The changing role of Customs: Customs aligning with supply chain and information management

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Abstract

The World Customs Organization (WCO) Framework of Standards to Secure and Facilitate Global Trade (SAFE) introduced concepts of supply chain supervision and authorised operator schemes. While it has been implemented in many countries, supply chain supervision still requires further exploration and development. In this article we present a vision on how the role of Customs could change in the coming years, taking into account innovations in supply chain management and information technology. We present how the Customs Administration of The Netherlands adapts their supervision, based on these innovations. The innovations range from the data pipeline to collect extra data to cross-validate customs declarations, the use of big data and data analytics, new advances in detection technology, handheld apps to check goods and drones to support surveillance.

1. Introduction

The WCO adopted, more than a decade ago, the Framework of Standards to Secure and Facilitate Global Trade (SAFE), which introduced the concepts of supply chain supervision and authorised operator schemes as a response to demands for increased security (WCO, 2018). Whereas the latter has been implemented in many countries, known as AEO (Authorized Economic Operator), C-TPAT (Customs Trade Partnership Against Terrorism) or Certified Enterprise, supply chain supervision still requires further exploration and development. However, since the introduction of SAFE we have witnessed additional obligations to provide data at entry and exit being placed on several supply chain stakeholders that do not have a business interest to hold these data nor—in a commercial sense—being held responsible for these. When we want to further innovate supply chain supervision, we need to respect roles and responsibilities of different stakeholders in the supply chain. This implies that, when it comes to information on the content of the consignment, contracts, price, Incoterms, quality and product, we should move upstream to the shipper, the one who packed the box, or to the buyer, as only they know exactly what is ordered. Innovation of supply chain supervision requires respecting interests, roles and responsibilities of stakeholders in business, placing burdens on the right parties, simplifying procedures and reducing red tape—in particular within the logistic chain—by re-using data from the source (Baida et al., 2008; Hesketh, 2010; Klievink et al.; Tan et al., 2011).

Information on quality, quantity, Incoterms and prices must be requested from the buyer, or the supplier where there is no buyer at importation. Demands on physical security and the integrity of movements should be put on the logistic stakeholders in the supply chain. More customs training and academic education of supply chain management, IT, business compliance, as well as legislation and enforcement (as already addressed in the European Union Competency Framework for Customs professionals in the public and the private sector), are key investment requirements to initiate and enhance further

innovation in supply chain supervision (see European Union, n.d.). The WCO upholds the PICARD standards, mainly focusing on management skills for customs executives (see WCO, n.d.). As such, today's knowledge requirements move much further than internal customs management, enforcement and legislation. Updating the PICARD standards, which were once leaders in global customs knowledge development, to today's requirements in skills and expertise, is urgently needed to enhance supply chain supervision. By taking the lead in this initiative the WCO will maintain its leading role in safeguarding the global supply chain.

In this article we will present a vision on how the role of customs could change in the coming years. We present a compilation and adaptation of the vision and ideas that were published earlier in white papers by the Customs Administration of The Netherlands (Customs Netherlands, 2017; 2020) based on innovations and a sequence of research projects that Dutch Customs are involved in. We would like to share these insights with the WCO community.

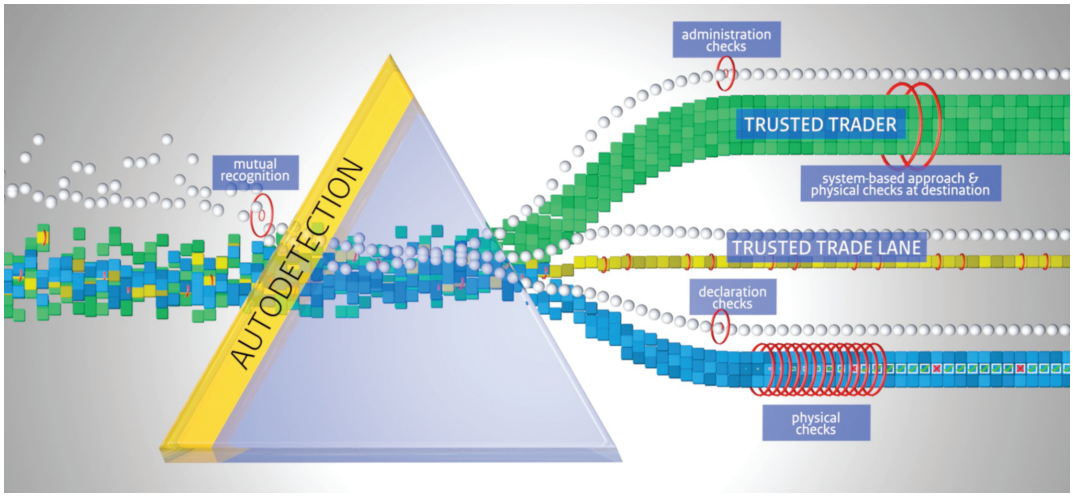
2. How the role of Customs could change

Customs is responsible for the enforcement of the fiscal integrity, security and safety of cross-border movements of goods. At the same time, Customs is expected to contribute to the economic competitiveness of the country by providing support and furthering the implementation of measures that promote trade. As a result, Customs fulfils a dual role: it both inspects and stops goods and allows goods to pass through without unnecessary interruptions. Customs intends to continue to fulfil this demanding task in an efficient and effective manner in the future.

2.1 Pushing boundaries

For this reason, some years ago Dutch Customs—under its 'Pushing Boundaries' motto—developed a new vision that will serve as a benchmark for reviews of all the measures to be implemented in the coming years and marks the final destination Customs will aim for. This vision is not a blueprint, but rather a compass that will enable Customs to take the right steps to reach its ultimate objective. A preliminary study identified that the approach of Customs, as prescribed in the Pushing Boundaries vision, could help trade to reduce their customs-related costs by 137 million US dollars per year in the Netherlands (ACTAL, 2013).

Figure 1: Pushing boundaries: the Customs Administration of The Netherlands' vision for the enforcement on continuously increasing flows of goods[1]



Since the introduction of the Pushing Boundaries vision, international trade flows continuously grew. This is not only applicable to goods imported or exported by sea but is equally applicable to other modalities. Above all, e-commerce has changed the landscape substantially. However, at the same time Dutch Customs' traditional enforcement capacity is expected to remain unchanged or even decrease. As a result, Customs needs to refine its enforcement process. For this reason, Dutch Customs has developed its enforcement vision—a concept of the most sophisticated manner in which the organisation can supervise large volumes of cross-border flows of goods in the near future. In essence, pursuant to this vision, Customs supervises 100 per cent of the goods that cross its EU-external borders. However, this does not imply that Customs opens each and every box or container, but that Customs can determine whether the required notification and declaration has been filed for every transport entering or exiting the country. It also implies that the information in the declarations and other sources provide Customs with a thorough insight into every container and pallet entering or exiting the country. In this ideal situation, Customs will be able to conduct more targeted physical and administrative inspections than is currently the case. It is aimed to increase the effectiveness of enforcement interventions. These inspections are preceded by the collection and weighing of information, and by risk detection and selection. To achieve these objectives, innovations have been conducted in five innovation areas: auto-detection of goods, auto-detection of data, and the differentiation of three flow types of goods; green, yellow and blue, each receiving different enforcement actions (see also Figure 1).

2.2 Automated detection

Customs will need to continue to invest in innovative technology and ICT to be able to implement this philosophy. A variety of modern technological aids have already increased the effectiveness and efficiency of Customs' supervision. These include, to achieve 100 per cent supervision, what are referred to as the aviation and maritime 'virtual networks': radar images made available via the Coastguard and Ministry of Defence provide Customs with an insight into the vessels and aircraft in territorial waters and airspace. Nuclear detection gates are the first enforcement layer, with 100 per cent of all cargo moving though ports being detected on radiation. These gates are located at logical points along the customary routes: drivers do not need to make detours or stop as the equipment automatically detects whether goods emit radiation. Customs does not need to intervene unless variances are detected. In other words, this system constitutes a form of 100 per cent inspection that, in principle, causes the business community no interruption whatsoever.

A next step in the auto-detection is the introduction of algorithms in non-intrusive scanning equipment. The scanned images currently need to be analysed by an officer, but with research and developments as set out, in the future they will be examined by automated scan interpretation software. Software will then compare the scans with reference files that include all the information about the relevant goods known to Customs, such as information from the declarations. Variances detected between the information on the documents and the contents of the container will result in the generation of a signal. Customs will use this intelligence to take appropriate action.

A second development track of which Customs has great expectations in the long term is the co-creation of scanning equipment that not only makes images but also assesses them for irregularities. These are artificial intelligence systems that signal that there is a mismatch, for example, between the data entered in the declaration and the goods present. Or that there are items in a container, suitcase or postal package that are prohibited or subject to a licence. In the meantime, predictive models for goods scans are being developed, based on data analytics algorithms. But that is no easy task. In order to design predictive models, data analysts must be able to rely on an archive (database) with a large number of scan images. For example, automated recognition of a weapon requires hundreds of images from all angles of this weapon. To process the goods scans automatically, it is necessary that all sensor data—in this case the x-ray images—is collected and processed in one central database, together with the declaration data and historical inspection data. The results of this automated processing must then be taken back to the scan.

In the past, there was no need for this infrastructure to store, collect and process sensor data. Customs is now faced with the challenge of building this infrastructure with a minimum of delay. The first thing to do now is to store and label scan images on a large scale for reuse and analysis. To place what scanned images can reveal in the right context, it is important to label each type of object with the utmost care. There can be no reliable algorithm without thorough data preparation! It goes without saying that this data preparation is a time-consuming and labour-intensive process. The process of storing, labelling, reusing and analysing scan images also involves formal legal aspects. Take the overriding importance of information security, for example. In short, what are the preconditions for using and sharing data to enable the auto-detection of scanned images? And how do we ensure that we put these conditions into practice in the right way? These issues are relatively new to Customs and take time. For Customs, the development of auto-detection of data and goods calls for investment in time and effort. But the first steps in this promising direction have been taken.

To rapidly develop this X-ray scanning and detection technology, Dutch Customs is taking part in various international research projects in which new technologies in this field are being tested. An example is the European Commission – funded research project C-BORD (Effective Container Inspection at Border Control Points) in which customs services, knowledge institutes, universities and industrial partners are working on the development of ultramodern scanning and sensor techniques, which are used for integrated inspection purposes in a single passage for trucks (C-BORD, n.d). Special attention is paid to the detection of narcotics and nuclear goods in freight containers. How does C-BORD work? As soon as a truck passes through the gate, it is subjected to a range of inspection technologies. A component or a combination of components of the inspection line is activated for each type of goods and for each type of risk selection. Gas phase measurement is carried out, for example, by means of sensors (i.e. an analysis of air from the container). This is followed by passive radiation detection. Traditional X-ray scanning technology is also part of the C-BORD arsenal, but in its most advanced form. These steps may give rise to further checks, such as when a significant radiation value is detected. The second-line photo-fission measurement offers a solution; this is a new method in which an X-ray beam is briefly aimed at a single position, after which secondary radiation is released and captured. This can be used to identify heavy metals, such as uranium or plutonium. The recently developed neutron scan is also being operated in the second line. This instrument is specifically aimed at identifying organic substances, especially narcotic drugs and drug precursors.

These examples make clear that, although Customs continues to adopt a risk-oriented approach, the organisation is also in part shifting towards 100 per cent inspections based on state-of-the-art technology. Elements of this approach are already both feasible and operational at the main ports such as the port of Rotterdam and Schiphol Airport. This approach is even more effective when improved detection technologies for the physical movement of goods is supplemented by the associated declarations for the goods.

2.3 Intelligence: collecting, weighing, validating, selecting, detecting

Customs automated declaration processing systems are already capable of screening many elements of declarations and accepting the declarations by the use of business rules. When this screening reveals, for example, that an inward processing declaration is lodged while the declarant does not hold the required licence, the declaration will not be accepted. The same goes for an illogical combination of country codes and certificate data. Customs systems also identify declarations that contain illogical information, such as an unlikely customs value. In the longer term, Customs will incorporate more of these automated inspections in its declaration acceptance procedure. On the control elements that are checked by business rules, Customs conducts 100 per cent controls.

Specific declarations are selected for further inspections for other risks. These selections are based on intelligence: Customs collects information from various sources, refines the information, based on its

knowledge of goods and risks, and then draws up selection profiles. The information in declarations filed with Customs is reviewed against these profiles. As a result, specific declarations may be flagged for an inspection. The number of sources of and types of information used in these processes are being expanded continually. Customs will shortly, for example, be able to detect, online, when a business was established, the itinerary of a container from origin to destination and the business's regular goods flow. In other words, Customs will have much more information available prior to the inspection of consignments. Part of the detection process will then be based on automated systems that select risks. In the longer term, declarations will be inspected by specialists who perform their duties on the basis of workflow management systems.

2.4 Green, yellow and blue flows

Although an increasing number of risks can be detected by these autodetection mechanisms, still risks remain that require the 'traditional' interventions. But there the other innovation areas of the enforcement vision Pushing Boundaries appear. Imagine the total flow of goods as one big haystack, and customs searching for the needle. But knowledge of the integrity of traders and supply chain offers the possibility to differentiate trade flows. A supply chain for which the data and movement are known and secured does not need to be checked in the same way as a shipment from an unknown trader. And trusted traders, like AEOs, deserve different treatment due to the level of compliance they have built into their businesses. Therefore we split the haystack into three: the **yellow flow**, smart and secure trade lanes, in which controls are mainly done at loading: the **green flow**, trusted traders, mainly checked by system-based controls in the companies' records; and the **blue flow**, which is treated with the more traditional enforcement instruments and has many more physical inspections.

2.5 The yellow flow: data pipeline for enabling smart and secure trade lanes

When the green and the yellow flow traders make available additional data about shipments, stakeholders and transactions, Customs can better assess the risks in the flow of goods. The better the assessment, the less the risk of unnecessary physical interventions through inspections, so data sharing is a win-win for all.

Dutch Customs has been making great efforts to promote these developments for some years. For example, Customs participates in European Commission – funded research projects such as the ITAIDE, IINTEGRITY, CASANDRA and CORE, which are exploring options for the implementation of a sophisticated form of supervision of the entire chain (Baida et al., 2008; Grainger et al., 2018; Hesketh, 2010; Hulstijn et al., 2016; Jensen et al., 2017; Klievink et al., 2012; Ravulakollu et al., 2018; Rukanova, Hennignsson et al., 2018a; Rukanova, Zinner et al., 2018b; Rukanova et al., 2019; Rukanova et al., 2017; Segers et al., 2019; Tan et al., 2011; Tan et al., 2019; van Engelenburg et al., 2017; CORE Project, n.d.).

The key concepts developed in these projects are the Data Pipeline and the Customs Real-time Information System (CRIS), a monitor with all the relevant goods information from each player in a trade lane. The data pipeline is a kind of internet for logistics that is brought about by connecting the enterprise IT systems of all parties in a supply chain, and which gives Customs access to data from the source such as purchase order, invoice or container packing list to cross-validate the accuracy of declarations.

CRIS is an interface of the data pipeline where businesses make this information available on a voluntary basis.[2] This dashboard is developed by Dutch Customs, and it includes technology that ensures that the information accessed via a data pipeline from different business systems is available in a uniform manner. When Customs can consult this information via CRIS as and when it wishes—and possibly, even analyse the information with its risk selection tools—then it will need to request much less supplementary information from the relevant businesses manually.

2.6 Benefits offered by advance declarations

Another, general feature to reduce logistic burdens is the option to lodge declarations earlier than at arrival of the goods. As a result, the system can assess whether all technical acceptance requirements have been met at an early stage. Consequently, the control begins once the goods are on their way to the country of destination. Customs can carry out a risk analysis of the data, if required, or request the underlying documents for their verification—all before the arrival of the goods (e.g. Rukanova et al., 2017). This approach can avoid delays during the physical movement of the goods. For trusted traders, Customs could even communicate ahead of time that shipments at arrival will be inspected physically, which increases predictability of the supply chain substantially.

2.7 Coordinated border management

The success of the differentiated approach in supervision of goods depends on the willingness of colleague enforcement authorities, such as for example the product and food safety agencies, to keep pace with Customs' vision and operational approach, as this is necessary if the business community is to gain the potential benefits. Dutch Customs has already implemented a government single window for incoming and outgoing maritime and air traffic—a facility whereby businesses submit information once and the various border enforcement authorities send one reply message and re-use the information as required. In addition, it will be possible to complete the one-stop-shop and joint inspection principles: all supervision authorities carry out their inspections at the same logical place in the transport chain and the same logical moment. This will enable government agencies to jointly work towards coordinated border management. In the research project CORE, Dutch Customs developed a coordinated border management approach jointly with the Dutch National Plant Protection authority to share electronic phytosanitary certificates of flowers from Kenya, which can lead to faster import clearance and significant reduction of logistic delays after arrival of the flowers at Schiphol airport (Rukanova et al., 2017). In particular, the implementation of this coordinated digitisation at both ends of the supply chain, in Rotterdam as well as in Kenya, made this project unique.

2.8 Data analytics

Data analytics scientists at Customs Netherlands are involved in the design of data analytics algorithms for accessing, structuring and analysing large amounts of data. With the aid of these smart technologies it will eventually become possible to automatically detect irregularities and fraud patterns in declaration and other data and scanned images and to develop predictive algorithm software. Customs is currently working on a project concerning risk filters. The aim of these filters is to reduce the relatively high number of false positives in the traditional risk selection of Customs. Based on historical data about declarations and related inspection results, a number of test filters have been built, through which what is rejected goes back in, as it were. These are test filters on the entry process and for taking samples for examination in the customs laboratory. The filtering method makes it possible to determine whether a perceived risk is real and whether it is worthwhile to check a batch of goods. This is expected to make customs supervision more efficient and effective. It is also good news for the trade as it means a reduction in unnecessary inspections and a reduction in logistic delays.

How does the filtering method work? The model assigns a risk score to each selection produced by a risk profile. If the risk score is higher than a set threshold value, a selection is checked; if it is lower, no check is carried out. So, the higher the threshold setting, the fewer checks there will be; but also, the higher the number of missed non-compliant declarations. However, research by the data analytics experts shows that it should be possible to reduce the inspection selections in the entry process by a maximum of 30 per cent without this leading to non-compliant declarations being missed.

Another example of data analytics innovations for customs risk targeting is the website data retrieval tool that is being developed in the European Commission – funded research project PROFILE (PROFILE, 2018) in which Dutch Customs actively participates. This website data retrieval tool for the postal and courier process can be used to collect additional data from external sources, such as e-commerce websites, to cross-validate the accuracy of goods descriptions of customs declarations. The first check is for the price of a product. If the value of a given goods description found in the declaration differs significantly from the average value found on the internet, this could be a reason to physically check the shipment. The long-term aim is to automate this cross-validation process (see e.g. Rukanova et al., 2019). Another objective is to create more precise risk indicators and risk profiles by means of data mining in historical datasets. In particular, algorithms are developed that can identify risks with increasing accuracy based on historical declaration data, profiles and inspection results.

In another research project, Dutch Customs developed a mobile app that can help to identify prohibited Chinese medicines being transported in passenger luggage.

2.9 Camera surveillance and drone technology

In the context of Pushing Boundaries, good progress has been made in the supervision of the blue flow in recent years. Important innovations have already been covered in the previous sections: the installation of onsite scan systems at all container terminals and the State Inspection terminal in the Port of Rotterdam and the Joint Inspection Center at Schiphol. An area still under development is airborne inspection. Using drones will make it possible in the future to observe port areas, vehicles and vessels. In 2018 the Port of Rotterdam carried out experiments with unmanned aircraft as a potential tool for customs supervision. In this pilot, Customs joined the Coast Guard, which has been conducting experiments into the added value of drone technology for the maritime domain for some time now. For Customs, for example, there were tests to establish whether airborne objects could be selected for inspection using cameras, whether the surroundings of these objects could be closely monitored, and whether any risks could be identified more quickly in this way. Customs will also investigate whether drones can contribute to the monitoring of locations around ships with a high risk. This aerial inspection should be seen as complementary to the existing surveillance using video networks of fixed CCTV surveillance cameras.

In the future, Customs also plans to experiment with mini drones. These drones will not operate in the open air, but only in enclosed spaces—especially onboard vessels. This concerns small locations that are difficult for tracking dogs and officers of the national inspection team to pass through. There are also places where there is a danger to people and animals, such as fuel tanks where toxic gases are present; these are, of course, ideal hotspots for concealed contraband.

2.10 Blockchain technology

Blockchains are distributed databases that together form a network. Blockchains make it possible for parties to securely share data and execute transactions and to reach consensus agreement on the existence, status and changes of this shared information (Zheng et al., 2017). Using blockchain technology means that all the databases in a network register the blocks of information that are associated with the transfer of value or exchange of messages and data between the parties in the network. Software links these blocks to each other to create a digital general ledger in which the assets, debts or properties of all the participants in the network are stored. The information stored in the digital ledger is irrefutable and cannot be manipulated. It is also possible to program so-called smart contracts in blockchains; for example, conditions for a value transaction in advance, such as a check on a minimum balance, the availability of the right authorisations, or trigger a payment from buyer to seller. The network can then verify a number of aspects, such as the authorisation of the parties concerned. Only when all the conditions have been met is the transaction automatically completed. Examples of such conditions are

the issuance of a bank guarantee for the start of a customs duty exemption of transit procedure, or receipt of a bill of lading by the bank that activates an automated payment to the seller according to a letter of credit arrangement.

The technology that makes blockchains possible is based on various emerging techniques such as data exchange between distributed data bases, cryptography and consensus algorithms. Blockchain technology is already operating at a global level. One example of such a worldwide operational blockchain platform for sharing logistic and customs-relevant data is the TradeLens system developed by MAERSK and IBM, of which the initial prototype version was developed in the CORE project (TradeLens, 2020; Segers et al., 2019; Tan et al., 2019). TradeLens users experience the global platform as a messaging service. It gives the exporter a web address to which they send a contact number, which is then stored in the blockchain. Which data they receive (e.g. from the forwarder) and in what form, depends on their authorisation. Typically, TradeLens contains risk-relevant datasets that correspond to a container, such as the invoice, packing list and bill of lading related to the goods shipped in a container. Dutch Customs is developing a dashboard—CRIS—that a customs officer can use to retrieve these data via TradeLens about the containers coming to Rotterdam (i.e. all the data provided by the parties concerned in TradeLens). Using a risk filter, Customs can identify the most high-risk shipments. Based on these findings, Customs could in turn provide status information to the TradeLens platform, such as 'container selected for inspection' or 'container released'. TradeLens can count on the increasing interest of the business community. More and more shipping companies, shippers, importers and exporters are now using this industry-wide platform.

2.11 The spot on the horizon—smart enforcement—smooth logistics

The change of the trade landscape requires Customs to constantly adapt to the outer world's changing demands. But also to have a permanent innovative approach. Therefore, the vision Pushing Boundaries, once developed to introduce blue, yellow and green trader flows, is changing. With increasing technological developments and changing needs in enforcement, a stronger is placed on autodetection. Regardless in what flow goods will be placed, all in- and outgoing cargo and data are scanned automatically on an increasing number of risks. And customs interventions are not merely done based on the possibility that a detected risk shows a mistake. Customs act on anomalies, differences in data detected in various sources of information, of which the customs declarations and scan images are just a few out of a wide range of data sources.

2.12 Multidisciplinary customs education

The innovations described above require multidisciplinary expertise from customs officers on customs legislation and procedures, supply chain management and information technology and compliance. Customs officers need to understand how supply chains are managed to be minimally disruptive when physical inspections are still needed. And they need to understand how companies have implemented the appropriate internal controls in their IT systems to mitigate the customs risks in their business operations. This multidisciplinary expertise is taught in the Master Customs and Supply Chain Compliance[3] of the Rotterdam School of Management, which is based on three pillars: teaching expertise in (1) customs legislation and procedures, (2) supply chain management and (3) information technology and compliance. This master's program is based on the principles of the Pushing Boundaries vision and was developed in close collaboration with Dutch Customs. This master's program is internationally recognised and accredited by the European Commission in the context of the European Union Competency Framework for Customs as well as by the PICARD program of the WCO.

3. Conclusion

In summary, Customs needs to move more to the supply chain, the innovation area that is left partly underdeveloped compared to the other goals of the SAFE Framework of Standards. An example of the role of Customs in a supply chain approach can be found in the Dutch vision Pushing Boundaries. Although this was developed a few years ago, Customs is still working towards autodetection and its layered approach enforcement concept, with supervision in blue, green and yellow variants. Customs then:

- in the blue goods flow intervenes in the logistics at the border based on risk analyses
- in the green goods flow makes observations—preferably outside of the logistics process—to verify that traders are acting correctly
- in the yellow goods flow works on securing entire chains.

However, the success of this concept is not only dependent on Customs but is equally dependent on the business community's faith in the concept and its efforts. This is already the case with, for example, the AEO system—which is founded on economic operators' trust in the system. Trusted trade lanes, in conclusion, can operate solely when businesses identify their own (commercial) benefits for improved data sharing and granting government, like Customs, access to those data.

The WCO SAFE Framework aims to establish standards that provide supply chain security and facilitation at a global level to promote certainty and predictability; enable integrated supply chain management for all modes of transport; recognise AEOs; and promote the seamless movement of goods through secure international trade supply chains. Pushing Boundaries provides a Customs response to all of these goals. Trusted traders receive a customs treatment that serves their level of compliance; trusted trade lanes are mainly controlled upstream at the consignment completion point, and Customs-to-Customs information exchange avoids double controls. Business will be acknowledged for its compliance efforts, and Customs can focus on the real dangers. The WCO PICARD Standards that focus on knowledge development need to be updated to meet these new requirements on all levels of the customs profession in government and business.

Since the term autodetection was introduced, many new technological developments have occurred, and the term autodetection has moved into a new dimension. Whereas initially this focused on mechanisms and technology to split the flows into green, yellow and blue, the examples in this article show that autodetection is an enforcement goal in itself. Technology can assist Customs to detect risks in data, from various sources, declarations, commercial data and images. So technology takes over part of the customs analytics work. Therefore, we move towards 'Pushing Boundaries, the next step! Smart Enforcement and Smooth Logistics'.

Acknowledgements

This research was partially funded by the PROFILE Project (nr. 786748) and PEN-CP Project (nr. 786773), which are funded by the European Union's Horizon 2020 research and innovation program. Ideas, adaptations and opinions expressed by the authors do not necessarily represent those of other project partners or of the Customs Administration of The Netherlands.

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Notes

1 See Customs Netherlands (2017) and https://youtu.be/iiNKkIBO99k

2 Voluntary means that businesses provide information in advance to the cargo movement, that Customs can ask for once starting to control declarations.

3 https://www.rsm.nl/executive-education/executive-master-customs-and-supply-chain-compliance/overview/ Yao-Hua Tan and Albert Veenstra are, respectively, program director and academic director of the program. Frank Heijmann is involved as one of the key lecturers in the program.

Frank Heijmann

Frank Heijmann is head of trade relations of The Customs Administration of The Netherlands, holding almost 35 years of Customs experience, having an in-depth knowledge in the fields of customs legislation, international business and logistics. He is recognised for motivating people, creating enthusiasm and support. This has resulted into the collective developments of novel ideas and solutions that focus on the balance between enforcement and trade facilitation, with trade, governments and academia, as there are the University MSc program Customs & Supply Chain Compliance, the BSc Customs & Trade Compliance, the supply chain innovation concept The Pipeline Interface, and Dutch Customs' vision 'Pushing Boundaries'.

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