores; immigration clearance for crew and passengers and their baggage; and import and export permits. When the ship leaves, it is the same process all over again. These activities are regulated by an international treaty called the International Convention on Facilitation of International Maritime Traffic (FAL Convention).

There are international requirements for governments to use electronic information exchange in this process. Since April 2019, the transmission of information required in respect of the arrival, stay and departure of ships in ports and harbours must take place via Electronic Data Interchange (EDI) according to the provisions of the FAL Convention. Following the adoption of amendments to the Convention, from 1 January 2024 the use of a Maritime Single Window (MSW) will be mandatory in ports around the world. The

1 *See IMO https://www.imo.org*

© KOEN VAN WEEL

MSW is a collaboration platform which enables the submission of standardized and harmonized information to a single entry point. It covers maritime regulatory procedures, but could be extended to include other administrative, nautical and operational procedures, as well as other related information between private-sector and public authorities in ports, in relation to the vessel clearance process and the Port Call process.

In some cases, digital platforms have been developed to manage the data flows. However, in several countries, ship-to-shore reporting and Customs clearance processes are cumbersome and inefficient as they rely on paper transactions (forms, documentation and certificates), human interaction, email, and applications such as WhatsApp.

Guidelines on Cooperation between Customs and Port Authorities

Back in June 2020, in the middle of the global pandemic, the International Association of Ports and Harbors (IAPH) led a joint industry call to accelerate digitalization in the maritime transport chain. This non-governmental organization (NGO) had conducted a survey on the implementation status of the IMO requirements regarding Electronic Data Interchange (EDI). The majority of the 111 respondents had declared that they were struggling to comply with the requirements.

As Customs play a pivotal role in the clearance processes in ports, in 2022 the WCO and the IAPH set up a joint working group to address a number of challenges in establishing cooperation between Customs and Port Authorities, especially with a view to digitalizing data flows. This resulted in the development of *Guidelines on Cooperation between Customs and Port Authorities*.

The Guidelines provide a path towards strengthening cooperation, and explain how to institutionalize cooperation, establish data governance policy and ensure mutual understanding of each other's business. They also describe business processes, the IT systems supporting them and the actors involved, as well as addressing the innovative use of technologies. They then look at how to implement interoperability between Customs' and ports' automated systems to enable the single submission of logistic and operational data sets, highlighting the need to comply with WCO and IMO reference data models.

It is worth noting here that the WCO Data Model incorporates the IMO Compendium on Facilitation and Electronic Business (IMO FAL Compendium), which is a tool for use by software developers who design the systems needed to support transmission, receipt and response, via electronic data exchange, of information required for the arrival, stay and departure of a ship, persons and cargo in a port. The components of the WCO Data Model are organized into small building blocks called Information Packages (IP), and the work done with the IMO resulted in the development of the IMO FAL Derived Information Package (DIP). In addition, practical guidance on implementing the IMO FAL Compendium using the WCO DM has been developed and published, including a Message Implementation Guide which provides additional technical information for implementers.

The Guidelines also recommend that Customs and ports create a joint data strategy, and explain how the strategy should be implemented. Finally, detailed explanations are provided on how to align the Customs Authorized Economic Operator and ISPS Code security programmes, and on the digital transmission of Advance Cargo Information.

Content of this Dossier

The Guidelines will hopefully stimulate a dialogue among Port and Customs authorities and move the digitalization agenda forward. For this edition of the Magazine, we have looked at the port environment from different angles.

We start with an article by the Abu Dhabi Customs Administration and Ports Group, introducing the various digital initiatives these

two entities have been driving jointly in recent years to improve operations and efficiency in Customs processes at ports. These initiatives include participating in the development of a digital platform which brings together more than 800 IT services developed by 70 public- and private-sector entities. The platform provides trade operators with a single IT ecosystem that encapsulates everything they need in terms of administrative procedures.

Our second article takes us to Bulgaria and the Port of Varna. The Bulgarian Customs Administration explains the risk analysis model applied by the Customs office in charge of the port, referring also to the various digital platforms employed by the administration and, finally, some of the challenges that frontline Customs officers have to deal with. "If a thorough and streamlined risk management model is in place and control measures are efficiently performed, digitalization can result in creating Smart Borders", concludes the author.

We then delve into more technical issues, with an article by a service supplier arguing that integrating Ports' and Customs' information systems in a Cloud environment is a game changer for digital transformation. The article also points out that in order to choose between on-premises and Cloud infrastructure, several factors must be taken into account, such as trade volume, IT budget, data sovereignty and growth aspirations in the medium to long term.

The next article, by the Georgia Ports Authority Customer Service Center, explains how the Authority has fostered a trusted partnership with U.S. Customs and Border Protection (USCBP). Among other things, the Customer Service Center has created a specialized, Customs-focused team to assist port customers with release/entry inquiries. It has also set up, in the Port of Savannah which operates its own terminals, a space for Customs inspections as well as a Government Services team which works hand-in-hand with the USCBP's Centralized Examination Station and the port customers to help expedite cargo flow.

An article by the Maritime Anti-Corruption Network (MACN) then looks at the impact of corruption in ports and introduces the anti-corruption measures adopted by the Nigerian Government following several years of engagement with multiple actors from the government, business and civil society sectors. The article shows that it is possible to address systemic corruption when building strong alliances between the public and private sectors.

The final article in the Dossier presents WCO Operation Tin Can – the first enforcement activity conducted with the active involvement of the shipping industry to combat the contamination of legitimate cargo with drugs through the rip-on/rip-off method. This method requires traffickers to work with "insiders" who use their authorized access, willingly or under coercion, to manage the logistics process. This article explains how Operation Tin Can opened up new horizons in terms of enhancing the capacity of Customs to fight drug smuggling, especially through enhanced cooperation with shipping lines and the use of various technologies.

One common theme runs through these articles: cooperation. In the complex environment of maritime trade, efforts to enhance operations and deploy technologies require cooperation. Ports and their stakeholders can support the role and responsibilities of Customs and vice-versa. I hope the articles in this Dossier will inspire Customs administrations to look at the relevance and possibility of engaging in new or deeper relationships with these actors.

Customs-Ports partnership and engagement in Abu Dhabi

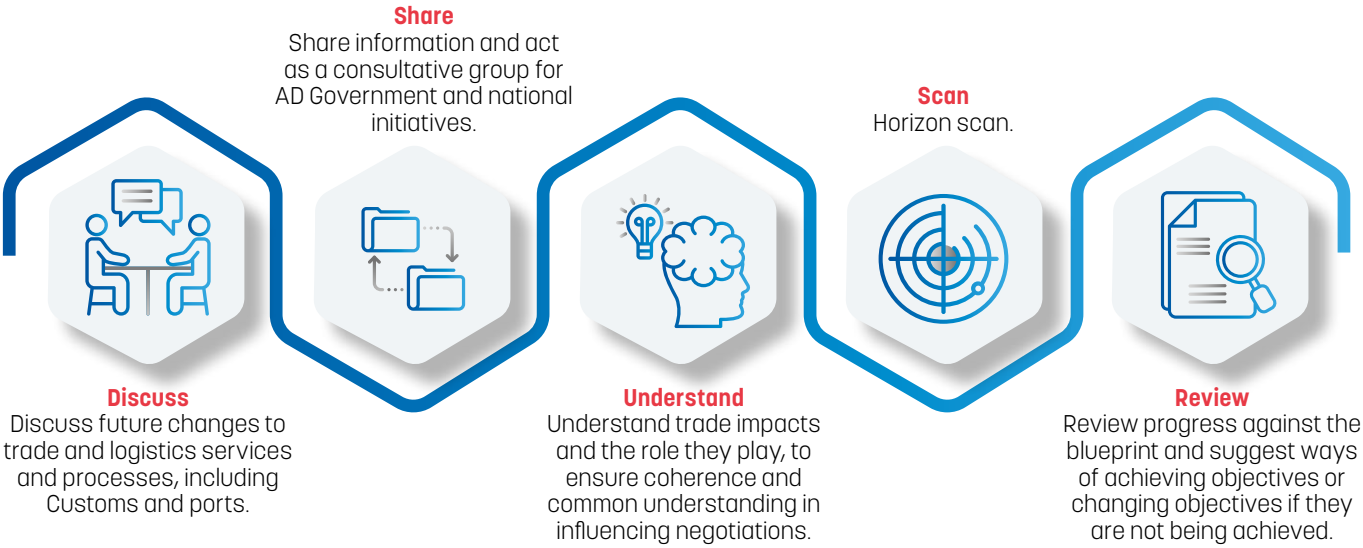
By Eng. Khalid Hasan Ali Al Marzooqi and Brahim Tchina of Abu Dhabi Customs Administration and Yousef Al Riyami, Chief Technology Officer, Maqta Gateway

Abu Dhabi (AD), the capital of the United Arab Emirates, was one of the early adopters of trade digitalization in the Middle East and has made considerable progress in this field. To achieve this, it needed to establish a solid partnership between key private- and public-sector stakeholders, including AD Customs, AD Ports Group[1] and the Abu Dhabi Department of Economic Development (ADDED).

In 2019, the ADDED formed the Abu Dhabi Logistics Sector Development Committee.[2] Under its umbrella, AD Customs and AD Ports Group discuss future changes, share ideas and positions, obtain valuable information to extend their horizons, review progress and brainstorm (see Figure 1).

© Abu Dhabi Customs

Figure 1 – AD Customs and AD Ports as part of the Logistics Committee in Abu Dhabi (governance body for logistics and trade facilitation in the Emirate of Abu Dhabi)



1 *AD Ports Group was established in 2021 bringing together all subsidiaries as an integrated business across five clusters – Digital, Economic Cities & Free Zones, Logistics, Maritime and Ports. AD Ports Group was publicly listed on 8 February 2022. ADQ, one of the region's largest holding companies, is the majority shareholder.* https://www.adportsgroup.com

2 *The following entities are members of the Committee: Abu Dhabi Customs, Abu Dhabi Ports, Abu Dhabi Police, Department of Transport, Department of Urban Planning and Municipalities, Supreme Corporation for Specialized Economic Zones, the Abu Dhabi Agriculture and Food Safety Authority, Abu Dhabi Economic Development Council, Department of Economic Development, Etihad Airport Services Company and Etihad Rail Company.*

Both entities have the common objective of reducing the time it takes to complete trade transactions and the associated costs, using cutting-edge technologies and smart ways of working. They are working together closely to meet businesses' expectations and ensure that regulations, policies and programmes respond effectively to an ever-changing environment.

This dynamic partnership is driving several initiatives, which are outlined in further detail in this article: the Advanced Trade and Logistics Platform, the Border Meter App, the live streaming of the inspection process in Khalifa Port, the Smart Gate pass solution in Khalifa Port and the Virtual Corridors initiative.

The Advanced Trade and Logistics Platform

Back in 2014, the government selected the AD Ports Group – the master developer, operator and manager of commercial and community ports within the Emirate of Abu Dhabi – to build what was to become the UAE's first dedicated Single Window Port Community System: Maqta PCS (M-PCS). The objective was for M-PCS to act as the point of convergence between all the entities involved in the process. Among other things, it enabled Abu Dhabi Ports to capture information (such as the manifest) from stakeholders and to receive and share information from Abu Dhabi Customs regarding the release of shipments when Customs procedures were complete. Another system called MAMAR was developed alongside M-PCS to send and receive Customs declarations.

The introduction of the platform has had a tremendous impact on port and coastal operations. The digitalization of core documentation and the integration of the multiple systems used by each participant in a transaction has helped to bring about a dramatic reduction in what used to be very paper-heavy, manual and frequently inaccurate processes governing the movements of vessels and cargo in ports, as well as payments for port services. Additionally, a considerable part of the process of digitalizing port services was devoted to re engineering trade processes, eliminating much of the red tape that had hampered them in the past.

© Abu Dhabi Customs

In 2016, soon after the successful launch of the system, AD Ports Group created a subsidiary, called Maqta Gateway, which is responsible for using advanced digital solutions to facilitate trade. In 2020, Maqta Gateway was mandated by Abu Dhabi Executive Council to extend the scope of M-PCS and create the Advanced Trade and Logistics Platform (ATLP).

The Platform integrates the Abu Dhabi trade Single Window and onboards all IT processes for cargo inspection and clearance. The service catalogue on inspection and clearance is divided into seven categories, covering Customs clearance, Customs clearance at Customs warehouses, Customs clearance in free zones, Customs warehouse licensing, financial services, intellectual property brands and commercial agencies protection, and registration and licensing.

© Abu Dhabi Customs

In total, the platform includes more than 800 trade services developed by 70 public- and private-sector entities, providing trade operators with a single window ecosystem that encapsulates everything they need in terms of administrative procedures. Since its launch in 2020, the ATLP has handled more than 100 million transactions. All maritime cross-border operations are processed through the platform, and adoption rates continue to rise for trade by air and land, and through economic zones.

The ATLP is expected to increase exports by 142 billion Emirati Dirham (AED) (36 billion euros) and imports by AED 111 billion (28 billion euros), adding AED 127 billion to Abu Dhabi's GDP by 2030.

AD Ports Group and AD Customs are also considering using the ATLP to develop the AEO programme further by increasing the benefits provided to the operators. Abu Dhabi Customs will use the ATLP to share AEO information with other regulatory authorities, enabling them to take into account the AEO status when processing licences, permits, certificates, and accreditation and provide AEOs with some benefits.

Border Meter App for real-time measurement of the time required to release goods

In 2022, the Abu Dhabi Port Group and Customs worked together on developing an Automated Time Release Application called BorderMeter™, a project which was initiated by the Abu Dhabi Department of Economic Development (ADDED) and which has already featured in the WCO News magazine.[3] The app combines data from ports, governmental authorities and Customs, and processes these data with artificial intelligence models. To develop it, a pilot Time Release Study was conducted at Khalifa Seaport. It covered nine cargo "journeys", from the moment the goods arrive at the port to the moment they are released, for three regimes (import, export and transit):

1. Import + no other governmental agencies (OGA)
2. Import + Agriculture and Food Safety Authority (ADAFSA) permission
3. Import + Ministry of Climate Change and Environment (MOCCAE) permission
4. Import + Ministry of Health and Prevention (MOHAP) permission
5. Import + Industrial Development Bureau (IDB) permission
6. Export + no OGA
7. Export + Ministry of Foreign Affairs and International Cooperation (MOFAIC) permission
8. Transit + no OGA
9. Transit + MOCCAE permission

The data were taken from the Customs clearance and ATLP and mapped against 23 key time points in cargo processing, from the time at which the vessel is fully docked, or best estimate thereof, to the time at which the last truck for this shipment

3 *https://mag.wcoomd.org/magazine/wco-news-1000-issue-1-2023/abu-dhabi-real-time-trs/*

leaves the port gate (not just the terminal), in alignment with the WCO TRS methodology.

The exercise brought valuable insights to participants, and 25 observations and recommendations were drafted. They addressed particularly OGA/Customs coordination, highlighting the need to establish a coordinated border management framework which would provide for joint inspections and enable Customs officers to act on behalf of certain OGAs. There are also proposals for working hours adjustments, the setting up of additional laboratories and specific training for Customs on procedures and controls handled by OGAs.

Live streaming of the inspection process in Khalifa Port

Abu Dhabi Customs has tested the use of live video streaming in Khalifa Port, so that the clearing agent in charge of completing all port and Customs formalities on behalf of a consignee can attend inspections remotely. Customs officers wear smart glasses with a micro-camera and can connect to Wi-Fi during the inspection. The video footage can be watched by the clearing agent from his or her desk or on a mobile device. This eliminates the need for the agent to travel to the inspection location and to complete the required formalities to attend the inspection.

Smart Gate pass

In Abu Dhabi, trucks cannot leave a port with a shipment without presenting a pass at one of the port gates. The pass is issued by the Port Authority once it has been notified by Customs that the shipment can leave the port. This notification is currently made electronically, and the pass is verified by a port agent at the gate.

To speed up the process, AD Customs and AD Ports Group are working on a system for automating gate operation at Khalifa Port. Controls at the gate would be conducted using a radio frequency identification (RFID) reader identifying vehicles and container IDs, and opening the barriers if the departure has been authorized.

© Abu Dhabi Customs

Virtual corridors

Abu Dhabi Customs has recently introduced a new procedure called "virtual corridors" to facilitate the movement of goods from Khalifa Port to the various Free Zones and bonded warehouses in Abu Dhabi (KIZAD) using a specific itinerary. To ensure that the trucks keep to the itinerary, an electronic seal is fixed on the container, and the GPS location and other data generated by the seal are transferred to a control room.

With the same objective but on a broader scale, AD Ports Group and AD Customs have launched an initiative to establish a virtual trade corridor between the ports of Abu Dhabi and those of Kuwait. Abu Dhabi Customs currently offers pre-clearance services for cargo at Khalifa Port, but there is very limited exchange of information between Customs authorities in Abu Dhabi and Kuwait. Under the Virtual Corridors project, in collaboration with their respective Port Authority, the Customs authorities will be able to share information on international cargo movements, as well as intelligence, and respond more effectively to risks, keeping people and goods safe. The MoU between the two parties was signed on 27 March 2022. Abu Dhabi Ports through Maqta Gateway will provide support via the ATLP. By working with Customs, AD Ports will play a key role in making this virtual corridor a success.

More information

k.almarzooqi@adcustoms.gov.ae
brahim.tchina@adcustoms.gov.ae
yousef.alriyami@maqta.ae

Are you implementing an
Advance Cargo Information (ACI)
protocol?

CargoX

More than

114.000

companies felt secure when they sent

5,2 million

e-trade documents

via the CargoX Platform.

CargoX helps you connect to
the Global Business Community.

Implementing the principles of "Smart Borders" at a medium-sized port

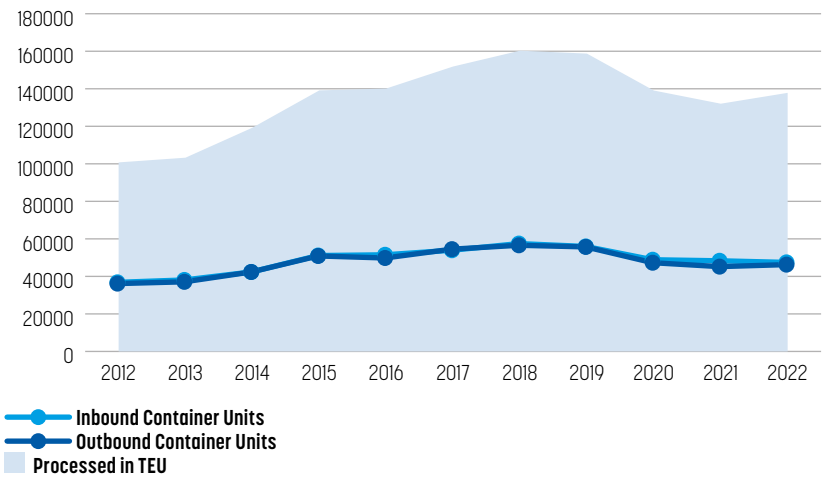
By Dilyana Gencheva, Bulgarian Customs

© AdobeStock

Bulgaria has been a fully-fledged Member State of the European Union (EU) since 1 January 2007 and exerts controls over one of the external maritime borders of the EU with the Black Sea, in accordance with EU Customs policies. The number of inbound and outbound container units going through its largest maritime port, the Port of Varna, has grown steadily over the past 10 years (see Figure 1) but represents a minor part of the flows of goods entering or leaving the European Union through its maritime borders. Most goods entering Bulgaria by sea are released for internal circulation or are in transit to neighbouring EU countries. Transboundary movements to non-EU countries and transshipment operations are an exception.

To be secure and resilient, international supply chains must rely on ports regulated by and enforcing stringent legislative policies, whatever the size of their traffic volume. In this article, I will explain the risk analysis model applied by the Customs office in charge of the port, the various digital platforms employed by the administration, and finally some of the challenges frontline Customs officers must deal with.

Figure 1 – Container Traffic at the Port of Varna



Customs risk analysis

In all EU countries, the Customs administration has the legal obligation to carry out the security and safety risk analysis on all the cargo, regardless of the EU country of destination. To do so, Customs risk analysis systems must apply common security and safety risk criteria and standards and common priority control areas set in the EU Common Risk Management Framework[1]. The Framework provides for common risk criteria and standards to target high-risk consignments before their arrival or departure from Bulgaria's jurisdiction, enabling expeditious releases when the goods are effectively presented. It also provides for financial risk criteria on Customs clearance formalities.

1 https://taxation-customs.ec.europa.eu/measures-customs-risk-management-framework_en

The risk management approach adopted by Bulgarian Customs is a double-layered, double-securing, process. The goal is to identify, in real-time, cargo and operators presenting a risk across a wide range of known fraud practices, as well as shifting patterns and emerging vulnerabilities.

For goods arriving or leaving through maritime ports, shipping lines or their local representatives have the obligation to submit entry summary declarations and exit summary declarations related to a shipment within specified time limits via the Bulgarian Import Control System (called ICS) or the Bulgarian Customs Information System for Exports (called MISI) – Import Control Systems and Export Control Systems are the IT systems which are used by Customs administrations across the EU. The time limit for reporting an inbound shipment is 24 hours before the goods are loaded onto the vessel for containerized cargo, and 4 hours before the arrival of a vessel for bulk cargo. Data transmitted to the national interfaces of ICS and MISI is analysed through a risk engine and the results from the risk analysis are transmitted to the Common EU IT system.

Customs declarations are lodged through the Bulgarian Customs Import System (called MISV) and a risk assessment is performed through the algorithms of the Risk Analysis Module (MAR). MAR targets common financial risks, such as undervaluation, misclassification, or origin fraud. Additionally, MAR addresses product safety standard requirements, as well as restrictive or prohibitive measures enforced by the relevant control authorities. MAR algorithms are built using recognized risk profiles and scenarios. They are developed, updated, and adjusted on a continuous basis with information gathered on fraud cases, infringements, or offences exchanged Customs-to-Customs via the Customs Risk Management System managed at EU level. MAR allows new risk profiles to be created quickly, for example, following a tip. Customs officers processing declarations are alerted when a risk profile is activated and are provided with a description of the actions to be undertaken.

In a second phase, a supplementary risk analysis is conducted to target specific threats and adverse practices. This risk evaluation is conducted on the advance cargo information (ACI) which is submitted to the Customs risk analysts by shipping companies in the form of manifests or, as an exemption, of Bills of Lading prior to ship arrivals or departures and before Customs clearance procedures are conducted. ACI is scrutinized to identify unmatched data elements, vague descriptions, inconsistencies, or missing data. Every single piece of data is weighed and assessed against the whole supply chain logic, from the source of the goods to the end user. Analysts must be agile to respond to changing trends and identify criminal intentions. They must justify their decisions to select a cargo for non-intrusive or intrusive inspections. Abusive practices which are discovered and the criteria used by the analysts are then shared to update the risk profiles and thus narrow and fortify the first layer of automated risk analysis.

Other regulatory agencies (border control police, tax and revenue administration, food safety control agency, and internal police service) also conduct their own risk analysis during the cargo clearance process, strengthening the whole targeting process. They receive entry summary declarations and ACI directly from the shipping companies. The data transmission is processed according to the respective competences of the authority to supervise and control the supply chain, as regards the sharing of personal and commercially sensitive data.

Digital platforms

Maritime port authorities must abide by multiple regulations, supervisory policies, and administrative procedures, and this necessarily entails the need for smooth interactions and cooperation between a diversity of stakeholders involved in moving and managing seaborne trade.

The Bulgarian National Maritime Single Window (NMSWe) was launched in 2013, transforming the entire mechanism of reporting obligations for the shipping companies, as laid down in the Facilitation of International Maritime Traffic Convention (FAL Convention). It enables them to submit electronic data required for the arrival, stay and departure of a ship, persons and cargo in a port (FAL Forms[2]) at least 24 hours before port calls. The NMSWe collects and distributes relevant information to border control agencies, which then transmit through the system their approvals or requests for additional actions that the shipping companies need to complete prior to

2 https://www.imo.org/en/OurWork/Facilitation/Pages/DeclarationsCertificates-default.aspx

receiving approvals for entering the port facilities. It allows for fast exchange of information and messages between shipping lines, providers of port services and all border control institutions. The NMSWe integrates the digital interface of a Vessel Traffic Management Information System (VTMIS), which enables the monitoring of ships' calls in ports, harbours, and coastal areas.

The NMSWe is to be transformed following the establishment of a European Maritime Single Window Environment (EMSWe) by 15 August 2025. The EMSWe aims to lower the administrative burden on ship operators by harmonizing rules for the provision of the information that is required for port calls, in particular by ensuring that the same data sets can be reported to each NMSWe in the same way. The front-end interfaces of those NMSWe on the side of the declarants should be harmonized at Union level by the use of common interface software for system-to-system exchanges of information, developed at Union level. The Bulgarian Port Authorities and the Customs administration should bear the responsibility for integrating and managing the interface module and for updating the software regularly and in a timely manner when the obligatory reporting data sets are amended by the Commission. Common databases are to be built, such as a ship database, a Common Location Database and a Common Hazmat Database incorporating a list of dangerous and polluting goods that are to be notified. Complete information on vessels (including particulars of the ship, history, visited ports and registered port calls) could be exchanged between the EU Member States in real-time[3].

Another system launched by the Bulgarian Executive Agency Maritime Administration in February 2023 is worth mentioning: the Integrated Bulgarian Maritime Surveillance (InBulMarS), developed as part of the EU Common Information Sharing Environment (CISE) which aims at enabling the sharing of maritime surveillance data between different ICT systems to obtain a comprehensive maritime picture. CISE works via a network of nodes in EU Member States, which takes information from the various existing maritime surveillance systems. In other words, its infrastructure is decentralized. CISE stakeholders define an information sharing plan based on their operational needs – in other words, each decides what information he can share with others and needs from others. When looking for information about a vessel, a stakeholder would include it on a Vessel of Interest (VOI) list and share it with the list of subscribers. If a second stakeholder detects the vessel, he would share the information through CISE. If he detects a vessel not transmitting its position with its radar system, he would also report it and, if a third stakeholder happens to come across the detected vessel, he could take pictures with the visible name and call sign, check that it is included in the VOI list and send the information through the system. InBulMarS brings together seven agencies to receive and communicate information on vessels within EU jurisdictional waters or in the EU maritime domain. The Bulgarian Customs Administration participated in the project from its inception in 2017 to its deployment in February 2023. However, since then, it has withdrawn its participation and denied access to the IT system due to internal cybersecurity rulings.

Finally, the much awaited Port Community System (PCS) is due to be launched by the Bulgarian Port Infrastructure Company in January 2024. It should allow logistics and transport information related to inbound and outbound cargo to be swiftly exchanged between port authorities, control institutions and involved stakeholders. An interoperable digital interface between the Port Infrastructure Company and the Customs administration should integrate their IT systems together with the Customs IT systems (such as ICS, MISI, MISV and Transit), and thus allow extracted data sets to be transmitted and messages to be communicated during the handling of the cargo at the port facilities and during the Customs formalities.

Challenges and acknowledged weaknesses

Given the complexity of their task, Customs analysts encounter many issues. Some are sketched out and briefly explained below.

- Obtaining advance cargo information remains pivotal for efficient risk assessment. However, the quality of this information relates to the contract between the carrier and parties involved in a shipment. They can be rather

3 *Regulation (EU) 2019/1239 of the European Parliament and of the Council of 20 June 2019 establishing a European Maritime Single Window environment (https://eur-lex.europa.eu/eli/reg/2019/1239/oj)*

distant from the manufacturers of the goods and their final end-users and consumers. Indeed, there are often many intermediaries involved in the international supply chain and this can lead to a lack of visibility which translates into incomplete and ambiguous data provision.

- The EU Customs risk management strategy stipulates the principle "assess in advance, control where required[4]" – in other words, tackling risks efficiently before they materialize, but enabling the uninhibited clearance of freight handled via "trusted trade lanes" (trade lanes which offer visibility to Customs, from the origin of the goods to the final consumers) and moving to and from compliant and trusted businesses. Concise risk analysis and decision-making correlates with the structure and quality of the data provided by the users and historically stored in IT systems. Rational, consistent, and unbiased solutions are expected to identify compromised shipments. Such solutions rely not only on quality data supply, but also on the results from controls. The approach towards every inspected cargo should be to anticipate and be prepared to react to unexpected threats or corrupt practices since the true intentions of an importer may remain disguised until the control ends.

- Effective Customs control practices and methods play a key role. Substantiated risk analysis depends on the reported results, where objectives meet outcomes from interventions. Jeopardized controls or subtle interferences can alter the data reported and thus preempt the wider strategy of risk management. This highlights the need at all levels for skilful, competent and reliable human resources.

- Customs officers operate through multiple decentralized electronic systems, each employed for a specific Customs procedure – entering goods, taking goods out, or transiting the goods. These IT systems are not integrated and data is not inter-connected through a common database. The risk analysis is hampered and has to take into account this multiplicity of Customs procedures and systems when matching the data. In many cases, it is impossible to properly track a consignment from origin to end as the quality of the data is poor. This situation can be exploited by malevolent traders to compromise the international supply chain, thus causing financial losses or endangering human and wildlife, as well as the environment.

Looking ahead

The gradual integration of interoperable IT systems could curb attempts to circumvent control decisions or to compromise the outcome of controls. It is therefore something to look forward to.

It would also make a huge impact to have the largest possible participation of operators in the Authorized Economic Operator programme, and the deployment of trusted trade lanes which could be based on Customs-to-Customs information sharing and mutual recognition of controls, or on Authorized Economic Operators (or other trusted traders) involved throughout the supply chain (trusted trade lanes). Such an ambition is laid out in the *WCO Integrated Supply Chain Management Guidelines*[5].

Another thing to consider is leveraging technologies deployed by the port operators, and a future alignment between the International Ship and Port Facility Security Code (ISPS Code[6]) and AEO security status (see Figure 2). The first would permit optimal utilization of IT resources and the establishment of an interchangeable electronic environment. The second, mutual recognition of both security programmes in terms of requirements and validation/revalidation methodology, would enhance mutual trust and would avoid duplicative administrative work, benefiting border regulating authorities and port operators.

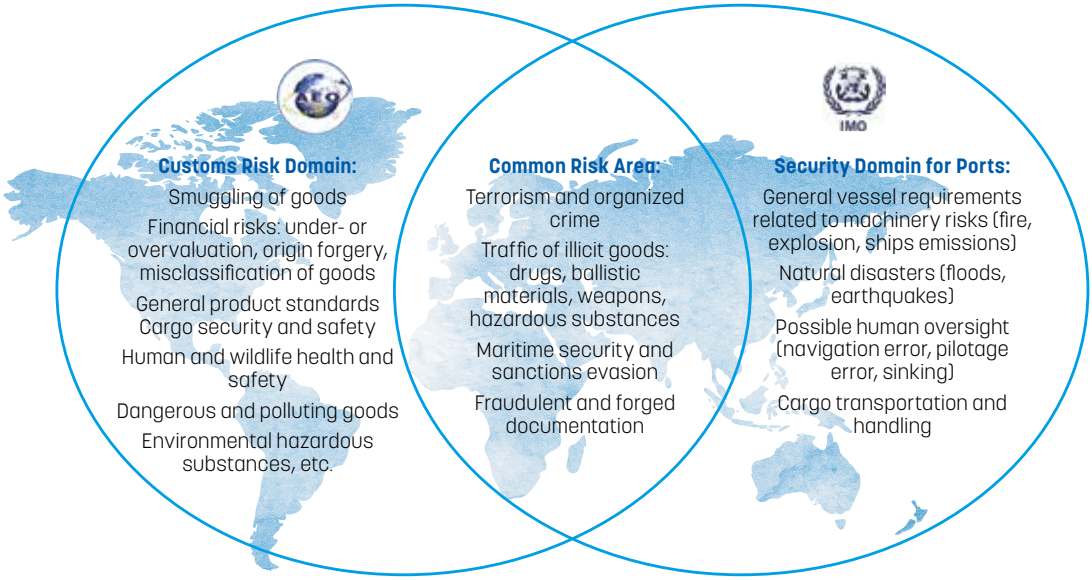
Finally, digital transition has been highly beneficial to risk analysis, but more could be done, for example by deploying disruptive technologies such as big data and machine learning.

4 *See Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on the EU Strategy and Action Plan for customs risk management: Tackling risks, strengthening supply chain security and facilitating trade https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52014DC0527*

5 *https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/safe-package/guidelines-on-iscm.pdf?la=en&la=en*

6 *Developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States, the ISPS code is a comprehensive set of measures to enhance the security of ships and port facilities.*

Figure 2 – Comparison of Customs AEO Programme and Port ISPS Code



If a thorough and streamlined risk management model is in place and control measures are efficiently performed, digitalization can result in creating "Smart Borders". Whatever the maturity of the port environment and traffic volumes, we need all maritime points of entry to become smart if we want to facilitate trade while enforcing regulations.

More information

Dilyana.Alexandrova@customs.bg
www.customs.bg

Achieving Compliance in the Complex World of Customs Tariffs and Export Control Classifications

The most fundamental task in international trade is determining the correct customs tariff and export control classification for a product. It's essential that products are correctly classified e.g. in order to identify what duties, rules of origin or controls apply when moving them to and from a country.

It's a fact that people in different divisions of a company can make different decisions about customs tariff and export control classifications, often resulting in duplicative effort and inconsistent results for the same product – an offence which is easily and quickly proven by the authority and often entails costly warnings. To avoid this, a central and standardized product classification is required.

MIC's Central Classification System CCS helps companies precisely classify parts utilizing artificial intelligence and machine learning (AI/ML). It increases the level of automation and ensures that multinational customs tariff schedules and export control lists are adhered to, while costs and workload are reduced. Our software permits clear and easy control of the entire product classification process e.g. via a full workflow management with the ability to manage multiple teams on a global basis.

www.mic-cust.com

You want to know more about MIC CCS? Please contact us:

MIC
Tel.: +43 732 778496
sales@mic-cust.com

mic managing international customs & trade compliance

Rapiscan systems | AS&E

Part of the OSI Systems family of security companies

END-TO-END CUSTOMS SCREENING SOLUTIONS

PROTECTING PORTS & BORDERS WHILE FACILITATING TRADE

Our industry-leading cargo and vehicle X-ray inspection and radiation detection technologies assist with contraband and threat detection, while our optical inspection technology helps to identify and authenticate vehicles and occupants. And, with the CertScan® intelligent data integration platform you get even greater insight into your operation's security-related information. Our screening solutions and unsurpassed program management, service, and support will help to ensure your success. **rapiscan-ase.com**

Rapiscan systems | AS&E | S2 GLOBAL

The OSI Systems family of security companies

© AdobeStock

Integrating ports and Customs information systems in a cloud environment: a game changer for digital transformation

By Charansingh Dabeesing, Chief Executive Officer,
Mauritius Cargo Community Services Ltd.

In today's interconnected world, the efficient movement of goods across borders is crucial to most economies. Ports and Customs play pivotal roles here. In this environment, as in many others, efficiency means digitalization of processes, and seamless flows of information. One critical decision shapes the organization's digital journey: should ports and Customs information systems be deployed on-premises or via a cloud infrastructure? Traditionally, on-premises infrastructures are reliable, but I believe ports and Customs authorities should embrace the cloud, and I will explain why in this article.

On-premises infrastructure: anchoring tradition

On-premises systems offer complete control over hardware, software and configurations, allowing for tailored solutions that align precisely with the organization's needs. For organizations with stringent data sovereignty requirements, on-premises infrastructure ensures that sensitive data stays within the organization. Although the initial investments for on-premises solutions can be substantial, they offer the advantage of predictable and long-term cost planning, which facilitates the process of budgeting.

However, scaling up or down in response to fluctuating demand can be challenging with on-premises systems, often requiring costly hardware upgrades. IT teams are responsible for maintaining hardware, applying updates, and managing security, diverting resources from core activities. Establishing robust disaster recovery plans can be complex and costly, potentially leading to extended downtime in cases of system failures.

Cloud benefits

There are many benefits to integrating ports and Customs information systems in a cloud environment:

- **Efficiency:** Cloud integration streamlines data exchange by providing a centralized and scalable platform for connecting different systems, applications and data sources across an organization or between organizations. This leads to quicker cargo clearance and reduced congestion at ports.

- **Scalability:** Cloud environments provide the scalability needed to handle fluctuations in trade volume. As trade activities peak, the cloud can seamlessly adjust resources to meet demand, ensuring uninterrupted operations.

- **Data Accessibility:** Cloud-based integration allows authorized stakeholders to access real-time information from anywhere at any time, promoting transparency and collaboration amongst various parties in the trade supply chain.

- **Cost-effectiveness:** Traditional on-premises infrastructure requires substantial investments in hardware, maintenance, and upgrades. Cloud integration offers a pay-as-you-go model, reducing upfront costs and providing predictable expenses.

- **Agility and Innovation:** Cloud adoption facilitates rapid deployment of new features and updates, empowering trade authorities to adapt to evolving regulations and market trends.

- **Heightened Security and Compliance:** Cloud providers offer advanced security features, including encryption, access controls, and compliance certifications. Integrating ports and Customs systems in the cloud can improve data security in adherence to international regulations.

Considerations for ports and Customs authorities

In order to make a choice, ports and Customs authorities should consider the following aspects:

- **Trade Volume and Fluctuations:** In terms of trade volume consistency and potential fluctuations, cloud environments are more adaptable to varying demand, while on-premises systems suit more predictable workflows.

- **Budget and Financial Strategy:** Evaluate upfront investment capabilities and long-term cost projections. Cloud computing often offers cost savings but requires ongoing operational expenses.

- **Data Sensitivity and Regulations:** Analyse data privacy and sovereignty requirements. On-premises infrastructure offers greater control over data location, but cloud providers may offer stronger security measures.

- **Scalability and Innovation:** Cloud environments foster innovation and quick adaptation to industry changes. The utilization of cloud environments encourages innovation and enables swift adaptability to trade sector developments. It provides opportunities to embrace new emerging technologies, and thus to become more agile and scalable.

The choice between on-premises and cloud infrastructure for ports and Customs information systems is a critical decision that shapes an organization's digital journey. On-premises systems offer control and customization, while the integration of ports and Customs information systems in a cloud environment represents a significant step forward in optimizing global trade operations. This decision is based on several factors, such as trade volume, IT budget, data sovereignty and growth aspirations in the medium to long term. Ultimately, whether anchored to tradition or sailing into the cloud, the chosen path should align with the organizational strategy to ensure that ports and Customs operations remain efficient, secure, and poised for the future of global trade.

More information
Dabeesingc@maccs.mu

Innovation Starts With You

NUCTECH

FG9000DT, the world's first CT-based cargo and vehicle inspection system, has been in operation and completed 100,000 scans as of today. NUCTECH's inspection solution reforms the radiation imaging technology of cargo and vehicles, achieving a leap from 2D to 3D, creating an unprecedented imaging experience, hence bringing unlimited possibilities for the future of smart customs.

www.nuctech.com Tel: +8610 62780909 Fax: +8610 62788896 E-mail: info@nuctech.com

Georgia Ports and US Customs and Border Protection – a partnership that works

By Alma Rodriguez, General Manager, Georgia Ports Authority Customer Service Center

The Georgia Ports Authority (GPA) develops, maintains and operates ocean and inland river ports within Georgia, United States. Its top priority is to ensure the seamless movement of cargo for its customers while enforcing security and environmental protection requirements. For more than 30 years, the GPA has fostered a trusted partnership with U.S. Customs and Border Protection (USCBP) to ensure it is doing all it can in this regard.

This partnership encompasses all levels of the Authority. GPA President and CEO Griff Lynch, staff from the Customer Service and Container Operations, and many others work with various Customs entities. From the Port Director and Assistant Port Director to the CBP Watch Commander and agriculture officers, they share one common goal – keeping the Port, and the country, safe and secure.

Specialized team

To facilitate cargo flows while ensuring they adhere to government regulations, the Customer Service Center has created a specialized, Customs-focused team to assist Port customers with release/entry inquiries. Thanks to the interconnection between the Port and USCBP IT systems, the team has visibility into the "hold" and "release" status of manifested cargo, as well as the status of freight being inspected at the Container Examination Station, enabling it to assist with answering customer inquiries and act as a liaison between beneficial cargo owners, Customs house brokers, truckers, ocean carriers, and USCBP.

The primary focus of this team, and of Customer Service management, is to facilitate ongoing dialogue between the external customers and USCBP, while adhering to all USCBP guidelines. The team also ensures customers are following proper protocol when working to get their freight released. The Port Authority understands there will be times when USCBP will not share information on certain shipments that are of a highly sensitive nature and require additional investigation. With that understanding, in such situations the team notifies the customers concerned that they need to contact USCBP directly about any further questions or assistance they may need regarding their shipment. All this cooperation has garnered a level of mutual respect from all parties.

The specialized team consists of employees chosen on the basis of their skill sets and knowledge of the industry. The team members have wide-ranging experience in the industry as well as within the GPA, combining 70 years of work at the Ports. They have previously worked in Container Operations, Gate Operations and Customer Service, and this has given them extensive knowledge and understanding of the GPA, the Container Examinations Station and U.S. Customs and Border Protection functions and processes – and of how these three entities operate.

The team members can also count on the Customs Service Center management team, whose industry knowledge brings the total up to more than 110 years. The management team is made up of individuals who worked on the Ocean Carrier side of the business before moving over to Georgia Ports, thus gaining port experience as well. This extensive knowledge has been of great benefit in building the partnership between the GPA and USCBP.

Government Services team

Being able to work closely with the USCBP's Centralized Examination Station (CES) is also key to expediting releases for the customers, and port authorities that operate their own terminals should consider designating a space for Customs inspections. At the Port of Savannah, a Government Services team works hand-in-hand with the CES and the Port customers to help expedite cargo flow. The team uses the N4 Terminal Operating System. Through the connectivity to USCBP systems, the team have full visibility of the status of shipments moving through the GPA. The existence of an on-terminal Customs warehouse makes it possible to speed up the release of cargo that has cleared inspection, so it can go back into the stream of logistics. Instead of being hauled by off-terminal drays that may get tied up in traffic, or being held up waiting for a "Permit to Transfer" to be issued, containers need only be shifted from the stacks to the warehouse, and back.

Induction training

Another major focus of the Customer Service Center is the proper education and training of all new employees, including cross-training with all our specialized and Government Services teams. All Customer Service representatives are put through a six-week training course, with evaluations performed at the 30-, 60- and 90-day marks. On their first day, they are given a training manual that includes their schedule for the next six weeks, and some quick links to easy reference guides, Georgia Ports Authority reference videos and Customer Service training videos. Towards the end of their training, they are placed with a team member they can shadow for a minimum of one week observing how we answer emails, and another week on the phones. Once they have completed the basic training, new employees are given the opportunity to cross-train with other internal Georgia Ports departments such as the Container Operations team, Gate Operations and our intermodal staff, to name a few. This helps to give them an even better insight into operations here at Georgia Ports. After all of this training has been completed, our management team works to identify the individual new employees' strengths so that they can be placed in a role that works for them, our customers and the team.

Going many steps further

The Customer Service Center management team has gone a step further by participating in monthly partnership meetings, quarterly pest risk management meetings that help with awareness of any potential invasive pests, and quarterly brokers meetings. We also facilitate meetings between beneficial cargo owners and USCBP to help customers better understand Customs and Border Protection guidelines and protocol. Assisting the U.S. Department of Agriculture with access to our Port for research purposes is another aspect of our partnership, which is critical for monitoring any environmental impacts of possible imported noxious weeds.

By attending these meetings, working with all government entities, sharing information, ensuring our Customer Service team members receive proper training, and having the visibility tools needed to observe cargo moving through our facility, we are able to contribute to enhanced compliance and add an extra layer of environmental protection and security, which continues to be an important focus of the Georgia Ports Authority.

More information

https://gaports.com

Tackling corruption in maritime trade

By Martin Benderson, Associate Director, Collective Action & Partnership Development, Maritime Anti-Corruption Network (MACN).

© AdobeStock

In today's highly interdependent world economy, business and societies depend on the efficient clearance of vessels and goods in ports worldwide to function, develop and prosper. More than 80% of world trade is transported by sea and via ports, and any business that is part of global supply chains does, to some extent, rely on ports for import and export. Every day, vessels and cargos enter ports, and the processes involve numerous stakeholders across several jurisdictions, resulting in multiple interactions with government officials, including Customs.

The port is an administrative monopoly over an essential public service that businesses depend on to function and prosper. This creates a breeding ground for 'coercive' corruption, where government officials may extract bribes from companies for performing routine processes during, for example, vessel and cargo clearance.[1] Maritime corruption of this kind increases trade costs and ultimately impedes economic and social development, particularly in low- and middle-income countries, where trade costs are already the highest.

Why tackle corruption in ports?

Corruption comes with a cost to business and societies. The impact of corruption in ports has been documented in several studies and through data collected by the Maritime Anti-Corruption Network:

- **Increasing the cost of trade:** Studies from Southern Africa have shown that bribes represent up to a 14% increase in total shipping costs for a standard 20ft container and that shipping companies are actively avoiding "corrupt ports" by taking longer and less direct routes to less corrupt ports. This adds to the costs of trade, adds to fuel costs and greenhouse gas emissions, and creates increased congestion and delays regionally.[2]

1 *Sequeira, S. and Djankov, S. 2009. 'On the Waterfront: An Empirical Study of Corruption in Ports' 2009, 2.*
2 *Sequeira, S. and Djankov, S. 2009. Op. cit.*

- **Causing delays:** Corrupt demands usually come with a threat of delaying the cargo and vessel. Bribes in ports result in slow-moving clearing queues, ultimately leading to delays.[3]

- **Facilitating illegal activities:** Corruption at borders and ports is also likely to facilitate a wide range of illegal activities, such as smuggling of people and goods, tax evasion, and cross-border crimes.[4]

- **Lowering productivity, and slower growth:** Firms that pay bribes not only spend more time and money dealing with the bureaucracy, but also suffer from the indirect costs, such as lower productivity, slower growth, employee theft and more expensive access to capital.[5]

- **Endangering the wellbeing of seafarers:** Rejecting and challenging corrupt demands can place the safety of seafarers, the vessel and its cargo at risk, and in particular, has a negative impact on the wellbeing and mental health of seafarers. The captain and crew are put under tremendous pressure when facing corrupt demands from port officials, who can arrange for the delay and detention of a vessel at considerable cost to their employers.[6]

The strategy of the Maritime Anti-Corruption Network

The Maritime Anti-Corruption Network (MACN) is an award-winning industry-led collective action initiative, working in partnership with industry, governments and civil society to eliminate corruption and promote inclusive trade across the maritime supply chain. With over 190 companies from the maritime industry in its membership, MACN represents more than 50% of the total global shipping tonnage used to transport cargos along sea routes.

Since its inception, MACN has pursued a comprehensive strategy, addressing both the supply and demand sides of bribery and corruption. The strategy consists of two fundamental approaches: one approach focuses on strengthening MACN members' corporate anti-corruption programmes; the other approach is external-facing and focuses on engaging with government stakeholders to improve, for example, clearance procedures, regulatory frameworks, and integrity in ports worldwide.

© MACN

Public-Private Roundtable with Nigerian stakeholders

In the MACN Collective Action programmes, governments, the shipping industry, and civil society are engaged in finding constructive solutions to challenges that influence the entire maritime supply chain. The MACN Collective Action approach has proven to be efficient in countering corruption in challenging environments such as Argentina, Bangladesh, Egypt, India, Indonesia, Nigeria, Pakistan, and Ukraine.

Public-private collective action to reduce corruption in Nigerian ports and terminals

In Nigeria, MACN has been working with the Convention on Business Integrity (CBi), a nonprofit organization promoting ethical business practices, transparency, and fair competition in the private and public sectors. Since 2012, both entities have been collaborating with government partners on a series of initiatives aimed at strengthening integrity and improving the operating environment in Nigeria's maritime sector. Over the years, this partnership has enabled port users in the private sector to demand, track, and ensure greater compliance with policies and laws at Nigerian ports and terminals.

---

3 *Igbanugo, H. and Gwenigale, R. (2011) 'Assessing and Minimizing Customs-related corruption risk in Sub-Saharan Africa's Ports'. Accessible online at https://www.martindale.com/matter/asr-2504265.Assessing-and-Minimizing-Customs-Related-Corruption-in-SSA-Ports-July-2011.pdf.*

4 *Chene, Marie (2013) 'Literature review on corruption at ports and border points in Southern Africa', U4 Anti-corruption Helpdesk.*

5 *Jenkins Matthew, 2018, The Relationship between Business Integrity and Commercial Success, Norway, U4 Anti-Corruption Resource Centre, p. 4-9.*

6 *'Corruption in ports puts pressure on crews', Safety at Sea, 3 March 2020.*

Similarly, it has helped the Federal Government of Nigeria (FGN) to strengthen its capability to establish compliance systems and collaborate with the private sector and civil society, through collective action to implement initiatives that lead to cultural shifts in behaviour and actions necessary to improve compliance and efficiency at ports and terminals. All of these are intended to directly improve trade flows in and out of Nigeria and support socio-economic development. At national level, slow cargo delivery, delays, cargo diversions and high demurrage charges at seaports are estimated to have cut Nigeria's economic growth by USD 14.2 billion, based on estimates by the African Centre for Supply Chain (ACSC, 2021).

Using industry data to identify and address corruption

In 2019, MACN and CBi introduced an Anti-Corruption HelpDesk for the maritime private sector and vessels calling at Nigerian seaports and terminals. The objective of the HelpDesk is to empower and support companies to reject corrupt demands during vessel or cargo clearance by providing a real-time incident resolution and accountability mechanism. If a government authority makes a corrupt demand, the Local HelpDesk team can intervene on the vessel's behalf by escalating the issue to the relevant government agency tasked with integrity oversight. Such real-time cooperation between private and public sector actors has proven to be a highly efficient means of tackling corrupt demands.

The HelpDesk is an innovative tool in which government agencies, and international and local maritime industry players, collaborate to monitor and enforce their integrity and anti-corruption compliance standards. The innovation aspect of the HelpDesk lies both in the way it can provide real-time support, and in its multi-stakeholder approach. When it was launched, the HelpDesk was the first real-time support mechanism in the world, giving companies much-needed support when operating in a high-risk market.

The data collected by the Local HelpDesk team in Nigeria shows that more than 90% of corruption incidents are solved within 24 hours and that the average case resolution time is 1-8 hours. Prior to the HelpDesk operation, case resolution took up to 7-10 days. For shipowners, the operational costs (staying in port, being delayed, processing paperwork) have therefore been reduced from approximately USD 150,000 to USD 20,000 per port call. The evidence from the data therefore suggests that the HelpDesk is not just an effective resolution mechanism, but a strong corruption-prevention tool. The Government of Nigeria has been using HelpDesk data to benchmark its performance in fighting corruption, recognizing the link between the benefit of improving trade flows and preventing corruption.

© MACN

Mr. Soji Apampa, co-founder & CEO of the Convention on Business Integrity, and representatives of the Nigerian Customs Service during a roundtable

Inter-Agency collaboration to enforce anti-corruption in ports

On International Anti-Corruption Day, 9 December 2020, the Vice President of the Federal Republic of Nigeria launched the new *Nigerian Ports Process Manual (NPPM)* in a bid to promote transparency, and to eliminate bottlenecks and illegal demands in the nation's seaports and terminals by making standard operating procedures (SOPs) for vessel and cargo clearance fully transparent across all government agencies involved.

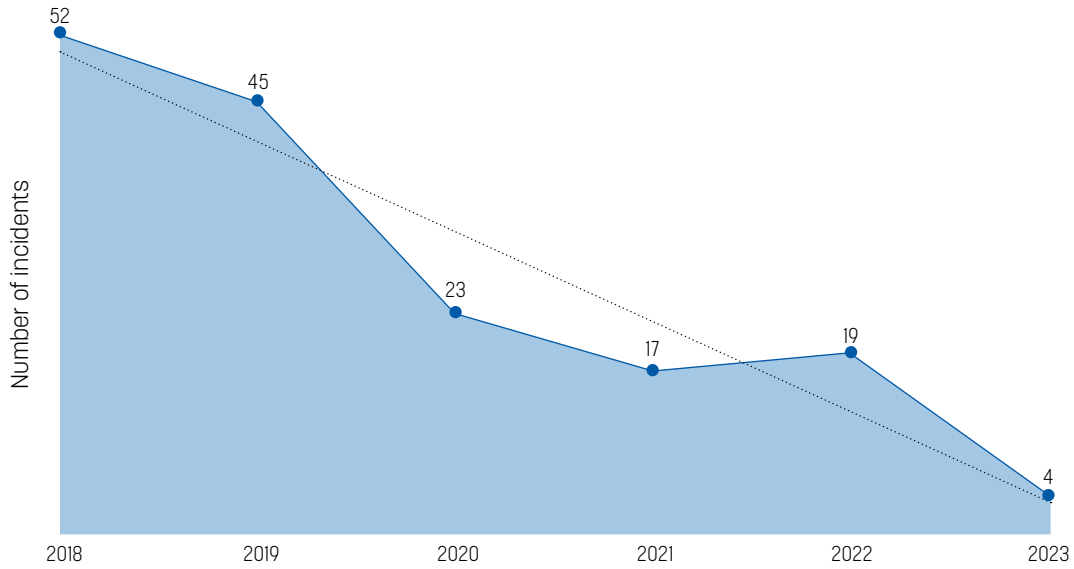
Subsequently, to ensure diligent enforcement and compliance with the NPPM, the Federal Government of Nigeria established an inter-agency Port Standing Task Team (PSTT). The key objectives of the PSTT are to monitor and enforce compliance by all government agencies and private sector stakeholders with the provisions of the NPPM, and help remove corruption risks and increase transparency in port operations, in line with international best practices as laid down in the NPPM. In practice, this means that the PSTT ensures that port officials strictly adhere to SOPs and carry out physical checks on board vessels and in ports and terminals during vessel and cargo clearance operations – where necessary, providing real-time responses to complaints regarding corrupt demands from port officials and private sector actors, or breaches of SOPs and NPPM timelines.

The PSTT is an innovative inter-agency collaboration which includes key agencies, such as the Independent Corrupt Practices and Other Related Offences Commission (ICPC), the Department of State Services (DSS), the Nigerian Shippers' Council (NSC), the Nigerian Ports Authority (NPA) and, recently, the Nigerian Customs Service (NCS). The PSTT's mandate has made it possible to dismantle corruption networks at port corridors and investigate breaches of standard operating procedures. As part of its functional initiatives, the PSTT has enforced joint boarding of vessels by NCS and other government officials to improve joint accountability. Each agency has defined timelines to board vessels and carry out its functions. This has improved transparency, cut inspection times, and ensured that officials must board vessels together and complete their inspection within 90 minutes of boarding, or formally request an extension of time.

For the Nigerian Customs Service, the PSTT has been a win-win solution as it has helped increase port efficiency. NCS has strengthened its dispute resolution mechanism at the command levels in order to be able to manage issues arising in the process, with a view to eliciting procedural compliance to facilitate trade. The commitment by the Nigerian Customs Service to engage in the PSTT and enforce compliance with standard operating procedures has also been noticed by the private sector. Since its formation, MACN has hosted an anonymous incident reporting system, allowing maritime industry players to submit reports on the corrupt demands they face during port operations in any port worldwide. This mechanism gives MACN data at stakeholder level in ports and shows a clear downward trend in the incidents involving Nigerian Customs which are reported by the private sector. That downward trend is particularly evident following the launch of the PSTT in 2020, and up to the present date, with an 86% decrease in such incidents, and only four reported in 2023 (see Figure 1).

For the maritime industry and port users in Nigeria, the establishment of the PSTT and HelpDesk has been a game changer. It has empowered the maritime private sector to reject, report and record corrupt demands, and reduces the costs of not participating in corrupt practices, which has further incentivized business to join MACN and CBi's Collective Action Initiative in Nigeria. It has further galvanized much-needed trust between the private and public sectors in Nigeria and improved the public-private dialogue on integrity, ethics, and regulatory challenges in trade.

Figure 1: Reported incidents of corrupt demands by the Nigerian Customs Service per year



Outcomes and impact

The anti-corruption solutions adopted by the Nigerian Government are the result of several years of engagement by MACN and CBi with the Office of the Vice President of Nigeria, Federal Ministry of Transportation, Nigerian Shippers' Council, Independent Corrupt Practices Commission (ICPC), Technical Unit on Governance and Anti-Corruption Reforms (TUGAR), and other key governance agencies. Through this multi-stakeholder process, MACN and CBi, and our partners from the government, business and civil society sectors, have achieved the following:

- **Strengthened compliance:** The Port Standing Task Team ensures full implementation of the NPPM and compliance with standard operating procedures (SOPs). It promotes integrity in Nigeria's maritime sector by dismantling corruption networks at the ports and terminals.

- **Institutionalized sector-wide reforms:** The Vice President Office's Executive Order No. 001 of 2017 on the Ease of Doing Business requires all government agencies, including port agencies, to publish their SOPs, application procedures and timelines, redress mechanisms, and consequences for process delays. It has institutionalized ongoing reforms and promoted transparency.

- High-level support: The Federal Government has provided significant support through the Office of the Vice President of Nigeria, which has incentivized other government agencies to engage in the initiative.

- Anti-Corruption Toolkit: MACN and CBi have contributed to the development of anti-corruption measures, including the SOPs, the Port Service Support Portal (PSSP), Compliance Learning Management System, the NPPM, and the establishment of a Grievance Reporting Mechanism implemented through the MACN HelpDesk.

- HelpDesk implementation: MACN has launched and operationalized the HelpDesk, which complements the PSSP. The HelpDesk enables port users to report, track and resolve incidents of corrupt demands in real time. This initiative has increased stakeholder capacity for anti-corruption management and reduced the cost of doing business. The use of the HelpDesk and the Nigerian PSSP has increased over time, with over 800 vessels using the HelpDesk since its launch.

Lessons learned

This Collective Action Initiative shows that it is possible to address systemic corruption when building strong alliances between the public and private sectors. For MACN, the initiative is a best-practice template to fight corruption through collective action. The following lessons, in particular, stand out:

- **Government support is key to achieving sustainable change:** The tone from the top has been instrumental in ensuring oversight for compliance of agencies that operate in Nigerian seaports.

- **Data is key to highlighting gaps and measuring progress:** Identifying the key players with leverage, and engaging the government with a solution-driven approach and evidence-based data to show which corruption challenges are systemic, has been successful.

- **Overcoming trust barriers:** It can take a long time to build trust between the public and the private sector, and for companies to report systemic integrity risks without fear of retribution. It is important to have a strategy and identify the right stakeholders, including the local private sector, who can drive change.

- **Link integrity training to the organization's strategy:** Building capacity for both the public and the private sector helps to incentivize a change of behaviour. Training should be linked to an organization's strategy and reform measures to be effective.

- **Engage civil society**: Civil society engagement is needed to keep public-private partnerships mutually accountable and ensure the sustainability of the project.

These lessons highlight the importance of collaboration, transparency, and long-term strategies to tackle corruption and improve the efficiency and integrity of seaport and terminal operations in Nigeria.

More information

http://www.macn.dk
mbenderson@macn.dk

SMART SOLUTIONS FOR SMARTER PORTS

Mezzo™ Enterprise Platform

SOFTWARE SUITE OF SECURITY MANAGEMENT PRODUCTS

Mezzo unifies non-intrusive inspection data, radiation portal monitors, sensors, and trade and inspection databases into one platform. Through advanced AI, Mezzo forms a continuous loop, retrofitting the integrated data into actionable insights for enhanced and efficiency at any point of entry.

Our product options can be used individually or combined for a more powerful solution.
Mezzo **Operate** | Mezzo **Integrate** | Mezzo **Automate**

For more information on our portfolio of security systems, please visit:
leidos.com/ports-borders

leidos

©Leidos. All rights reserved. An equal opportunity employer: disability/vet.

Combating the infiltration of criminals in the maritime supply chain: an overview of Operation TIN CAN

by the WCO Secretariat

Operation TIN CAN was the first enforcement activity actively involving the shipping industry to combat the contamination of legitimate cargo with drugs through the rip-on/rip-off method. This article explains how it opened new horizons for enhancing the capacity of Customs to fight drug smuggling, especially through enhanced cooperation with shipping lines and the use of various technologies.

Most of the cocaine seized by Customs administrations is found on ships and other vessels. Cocaine is shipped directly from the countries of production, but also from neighbouring countries in South and Central America, as well as the Caribbean.

There are many ways drugs shipments can be concealed aboard ships. One of them is to put them in a container. This can be done by camouflaging the drug within the load, which requires traffickers to run front companies. It can also be done by breaking open containers, loading packages or bags of drugs inside them, and then using duplicate or cloned Customs seals to conceal the tampering.

This last method is called the rip-on/rip-off method. The drug is placed in the front of the container in bags, in the reefer compartment or in the structure of the container, or with the legitimate cargo. It requires traffickers to work with "insiders", who use their authorized access, deliberately or under coercion, to manage the logistics process. Some will transport the drug into the port, whilst others will access and move containers, or share information on which container has been scanned, as well as on the container's location,[1] from the departure country, through transit countries, to the final destination where the drugs will be retrieved and taken out of the port.

© Norway Customs

We are not talking about "small" quantities. In 2020, police in Costa Rica made the biggest seizure of drugs in the country's history, finding more than five tons of cocaine in 202 suitcases which had been placed in a container with a consignment of flowers headed for the Netherlands. This is just one of many examples.

1 *According to various sources, criminals are using tracking devices to monitor their shipments and to be kept informed if Customs has examined and detected the illicit goods. (https://www.tradewindsnews.com/law/rip-on-rip-off-alert-no-port-safe-after-drug-gangs-up-their-game/2-1-1457380 or https://www.foxnews.com/us/drug-cartels-heavily-rely-on-gps-devices-to-track-shipments-feds-say)*

The use of the rip-on/rip-off method is not a new phenomenon but, until a few years ago, many countries still believed that such an infiltration could not happen in their ports. However, several incidents and a huge increase in the number of reported drug smuggling attempts using the method have put the issue under the spotlight in more and more countries. Since 2011, seizure data has shown that the rip-on/rip-off method has been increasingly used to move cocaine, and the insider threat has become a major concern for both Customs and law enforcement agencies, as well as for shipping lines. The latter are losing money when drug shipments are discovered, as ships and containers may be detained for weeks, and crew members are investigated and sometimes arrested. Reputational damage is another concern, as well as staff security.

Targeting methods to identify "contaminated" containers are primarily based on analysing container routing and data received from shipping lines. Security guards on the ships inspect containers while they are out at sea. Some liners have also invested in technology to monitor container-related activities on their ships and at terminals. They have, however, no direct communication mechanism with Customs authorities, and no legal framework covering, for example, data protection and confidentiality safeguards. In addition, there is a lack of formal communication channel between the parties.

To discuss ways to collaborate and to open lines of communication, representatives of shipping companies and Customs authorities from various regions came together at the WCO Headquarters in June 2022 at a Conference organized by the World Shipping Council (WSC) and the Container Control Programme (CCP), which is a joint initiative between the UN Office on Drugs and Crime (UNODC) and the WCO. A few months later, in partnership with ONODC, the WCO Secretariat organized an enforcement operation during which all these actors were to establish data exchange mechanisms with the objective of disrupting cocaine trafficking using the rip-on/rip-off methodology. The Australian Border Force provided significant support for the Operation.

Operation TIN CAN

Named TIN CAN, the Operation ran for four weeks at the end of 2022, with 58 Customs administrations participating, as well as five major shipping lines, including all those operating in Latin America, and a company offering roll-on/roll-off shipping services (in other words, cargo ships designed to carry wheeled cargo, such as cars, motorcycles, trucks, semi-trailer trucks, buses, trailers, and railroad cars, that are driven on and off the ship).

Training material was provided to participating administrations. It included the United States Customs and Border Protection Service training on "Seal Security", as well as the UNODC-WCO Container Control Programme training on the "Insider Threat" and rip-on/rip-off modus operandi.

An Operational Coordination Unit (OCU) was set up at the WCO Headquarters, with the task of collecting seizure data from Customs administrations (including the CCP Port Control Units) and from other information sources, so as to provide all participants with a comprehensive overview of smuggling methods and accurate risk indicators.

The unit also received information from participating shipping lines and communicated it to the administrations concerned, which then assessed the need for a control. Shipping lines were also provided with a central contact point for their referrals in each participating administration.

Shipping lines were to inform the OCU and the contact points about specific incidents or events, such as unusual requests to "switch the BL",

© Costa Rica Customs

change the destination port of the BL or other data, cancellations of export bookings, unusual changes in temperature for reefer containers (a specialized container that carries temperature-sensitive goods at regulated cold temperatures), or any other information they considered risk criteria.

A total of 688 alerts were received in the OCU from the shipping lines. Some of these alerts resulted in cases. 158 cases were reported by Customs administrations, representing a total of 98,734 kg of cocaine and 314 kg of marijuana. In 107 cases, representing 62,834 kg of cocaine, the rip-on/rip-off method was used. 25 seizures were made in containers in transshipment, and for 22 of these seizures, the rip-on method was used.

It is worth noting that other modi operandi require an insider-job, and during the Operation, some drugs were found concealed under water in a ship's sea chest, and inside bulk carriers, as well as floating in the Pacific Ocean. 43 individuals, exploited either wittingly (often through threats to their own or their family's safety) or unwittingly by criminal organized groups, were arrested.

Testing technology

Drugs used to be found mainly inside bags near the door of the container and were therefore visible once it was opened. Nowadays, however, they are more likely to be found behind the first rows of boxes or pallets of legal cargo, which makes control more difficult. One of the objectives of the Operation was to test and identify effective detection and control technologies to determine the presence of drugs. As with all emerging technologies, the use of smart container alerts cannot be relied upon in isolation, but can be used in support of other targeting techniques.

Vapour detection

Belgium Customs in the port of Antwerp tested devices enabling vapour screening using swab and air samplings. The air sampling device works as follows: a small tube, which contains a sample trap, is inserted through the container door gasket or is fixed over the ventilation outlet; it extracts the air from the container into the sample trap, where volatiles from the air are collected on a sample card; the sample card is then transferred to an analyser, which compares the molecules present against a library. With swab sampling, special gloves made of natural wool are used to collect the volatiles which have settled on the surface of the cargo.

Vapour screening proved to be a rapid and reliable non-intrusive inspection technology during the trial. Out of the 33 containers which were tested, five containers were found to be positive and 28 containers were found to be negative. Further physical inspection confirmed the results.

The containers had also passed through X-ray scanning. Two of the containers which were found to contain cocaine showed no anomalies on the image. One was transporting boxes of cassava roots, and the bricks of cocaine were found in a few boxes wrapped in plastic and concealed underneath the cassava.

Door opening detection devices

Two shipping lines participating in the Operation used containers with permanently affixed devices providing real-time location and detecting door openings, thanks to sensors sensitive to light, shock and temperature changes. Data was collected on an online platform and algorithms were used to identify unexpected door openings. Prior to the start of the Operation, the shipping lines positioned these containers at ports considered as high-risk by the industry throughout Latin America, and provided the OCU with remote access to their alert platform for the entire duration of the Operation. The alerts were jointly triaged by the OCU and the referring shipping line to assess the required operational response.

Some factors limited the efficiency of the technology. Some countries regulate, restrict and/or prohibit the importation of devices affixed to containers, or do not allow such technology to be used as long as the container is in their territory. Moreover, alerts were sometimes triggered due to legitimate door openings, including by enforcement agencies which do not always inform shipping lines when they conduct inspections. The algorithms could perform better if authorities were to provide feedback on controls and share risk indicators. For example, shipping lines do not consider that empty containers or containers in transshipment pose a risk.

Reporting container movements

Some shippers are also using geofencing tools using positioning technologies to receive

alerts when a vehicle enters or leaves a zone unexpectedly, or when a container movement does not make sense.

Although the OCU did not have the resources to digest the significant amounts of data generated, post-operation analysis identified the benefits of measuring:

- the average transit time of containers transported by truck between terminals to identify excessive transit times,
- the average dwell time of containers in high-risk ports to identify dwell time anomalies.

Smart seals

Criminal organizations can clone and reconstruct bolt container seals. Various types of technology exist to ensure seal integrity. Two were tested during the Operation: electronic seals, which enable the detection both of seal tampering and container door openings via a specially designed latch mechanism that transmits alerts to a software application; and Radio-Frequency Identification (RFID) seals, which look like regular bolt seals and which require officers to scan a Quick Response (QR) code to confirm if the seal is legitimate.

What we learned

Lessons learned are as follows:

- Analysis of seizures indicates that ports and terminals deemed as high-risk for cocaine smuggling are not always the ones where a rip-on occurs, and transshipment operations are especially risky. Moreover, cocaine is not the only drug concerned and the method has also been used to move methamphetamine and cannabis.
- Identifying contaminated containers and identifying the presence of drugs in those containers requires the use of various techniques and technologies, including access to those used by the industry.
- Industry needs to understand Customs targeting techniques and to receive information from law enforcement to enhance the quality and accuracy of their alerts.
- Customs needs to understand how shippers operate and the technology they use to target and monitor illicit activities.
- Participating administrations need to strengthen their reporting capacities in order to be able to provide detailed and complete information.
- If shipping lines were to send referrals to Customs administrations, the latter would need to organize and facilitate collection of the data and to develop capacities to analyse the data.

Way forward

During the Operation planning phase, when trying to identify red flag indicators, a clear gap was identified between industry and Customs. What seemed like a normal business practice for one party was sometimes a risk indicator for the other. The World Shipping Council, through their Safety and Security Group, decided to develop training on the examination of shipping documentation and supply chain processes to close this gap. The contents of the training are to be determined in collaboration with Customs administrations and the WCO. Shipping lines seem to be rapidly upgrading entire fleets of containers with varying technical capabilities. It is imperative for Customs administrations to establish communication lines with these actors and to build capacity to leverage the data they provide. The WCO Secretariat will continue to foster such cooperation and is exploring ways to enable efficient data sharing with private sector entities.

A symposium on “Insider Threats” is under consideration, the idea being to bring together representatives from Customs, the police, prosecutor offices, shipping industry and other transporters to discuss how to enhance procedures and communication. The WCO Secretariat will also organize regular meetings with private sector representatives to take stock of developments. Finally, another edition of Operation TIN CAN is in the pipeline, as well as a study of the way criminal organizations use threats and money to corrupt individuals.

More information

enforcement@wcoomd.org

© AdobeStock

Transforming trade: how Dubai Customs is harnessing AI for enhanced trade facilitation and border control

By Ahmed Mahboob Musabih, Director General, Dubai Customs

In a world where international trade is the lifeblood of economies, ensuring the smooth flow of goods across borders while maintaining rigorous controls is a challenging balancing act. Dubai, one of the world's busiest trade hubs, is meeting this challenge head-on by investing in advance technology and embracing the power of Artificial Intelligence (AI) to enhance trade facilitation and border control. These efforts are poised not only to bolster Dubai's position as a global trade and tourist hub, but also to set new standards for Customs operations and services worldwide , which has reflected positively on Dubai Customs client happiness index reaching a score of 98% for smart and electronic services. Some of the projects developed using AI are presented below.

Artificial Intelligence

As explained in a previous edition of this magazine[1], the term "AI" refers to several systems and theoretical concepts:

- Reactive AI systems, which have the ability neither to form memories, nor to use past experiences to inform current decisions.
- Limited memory systems, which are able to use information about the past to improve their responses.
- "Theory of mind" AI systems, which not only form representations about the world, but also about other entities. Called "theory of mind" in psychology, this capacity to understand other people by ascribing mental states to them allows humans to have social interactions. This type of AI understands reasoning, motive and intent, and adjusts its behaviour accordingly.
- Self-awareness: systems that can form representations about themselves, know about their internal states, and are able to predict the feelings of others.

AI "mainstream" systems which are in use today correspond to reactive and limited memory AI. They can enable Customs to make sense of images and data produced by NII systems, to cross-validate data flows, to analyse extensive sources of data to detect fraud, to search for all types of risk and to find anomalies.

1 https://mag.wcoomd.org/magazine/wco-news-1000-issue-1-2023/2022-wco-it-conference/

Cross-border E-commerce Platform

The Government, guided by its strategic vision to establish Dubai as a global e-commerce hub and reduce the cost associated with e-commerce operations, is committed to achieving a noteworthy 20% reduction in the cost related to e-commerce operations. These encompass declaration costs, Customs duties, storage, warehousing, and more.

Dubai Customs has leveraged on the cutting-edge capabilities of blockchain technology and forged strategic partnerships with leading Free Zones to create an innovative cross-border e-commerce facilitation platform. This platform seamlessly integrates with the IT systems of various companies engaged in e-commerce operations. This collaborative network encompasses express courier companies, e-commerce enterprises, logistics service providers, handling authorities and Free Zones. The platform helps build trust and transparency within the e-commerce ecosystem, and results in improved Customs compliance.

When an e-commerce order is placed online by a company connected to the e-commerce platform, the order data is instantly transmitted to the platform. When the platform receives invoice and shipment information, it quickly creates a Customs declaration by applying policy benefits. The declaration clearance message is exchanged with the company and the Free Zones, allowing for the quick discharge of products through the Free Zone gates.

The platform enables:

- Identification of e-commerce companies, enabling them to be served better;
- Automated declaration preparation and immediate clearance;
- Provision of duty exemptions and a reduction in service charges;
- Automated and instant Customs duty/deposit refunds;
- Regulation of goods returns by linking import and export declarations;
- Provision of 100% visibility and traceability on e-commerce transactions;
- Improved flexibility for companies engaged in 24/7 e-commerce operations; and
- Integrated Gate Pass for faster goods movement and delivery.

In essence, this innovative e-commerce ecosystem is not only shaping the future of the industry, but also positioning Dubai as a global leader in the realm of e-commerce facilitation. From January to September 2023, e-commerce declarations worth AED 732 million (CIF value) were processed, with no registration charges. More than 300 companies have registered with Customs as businesses and/or logistics companies handling e-commerce operations.

iDeclare

Designed to facilitate the journey of the growing number of passengers passing through Dubai airports (they were more than 66 million in 2022 and 42 million in the first half of 2023 only), the iDeclare app enables passengers arriving in Dubai to securely submit Customs declarations electronically, thus bypassing the current traditional paper forms. "iDeclare" generates a "barcode" which is scanned by Customs (see article published in October 2018[2]). The application has been upgraded. To pre-declare any goods, personal effects, gifts, currencies, or cash they may have in their possession, passengers can now take a picture of the items. The application then selects the appropriate HS Code, and determines the Customs duties that are payable, if any. Passengers do not have to fill in travel information manually, instead, they can just scan their boarding pass QR code.

The app also features the Passenger Customs Guide (also available at www.dubaiCustoms.gov.ae), which includes information about prohibited items and goods that need to be declared, goods exempt from duty and conditions for exemption, and some restricted items such as medications and plants that require importation permits from relevant authorities.

Al Munasiq

Another innovative tool launched by Dubai Customs is an app called "Al Munasiq" ("The

2 *https://mag.wcoomd.org/magazine/wco-news-87/dubai-ideclare/*

Harmonizer"), which enables users to look up a Harmonized System (HS) code by either entering an item's description, capturing a photo of the item using their smartphone camera, or uploading an existing photo/picture to the app. AI Munasiq provides users with one or more results, ranking them from a higher to lower probability, as well as with commodity information such as the description of the item, applicable Customs duty rate and any related prohibitions and restrictions (see article published in October 2021[3]).

Remote inspection

Developed in collaboration with our strategic partner, Dubai South, the Remote Inspection initiative allows companies with AEO status in Dubai Logistics City to ask Customs to conduct inspections in designated areas within their premises using a robot equipped with a thermal and infrared video camera. The camera is controlled remotely by Customs officers, and footage and related data is sent to the Customs control room in real-time. The remote inspector robot is powered by a long-lasting Li-ion battery with fast-charging capabilities.

Virtual Reality Customs training programme

Virtual Reality (VR) solutions are creating new ways to learn and become more embedded in the private and public sectors. Dubai Customs deploys a VR training programme to train their inspectors for fieldwork. The training is designed to improve inspectors' efficiency in identifying prohibited items, enabling them to gain practical know-how while enjoying the experience. Managed by the Customs Training Centre, the VR programme teaches inspectors how to start their day before every inspection – for example, all safety tools should be ready before they go to the ports – as well as how to inspect cargo. During the training, inspectors have to find hidden and prohibited items, such as drugs and weapons, among others, and every time they do so, they are awarded points, which allow them to move to the next training level (see article published in February 2019[4]).

Smart Refund System

Robotic Process Automation (RPA) uses intelligent automation technologies to perform repetitive office tasks of human workers, such as extracting data, filling in forms or moving files. Dubai Customs uses RPA and IA to automate claim and refund processes. Our tech development teams have rolled a Smart Refund System which matches and validates line item details with supporting electronic/scanned documents, without any human intervention. By implementing Smart Refund System, there are key benefits for both businesses and governments in terms of promoting trade, reducing cost, and improving transparency in international trade transactions..

Post Clearance Audit

Robotic Process Automation and AI have also been used to transform and enhance another important aspect of Customs work, which is Post Clearance Audit. The move consists of automating some processes to audit high-value import declarations. Five software applications or "bots" are to be trained to automate repetitive processes, for example, data matching. AI has been integrated into their core functionality, and the bots apply machine learning algorithms and natural language processing to interpret data and identify patterns. In addition to significant cost savings due to eliminating the manual verification process, the audit automation is expected to impact revenue collection generated through audits. It will enable Customs to gradually increase audit coverage of high-value import declarations from currently 19% per year (approximately 380,000 declarations) to 100% (2 million) in the next five years.

A wide range of tools

There are many more areas where Customs can use AI to potentially transform trade processes and bolster security:

- Automated Threat Detection algorithms to find specific patterns in X-ray scans of all sorts,
- Predictive analytics (automated historical trend analysis to derive predictive models),
- Automated document verification systems,
- Chatbots and Virtual Assistants,
- Blockchain-based records of transactions and cargo movements,

3 *https://mag.wcoomd.org/magazine/wco-news-96/dubai-customs-launches-an-app-to-help-with-goods-classification/*
4 *https://mag.wcoomd.org/magazine/wco-news-88/dubai-virtual-reality-customs-training/*

- Anomaly detection tools,
- AI-enabled drones,
- Analytics platforms to mine and analyse Customs data,
- Machine vision systems, designed to use information extracted from digital images to automatically inspect containers for damage, tampering, or concealed compartments.

Takeaways

Customs authorities worldwide should recognize the importance of compliance with privacy and data protection regulations, as well as the need to foster trust among traders and travellers. Additionally, ongoing investment in employee training and infrastructure remains crucial for the successful integration of AI into Customs operations. Customs authorities should consider also sustainability by promoting eco-friendly practices to facilitate the movement of goods and passengers whilst ensuring environmental, social and economic interests of future generations.

Dubai Customs' visionary approach to harnessing AI is poised to set new standards for Customs operations worldwide, demonstrating how technology can be aligned with our business to serve the twin goals of facilitating trade and enhancing security. As the global trade landscape continues to evolve, Dubai stands ready to lead the way, and remain adaptable and open to evolving trade dynamics and technological advancements, showcasing the transformative power of Artificial Intelligence in Customs and border control.

More information

Communication.Department@dubaicustoms.ae

The Czech Customs laboratory is 100 years old and more relevant than ever

By the Customs and Technical Laboratory, Czech Customs

The Czech Customs laboratory celebrated its 100th anniversary in 2023. Its history goes back to the creation of Czechoslovakia, after the collapse of the Austro-Hungarian monarchy in 1918 at the end of World War I.

First known as the Chemical and Technical Testing Laboratory, it was established in 1923 with the task of carrying out analytical and microscopic analyses, and of testing and examining raw materials, products and goods of all kinds, at the request of the Ministry of Finance and other authorities. In 1956, the laboratory was closed.

It was reinstated as the Customs and Technical Laboratory (CTL) in 1990 to support Customs activities by determining the nature of goods, their tariff classification, origin and, where appropriate, their value.

At first, the laboratory had only one office, in Prague. Several regional units followed in 1994 and 1995.

Staff

Today, CTL employs more than 50 specialists and technicians. Customs laboratories differ from other laboratories in that they have to analyse all types of products, mainly for the purposes of Customs classification, with staff skilled in two disciplines: chemical analysis and Customs regulations. As well as solid training in analytical methods, industrial processes of manufacturing, and chemistry in general, the staff must have an in-depth knowledge of Customs procedures and regulations pertaining to, for example, the classification of goods, the application of excise duties and the processing of export refunds, among others. CTL staff are trained by in-house specialists and analytical systems and devices suppliers. They also learn

through knowledge exchanges with scientists from other Customs or state laboratories.

Equipment and certificates

Over the years, equipment has gradually been upgraded and analytical methods have been further developed. All units are equipped with standard analytical instruments, including chromatographs, spectrometers, various microscopic and macroscopic instruments, and specific analysers (for example, for the analysis of petroleum and other fuels). In addition, the central laboratory unit in Prague operates sophisticated analytical systems, such as nuclear magnetic resonance spectroscopy, high resolution mass spectrometry or isotope-ratio mass spectrometry. CTL also supports Customs officers who have access to mobile testing devices by providing guidance on how to use the devices and by checking and updating them.

The laboratory is today well known for its expertise in isotope analysis methods, especially nuclear magnetic resonance spectroscopy and isotope-ratio mass spectrometry, and has provided training on this to European Union (EU) Customs laboratories. CTL also participated in the development of the WCO Customs Laboratory Guide, which serves as a practical handbook for the establishment or improvement of Customs laboratories.

To demonstrate that it operates competently and generates valid results, as well as to promote confidence in its work, the laboratory participates in accreditation and certification schemes which assess alignment with national, European, and international standards on a regular basis. For example, CTL has been accredited by the Czech Institute for Accreditation as complying with ISO/IEC 17025 general requirements for the competence of testing and calibration laboratories, as well as with ISO 9001 global standards for a quality management system.

Information system

An intelligent Laboratory Information and Management System (LIMS) allows CTL staff to receive and enter information on all operations, from reception of the sample to the issue of the expert opinion. It facilitates the monitoring of laboratory activities and performance, the comparison of cases, the validation of results, and the compilation of statistics. The LIMS is interconnected with other information systems of the Customs Administration, which enables a completely paperless data exchange. The system also allows them to communicate with officers requesting the tests, if needed.

©CTL

Focus on revenue collection and prohibited substances

Traditionally, Customs laboratories perform chemical analyses to determine the tariff classification of goods referenced in the Customs nomenclature, which is crucial for applying the correct duties, as well as for matters relating to

©CTL

©CTL

anti-dumping procedures and export refunds. In fact, the controls for which CTL examination is required are mainly related to excise duty and anti-dumping measures. However, the laboratory also plays a critical role in enforcing safety, health and environment-related regulations. The commodities most represented in samples are mineral oils, other fuels, lubricants (about 20%), Customs seals (about 20%), alcoholic beverages and denatured or pure alcohol (about 20%), and narcotic substances (20%). The remaining fifth of the samples includes minerals and metallic products (currently dominated by gold products), chemical products, tobacco, tobacco products and substitutes, food and food preparations and textile products.

Some commodities are challenging, such as narcotic and psychotropic substances (NPS), their precursors and other organic substances suspected of having psychoactive, anabolic or hormonal effects, especially as they pose a particular danger to laboratory staff examining them. Assessing gold carat purity using a non-destructive method (as recently requested by the Crime and Tax Fraud Detection Unit) also requires special procedures, on top of equipment.

Cooperation

From the moment a new fraud is detected, laboratories have to implement a new type of test within days. New techniques need to be developed in order to be operational as fast as possible. To deal with and keep abreast of the latest techniques, CTL has been cooperating over the years with a number of research institutes and universities, as well as with the professional research and scientific departments of industry groups, such as the Biodiesel Association, in testing fuels.

As mentioned earlier, exchanges with other Customs laboratories are common occurrences. Of particular importance is the relationship established with the Coordination Group of European Customs Laboratories (CLEN) of the Directorate-General for Taxation and Customs Union, especially within the Expert Team project (CLET), whose objectives include pooling expertise and equipment, sharing results of analysis, and elaborating an operational common/harmonized approach for analysis.

More information

See Video "The 100th Anniversary Of The Customs Technical Laboratory"
https://www.youtube.com/watch?v=UJqlr5P5tVY

Customs - IT Dept

Hello again! We have some blanks in our tax calculations after updating our commodity codes. Can you help?

No problem, I checked the issue remotely, the attached code should fix your issue 📎

Customs - IT Dept

Disaster averted 😮‍💨 thanks again!

Want dedicated support you can rely on 24/7?

Scan the QR code to book a meeting with us

strategyObject

Jordan Customs equips patrol officers with body-worn cameras

By Eng. Mohammad B Alqaderi, Head of Electronic Command and Control Division, Jordan Customs Department

Body-worn cameras are small cameras which can be clipped onto clothes or worn as a headset and turned on to record video and audio. In some countries, enforcement agencies are using the devices to monitor officers on patrol or on other assignments that bring them into contact with individuals. This has also been the case with the Jordan Customs Department (JCD) since December 2019.

© Jordan Customs

About the devices

The cameras record high-quality videos with time and date stamps and GPS coordinates. They are equipped with 4G SIM cards that stream videos directly to control rooms. They have the ability to automatically start recording when they sense certain triggers, but the Administration decided to let officers decide when to switch them on. The devices capture what happens 60 seconds before the record button is pressed. Footage is automatically uploaded to a database maintained by the JCD and is accessible only to authorized persons under strict rules. Additionally, a copy of the footage is uploaded when the cameras are inserted into the docking station. Officers do not have the ability to view, delete or edit the stored footage.

When in use, a camera must be attached to the officer's uniform in an overt manner and be visible to the public. As soon as the camera starts to record, a flashing red light appears at the front of the camera and the Customs officer must inform individuals that they are being filmed.

Research

The Department conducted extensive research and practical experiments to determine the required specifications to be met by the cameras. The team in charge of the project first had to document the situations that the officers of the Anti-Smuggling Directorate and the Customs Escort Directorate were exposed to while performing their daily duties. These include, for the former, searching suspect vehicles, shops, factories and homes; for the latter, they include escorting transit trucks passing through Jordan. The team reviewed complaints and analysed the behavioural responses of each party during interactions, as described in claim files. They also studied the literature available on the topic.

Benefits and usage

Various benefits were identified regarding the proper use of the body-worn cameras:

- enhanced compliance with discipline and integrity rules;
- increased trust and confidence in law enforcement;
- increased civility and positive interactions between officers and citizens; and
- reduction in citizen complaints, and quicker resolution of complaints and lawsuits.

They were all confirmed during the experimental phase. The cameras enabled the JCD to reduce the number of incidents. Officers in the control room can provide instructions to Anti-Smuggling Directorate patrollers dealing with difficult situations, or even decide to send them support.

The JCD has issued rules on the use of BWCs, and a set of disciplinary measures when officers fail to wear or operate the cameras without reasonable grounds. The cameras also have a deterrent effect on individuals, who are now less inclined to trouble inspectors. There has also been a decrease in the number of incidents of verbal abuse, assaults, and factually unfounded complaints against the patrollers.

The cameras have also enabled the Administration to increase compliance with standard operation procedures, enhance the accuracy of seizure reports, and respond to allegations of damage or shortfalls of goods following an inspection. Videos of a search are reviewed before reports are finalized, and it is possible to assess whether the data related to the quantity and types of goods is correct, and whether some items have not been reported. The quality of the work has improved: patrollers make fewer errors, while the time required to conduct an inspection has decreased.

Footage captured may also be used as evidence in arrests or prosecutions. Civilians who allege public misconduct or who are accused of a crime can view the footage in which they appeared, before making their initial statements, by submitting a request to the judicial authorities.

It can also be used to assess and train officers. Cases are analysed to draw lessons and develop guidance for field officers. Such analyses could also support the review of policies and procedures in the future. The cameras were used when building the National Trade Window (NTW), enabling the officers in charge of the project to observe the inspection process at Aqaba and assess whether the agencies brought together under the NTW could use the footage to inspect goods, instead of requiring samples or items to be sent to their offices.

Customs escorting

The JCD uses an electronic seal system to track goods transported in transit, and mobile intervention teams when something suspicious is detected. Officers of the Customs Escort Directorate are in charge of checking the integrity of the seal at the point of departure and the point of arrival while trucks pass through Jordan. The cameras are activated during this process and record the seal number. Video recordings corresponding to the same number are automatically matched and anomalies identified, facilitating the work of the control room officers.

More information

customs@customs.gov.jo

© AdobeStock

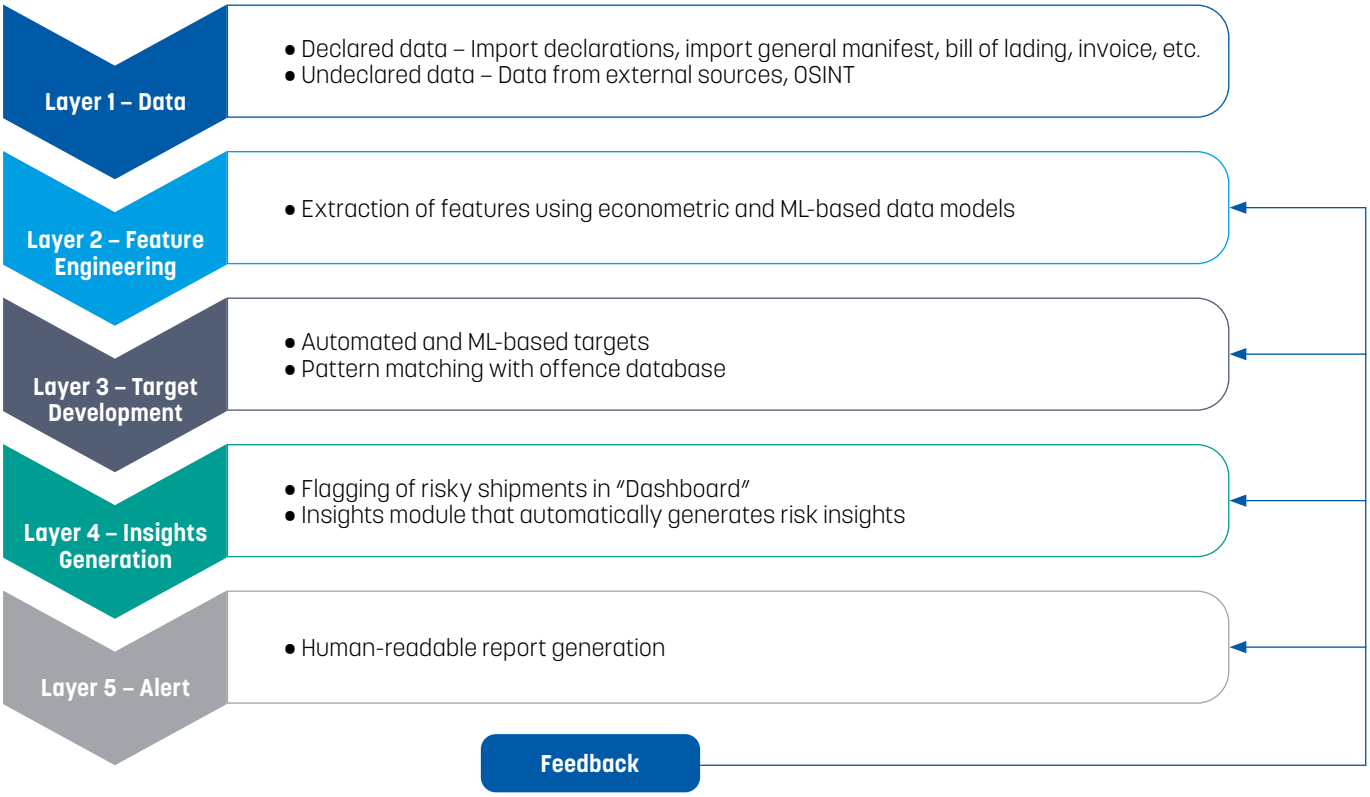
How Indian Customs leverages data analytics for efficient risk management

By M. Ramesh and Sruti Vijayakumar, National Customs Targeting Centre, Central Board of Indirect Taxes & Customs, India

Selecting cargo for inspections and examinations using basic methods has limitations, so, to enhance their enforcement capability, Customs administrations need a paradigm shift in the way they deal with targeting. They need to leverage data science, an interdisciplinary academic field that uses statistics, scientific computing, scientific methods, processes, algorithms and systems to extract or extrapolate knowledge and insights from noisy data, both structured and unstructured. To apply data science tools, you need to have a sound data architecture in place, and in this article we delve into the sophisticated architecture designed by Indian Customs.

Data analytics architecture refers to the design of different data systems within an organization and the rules that govern how the data are collected and stored. It is foundational to data-processing operations and artificial intelligence (AI) applications. Indian Customs has developed an architecture for the purpose of automatic data analytics which incorporates five interdependent layers, each contributing to a holistic and dynamic approach to Customs targeting and detection. This article aims to highlight the architecture's capabilities in big data analytics for the purpose of precise targeting.

The architecture's robustness is underpinned by its ability to combine multiple advanced data science components with human intelligence. It enables Indian Customs to integrate multiple data sources, generate meaningful insights and utilize targets derived from both data science



and human expertise. An iterative feedback loop means that detection strategies can be adapted, making the model resilient in the face of evolving smuggling techniques. These various elements are explained below.

Layer 1: Declared and undeclared data

The first layer involves the collection, collation (assembly of written information into a standard order or sequence) and cross-validation of available data at the time of importation of goods. This encompasses both declared and undeclared data.

The declared data, which provide the initial data points, comprise, among other things, data submitted in the import declaration and in the import general manifest and data contained in the invoice, bill of lading and licences. If the documents submitted by importers and carriers are in paper or PDF formats, the data are not readily available for automatic risk analysis, and much reliance is placed on the use of optical character recognition (OCR) tools for the development of automated solutions, whereby the available data are converted to machine-readable formats for system-based risk analysis.

The "undeclared" data are those obtained from Open-Source Intelligence (OSINT) and proprietary data repositories. They form additional sources to fine-tune the analysis. They also include scanned image data generated by non-intrusive inspection equipment. Data can be tracked back to the source systems with an audit trail.

The purpose of this layer is to collate unprocessed data (the primary data collected from the source) related to a specified import declaration. The range of data extends beyond just the individual import to encompass information from numerous comparable imports. This collective data set becomes the input for algorithms or models hosted in subsequent layers, including image analytics, automated classification and score-based generative models. Through input from this layer, these algorithms and models discern unique patterns and anomalies that are relevant to the specified import.

Layer 2: Feature engineering

Raw data are not suitable to train machine-learning algorithms. Instead, data scientists devote much time to feature engineering. This is the process of transforming raw data into features (also known as variables or attributes) that are suitable for machine-learning models. Understanding the training data and the targeted problem is an indispensable part of feature engineering, which is not an exclusively manual process. It is performed by using algorithms to analyse and cluster unlabelled data sets without

human intervention (unsupervised machine learning (ML)), feature augmentation techniques and econometric models.

Layer 2 is made up of the numerous "themes" that exist in each import transaction: for example, importer, supplier, country of origin and country of shipment. From the exploration and comprehensive understanding of the combined data set in Layer 1, multiple "features" have been created for each of these themes. Thus, Layer 2 has multiple themes and associated features containing important insights derived from raw data.

The primary objective of this layer is to incorporate a wide array of trade aspects captured directly or indirectly within the data. For example, the theme "importer" could include features like the frequency of imports, commodity of import and type of importer. Attributes such as the geodemographics of the importer are taken into consideration for the development of possible risk insights on the import patterns of the importer.

Features can be created using unsupervised machine learning. The codification of supplier details and item description details, for subsequent efficient targeting, is a critical derived feature generated by such tools.

Layer 3: Target development

Smuggling activities are often camouflaged within established trade patterns, yet subtle deviations exist within one or multiple data points. A robust Layer 3 design effectively flags such suspicious import declarations through "targets", meticulously crafted to identify these deviations or anomalies. Targets are created by machines and humans through the analysis of smuggling trends, previous seizures and emerging threats. They are combined with algorithms which are then encoded into the machine using Layer 2 features.

For example, targets generated by the machine flag instances of misclassification and undervaluation. Pattern matching with the offence database in the system enables automatic targeting. Thus, Layer 3 represents a pivotal step, in which various targets are designed to address and automatically flag different types of risks. A comprehensive array of targets ensures that the model is robust.

Layer 4: Decision layer – insights generation

Layer 4 combines machine-generated risk insights and targets for the precise identification of risky import consignments and creates a "dashboard". With the targets from the previous layer as inputs, this dashboard is a decision model created through the use of machine learning that highlights risky shipments as an output.

The risk insights form the outcome of the analysis of the Layer 1 data set in combination with data processing in Layers 2 and 3.

The insights are generated automatically by the machine against every targeted import declaration through network associations. They highlight potential risk factors, such as patterns showing the importer "hopping" between various parameters (for instance the port, commodity, supplier), and Customs broker, importer-supplier correlation and supplier risk analysis. Based on the analysis in this layer, a decision is taken on whether the cargo is to be interdicted. The results are then fed into Layer 5.

Layer 5: Alert generation

The final layer distils the analysis, insights and findings into easily comprehensible, human-readable reports. Customs officers gain a comprehensive overview of anomalies and patterns detected, making swift decision-making and action possible. The readability of the reports generated by the system is crucial: a well-designed and easily comprehensible report serves as a bridge between the analytical insights derived through the architecture and the Customs officers in the ports, who rely on these insights to take decisive action.

The dynamic feedback loop: refining targeting strategies

A distinctive aspect of this architecture is its ability to respond dynamically through the incorporation of an iterative feedback loop. This iterative process ensures that the analytical model evolves continuously, adapting to new smuggling trends. Data related to import declarations that are labelled as "offences" and stored in the offence database are fed back into layers 2, 3, 4 and 5. All offences are included in the database, whether they were identified through the targeting model or by another method.

For instance, at Layer 2, successful detections of smuggling, as well as false positives, provide valuable insights on features that are most indicative of potential smuggling. The feedback serves to re-evaluate the range of features incorporated into the analysis and potentially introduces new features that have proven to be more effective in accurately identifying illegitimate trade. This, in return, helps in the reconstruction of the expert targets in Layer 3, which subsequently results in refinement of decision-making in Layer 4 and improved precision of the human-readable reports of Layer 5.

Performance

This data science architecture, integrating advanced data analytics with human intelligence, has proved to be effective and efficient in detecting instances of smuggling of contraband and prohibited and restricted items through the border. This model enabled the detection of about 3,000 kgs of heroin smuggled from Afghanistan through a maritime import consignment at Mundra port, Gujarat. Other successful detections include those of 7.2 million sticks of foreign brand cigarettes found concealed in an import consignment at Nhava Sheva Port, and poppy seeds concealed in a consignment that had arrived at Chennai port, to name but a few.

The model has demonstrated its ability to enhance Customs administrations' potential to combat smuggling significantly. A multi-layered architecture and a continuous feedback loop have ensured that the model remains dynamic and relevant. As the threat landscape evolves, this model holds the potential to redefine the fight against illicit trade, thereby safeguarding economies and protecting societies from the menace of smuggling.

More information
sruti.vijayakumar@gov.in
Mramesh.irs@gov.in

© AdobeStock

Diary of a WCO Professional Associate

By Sruti Vijayakumar, National Customs Targeting Centre, Central Board of Indirect Taxes & Customs, India

Dreams are for real

For Customs officers across the globe, working for the WCO Secretariat is a prestigious opportunity not to let slip. I'm no different. So when the chance came knocking to ply my trade via the Career Development Programme (CDP), I was eager to grasp it with both hands.

The CDP, a Japan Customs-financed initiative, allows selected candidates to undertake work at the WCO Secretariat in Brussels for ten months. Fortunately, with the support and encouragement of my Administration, the Indian Central Board of Indirect Taxes & Customs, I was nominated to participate in the 2022/2023 Programme.

I fondly recall the news of my selection as a Professional Associate (PA) lighting up my screen on a rainy day during the monsoon of June 2022 in Mumbai. I was overcome with excitement about what lay ahead. My previous visit to WCO Headquarters in 2018, as part of international training for officers of the Indian Revenue Service (Customs & Indirect Taxes), had already left a profound and lasting impact. But little did I know that it was just the start of a thrilling journey – one filled with intellectually invigorating, professionally inspiring and personally exhilarating experiences.

In September 2022, I joined the team responsible for the Risk Management and Intelligence Programme in the Enforcement and Compliance Sub-Directorate. The onboarding process was a breeze, thanks to the incredibly supportive CDP team. They helped with relocating, made it easy to acclimatize to a new city and readily addressed a host of other concerns. The team continued to be a guiding force throughout the Programme, enabling me and the other PAs to maximize our learning from our time working for the WCO.

Embracing opportunities

My first major task was to help organize the Global Information and Intelligence Strategy Working Group meeting. My role was not confined to making preparations for the meeting. I was to deliver a presentation on behalf of the WCO Secretariat on the topic of data analysis. Taking the floor in the presence of such a large distinguished gathering was a rewarding and unforgettable experience.

Moreover, I was provided with the opportunity to work on updating the WCO Customs Risk Management Compendium, which required in-depth discussions about data analysis, e-commerce, and passenger and trusted insider threats. The drafting process also instilled great insights into the best practices of Customs administrations in risk management.

Providing technical assistance is an intrinsic function of the WCO Secretariat and I assisted in organizing numerous workshops and other activities related to risk management. Through this, I developed know-how on proficient planning, preparation, coordination, logistical and travel arrangements. I also had the opportunity, as a WCO expert, to conduct a risk management workshop in Moldova. The knowledge gained from this activity boosted my capabilities as a trainer.

Being part of the Risk Management and Intelligence Programme, which holds relevance in various areas of Customs, allowed me to familiarize myself with various topics and practices. For instance, I visited the Customs facilities at the port of Rotterdam in the Netherlands as part of a workshop on risk management applied to environmentally sensitive commodities. I also supported the

work undertaken to build enforcement capacities related to Illegal Wildlife Trade by conducting training on the risk management process and the development of risk indicators in this domain. Each of these experiences widened my perspectives on the various aspects of risk management.

The beauty of the CDP is that it teaches you that the sky's the limit if you set your mind to it. It consistently opens up various avenues for you to explore and grow, depending on your interest. During my tenure at the WCO Secretariat, I familiarized myself with the Customs Enforcement Network (CEN) Suite, with the support of hands-on training on the use of CEN applications. It was a delight to use the CEN Data Visualization tool funded by Indian Customs. Further, I assisted in drafting the Illicit Trade Report and was involved in the work of the Working Group on Data and Statistics. Having actively participated in the conduct of Time Release Studies in India, I associated myself with the work being done by the TRS team.

I was also able to participate in various meetings and learned invaluable lessons on how to work as a team in an international environment, how to understand everyone's ideas, derive insights from conversations, and take on board the different viewpoints expressed.

Never stop learning

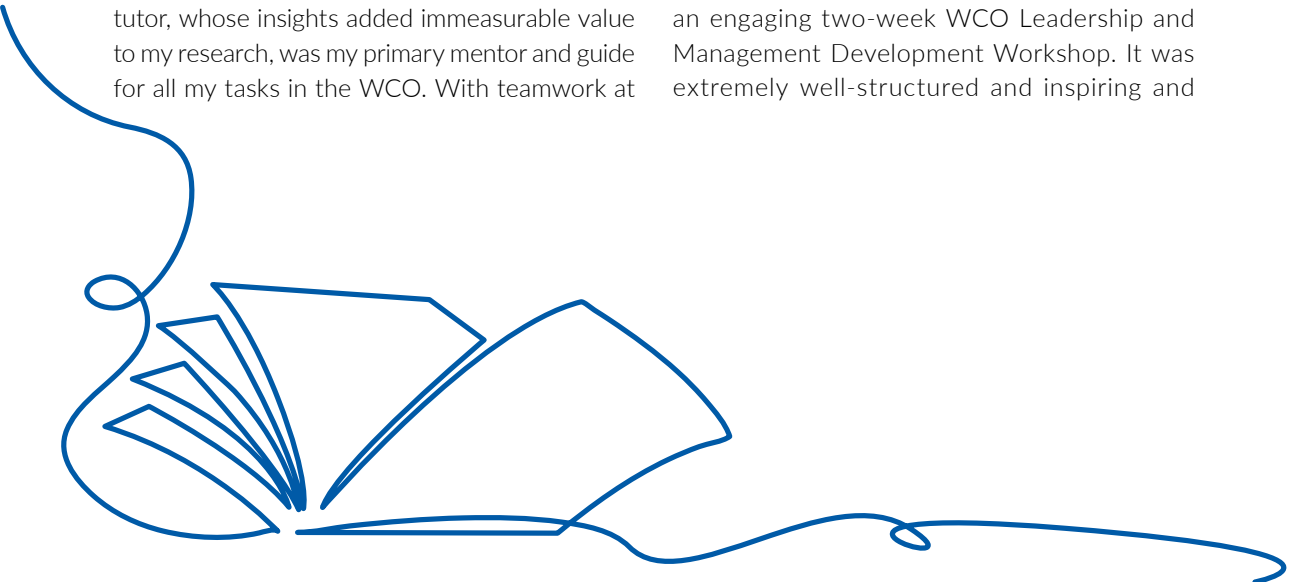
As part of the CDP, we were expected to undertake a research project in our area of interest. Having experience working in the National Customs Targeting Centre of Indian Customs and a keen interest in the area of Customs risk management and data analytics, I decided to delve into data-driven risk management and the use of technology to address risks in the supply chain. I garnered inputs for my research from various fronts. My tutor, whose insights added immeasurable value to my research, was my primary mentor and guide for all my tasks in the WCO. With teamwork at the heart of all things good at the WCO, my colleagues shared their valuable thoughts, which also helped shape my research.

There was never a dearth of avenues for knowledge enhancement. The WCO Technology Conference & Exhibition in Maastricht enriched my understanding on the use of technology and the role of data in the changing landscape of global trade. So did the WCO's first Data Innovation Hub, the PICARD Conference, and the WCO Knowledge Academy for Customs and Trade.

Among a plethora of highlights as part of the CDP was the Study Trip to Japan. The field visit to various Customs formations under Japan Customs provided a greater understanding of their working and the use of cutting-edge technologies such as E-Gate, an AI-based form of X-ray image analysis. We also participated in the engaging WCO-UPU Global Conference and witnessed the signing of the Joint Declaration between the WCO and UPU on facilitating safe, secure and efficient global trade. The richness of the country's culture, the warmth of the people and the irresistible Japanese cuisine remain etched in my heart forever.

These opportunities served as a catalyst for professional knowledge enhancement and also provided a wealth of ideas for my research. I presented my research paper, titled "Embracing a Technology-centric and Data-driven Customs Risk Management", before the honourable Secretary General and senior management of the WCO Secretariat in June 2023. It was a rare, extraordinary and encouraging experience to present my research findings before such learned officers in the Customs domain.

I also had the opportunity to participate in an engaging two-week WCO Leadership and Management Development Workshop. It was extremely well-structured and inspiring and



addressed important aspects needed for efficient leadership, self-awareness, strategic management, people management, negotiations and change management. The workshop has truly helped me understand myself better and positively impacted my thoughts, behaviour and actions.

Borders divide, Customs connect

Since returning to my home Administration, I have been involved in sharing my newly acquired knowledge with my colleagues and contributing to Customs reform and modernization projects. My experiences and international work exposure in the WCO have not only widened my horizons, but also strengthened my capabilities as a Customs officer and provided me with global perspectives. The wealth of information collected on best practices in the area of Customs risk management has been immensely helpful in my current role in the National Customs Targeting Centre. It has enabled me to assess the possibility of introducing some of the functional best practices in the area of risk management. In the spirit of global Customs, I hope to be an accelerator in my Customs Administration towards further modernization, as well as utilize my learning, networks through the CDP, and relationship established with the Secretariat, to play a leading role in addressing the challenges facing the Customs community.

The CDP illustrates the unwavering commitment of the WCO to empower Customs, in keeping with the WCO's theme for 2023 – "Nurturing the next generation: promoting a culture of knowledge-sharing and professional pride in Customs". I am thankful for this brilliant opportunity that has equipped me with enriched experiences, enhanced capabilities and broader perspectives.

More information

sruti.vijayakumar@gov.in

https://www.wcoomd.org/en/topics/capacity-building/activities-and-programmes/people-development/learning/development-programmes/career-development-programme.aspx

Cognyte

INCREASE CUSTOMS REVENUE COLLECTION WITH DECISION INTELLIGENCE

+ Discover customs fraud by fusing siloed data into a single pane of glass
+ Boost customs revenue based on ML-powered risk management
+ Optimize customs operations with strategic and operational decision intelligence

NEXYTE | EVERY DECISION COUNTS

Visit us at www.nexyte.ai

Cameras: one way of making traffic controls more efficient

By Cédric Orgeret, French Customs, and Thomas Cantens, Research Unit within the Office of the Secretary General at the WCO

© French Customs

Between 2021 and 2023, French Customs trialled the use of cameras in covert surveillance systems on the roads. Positioned discreetly on the ground and connected to a 4G system, they allow Customs officers to detect suspicious movements remotely. As mobile devices mounted onto a helicopter or drone, they facilitate wider-ranging surveillance beyond the confines of checkpoints. This article presents details of the trials conducted by French Customs along with the lessons learned, which contribute to the development of the Customs control mechanism in France as well as the tactical strategies on the ground.

Between the 18th and late 19th centuries, French Customs units were developing – quite separately from any industrial programme – various models of folding beds that could be transported in backpack form. They made it possible for Customs officers to remain silent and still for hours at a time whilst on the lookout for smugglers. This "nightwatch bed" ("lit d'embuscade" in French, literally "ambush bed")[1] is an iconic object showcasing the ingenuity and operational innovation of the Customs profession.

The underlying principle of the nightwatch bed of old, namely to "see without being seen" before taking advantage of the element of surprise and springing into action, is embodied nowadays in the tactical camera. This image-capturing device can be placed in a key position as part of a surveillance system (ideally at an observation post, although keeping this surveillance mechanism covert is problematic for Customs officers) or on an airborne mobile device (such as a drone or helicopter), on a temporary basis and without the smugglers' knowledge. The use of such cameras has been trialled in France to support "traffic" controls, which involve setting up covert Customs surveillance operations on domestic roads.

Covert surveillance: Daily working hypothesis for inland Customs

The image of a Customs officer standing at a barrier has never been anything but an illusion. The annals of French Customs are brimming with references to surveillance mechanisms, including use of the famous folding bed for ambushing convoys of smugglers on the roads and at border crossing points that were not permanently manned. However, over the years, this method of covert surveillance work would be codified.

A significant turning point was reached in 1993 when the internal borders within the European Union (EU) were abolished. This phenomenon gave rise to a new body of principles governing the use of Customs services and created a new relationship between Customs and the territory in which it operated. First of all, services were

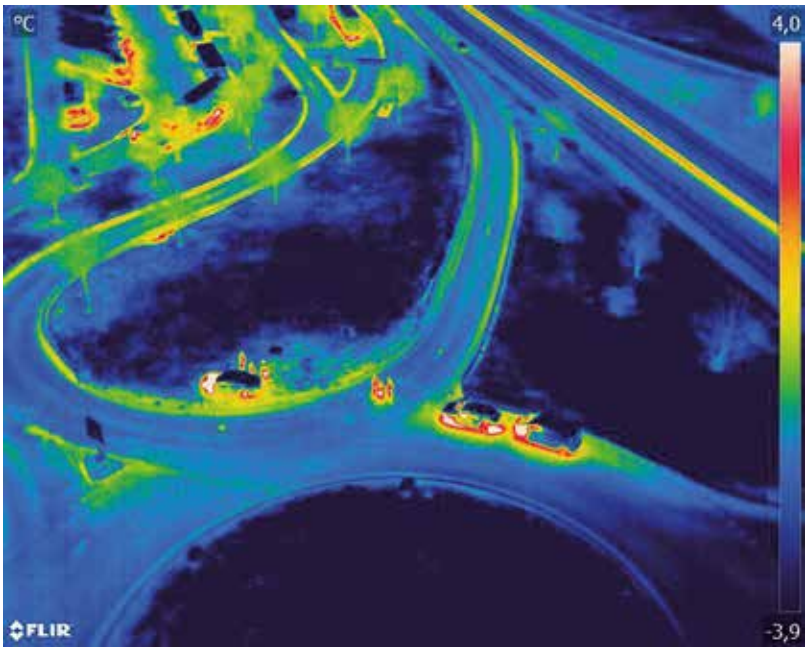
1 *See the Centre d'Histoire Locale de Tourcoing (Tourcoing Local History Centre) website at: http://chl-tourcoing.fr/Collections/Zoom-sur-les-collections/Vie-publique/Lit-d-embuscade.*

regrouped across the major transit routes such as the ports and airports serving the Union's external borders. Secondly, in order to gain an insight into the monitored intra European flows (goods in transit, products subject to excise duties such as alcohol and tobacco products, prohibited products such as counterfeit goods or narcotic substances), Customs authorities developed new control techniques, including inspections in warehouses and inside businesses, as well as "traffic checks".

These traffic checks quickly garnered enthusiasm among Customs administrations and Customs officers alike. Various "second-level" Customs services were then established in a number of European countries (e.g. Germany, Poland and Italy). France set up its own domestic surveillance units ("brigades de surveillance intérieures" (BSIs)) with 2,741[2] officers on the payroll, making up approximately 45% of France's land-based Customs workforce.

These checks are, in fact, part of the daily covert surveillance operations by Customs. The operations are embedded deep within the transit routes, meaning that a broader variety of fraud routes and bypass options can be covered. In this way, this covert surveillance concept can be applied as a response to the concept of the "smuggling basin", a border area stretching into the hinterland and ripe for smuggling activity across the national territory. This smuggling basin is familiar territory for Customs officers; they have to be fully acquainted with the topography of the transport network and border areas, the secondary roads, the routes used for bypassing possible roadblocks and the key road junctions, but they also need to know specific locations and their capacity for storage, stopping and transshipment. The Customs services therefore needed to improve their working methods and increase their local knowledge.

After 1993, these methods were gradually codified as the Directorate General introduced a number of all-encompassing texts enshrining many tactical practices that had been rolled out on the ground (the use of regional topographical documents, the installing of motorway tolls and secondary exits,



© French Customs

dynamic checkpoints with or without motorcyclist teams, decoys, stealth operations,[3] etc.).

Set against this new background of enforcement and checks, where mobility became the prerequisite for commanding control over the territory, technology was initially the Customs officer's enemy. General and widespread accessibility of mobile phones has allowed traffickers to set up workarounds to the controls by warning their fellow traffickers within organized convoys of the Customs presence. Large-scale fraudulent organizations do not hesitate to use military technologies, such as locator beacons or satellite telephones, to evade detection by the listening devices operated by the various investigative units. Since the 2010s, smartphones and the internet connectivity they deliver have made the tactics required for controls even more complex.

Customs authorities reacted by integrating similar technologies, combining the communication of different types of information and geolocation. A 4G-based secure radio network emerged. Known as AGNet,[4] this tool is tailored perfectly to the needs of the units for which it was clearly designed (motorcyclist integration, emergency button function, geolocation facility, tactical wire function, etc.). More recently, Customs has

2 *Figures as at July 2023 – includes motorcyclists and dog/handler teams but excludes other land-based services at the borders (such as the External Surveillance Units (BSEs)) or specialized support services (Customs Operations Centres (CODTs), scanner lorries, etc.).*
3 *"Stealth operations" means involving regular relocation during an operation to create confusion among traffickers.*
4 *Presentation of the AGNet tool in Douane infos, September 2021.*

been trialling the use of ground and aerial tactical cameras.

The tactical camera: a promising device under trial

Trials have been conducted by French Customs' new centre of expertise for drone technology, which has been assigned to provide support on demand for land-based services and for key advisers[5] in the Customs units, which are the real driving force behind this innovative spirit that relies on a local culture of openness to change from the bottom up.[6]

On the ground, the decision was taken to use hunting cameras. The equipment cannot be used to identify individuals or vehicles specifically, but it is suitable for monitoring small areas (such as car parks or motorway laybys) and for observing the arrival of a vehicle as well as noting its size and model and – if they get out – the behaviour of its occupants. The use of more detailed viewing methods would be subject to specific administrative authorzation in advance (from CNIL[7]) or authorization from judges in judicial investigations, given that such use is inconsistent with everyday detection work.

Discreet hunting cameras[8] have been connected up to a 4G image transmission system. These robust systems can be disassembled and are relatively inexpensive. However, sufficiently experienced Customs personnel are needed to operate them, using their expertise to identify abnormal movements and fit them strategically for the most effective outcome within an operation (ensuring optimum positioning of cameras, and knowing how to make best use of the warnings issued and carry out verifications effectively).

The cameras installed on helicopters[9] operate a superior optical system to those positioned on the ground (greater zoom capacity, thermal imagery capability). The main obstacle to their regular use is the cost of maintaining and mobilizing helicopters as well as pilot availability.

Drones operated by the centre of expertise, use of which is regulated under the new legal framework established by Law No. 2023-610 of 18 July 2023,[10] are now piloted remotely by licensed pilots from the DNGCD, which conducts test flights over a number of land areas within French Customs territory.

Lessons learned and conclusions drawn

These tactical cameras are proven to be invaluable tools for Customs officers, as they offer a means of real-time surveillance that is workforce-efficient and effective.

© French Customs

Use of the camera on the ground enables units to be one step ahead for the purpose of intercepting vehicles and, potentially, to have additional behavioural "selection criteria", identified upstream, at their disposal for their response at checks further downstream. Lastly, the viewing of the relayed images can also facilitate

5 *Thanks in particular go to CP Nicolas Buffe and to ACP2 Davroux of the Nogent-sur-Oise unit for their work.*
6 *"Bottom-up innovation" means that the administration promotes ideas from the bottom upwards through collaborative or participatory methods (as opposed to innovation emanating from the top downwards only). This approach sometimes allows the local services to trial technologies and to use the results in the main decision-making services. Trialling one technology over another is therefore determined at the initiative of local Customs managers who are familiar with and choose the units for conducting such trials.*
7 *Commission Nationale Informatique et Libertés (France's National Data Protection Agency) which oversees the collection of individual data in France and ensures compliance with the principles of law.*
8 *Off-the-shelf and reasonably priced small hunting cameras with movement detection function (to capture the arrival or departure of a vehicle, or the movement of individuals even in darkness – as used in game hunting).*
9 *Airborne assets have been used in Customs operations since the 1960s. They have been developed mainly in the maritime/coastguard context which in 2018 established a fully-fledged department with national competence, the National Customs Coast Guard Directorate ("DNGCD"), comprising a fleet of 31 vessels and 15 aircraft (Beechcraft King Air 350 twin-engined turboprop aircraft and EC135 helicopters). The air/land component is provided by the Air/Land Surveillance Unit ("BSAT") based at Margny-Les-Compiègne (Oise).*
10 *Providing Customs with the resources needed to handle new threats (Article 22 amending Article L 242-5 of the Domestic Security Code) which permits the use of "cameras fitted to aircraft" by Customs for some operations.*

post-operation analysis in the course of feedback. Its low price and reasonable cost of maintenance, and the short training time frame required for the use of this equipment (approximately one day) are all arguments in favour of its broader deployment.

The helicopter and camera have already proven effective, in particular in visual pursuit exercises where the target refuses to surrender. The helicopter/camera coupling also makes it possible to detect suspicious conduct upstream of a surveillance mechanism. A camera fitted to a helicopter can take aerial photos several tens of kilometres apart and along various routes for comparison purposes (for example, capturing the number of vehicles parked before and after the surveillance system has been installed). Fully integrated in a land-based system (in terms of the mission, command, resources, transmission and regularity), helicopter support has already facilitated combined ground/air operations and the establishment of major findings. Investment in staff and upgraded equipment or the pooling of resources with other military or civil departments would contribute to the further development of this highly valued support.

The drone itself has also become a particularly beneficial platform for additional uses. Assigned to an observation sector, it can be used both as "remote aerial observation binoculars" for spotting suspicious behaviours in the traffic upstream (offloading of goods, parking on the hard shoulder, making U turns and suddenly turning off, etc.) and also for securing the control area (with recording capability). The obstacles to using such drones include the current low numbers of staff available to pilot them remotely (and, therefore, the lack of regular availability of this resource), the range (some 5 km for the current models) and the endurance of Customs drones generally (around 25 to 30 minutes, thus requiring frequent battery changes). Drones will probably become increasingly commonplace for use in Customs operations, with officers operating small, less costly civil drones, which will push up the demand for remote pilots.

Conclusion: trialling, evaluating, mapping

Trials have shown that French Customs would benefit from exploring further the use of the tactical camera in its everyday detection devices. Cases of fraud identified in this context are established most of the time not on the basis of prior intelligence but as a result of swift tactical exploitation of the reaction of a suspect vehicle in the traffic flow. A camera would facilitate an even more proactive approach and would not be dependent essentially on prior operational intelligence or on mere luck. The availability of human resources and the training of Customs officers are genuine issues here but do not in themselves present a challenge. In making the final preparations for the use of tactical cameras, two elements still require work.

The first involves their consideration as an evaluation tool. Just as departments are subject to a performance policy, technical resources could become subject to monitoring indicators which measure their longer-term cost, their usability in real conditions (for example, how many hours are spent airborne per month by one drone, taking meteorological conditions into account?) and their results (in which operations did their use play a decisive role?).

The second element concerns the need for a greater geographical and analytical culture: where and when to use cameras remains the tactical question upstream of operations. Currently, the geographical culture promoted by Customs is too weak; experienced Customs officers rely on an empirical knowledge of the terrain and, as they transfer to new positions or take up retirement, the result is a significant draining of knowledge from the field services. How can we harness this empirical knowledge? How can we build a Customs knowledge of the territory and of potential smuggling basins so as to be proactive and know where to deploy the cameras?

More information

cedric.orgeret@douane.finances.gouv.fr

Elevating partnerships between Customs brokers and Customs authorities – the way forward

By Michael Douglas, Senior Technology Advisor, ALS Customs Services.

© AdobeStock

One of the benefits of being a Customs broker[1] providing services at the international level is experiencing the flexibility and efficiency of many Customs authorities. One of the challenges is dealing with inconsistencies in how they apply regulations, and the lack of a standard in the processes and technologies they use, which prevents them from collaborating more productively with each other. In this article, we compile input from companies, organizations and individuals to give an overview of the challenges they face, explain existing co-operation mechanisms between Customs, brokers and intermediaries, and explore what more could be done.

Customs brokers – a challenging yet rewarding business

Being a Customs broker working at the international level is not for the faint-hearted. Helping businesses navigate the complexities of international commerce requires a deep understanding of international trade regulations, a commitment to continuous learning, and an ability to communicate across cultures and to adapt to an ever-changing landscape. Armed with dedication and expertise, they contribute to the smooth flow of goods across borders, ultimately benefiting the global economy as a whole.

Adaptability

Central to everything they do are Customs authorities, as any changes in Customs legislation and processes impact them. One of the clear recent examples is Brexit. When the UK left the European Union, they also left the Customs Union – which resulted in a massive increase in paperwork, declarations, inspections and regulations, both in the UK and in the EU. This in turn has led to increased delays in goods reaching the final consumer. Customs brokers have had to rapidly employ and train new staff to meet the demands.

Additionally, if they have international presence, they must adapt to the differences in how each Customs authority interprets regulations, even in a Customs Union as integrated as the EU. Take the discharge of a transit document at destination, which requires the information on the transit document to match the goods/invoices. Some Customs authorities will accept obvious human errors, such as in the transposing of digits on weights, while some will refuse to ignore them. Often, these inconsistencies exist between different Customs offices in the same territory. Correspondence to resolve these issues often reveals that the variance in acceptance is not risk-assessment driven, but simply a local interpretation of the regulations.

The cost of resolving these issues can be expensive, both financially and, in some cases, time spent for vehicles to return to origin for new documents. However, it is the inefficiency that is most troubling. Alex Lackner is a Director of LKW Walter – Europe's leading transport organisation for full truck loads. Taking the movement of goods from the United Kingdom to Germany through France as an example, he comments: "Discharging the T1 external transit documents from the EU efficiently is still a constant challenge. Hard copies are required to be presented by drivers, and we still face the ongoing lack of synchronization between

1 *A note on terminology: Customs Broker, Customs Intermediary, Customs Service Provider, and Customs Clearance Specialist are all titles used interchangeably in this sector. The technical and legal differences are not relevant within the context of this article.*

export systems and the New Computerized Transit Systems (NCTS). Although the T1 almost exactly mirrors the data on the export declaration, datasets need to be entered both in the NCTS, as well as in the export system of the export country, which takes time and creates additional failures. A unified approach by Customs authorities would be a welcome development."

Software and solutions

Declarations are processed by a Customs authority computer system. These are normally unique to each country, and the interfaces specific to just that system. Most Customs brokers do not develop their own software, so they must find applications that can communicate with these multiple systems. Whilst applications exist that can interface with more than one Customs system, they often have Customs declarations as a secondary focus. Furthermore, the slight differences in Customs processes are often not fully addressed, and therefore their use requires manual tweaks or interventions. This is, of course, inefficient, costly and a source of ongoing frustration.

Seamless end-to-end declaration processes may require Customs brokers to use multiple applications, often a different one in each country, or to have a highly adaptable application in the middle (often known as a "Customs Control Tower") that can produce different data formats for each Customs system. These "Customs Control Towers", such as ALS's MOTA system, or AEB's Customs software, are increasingly popular but they require constant updates for every Customs system they connect with. The additional costs of these are eventually borne by the trader or consumer.

Single Windows for Trade (known as STW's) are increasingly being developed – they simplify the exchange of information and documents between government agencies, importers, exporters, and other stakeholders involved in cross-border trade. However, they are not yet functional in many countries, and offer limited interoperability.

A fluid declaration process needs common datasets and the interpretation of regulations to be aligned in the departure and destination countries. This is a rare occurrence at present. The WCO has an extensive Data Model and documentation, and progress on adopting this across its membership continues – however, the final stage is always a local Customs system with a unique interface that requires a bespoke connection.

AEB is a global provider of software for the logistics and supply chain, with a special focus on Customs clearance. Dr Ulrich Lison, one of AEB's main board of directors, talks about the challenges of providing solutions that meet the requirements of different Customs territories: "We rapidly adapt to changes in Customs systems, however, these are often poorly communicated, at limited notice and with no consistent hierarchy to resolve technical queries. A stronger community approach amongst authorities would be really beneficial and welcomed. Perhaps an advisory board, via the WCO, with representatives from different Customs-related sectors, could help achieve common goals. Brokers and software providers could enhance Customs understanding of their challenges and allow authorities to actively incorporate them into their process models and rollouts."

When co-operation succeeds and excels

War is still sadly with us in many parts of the world. Regardless of which side people are on, one of the common challenges is arranging for humanitarian aid to be made available where possible. Often the most difficult part of delivering physical aid is meeting the necessary regulatory demands of every country on the journey, including the destination. Arranging the movement and Customs clearance of humanitarian aid from the UK to Ukraine has been an important insight for Richard Catt, Director of International Relations for ALS Customs Services. With more than 40 Offices in 14 countries, ALS regularly interacts with multiple authorities.

Richard is full of praise for the authorities he has dealt with on these movements, and believes that the processes implemented could be used to improve collaboration for normal Customs processes: "My experience with France, Belgium and many other country authorities is one of delight at the way everyone found solutions quickly that normally would take much more effort and time. What became clear is that most Customs authorities value trusted trader schemes, like AEOs (Authorized Economic Operators), as being critically important to agreeing any simplifications. Trust is at the centre of all regulations, and perhaps the future focus on achieving alignment

between Customs authorities could be to improve the AEO requirements, extend the approval to cover more simplifications, and ensure that non-approved operators are encouraged to meet the necessary approval standards. For example, the status of authorized consignor and consignee[2] for the transit procedure could be tied to AEO approval."

Co-operation within and beyond Unions

Customs Unions, such as the Central American Common Market (CACM) and the European Union Customs Union (EUCU), have proved to be very successful in trade facilitation and reducing unnecessary interventions and trade distortions between their members. However, some topics, such as consistent interpretations, change management, and dispute resolution mechanisms, both for members and non-members of Customs Unions, continue to be challenging.

International supply chain stakeholders are at the heart of these challenges and are often willing to engage directly with their competitors and authorities to resolve specific challenges and improve Customs processes for everyone.

One such co-operation is the ITF (Intermediaries Task Force) – an industry-led group which was set up in 2019 to ease the Brexit transition period and which includes officials from several Customs authorities in Europe. It had a clear mission: "Fluidity and trade remains the priority, especially on application of Customs / Sanitary and Phytosanitary procedures, i.e. to be designed to assist the movement of goods, and the ITF objective is to be clear in understanding both UK and EU procedures."

The ITF members include the UK short straits ports (Port of Dover and Channel Tunnel) and the EU border channel ports from Rotterdam down the coast to Bilbao, EU Customs officials from France, Belgium, the Netherlands, Germany, Ireland and Spain, as well as CLECAT (the European Association for Forwarding, Transport, Logistics and Customs Services), and several high-profile logistics and Customs service providers. They have continued to find and achieve improvements in many processes that are defined at Union level but require consistent implementation to be efficient.

Mark Johnson, National Director for Customs and Trade Control at Kuehne + Nagel, and a co-founder of the ITF, believes that the ITF is a notable success story of co-operation: "We bring together technical expertise from Customs intermediaries, officials, and transport and logistics associations from the UK and the EU. We collectively believe that the interests of the UK and the EU in the Brexit space are united and what is a problem to one is a problem to the others – through this great working relationship, we continue to discuss solutions for both sides of the border and endeavour to promote them and best practice through the correct channels."

Innovation requires both technology and co-operation

Technological innovation is one of the most prominent topics being discussed in the Customs sector. In fact, the WCO is holding another one of its popular technology conferences in October 2023, in Hanoi, Vietnam. The byline is inspiring and thoughtful: "Embracing the Digital Age: Leveraging Technology, Fostering Innovation, and Nurturing the Next Generation of Customs Professionals". Much of the agenda is focused on cutting-edge technologies, such as Artificial Intelligence and blockchain. These are the future of trade facilitation, protection of society and revenue collection.

However, from the standpoint of international Customs service providers, new technologies that affect stakeholders directly, such as blockchain, need to be integrated across multiple territories if we are to maintain the efficiencies demanded by traders and consumers.

Some of the technologies being discussed and developed help to reduce border delays. However, we need to ensure that delays and direct costs are caused only by necessary interventions (related to the fight against fraud and duty evasion) and are not the result of the need to implement a different version of the same technology in each country – a burden which exists today, but needs to be removed.

2 *The status of authorized consignor allows the authorization holder to place the goods under the Union transit procedure without presenting them to Customs. The status of authorized consignee for the Union transit procedure grants the holder of the authorization the right to receive the goods in an authorized place in order to end the procedure without the goods being presented to the Customs office of destination.*

Blockchain is one of the emerging technologies that will be a fundamental part of the future of Customs processes. Immutable data and secured documents will facilitate much faster border crossing, decrease duty evasion, and potentially stop fraudulent imports. It is certainly a hot topic, and there have been some successful implementations, but they are still the exception. The struggle to implement blockchain solutions across territories is hampered by the commercial cost and inconsistent dataset requirements. Paying a different commercial blockchain provider in each territory would be an added cost to the trader, as well as increase the number of integrations and applications being used.

One current effort gaining some attention is the "Open Customs Blockchain" working group, which is part of the Open Logistics Foundation. It looks to help bridge the difficulties of cost and complexity. Their GPID (Goods Passport ID) project was featured in a previous WCO News article.[3] It focuses directly on the needs of Customs authorities, and proposes the use of open-source blockchain components and a minimal key dataset to enable authorities to compare the data from the original seller with the data submitted on a declaration. The combination of open source, minimal cost and a reduced dataset offers an opportunity to finally see the benefits of blockchain at declaration level in the border process.

Ideas for a new future

International Customs brokers perceive the WCO to be the pinnacle of Customs authority collaboration. The topics covered in this article lead us towards some ideas which would involve the WCO if they were to be brought to life.

The first one deals with measuring performance and the benefits of engaging the private sector in this process. As governmental entities, Customs authorities "serve" people and society, and more directly, traders, logistics supply chain providers, Customs brokers and software suppliers. Their success should be measured against their capacity to protect and provide an efficient service for all of these entities. Could further success be achieved if the WCO were to gather and share industry views on the advances in efficiency and collaboration being made within their membership?

The private sector is often best placed to identify processes' strengths and weaknesses and pinpoint Customs-related problems. Gathering feedback through regular questionnaires to major players would provide valuable insight into collaboration and consistency of implementing Customs regulations. This could lead to clearer regulations, better technology solutions, and real global consistency. GEA (DHL, Fedex, UPS) already publishes its internal KPIs on Customs authorities by compiling answers to internal questionnaires. An article in WCO News gives full details.

Another question is: Should the WCO engage with Customs brokers directly, rather than as an offshoot of transport-related bodies, such as the International Federation of Freight Forwarders Associations (FIATA) and the International Air Transport Association (IATA)? Of course, this would need Customs brokers/intermediaries/providers across the globe to consider forming a specific body that could work directly with the WCO.

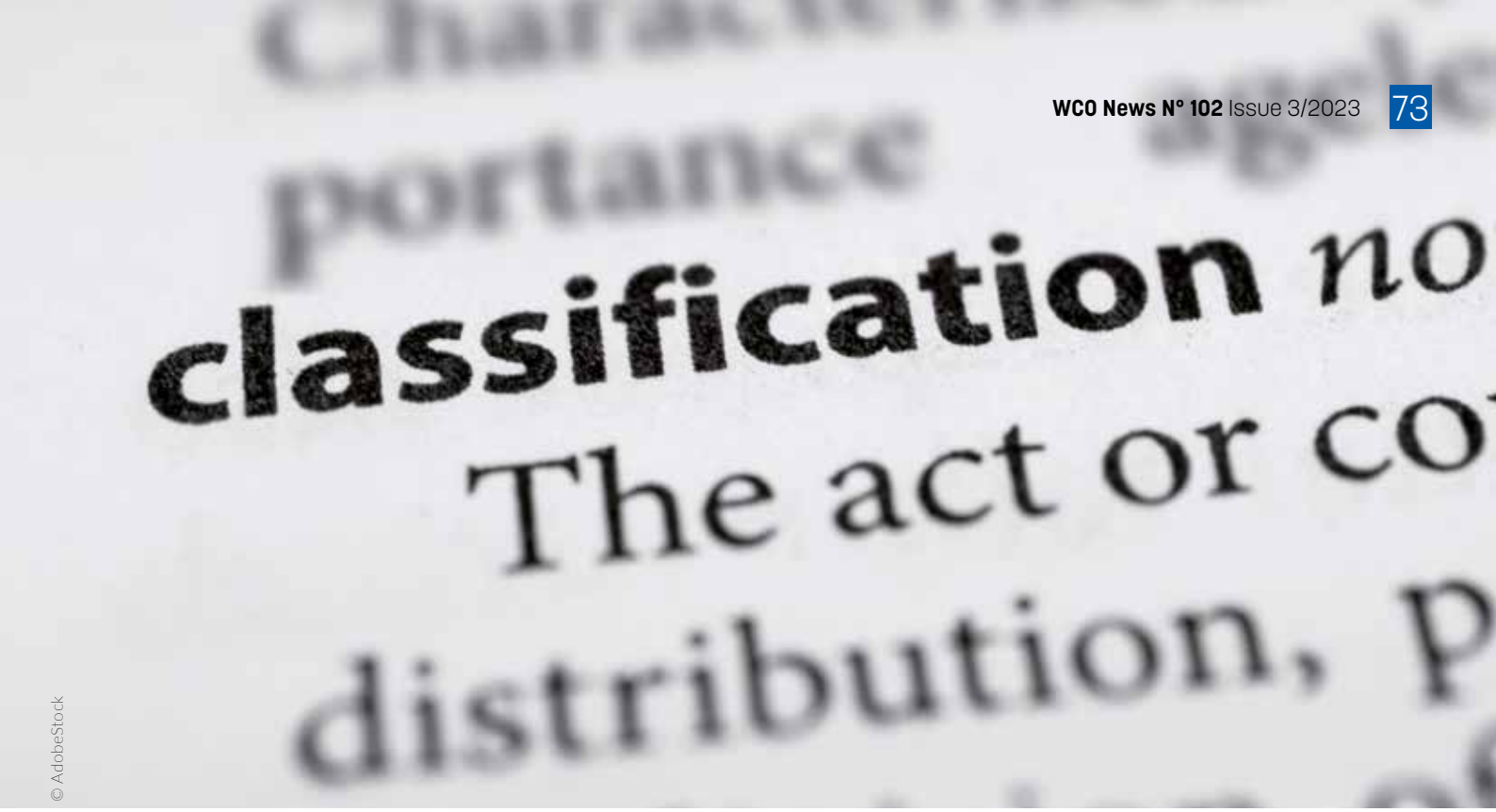
Another idea regularly discussed is the introduction of voluntary standards by Customs intermediaries – for example, on qualifications, internal compliance audits, and knowledge sources. This could lead to more compliance, where less scrupulous providers can be targeted more effectively.

Finally, could WCO Members accelerate the introduction of blockchain data in Customs processes by agreeing a minimal key dataset for basic declarations? Clearly, this would not be a comprehensive solution, but could be built upon incrementally, with feedback from all stakeholders in the supply chain.

What is undeniable is that new technologies, the globalization of commerce, and the inescapable need for security, have increased the need for consistency, transparency and efficiency across multiple Customs authorities. The role of the WCO is more important than ever.

More information
mdouglas@als-cs.com

3 https://mag.wcoomd.org/magazine/101-issue_2_2023/open-customs-blockchain/



© AdobeStock

Leveraging AI for Customs classification purposes

By Thibo Clicteur and Dries Bertrand

There are many discussions about the efficiency of classification assistance tools. In this article, we argue that an AI-based tool, if well built and properly used, can support classification experts, enabling them to focus their attention on unusual and difficult product classifications.

Since the early days of computer history, scientists have strived to make machines as intelligent as humans, developing what in 1956 were called Artificial Intelligence (AI) capacities. The AI "mainstream" systems which are in use today correspond to reactive AI systems, which have the ability neither to form memories nor to use past experiences to inform current decisions, and limited memory systems, which are able to use information about the past to improve their responses.

In 1997, a milestone was reached for AI, as the supercomputer Deep Blue beat the best chess player in the world, illustrating its numerous possibilities. From the autonomous car in 2005 to the Siri answering system in 2011 or the introduction of ChatGPT in 2022, AI technology has penetrated multiple facets of our society and is constantly being developed to reach greater heights.

The rise of AI has also had a profound impact on international trade and economic growth. The business world is developing a new understanding of what it means to trust machines, acknowledging that what will matter in the future is who will be able to use AI most effectively. This point represents an essential step in the implementation of AI tools and the legislation surrounding them.

Firms that use AI extensively throughout their operations perform at a higher level than those that do not, and they seem to be aware of it, with

73% of businesses stating that AI is critical to their success.[1] However, even though nearly three out of four organizations say that AI is critical to their business, almost half of them feel that their organization is behind in its AI journey.

This article focuses on the use of AI for product classification, which is a critical pillar of trade compliance for many companies.

Classification process

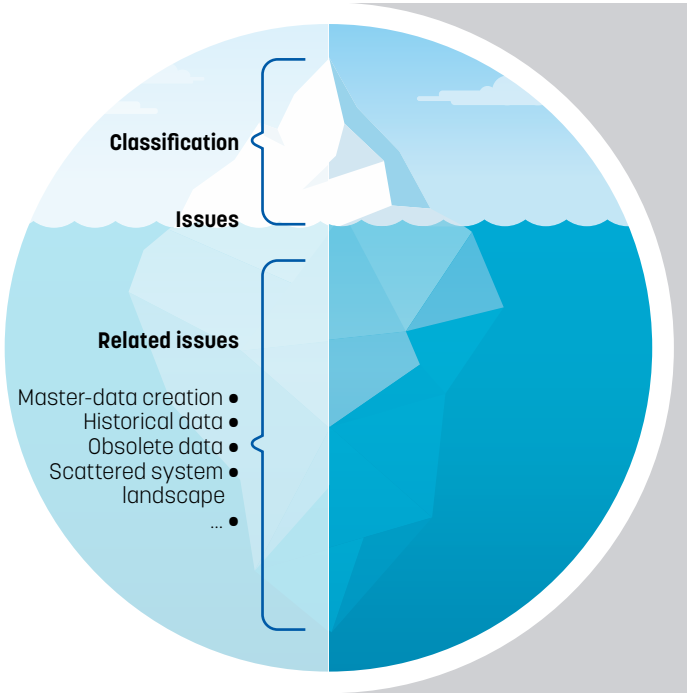
Countries or geographical entities use the WCO Harmonized System (HS) as a basis for their classification system. They develop their own classification scheme by further expanding the six-digit HS product categories into eight or more tariff lines for greater specificity.

Customs classification is the art of assigning a correct classification code to a product for Customs purposes. In order to do so, general classification rules have to be followed (the General Rules for the Interpretation of the HS), along with a plethora of other classification rules and sources on a country-level basis. The product portfolio requiring classification can be significant, especially for companies in certain industries, such as automotive companies, apparel companies, retailers, or e-commerce players. For example, if a car is composed of 30,000 parts and can be sold in 170 countries around the world, this could theoretically add up to a total of 5,100,000 classifications of spare parts.

In principle, classification experts carry out the Customs classification process, collecting as much information as possible that allows them to classify products, including product data sheets, product specifications, production methods, the use of the product, and so on. Based on this objective information, the product is classified, following the said classification rules and opinions. Often, these experts are supported by workflow tools, master data governance systems (master data recording all the materials bought, procured, produced, and kept in stock), global trade management solutions, decision trees, global delivery centres and the like.

Nonetheless, in reality we notice that it is not uncommon for companies to face a variety of classification challenges. First, the availability of skilled classification experts may be a challenge. Second, the product information and product data for determining classification codes may be scattered within the company, its databases and systems. Finally, the master data for product classification may not be properly maintained, may be obsolete, or even be unavailable.

Figure 1 Classification's hidden issues



Incorrect Customs classification may lead to (financial) penalties, incorrectly calculated duties, and supply chain disruptions, and may have a knock-on effect on other trade and tax related areas. A variety of initiatives has been launched by Customs authorities that embed technologies such as predictive analytics and sophisticated analytical tools in the control of Customs declarations. It is therefore more vital than ever to put in place a solid process for product data governance, ensuring compliance with classification, trade and Customs regulations.

AI classification

In order to tackle the aforementioned challenges, which are inherently linked to high-volume classification, AI can be leveraged to support classification experts in the classification process, significantly increasing the latter's accuracy and speed.

In recent years, we have gained experience in classifying goods using AI.[2] A typical classification trajectory starts with a preliminary data quality assessment, which may lead to the potential

1 Whitepaper-State-of-Ai-2020-Final (1).pdf (deloitte.com)
2 TRADEclassifier, Deloitte, https://www2.deloitte.com/be/en/pages/tax/solutions/trade-classifier.html

cleansing of product master data. Indeed, it is of utmost importance that the baseline is correct and that quality issues and classification inconsistencies across product clusters, jurisdictions and systems are solved.

In a subsequent step, a representative set of classified products, including product descriptions, master data product attributes, pictures, drawings, etc. is loaded into the AI solution for training purposes. Finally, after the AI solution has been trained properly, new products can be loaded into the solution, whereupon the AI will generate classification recommendations for the classification expert to analyse. The classification expert plays a crucial role in validating and/or correcting these classification recommendations, which will ultimately allow the AI solution to further fine-tune its future classification recommendations.

What we obtain through this process are algorithms which can support the classification expert by returning possible classification recommendations, including confidence levels, for a large range of products. In reality, the AI algorithms can assess and learn patterns from historical classification data, enabling the AI to produce HS code recommendations which are tailored to company-determined parameters.

Conclusion

AI can be seen as a supportive technology for classification experts, remedying multiple drawbacks of manual classification activities through automation. As the classification of large volumes of data is a time-consuming activity with high operational costs, the use of AI can lead to operational efficiencies, time savings, cost savings, reduced error rates, and risk mitigation. The AI allows the classification experts to focus their attention on unusual and difficult products, while adding value to the classification of other, easier product ranges.

More information

https://www2.deloitte.com/be/en/pages/tax/solutions/trade-classifier.html
dbertrand@deloitte.com

CUSTOMS & SECURITY
SOFTWARE SOLUTIONS

conex
i-way to customs

How Smart Containers could contribute to Customs operations efficiency

By AELER Technologies SA

One of the chapters of the innovation white paper[1] recently published by the International Association of Ports and Harbours (IAPH) is titled "Innovation in ports – not only about technology". It argues that innovation is also about process efficiency, and this includes how data flows among stakeholders and how it is used. Today, thanks to IoT technology, information flow can be generated by cargo containers themselves and be shared across many actors, improving the quality of transport and logistics performance by enabling collaboration among stakeholders.

Smart Containers

Smart Containers are shipping ISO containers equipped with IoT technologies and a range of sensors and devices They can detect door opening or an impact event, provide precise GPS positions and container orientation, measure temperature, pressure, humidity and luminosity, establish the presence of volatile organic compound gases, and much more.

The data collected by the Smart Container's sensors is transmitted to a central monitoring platform, called the Smart Container's control tower, which provides a holistic perspective on the container and its contents, using additional information sources such as AIS (Automatic Identification System) data, as well as freight forwarders' and other shipping partners' data.

A regular steel container can be turned into a Smart Container by having devices and sensors installed in it. At the end of the contract with the IoT service provider, they will be dismounted. There are also containers with IoT hardware embedded into the original design during the manufacturing process. In some cases, these Smart Containers are owned by the service provider and are rented together with the monitoring services.

In April 2022, the German shipping Line Hapag-Lloyd announced that it had fully digitalized its fleet of three million TEU containers. It first introduced the technology in 2019 in reefer containers, and steadily continued installing IoT devices in all standard containers.[2] In 2023, Ocean Network Express, the Japanese container transportation and shipping company, decided to do the same.[3] Drewry, an independent maritime research consultancy, has updated a previous estimate of 8.7 million smart containers by 2026 and forecasted that, by 2027, almost one third of all containers will be equipped with telematics hardware.[4]

Smart Containers are mainly used by shippers who need to apply special security measures to their cargo and to have full visibility on their integrity (high-value goods, goods sensitive to environmental changes, etc.). Shippers access data generated by the devices through the central monitoring platform and could also grant access to some information to other parties, including Customs administrations, by enabling them to connect to the platform or to pull the information into their IT system using an API.

Sharing the data generated by Smart Containers with Customs administrations can enrich the information they collect and analyse. Two events are of specific interest to them: unauthorized door opening, and route deviation when the container crosses previously defined geofences. Geofences

1 https://sustainableworldports.org/wp-content/uploads/IAPH-The-mindset-shift-towards-Innovation-White-Paper.pdf
2 https://www.hapag-lloyd.com/en/company/press/releases/2022/04/hapag-lloyd-first-mover-in-equipping-all-containers-with-real-ti.html
3 https://www.one-line.com/en/news/one-announces-project-sony-network-communications-europe-create-smart-container-solution
4 https://theloadstar.com/use-of-smart-containers-speeds-up-as-more-ocean-carriers-get-onboard/

are created by defining virtual boundaries around a location and by developing algorithms to identify any breaking of the fences and the average time required for a container to go from point A to point B. Thanks to geofencing and IoT hardware connected through GNSS antennas and global GSM roaming, deviations from the planned routes or delays can be reported immediately by the Smart Container and add a risk score to a container.

The following data can be transmitted when one of these events occur:

- Container BIC number;
- Door status: open/close;
- Geographical location (latitude/longitude);
- Time stamp;
- Modality (truck, rail, idle, moving, etc.); and
- more if required.

One of the key advantages offered by Smart Containers to shippers is the enhancement of the features provided by some types of electronic seal. The sensors can detect the opening of the container not only by the door but by any of it sides. Unauthorized door opening, together with geolocation, time stamping and additional sensor information could be pulled into the Customs risk management system of a country of import, transit or transshipment, driving substantial change in Customs operations.

Smart Containers offer other advantages compared to electronic seals:

- for containers with IoT hardware embedded into the original design, there is no need for storing, sending, receiving and returning IoT devices, or for charging them as they can be powered by solar panels placed on the exterior of the containers or by electrical connection in the case of reefer containers;
- data management, data transfer, monitoring and even the virtual sealing is done in one place, the Smart Container's control tower;

© AELER

- the operating cost is low and included in the price paid by shippers; and
- there is no operational cost for Customs as the shipper is paying for the service.

What's next?

To explore how data generated by Smart Containers could benefit Customs operations, there is a need for Customs administrations and Smart Container developers to conduct pilots.

Such experiments should address the following points, among others:

1. the data elements to be transmitted from the Smart Container to the Customs administration;
2. the communication method by which the data from the Smart Container to the Customs administration will be transmitted; and
3. the time intervals in which the data from the Smart Container to the Customs administration will be transmitted.

More information

info@aeler.com
https://www.aeler.com/

Identifying chemicals precisely through trace analysis is now a reality, opening new doors for Customs officers

By John Johnson, 908 Devices

Customs administrations have a full array of tools and technologies at their disposal to test material and substances – both in the field and in their labs. These tools all have benefits and limitations. This article introduces an innovation which enables field officers to analyse trace materials left on any items and obtain the specific name of a trace level substance. Not only can they confirm or allay their suspicions rapidly, but they can also proceed to physical inspection with all the precautions needed.

Chemical analysis: the difference between lab and field tools

Mass spectrometry (MS) is the gold standard technology used by all forensic crime labs to analyse chemical substances. This technology provides Customs officers with everything they need: high molecular specificity, reproducibility, accuracy and sensitivity to low parts per billion (PPB). The limitations of this technology, in terms of getting it into the hands of Customs officers, are not insignificant. Traditional mass spectrometry instruments weigh 400 pounds, need an air-conditioned, humidity-controlled room and require a large supply of helium or other carrier gas. The outcome, due to these limitations, is that mass spectroscopy is relegated to the forensic lab. This left room for other, field-based technologies to fill the need for high-fidelity chemical analysis in the field.

This need was filled by two technologies: Ion Mobility Spectroscopy (IMS) and vibrational spectroscopy techniques such as Raman and FTIR. These two capabilities in a single portable system have been, to a large degree, mutually exclusive, with the technologies being separated by their degree of specificity and their level of detection.

© 908 Devices

An officer operates a handheld mass spectrometry device with trace analytics directly in the field. Devices like this are used by Customs organizations around the world, including the New Zealand Customs Service.

IMS is most familiar to the air traveling community when airport security, such as the U.S. Transportation Security Administration (TSA), pulls travellers aside to check their bags for explosives using a trace explosives-detection device (TEDD). When airport security use a TEDD, they are looking for anything invisible to the human eye to determine whether a traveller has been in proximity to, or has recently handled, explosives. The adoption of IMS in the airport security sphere made it relatively easy for this technology to also be employed in other security

arenas, such as Customs and borders. The primary limitation is that IMS does not have the ability to make an exact identification of a substance. Functionally, IMS cannot tell the difference between TNT and DNT (a precursor to TNT), as it classifies everything into families – in this case, explosives.

Vibrational spectroscopy systems are ubiquitous in the public safety space, but are relatively new tools for Customs officers. These are bulk identification technologies, which are very good at analysing a substance by creating a molecular fingerprint that can then be measured against tens of thousands of chemicals in a library of known chemicals. These technologies are commonly employed by law enforcement and hazardous materials response teams to identify puddles, spills and powders that are visible to the human eye, often in large (bulk) quantities. The response provided by these systems is extremely precise, even among closely-related chemicals like TNT and DNT, which are correctly differentiated by vibrational spectroscopy systems every time. The drawbacks of these technologies are twofold: first, they can only identify a substance that is visible to the human eye, and second, the high degree of specificity they provide is outstanding for pure substances, but challenging in the case of mixtures. The smaller the component within a mixture, the more likely it is that vibrational spectroscopy will fail to detect it. Once you get below 10%, it is extremely likely that only the major component will be identified, and any minor components will remain undetected. While there are situations where pure forms of drugs are found by Customs, it is generally the case that officers will encounter mixtures of compounds where controlled substances such as fentanyl, for example, are in the 1% to 3% range.

Mass spectrometry goes into the field

Mass spectrometry offers two distinct advantages in a single device, in that it has almost the specificity of FTIR and Raman, as well as the trace level analysis capabilities of the IMS systems. Getting it out of the lab and into the field has been made possible by the advent of high-pressure mass spectrometry (HPMS). HPMS leverages microscale geometries, high frequency electronics and high efficiency vacuum pumps, all leading to significant reductions in device size and power consumption. Today's HPMS systems have been scaled down from 181 kg (400 lbs) to 3.6 kg (8 lbs), and run on rechargeable batteries.

Trace detection technology alerts officers to the presence of fentanyl. This enables them to take more protective measures upon continued search efforts.

© 908 Devices

© 908 Devices

High-fidelity, handheld chemical analysis tools enable Customs officers to discover drugs hidden in a vehicle during an inspection.

Microscale mass spectrometry offers trace detection and identification of chemicals at the point of need, in an easy-to-use handheld device. Regular software updates enable users to identify new substances, such as novel synthetic drugs. In addition, the devices are equipped with machine learning software that can identify more than 2,000 fentanyl analogues in addition to hundreds of other drugs, such as methamphetamines, xylazine and more.

Every bulk substance leaves a trace

Using a high performance, handheld mass spectrometry device enables Customs officers to deploy this technology right at the point of need; they can quickly and reliably detect materials and determine appropriate action by taking a simple swab. Take the New Zealand Customs Service, for example. Their officers recently positively identified narcotics concealed in containers of waterproofing materials using swabs taken from the handle of the bucket – where traces of narcotics were left behind by the people who packed the containers – and running them through a handheld mass spectrometer with trace analytics. Positive indications for methamphetamine hydrochloride were returned in seconds. For confirmation purposes, the process was replicated with non-suspect items

(which returned negative results), at which point officers carefully took apart the containers where multiple small packages of methamphetamine were located.

The entire airport security apparatus is built on an unwritten rule – every bulk substance leaves behind trace evidence. The same principle applies to Customs operations. A smuggler who is packing drugs into hidden compartments in a car, for example, or hiding them in a tub of construction materials, will inadvertently make physical contact with the object being used to transport the drugs. This means that Customs can use HPMS to analyse trace materials left on vehicle steering wheels, door handles, or the handle of a tub. This transferred trace material is rich in information that helps to alert Customs officers, allowing them to increase their operational speed by focusing their attention on where to search and removing some of the guesswork. While the presence of a trace itself is an important factor, no less important is the ability to obtain the specific name of the trace level substance concerned.

In another example, a Customs officer who suspected that a shipment of fire extinguishers were fake took a swab from the outside of one of the extinguishers near the top, where it was likely to have been handled. HPMS quickly identified the presence of methamphetamine. To confirm, Customs officers used a power saw to cut the extinguishers in half and found them to be packed with methamphetamine. Had the swab revealed that the extinguishers were packed with fentanyl, the officers might have used a different tactic to cut them open, or employed additional layers of personal protective equipment. Identification allows Customs to speed their investigations in other ways too, especially where a technology like HPMS or Raman is used. Customs officers not only encounter different chemical substances, but also have to implement different laws and regulations for controlled substances. Most systems that perform identification provide a chemical abstract number (CAS), which is a unique numerical identifier that is most often tied to regulatory codes regardless of the terminology employed.

Safety is the top priority

The primary goal of all these technologies goes beyond enforcing the law, in that it also extends to protecting Customs officers who operate at ports of entry. Many of these technologies, including HPMS, enable officers to identify exactly what drug may be present before they start cutting into boxes, packages and other containers. If fentanyl is present, officers will need to follow additional precautions to ensure that their exposure, and that of any drug sniffing dogs they may use, is either minimized or eliminated altogether. Identification at trace level combines the best features of two great technologies into a single tool that increases operational speed and enhances safety, while providing explicit answers. There is no doubt that the use of trace detection combined with identification in the field saves precious time and supports Customs officers when and where they need it most.

More information

https://908devices.com
info@908devices.com

About the Author: As Senior Director of Business Development, John Johnson oversees the strategic direction and market adoption of the 908 Devices handheld mass spectrometer device, an industry-leading trace identification solution. John has served in many roles over the course of his 30 years in public safety, launching 17 different products in over 61 countries and working with more than 312 public safety organizations. Since 2001, John has focused his efforts on changing mindsets and driving the acceptance of novel technological approaches for identifying explosives, chemical weapons and narcotics by bringing technology used in forensic laboratories into the field, including mass spectrometry, FTIR, Raman, and Rapid DNA. John's influence in these areas has led to standard industry practices and broad technology adoption, all aimed at improving public safety outcomes.

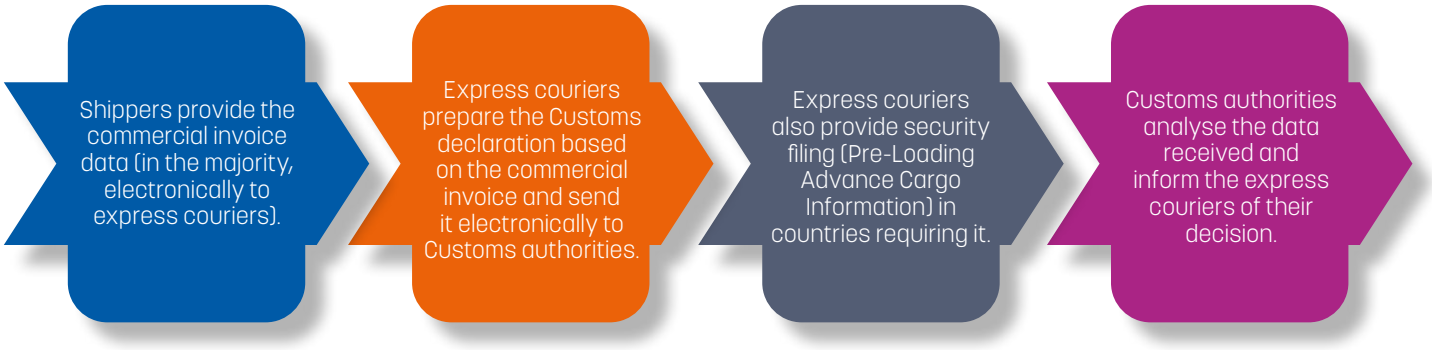
© AdobeStock

The importance of data in DHL Express

By Sandra Fischer, Asha Menon, Marcelo Godoy Rigobello, Global Customs & Regulatory Affairs, and Ben Bridge, Data Quality & Governance DHL Express.

Quality data is the lifeblood of an efficient Customs clearance process. All Customs tasks and responsibilities are performed, at least in part, on the basis of data received from businesses engaged in trade – for example, data for purposes of revenue collection, risk management, admissibility checks, resource allocation and cooperation with other agencies, as well as the collection of statistical data for macroeconomic decisions.

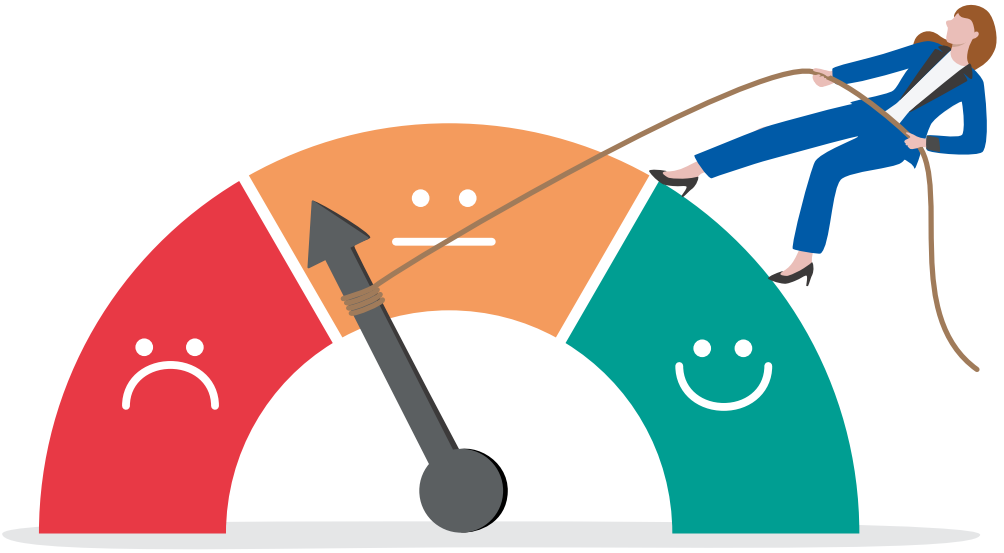
In the express industry, data flows as follows:



To ensure that the data submitted by shippers (i.e. DHL customers) is of high quality, in other words, complete, correct and authentic, DHL has taken several measures.

Educating customers

Usually, express couriers' shippers are their customers. They consist of big and small companies selling goods, as well as private individuals who may or may not be selling goods, or wish to return the goods they bought online.



© AdobeStock

Often, these companies and private individuals simply do not understand the data requirements and believe the data they provide is accurate when it is not. When the shipper is a business and a commercial invoice is required, he may understand the national regulations (of the export country), but not the specific requirements of the destination (import) country.

Shippers selling goods online typically provide the necessary commercial invoice data required to ship the goods to end-consumers. However, the end-consumers returning the goods (back to the seller) might not provide all the required data, or the data quality might not be optimal, posing hurdles in managing reverse logistics effectively.

It is, therefore, of utmost importance to ensure that shippers understand the importance of complete and accurate data. As part of this commitment, DHL Express has developed various customer education initiatives. Customers are engaged through face-to-face meetings, online webinars, roadshows, social media, and other communication channels.

Among the topics addressed during these activities are:

- Customs regulatory requirements and changes
- The importance of providing complete and accurate commercial invoice data
- Potential implications of inaccurate/incomplete commercial invoice data, such as delays in transit times, clearance delays and unnecessary customer service contact to request the missing information.

Promoting digitalization and IT integration

There is another reason for data discrepancies and inaccuracies: businesses may operate different internal systems that are not seamlessly integrated to manage their logistics and rely on paper documents when dealing with express couriers. DHL Express does encourage its clients to implement data transmission processes so that data is provided electronically.

Certified Shipper Programme

In 2022, DHL Express introduced the Certified Shipper Programme. Originally, the programme aimed to enhance data availability, particularly the provision of commercial invoice data. In 2023, it focused on refining the content quality of the data, which proved pivotal in adapting to regulatory changes such as the abolishment of the VAT de minimis threshold in the European Union (EU), the withdrawal of the United Kingdom from the EU (Brexit), and the second release of the EU's Customs pre-arrival security and safety programme – Import Control System 2 (ICS2).

The programme has three core pillars:

1. **Governance:** This phase emphasizes the definition of "good" data. Shippers learn what are the mandatory fields, the optional ones, and specifications like maximum length and whether they should be alphanumeric or numeric.

2. **Tools:** With the governance rules in place, the next step involves aligning all systems – from front-end to back-end – with these rules. To ensure customers provide accurate data from the outset, several services have been developed, like the Global Trade Services Auto-Classification, which assists in classifying line item commodity details from commercial invoice data. Lastly, dashboards have been developed to provide a transparent view of data errors by customers, accounts, and countries. By identifying consistent problem areas, DHL Express can proactively address concerns, informing customers of issues and devising solutions.

3. **Customers:** Customers engaged in the programme are informed about impending regulatory changes and data quality expectations, and are encouraged to use the tools mentioned above.

More than three million shipments a month are generated by certified shippers.

Getting support from Customs authorities

It is essential that express couriers and Customs authorities work together to support shippers' compliance efforts.

Here are some key actions to consider:

- **Developing joint communication and training programmes for shippers:** Customs authorities could collaborate with express couriers to develop communications and training programmes to educate shippers worldwide about the importance of providing complete and accurate commercial invoice data, ideally electronically. It is worth noting that the *Recommendation of the Customs Co-operation Council on the Guiding Principles for Data Quality*[1] lists "Education" as one of the principles to follow to enhance data quality.

- **Empowering first-time shippers:** the need for accurate Harmonized System (HS) codes, understanding of duties and taxes (landed cost), and knowledge of import requirements can perplex first-time shippers who have very little (or no) knowledge of international trade. The WCO could create a centralized online simulation platform where shippers could get information such as where to find nomenclatures, import requirements, and import regulatory charges per country.

- **Mutually beneficial incentives:** Customs authorities could consider providing tangible benefits to express couriers and shippers who consistently maintain high data quality. These benefits could include expedited clearance processes, reduced inspections, and facilitation for Authorized Economic Operator (AEO) accreditation.

- **Developing the WCO Voluntary Compliance Framework (VCF):** the section dedicated to data quality could be further developed, including recommendations for shippers, express couriers and Customs administrations.

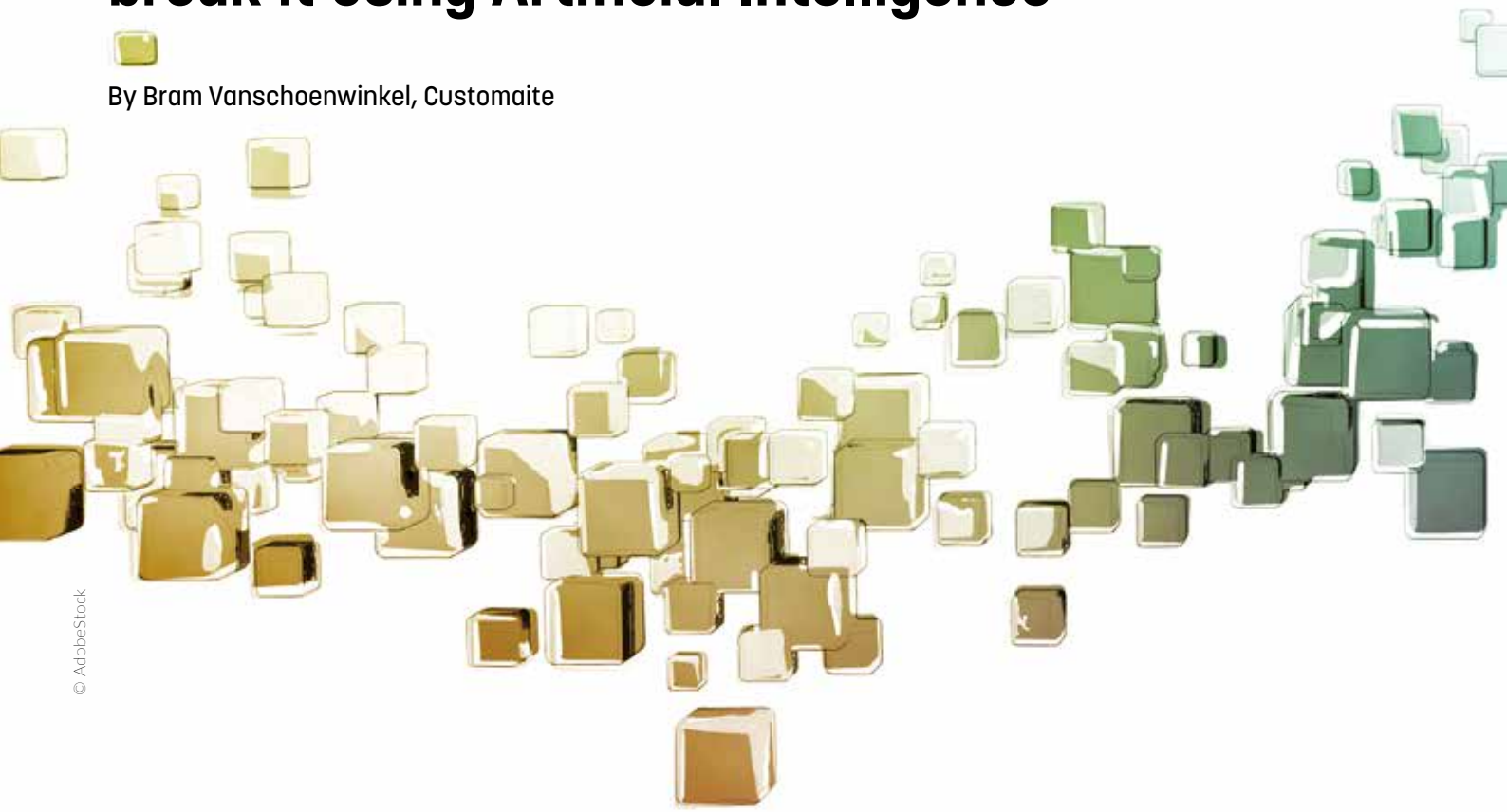
Quality data is the bedrock upon which efficient and effective clearance processes are built. By joining forces, shippers, express couriers and Customs authorities could nurture a culture of data quality and collectively embark on a journey towards data excellence, which would secure benefits for all involved parties.

More information
EXPcustoms@dhl.com

1 *https://www.wcoomd.org/-/media/wco/public/global/pdf/about-us/legal-instruments/recommendations/facilitation/transport/recommendation-data-quality-en.pdf?la=en*

The invisible paper chain in today's Customs document flow and how to break it using Artificial Intelligence

By Bram Vanschoenwinkel, Customaite



© AdobeStock

As in other sectors, the logistics sector has benefited from digitization in recent years, allowing a smoother flow of goods across the globe. These advancements have promised, and to some extent also delivered, efficiency and convenience. However, a more 'inconvenient truth' today is that a considerable volume of critical information still circulates in the form of non-standardized documents sent via email. Today, new developments in Artificial Intelligence are proving promising in enabling the data extraction of these unstructured documents and scans to finally fully break the paper chain.

The logistics sector plays a critical role in ensuring the smooth flow of goods around the globe. However, a smooth flow of goods through the supply chain is only possible if the information regarding these goods also flows smoothly between the various parties in the chain, making digitalization an absolute necessity. This applies in particular to Customs processes, as declaring goods to Customs requires qualitative information from many different parties that is easily available. In recent years, the world has witnessed remarkable progress in digitization, revolutionizing the way data is exchanged across industries. The logistics sector is no exception to this: from EDI (Electronic Data Interchange) to electronic document standards and comprehensive data sharing platforms using APIs (Application Programming Interfaces), these advancements have promised, and to some extent also delivered, efficiency and convenience. However, despite these strides, a considerable volume of critical information still circulates in the form of non-standardized documents sent via email. Furthermore, and to make things worse, a large portion of documents that might seem digital at first glance (generally in the ubiquitous PDF format) often conceal a surprising secret – they are mere scans of paper documents.

A peculiar workflow that's difficult to correct

While interacting with Customs brokers or Customs department staff within a company, I often observed this peculiar workflow: it involves the printing of information that was digitally available at some point in time, on paper, followed by scanning it to convert it back into a "digital" format. The information trapped within these scans cannot be readily copied or extracted, forcing Customs declarants to resort to the tedious and error-prone task of manually retrieving information: you will see them scouring these documents they have printed out and retyping the required information into their Customs declaration (or any other) software. Even if they have readable non-standardized documents, such as Word or Excel documents, the result is similar. It may be possible to copy the information in the documents, but the documents still have to be searched and processed manually.

This – seemingly – unbreakable paper chain poses significant challenges for companies and Customs administrations alike, resulting in increased costs, inefficiencies, and elevated risks. Enter Artificial Intelligence (AI), a potent force poised to shatter this paper chain and address the myriad challenges linked to paper document processing.

The paper jam

To truly appreciate the potential of AI in this context, we must first grasp the depth of the problem. For businesses including Customs brokers, freight forwarders, importers and exporters, the reliance on paper documents has several costly implications. One major concern is the escalation of operational expenses due to increased costs. These result from the inefficiencies and errors that arise when manual data retrieval and input are required for Customs declarations. Another challenge is the scarcity of qualified declarants. The complexity of navigating through this paper-driven maze necessitates a specialized skill set, making it difficult for companies to find and retain individuals with the necessary expertise. Moreover, the repercussions extend to supply chains, as errors or delays in Customs declarations can trigger a ripple effect, disrupting logistics operations and leading to financial losses and operational headaches.

From the perspective of Customs administrations, the challenges are equally daunting. The surge in workload is a prominent issue, as errors in declarations demand additional scrutiny and manual intervention. This places an increased burden on Customs administrations. Furthermore, there is the looming risk of undetected errors concealed within paper documents. These hidden pitfalls pose a substantial threat, potentially compromising security measures and revenue collection.

Unlocking opportunities with AI

Artificial Intelligence (AI) offers a transformative solution to these document-related challenges which, as we have established, will not be going away anytime soon. The heart of the matter lies in AI's ability to automatically extract and interpret information from documents. By leveraging AI technologies, we can reimagine document processing, reducing errors and inefficiencies while enhancing speed and accuracy.

AI-driven document processing involves a spectrum of techniques and approaches, ranging from basic Optical Character Recognition (OCR) to advanced Intelligent Document Processing (IDP) techniques. Let's offer a brief description of what they are capable of. The OCR technology has a longstanding presence, but its limitations lie in its inability to impart meaning to the extracted text. OCR, in its traditional form, excels at recognizing and converting printed or handwritten text within images or scanned documents into machine-readable text. However, it does not inherently understand the context or significance of the text it extracts. Typically, OCR is paired with Robotic Process Automation (RPA) technology, wherein meaning is imparted by explicitly instructing the algorithm where to locate specific information within a document. This is achieved by creating templates for every different document with its own specific layout or structure, but this approach lacks scalability and is error-prone.

On the horizon is Intelligent Document Processing (IDP), a paradigm that takes AI a step further. Here, Natural Language Processing (NLP) algorithms, including Large Language Models (LLMs) like ChatGPT, come into play, elevating the understanding of context and meaning within documents to a new level. Unlike traditional OCR, NLP algorithms do not rely on rigid templates. They also require instructing the algorithm where to find information within documents, but they possess the remarkable ability to generalize to new document structures they have never encountered before, alleviating the need to

construct a new template for every new document type you want to process. This makes NLP-based solutions more scalable and adaptable to diverse document types and formats. Moreover, pretrained models are available, typically trained on vast amounts of logistics documents, and specifically aimed at extracting and interpreting information that is relevant within the logistics context. These pretrained NLP models offer powerful language understanding capabilities and facilitate the extraction of information from logistics documents more efficiently than ever before.

Don't take away my paper!

Despite the immense promise of AI, challenges abound in implementing this technology effectively, each demanding a thoughtful approach. The first hurdle to surmount is the recognition that AI is not infallible and may never achieve perfection. Mistakes can occur, and there might be instances where information is missing. This means that possibly a lot of time is spent (lost) searching for missing information and correcting inaccuracies, to the extent that the initial time savings from AI implementation could be compromised.

The second challenge revolves around understanding that AI model outputs do not equate to outcomes. While these AI models generate meaningful information, this information must undergo further processing downstream to culminate in an actual Customs declaration.

The third obstacle relates to the black-box nature of AI models. Employees within companies often harbour reservations or scepticism towards this technology. On the one hand, they might lack faith in AI's capabilities, while on the other, they may fear its implications. Such apprehension can lead to resistance and reluctance to adopt and utilize AI technology effectively within their workflows.

Because of these hurdles, there is a risk that people revert to printing documents, effectively bringing us back to square one. In this scenario, the paper chain remains unbroken, and the benefits of AI implementation go unrealized. Overcoming these challenges is crucial to ensuring that AI truly transforms Customs document processing and breaks free from the shackles of traditional paper-based workflows.

Breaking the paper chain with Human-Assisted AI

To harness the full potential of AI in this context, a specific approach emerges as a compelling solution – Human-Assisted AI. This approach recognizes that while AI can perform tasks autonomously, there are areas where human expertise remains indispensable.

© AdobeStock

A Software as a Service (SaaS) solution exists which can automate and optimize the Customs declaration processes that still involve unstructured documents and scans. It embodies the vision of Human-Assisted AI by offering:

- A rich user interface that replicates the declarant's familiar (paper) workspace, allowing efficient but fully digital means to validate, assess and, if necessary, correct the extracted information. The idea here is to make the transition to digital seamless and user-friendly.
- Integration into declarants' operational processes, providing a guided workflow that simplifies Customs declarations and produces accurate declaration proposals.
- Seamless integration into the existing IT landscape, like declaration software, transport or warehouse management systems, etc., and enrichment of the declaration proposals with data from those systems.
- Effective change management support, empowering declarants to embrace the technology and leverage it to its full potential.

Measuring the impact

To illustrate the effectiveness of the Human-Assisted AI approach and the transformative impact of such software, a comprehensive measurement was conducted, comparing the traditional manual process with the newly implemented automated process.

The performance across five distinct flows within the forwarder's operations was meticulously evaluated. These flows encompassed a wide array of Customs declaration tasks, each with its unique complexities. The goal was to understand how the software could enhance efficiency and accuracy while saving valuable time. In the case of the automated process, time savings ranged between 50% and an astounding 75%. For instance, a task that previously consumed 40 minutes of handling time was now accomplished in just 10 minutes. This substantial reduction in processing time translated into significant operational efficiencies.

However, the impact extended far beyond time savings alone. The implementation of the software led to a remarkable increase in the quality of Customs declarations. With AI handling the data extraction, the risk of human errors was substantially diminished, ensuring that declarations were consistently accurate and compliant. Moreover, the time freed up by the expedited process allowed declarants to shift their focus. Instead of laboriously retyping information, they were now empowered to channel their expertise towards more meaningful tasks related to Customs matters. In essence, the software not only revolutionized the speed and accuracy of Customs declaration processes, but also unleashed the potential of declarants to elevate their role as Customs experts, thereby enhancing the overall service quality and customer satisfaction.

This use case serves as a compelling testament to the power of Human-Assisted AI and its transformative impact in breaking the paper chain and redefining Customs declaration processes for the better.

More information

https://www.customaite.ai

About the author

From the very start of his career, Dr. Bram Vanschoenwinkel has been involved in the AI revolution, obtaining a Ph.D. in Science, with a specialization towards Machine Learning and AI. He is one of the co-founders of Customaite, where his role is that of Chief Product Officer, steering the innovative AI-driven solution into the future.

CARGOES CUSTOMS

The intelligent customs administration system built upon 40 years of experience in the sector and powered by the latest technologies.

CUSTOMS AUTHORITIES | TRADING COMMUNITIES | OTHER GOVT. AGENCIES

- MANIFEST MANAGEMENT
- DECLARATION MANAGEMENT
- INTELLIGENCE MANAGEMENT
- SMART INSPECTION
- REVENUE MANAGEMENT
- KPI MANAGEMENT
- SINGLE WINDOW
- ARTIFICIAL INTELLIGENCE

CARGOES by DP WORLD

customs@cargoes.com