

APEC Project: SCCP 02 2021S

Produced by:

New Zealand Customs Service

The Customhouse

1 Hinemoa Street,

Pipitea, Wellington

New Zealand

Website: <https://www.customs.govt.nz/>

For:

Asia Pacific Economic Cooperation Secretariat

35 Heng Mui Keng Terrace

Singapore 119616

Tel: (65) 68919 600

Fax: (65) 68919 690

Email: info@apec.org

Website: www.apec.org

© 2022 APEC Secretariat

APEC#222-CT-01.4

Disclaimer: The views expressed in this paper are those of the authors and do not necessarily represent those of APEC Members Economies.

Project Summary

The rapid digitalization of the global economy has opened new growth opportunities for micro, small, and medium enterprises (MSMEs) to participate in global trade, as well as opened the window for governments to simplify procedures thus lowering businesses' trading costs. The objective of this Self-Funded project, *Best Practice Guidelines for Paperless Trading (SCCP 02 2021S)*, is to develop a non-exhaustive set of best practice guidelines to assist APEC economies in implementing electronic/paperless customs procedures and a flexible and enabling legislative framework so that all traders, especially MSMEs, can engage with the APEC customs authorities electronically. The project also supports and lays the foundation for the long-term harmonisation of electronic/paperless customs procedures for APEC economies.

The project supports the Putrajaya Vision 2040 as it will “strengthen digital infrastructure, accelerate digital transformation, narrow the digital divide, as well as cooperate on facilitating the flow of data and strengthening consumer and business trust in digital transactions”¹. This project aligns with APEC’s recent focus on recovery from the COVID-19 pandemic, particularly through trade facilitation and connectivity. This project will also provide APEC Economies resilience for potential future health crises or natural disasters.

The APEC Ministers Responsible for Trade (MRT) (June 2021) directed officials to accelerate the implementation of the WTO Trade Facilitation Agreement, particularly those articles relating to the accelerated use of digitalization for border processes; pre-arrival processing of electronic declarations; electronic documents, electronic certification, electronic payments; expedited shipments; and border agency cooperation. This APEC project builds on the direction given by MRT in June 2021 and provides guidelines for economies to progress to the next steps of digitalisation. To implement paperless trade, economies need to look beyond the WTO TFA and consider the building blocks of paperless trade, which are enabling infrastructure, legislative frameworks, border agency collaboration, risk management, data standards, and trade stakeholders.

This project report is split into two parts:

1. APEC Paperless Trade Facilitation – written by an independent consultant, the NZ Institute of Economic Research² This part discusses and provides analysis of the ‘why’ for paperless trade, examines how paperless trade is addressed in current agreements, and provides high level components for paperless trade.
2. The Pathway to Paperless Trade – this part provides the tactical framework, policy, and procedures to implement paperless trade in further detail.

Parts one and two had provided background and input to the drafting of the APEC SCCP Guidelines for Paperless Trade, which were endorsed by the Sub-Committee on Customs Procedures on November 2021.³

¹ APEC Putrajaya Vision 2040, 2020 Leaders Declaration. Available on: https://www.apec.org/Meeting-Papers/Leaders-Declarations/2020/2020_aelm/Annex-A

² Disclaimer: Part 1 was based on a paper drafted by an independent consultant, NZIER, and does not necessarily reflect the views of all APEC economies.

³ APEC Guidelines on Paperless Trade (November 2021) <https://www.apec.org/publications/2021/11/guidelines-for-paperless-trade>

Contents

- [Part 1](#) 1 of 20
 - APEC Paperless Trade Facilitation 1 of 20
- [Part 2](#) 1 of 6
 - The Pathway to Paperless Trade 1 of 6

Part 1

APEC Paperless Trade Facilitation

Independent Consultant (NZIER) report

Executive Summary

What is paperless trade?

This report uses the United Nations Economic Commission for Europe definition of paperless trade:

When goods and services cross borders in international trade, information needs to be passed between relevant parties, whether private companies ⁴or public bodies, including suppliers, logistics providers, customs, regulatory agencies, sellers and buyers. Paperless trade refers to the digitization of these information flows, including making available and enabling the exchange of trade-related data and documents electronically. Less formally, one can think of this as cross-border trade transactions using electronic data in lieu of paper-based documents.

There are significant benefits

A move to paperless trade can reduce transaction costs significantly. The estimates range between 15 percent and 45 percent in cost savings depending on the stage an economy has reached implementing paperless trade facilitation measures at the border (United Nations 2014; UNCTAD 2020; Duval 2017; WTO 2015). This amounts to billions of dollars annually. Benefits also include time saving and reduction of hardcopies.

Components of idealised criteria for paperless trade

Beyond those savings, a well-designed cooperative system of paperless trade should ideally showcase how electronic licenses, permits, certificates, and other documents improve compliance with regulations and policies, reduce errors and fraud, support risk management, and build trust.

A paperless trade system should show that when information is exchanged electronically, the number of participants in e-systems quickly grows. This would increase participation in trade and, in some cases, even increase revenue.

Paperless systems should increase clarity and streamline clearance processes for Customs administrations. Government competence and capacities should be enhanced, and industry will experience timesaving and improved communication. In addition, trust should increase along with security and system integrity. Table 1 sets out the criteria for an ideal paperless system.

⁴ Please note that the Guidelines on Paperless Trade does not cover the exchange on information between private companies.

Table 1 Idealised criteria

Possible criteria	What are we looking for under each criterion?	Comments
Efficiency	Is there a net benefit under each of the different efficiencies?	Needs to deliver benefits to participants.
Technical efficiency (scale)		It must reduce the fixed costs of entry for smaller firms. This requires increased outreach by Customs administrations.
Allocative efficiency (matching)		It must reduce costs to firms that comply and increase resources aimed at illicit trades or continual non-compliance. Firms have reduced variable costs with faster clearance.
Dynamic efficiency (innovation)		Opportunities not possible without an increase in paperless trade.
Effectiveness	Will it deliver outcomes in line with governments, exporters, and importers priorities?	Paperless trade must provide more effective resource deployment, faster clearance and release, improve revenue collection, increase trader compliance, reduce costs and enhance supply chain security.
Certainty, integrity and accountability	Are the processes secure?	The base of all other benefits is secure systems, difficult to forge.
Simplicity	Can firms new to trade participate easily?	For smaller firms to participate on an ongoing basis requires easy access and guidance.
Fairness and equity	Will it increase export trade participation?	To increase participation requires a focus on smaller firms. More resources are needed to deal with specific concerns.
Flexibility	A focus on outcomes for MSMEs of systems with all participants.	A major challenge for Customs administrations but critical for further paperless trade development.

Source: NZIER

How did we develop the idealised approach?

We have developed a framework to describe the various impacts of paperless trade. It incorporates the following attributes:

The drivers of paperless trade including:

- The technical infrastructure and the approaches needed to maximise the best use of that technology (the importance of non-discrimination of digital process and technology neutrality).
- The regulatory environment and
- Factors that might encourage micro, small and medium-sized enterprises (MSMEs) into participating in trade.

The trade flows, including: delivery of trade flows, mode of delivery, and the actors in the supply chain (MSMEs) that may need support.

The importance of a favourable political environment to lead paperless trade initiatives.

Barriers to paperless trade

There are significant interoperability hurdles for Customs administrations. A lack of interoperability may mean they have trouble working effectively and efficiently with other government agencies at the border, and cross border interoperability may be limited.

The lack of standardisation, coherency, and consistency. Information and documentation required by APEC economies are different.

Certain interests that benefit from fees generated from paper based systems hold up paperless trade initiatives.

A lack of political will and leadership to manage the transition between paper and paperless trade environments.

The lack of close cooperation between firms, Customs administrations, and other stakeholders who participate in value chains.

Frameworks are embedded in trade agreements

Paperless trade provisions in international agreements should be focused on efficiency and how to enable participation of all jurisdictions. Increased efficiency would drive increased trade, increased participation in trade, and more efficient customs services.

Approaches include:

Describing best practice rather than developing a prescriptive approach. This allows each jurisdiction to determine how much of the agreements they want to implement under timeframes that suit them (United Nations 2016b).

Development of an agreement with an element of prescription but balanced by differential treatment for economies requiring support (WTO trade facilitation agreement).

Development of a high-quality agreement that is open to other economies.

Introduction

As goods cross borders, information is required between relevant parties: buyers, sellers, suppliers, logistics providers, customs, and other regulatory agencies. Paperless trade is the digitization of those information flows that enable the transit and exchange of goods and services across borders (adapted from United Nations Economic Commission for Europe 2017).

We aim to focus on the implementation of electronic/paperless customs procedures by providing guidelines that economies can adopt to facilitate paperless trade:

- Documenting existing work on paperless trade. This includes identifying and outlining relevant frameworks and international instruments that deal with paperless trade.

- Understanding the implications of the way paperless trade is evolving on the ground – especially in APEC economies.

- Noting the barriers and impediments to Customs administrations adopting paperless trading measures.

- Establishing a set of criteria to evaluate progress toward a paperless system, possibly starting with what an ideal system would look like and the [existing] obligations placed on economies by the World Trade Organization (WTO) Trade Facilitation Agreement. This is needed to compare possible variations in the processes in place or being considered by APEC Customs Administrations as candidates for 'Best Practice'.

- Providing guidelines to show the requirements for the successful initiation of a paperless system.

We have drawn on international studies in peer-reviewed journals, case studies, information from practitioners using paperless procedures, perceptions of those implementing paperless procedures, past assessments, and other sources discussed later in this report.

The analysis and proposed guidelines intends to inform and support progress towards increased facilitation of paperless trade in APEC economies.

Why focus on paperless trade?

The motivation for pursuing paperless trade initiatives by economies boils down to a few agreed facts on the benefits. These include:

- Paperless trade could reduce international trade costs significantly, saving billions of dollars in the APEC region. The estimates range between 15 percent and 45 percent in cost savings depending on the current stage of paperless trade initiatives in each economy (United Nations 2014; UNCTAD 2020; Duval 2017; WTO 2015).

- There will be increased revenue for both the private sector (cost savings to share among trade participants) and government (increased revenue from increased trade). As the ability to trade becomes easier, more participants will engage in trade (United Nations 2017).

- Security, transparency, and efficiency in supply chains will increase (Ha and Lim 2014).

- Electronic information will be easier to process and be more reliable. Paper-based trade is subject to human error, creating hold-ups and stalls the movement of goods (APEC 2010).

Delays in border clearance will be reduced (United Nations 2014; APEC 2010).

The changeover to paperless trade can simplify procedures, increase transparency and accountability, and improve governance (United Nations Economic Commission for Europe 2006).

Cost reductions and simplification of procedures will help small and medium-sized businesses to become more competitive since savings from paperless trade are the highest for smaller shipments and perishable goods (OECD 2019c).

Electronic trade is better suited to risk analysis, which helps prevent fraud and non-compliance (United Nations Economic Commission for Europe 2006).

Paperless trade substitutes capital for labour, improving and better utilising skilled labour for productivity gains (OECD 2019b).

A shift to paperless trade improves the reliability of data enabling better informed decisions (OECD 2019b).

Costs and a lack of understanding can delay the transition to using less paper. Businesses can be reluctant to incur additional costs unless they see an immediate benefit. These significant barriers will be examined in more detail later in this paper. In brief, this problem can be mitigated by:

An outreach programme to MSMEs, indigenous firms/entities, and women-led firms by regulatory authorities detailing how to approach a paperless interface.

Demonstrating – possibly using MSME case studies – the value add for all stakeholders of increasing paperless trade.

It comes as no surprise to those working in the supply chain that the cost reductions are significant. Examples given at the APEC Customs Business Dialogue showed that a single shipment could pass through 30 different organizations, with up to 200 communications about that shipment. If a form is missing or there is a problem with some information, then delays are inevitable.⁵

Does the pandemic create conditions to move forward on paperless trade?

The pandemic has caused huge trade disruption around the globe. Trade slowed down as supply chains came under stress. Lockdowns and restricted travel cut off some trade links and provoked a 'rewiring' of trade.

The one encouraging sign has been the rapid introduction of digitalised trade initiatives under temporary (crisis) legislation and the urgent rollout of automated processes underpinned by new technology.

This has propelled the digitalisation of paperless trade forward in ways not envisaged at the end of 2019 (McKinsey & Co 2020, Liang 2020).

McKinsey & Co assert that the pandemic has pushed digital transformation forward by at least three years (McKinsey & Co 2020).

⁵ Comment made at the APEC Customs Business Dialogue, 2021.

Scene setting

What is paperless trade?

As goods cross borders, the information requirements increase significantly to satisfy both exporting and importing economy requirements. The relevant information required by authorised parties includes:

The providers of the product.

The suppliers of the product.

The logistics providers.

Customs administrations and other regulatory agencies

The sellers and buyers.

Paperless trade is all about digitising the information flows and ensuring that the exchange of information can occur.

Paperless trade replaces paper-based systems; it does not run alongside paper systems. Replacement of paper-based systems generates benefits, i.e. the speeding up of trade, reducing bottlenecks in the supply chain, and reducing the fixed and variable costs of conducting international trade.

How might it work?

Taking paperless trade from the drawing board to a working approach looks relatively simple. This belies the need to coordinate electronic processes:

Between Customs and importers/exporters, customs brokers/freight forwarders, and logistics companies.

Between government agencies at the border.

Cross border coordination between agencies.

There is a need to ensure standardisation, coherency, consistency, and the legal permissions required to enact paperless trade.

These mechanisms are not new. In 1961 a UN Working Party on Facilitation found that trade would be enhanced by facilitating: *“international trade and transport by promoting rationalisation of trade procedures and the effective use for this purpose of electronic or other automatic data processing and transmission.”*(United Nations 2017)

Barriers to paperless trade

The benefits of moving to paperless trade are well known. Yet a report by United Nations 2019 found that of the economies surveyed, only 39 percent of economies had instituted paperless trade initiatives. There is currently a fragmented picture with *“digital islands”*⁶ across APEC and the world.

⁶ Comment made at the APEC Customs Business Dialogue, 2021.

What are the reasons for this? Increased transaction costs of trade benefit some parties and they will resist efforts to change. Therefore, it is in the efficient interests of governments to look beyond the short-term interests of some stakeholders and think more broadly about their economy.

There are barriers both at the firm and government levels that need to be further understood and mitigated.

Capital needs. Some traders suffer from a lack of capital. This makes it harder to trade, but it also makes more difficult to develop and connect with Customs paperless procedures.

Skill support. MSMEs and SMEs do require more assistance to connect with paperless systems. Where bigger companies can employ staff that specialise in this area, MSMEs and SMEs may not have the capital to do so. Effective participation of MSMEs/SMEs requires tailored assistance.

Working guides. The lack of detailed 'how-to guides' of how traders could go about entering a paperless trade environment.

Consistency. The lack of standardisation, coherency and consistency. Information and documentation required by many economies is different.

Overcoming opposition. Parties that benefit from less transparent approaches to trade may delay paperless trade initiatives.

Using public status. A lack of political will and leadership to manage the transition between paper and paperless trade environments.

Creating cooperation. The lack of close cooperation between firms, Customs administrations, and other stakeholders who participate in value chains also stalls progress to a paperless environment.

While there is progress towards paperless trade, there are still significant challenges. Not only do documents require standardisation, coherency, consistency, and digitization, there are also digital standards involved.

Underpinning these issues is trust in a new system. Trust is hard to earn, and is very easy to lose. The design and implementation of a new system requires acceptance by the users and belief that the new system will be beneficial.

Regional coordination

Global integration has driven:

greater trade flows,

- fragmentation of the production process by locating different stages of production in the lowest-cost economy, and
- more cross-border investment.

While some of these processes may have slowed recently, increased global interconnectivity and the pandemic have focused attention on cross border transactions and the role that paperless processes could play to facilitate trade for all exporters.

This reinforcement of the importance of trade and trade facilitation has led to a number of initiatives. These include:

The development of trade single-windows. New Zealand, for example, has, in consultation with industry, adopted a trade single-window approach and at the same time introduced the World Customs Organization data model version 3.0.⁷

Improvement in standardising trade-related documents.

This involves a changing approach from Customs administrations. If Customs administrations can verify that businesses are legitimate, with good records (including financial), then trade efficiency increases dramatically. It also benefits Customs administrations since they can redirect resources to focus on enforcement and develop a lighter touch around legitimate businesses.

Existing frameworks

Frameworks associated with facilitating paperless trade focus on improving various aspects of efficient movement of goods and services at the border. The more efficient the processes, the more likely there will be increased trade, increased participation in trade, and more efficient customs services.

The following agreements have implicit frameworks that drive efficient implementation. They do things slightly differently, but all have the same improved efficiency objective in mind. They are also consistent with each other. Of specific importance is flexibility in order to:

Describe best practice rather than prescriptive agreements that demand that parties do things a certain way. This allows parties to determine how much of the agreements they want to implement under timeframes that suit them ((United Nations 2016a)).

Can have an element of prescription but provide time for adjustment and training for those economies which require it (WTO Trade Facilitation Agreement).

Develop high-quality standards in an aspirational agreement that is open to other WTO members (Digital Economic Partnership Agreement).

Below we look at the aims and general principles that drive these agreements.

UN Framework Agreement on Facilitation of Cross border Paperless Trade in Asia and the Pacific

The Framework Agreement on Facilitation of Cross border Paperless Trade in Asia and the Pacific sets out an ambitious approach to facilitating the use of paperless trade in the region. It came into force in February 2021.

This is an enabling agreement and does not bind individual economies to a specific commitment. Its objective is “*to promote cross-border paperless trade by enabling the exchange and mutual recognition of trade related data.*” It does this in two ways:

⁷ This is a collection of international standards on data and information required by NZ Customs, Ministry for Primary Industries and other government agencies developed with the objective of achieving a consensus on the way data will be used in applying regulatory facilitation and controls in global trade.
<http://www.wcoomd.org/en/media/newsroom/2016/may/version-3-6-0-of-the-wco-data-model-has-been-released.aspx>

Enabling and recognising (through mutual recognition) the exchange of trade-related electronic data and documents.

“facilitating interoperability among national and sub regional single windows and/or other paperless trade systems” (United Nations 2016a).

The general principles revolve around:

Non-discrimination of the use of electronic communications: a communication cannot be denied solely because it is in electronic form.

Technology neutrality: the agreement should not impose the use of or favour any specific technology.

Promotion of interoperability: digital systems should take into account global standards to enhance interoperability.

Improving trade facilitation and regulatory compliance.

Cooperation between the public and private sector.

Improving transboundary trust.

Functional equivalence: the purposes and functions of paper-based requirements may be satisfied with electronic communications provided it meets specific criteria.

WTO Trade Facilitation Agreement (TFA)

The TFA entered into force in 2017. The TFA aimed to reduce red tape at the border. It addresses:

Release and clearance of goods. Time is a critical issue; therefore, it is important that goods are moved as rapidly as possible. Several of the TFA’s provisions are aimed at facilitating the release of goods (particularly perishables) quickly.

Transparency of rules and procedures. Information on how to navigate foreign Customs regulations is important for all firms (but particularly MSMEs). The more transparent, the better. The TFA requires that critical information be required online as well as contact points for enquiries.

The TFA requires e-payments and e-versions of certain documents are accepted.

Disciplines on fees and penalties. The TFA addresses how fees and penalties should be assessed. Charges should be limited to the approximate cost of the services rendered.

Increasing predictability of processes and standards. A single window or entry point is the preferred method favoured in the TFA. This assists with the predictability of rules and procedures.

Consultation and appeals. Rights of appeal and opportunities for traders to comment on changes to the movement of goods are an important part of the TFA.

Assistance for implementation is built into the TFA. Many developing nations will require time and help to reap the benefits of the agreement. These issues are addressed as part of the agreement’s structure.

Digital Economy Partnership Agreement (DEPA)

The DEPA is a plurilateral agreement that came into force in January 2021 between Chile, New Zealand and Singapore. It provides a high-quality model that seeks to drive further trading opportunities.

It uses the experience from the CP TPP and views from the business community to set the ground rules for engaging digitally and taking advantage of digital transformation.

The DEPA is committed to:

- Exploring how enhancements can be made as the digital economy grows through an evolving partnership with member states.

- Further understanding how MSMEs/SMEs can participate and share that information.

- Promoting consumer trust and confidence by ensuring consumers have the information to trade with confidence. Access to appropriate redress is also required if things go wrong.

- Ensuring non-discrimination of digital products used to facilitate trade.

- Ensuring that personal data is protected and affirming the current level of commitment relating to data flows and location of computer facilities.

- Encouraging innovation through open government data.

- Facilitating paperless trade, e-invoicing, e-payments and streamlining customs procedures for parcels.

- Initiating discussions on best practice approaches to digital identities, policies and regulation.

- Exploring how emerging technologies can be employed and promoting frameworks that support the safe use of artificial intelligence.

- Establishing approaches that allow for future cooperation between partners on digital inclusion and inclusive trade, including new people-to-people connections among indigenous peoples.

High level framework

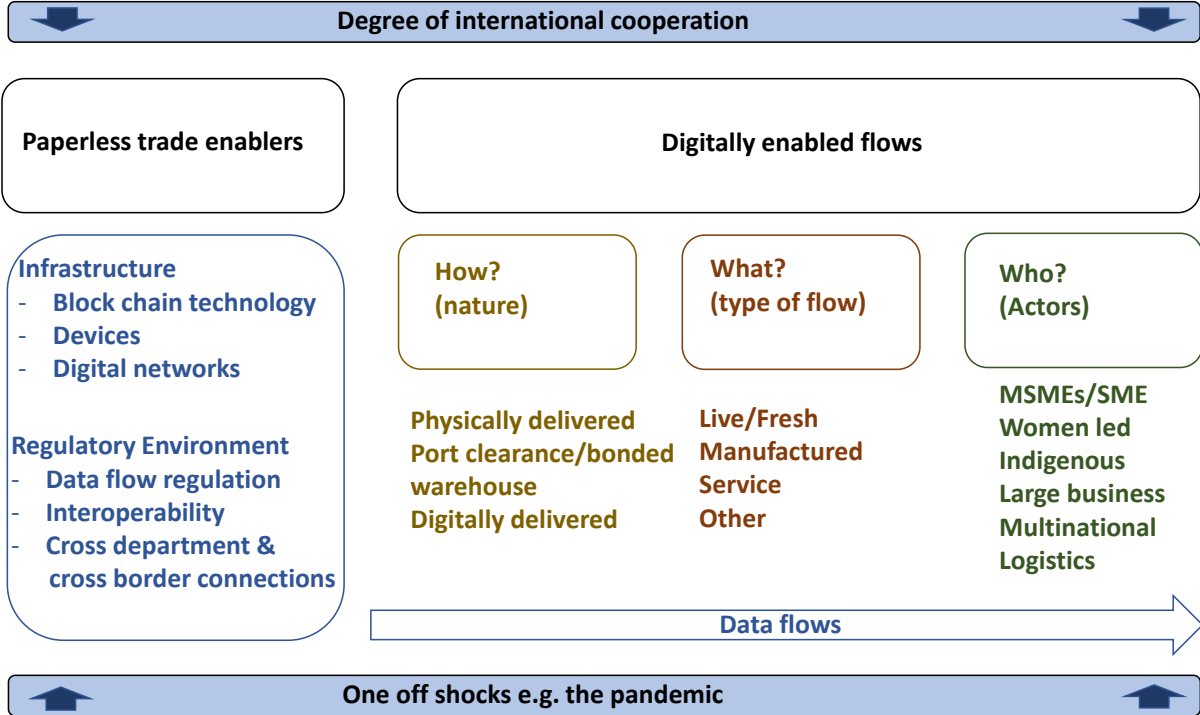
Paperless trade initiatives are one element for governments to improve their economies. To illustrate how we think about speeding up trade and reducing the transaction costs associated with trade we have set out a high-level framework adapted from OECD (2019a). See Figure 1 below.

In its policy brief, the OECD set out the elements (or building blocks) that influence how economies might approach streamlining their trade facilitation processes and ultimately benefiting all participating economies.

By applying this approach, we hope to understand how to advance paperless trade procedures without impinging upon security interests. The aim is to look for factors that can contribute to the success of a paperless trade strategy.

The proposed design of the analysis is simple. The analysis should contain just sufficient detail with enough complexity and reality to allow us to capture and illustrate the important issues.

Figure 1 Proposed framework for paperless trade analysis



Source: Adapted from OECD (2019a), González and Jouanjean (2017)

This approach concentrates on the interaction between the enablers (infrastructure, policies and regulation) and the practical physical flows: the how (a product moves), the what (type of product), and the who (the entities that move the product). These activities are constrained or enabled by the degree of international cooperation and the one-off shocks to the system (pandemics, climate change and other events).

Therefore, willingness to cooperate and the degree of cooperation have a significant impact on building trust and the durability of paperless trade initiatives.

Components of paperless trade

What drives paperless trade: enabling technologies and regulatory frameworks

Digital enablers

The technical infrastructure

The WTO, UN, and DEPA agreements are designed to ensure even-handedness towards enabling technologies that may assist paperless trade. Two issues are highlighted:

- 1 Equivalence or non-discrimination requirements between digital vs paper trade.

Technology neutrality, i.e., not favouring one technology over others.

Equivalence appears to be a specific requirement. Further, the ongoing pandemic initially assisted digitalisation across the APEC region. Governments were keen to facilitate trade in

any way they could, and digitalisation processes were implemented. However, as the pandemic has receded somewhat, some governments are moving back to paper-based systems. Cementing equivalence into general trading conditions will require policymakers to convince more sceptical economies of paperless trade benefits.⁸

Trade agreements have also adopted technological neutrality. A glance at the literature on technology suggests that technological neutrality is difficult to achieve if not impossible (Whelchel 1986). However, if you view neutrality as a set of options where choices can be made (without initially favouring one option over another), this allows you to move forward.

There are some big technology decisions to make, e.g. the use of blockchain technology. Any technology that makes it difficult to change, hack or cheat a system should be carefully considered, but blockchain is unlikely to be a perfect solution.⁹

The regulatory environment

Government budgets are always under pressure. Customs administrations need to improve their service delivery and efficiency continually. For Customs administrations all over the Asia Pacific, paperless trade offers the chance to reduce overall costs, reduce trade administrative costs, and develop a much more systematic approach to border security and trade facilitation. All this in a world that is becoming much more reliant on new digital technologies.

The development of new technologies and the pandemic has increased the focus on digital approaches that improve trade efficiency.

Obtaining the modelling benefits described earlier in the report requires the participation of current and new exporters. Many of the newer exporters are MSMEs and SMEs. Therefore, the real question is: how government can convert lower transaction costs through paperless trade to encourage MSMEs and SMEs to export?

This is not easy, with only 39 percent of governments engaged in paperless trade initiatives. There is:

- A patchwork of rules in the digital space – “the digital islands”.

- A need for clarity, standardisation and coherency.

- A need for better information on how to comply with customs requirements

Even if Customs administrations accept paperless trade, enabling the legal frameworks can be a challenge.

Issues include:

- Changes required to existing laws (trade and customs laws).

- Legal provisions on data protection, privacy, integrity, and data storage may need to be changed.

- Recognition and acceptance of electronic signatures, certification authority etc., are non-trivial issues that need to be sorted through.

⁸ Non-government stakeholders such as the APEC Business Advisory Council (ABAC) have this issue on their agenda.

⁹ There are worries about block chain power usage, for example.

A focus on encouraging MSMEs, SMEs, indigenous entities and women-led firms

Due to the rapid digitalisation, Customs administrations and other government agencies are expected to make paperless border processes as simple as possible. This requires:

Customs administrations recognising that they are part of the supply chain. They have a different role to other participants (i.e., compliance and security functions), but part of that role is trade facilitation.

Outreach programmes to understand the needs of MSMEs, SMEs, indigenous firms and women-led firms to maximise export potential.

Paperless environments improving clarity, standardisation and coherency.

Ideally, what Customs administrations are driving towards is the paperless trade version of the harmonised code system: in particular, it requires generic conformity (the trade sits in a certain category and needs to comply with those categories requirements) and specific diversity (how each firm goes about trade may differ if it meets certain criteria informed by the type of trade).

For example, New Zealand, Australia, Chinese Taipei, and other APEC economies are striving to provide certainty and clarity to the business community around their export/import channels. They are also ensuring that when changes occur, they can be easily communicated, and firms are able to adapt.

What is happening?

The impact of green priority lanes between Australia and New Zealand, and more targeted interventions are having an impact. Moreover, this has been helped by the pandemic lockdowns and restrictions on people-to-people contact within the workplace.

The OECD¹⁰ points to some signs that digitization was improving:

Between February and September 2020, there were many more trade facilitation measures brought in by member economies.

The International Plant Protection Convention (IPPC) indicated an eight-fold increase in e-certifications between April 2020 and March 2021.

Small changes in transparency or automation or interagency cooperation saw trade in all sectors rise between 1 percent and 4 percent. This for all types of goods and all economies.

There is a real payoff.

van Tongeren and Baragwanath (2021) pointed to greater exchange of ePhytos, up from 7,992 in December 2019 to 45,351 in August 2020. They also point to the need for greater cooperation between international approaches to e-certification (van Tongeren and Baragwanath 2021). The IPPC, the World Organization for Animal Health (OIE), and Codex Alimentarius all have taken different approaches to e-certification.

¹⁰ Comment made at the APEC Customs Business Dialogue, 2021.

Describing the digitally enabled trade flows

As the pandemic persists, governments continue to restrain the free movement of people, goods and services across borders to unprecedented levels. Economies find themselves confronted with the increasing need to move away from over-reliance on their traditional manual ways of trading in favour of automated alternatives.

Understanding policy implications of paperless trade requires further understanding of the fine details of the trades. This includes:

- How goods are delivered.
- What is delivered (the object of the transaction).
- Who (the actors) are the participants.

How are products delivered?

This report is mainly concerned with how paperless trade impacts traditional trade and how goods are physically delivered to the market by sea and air.

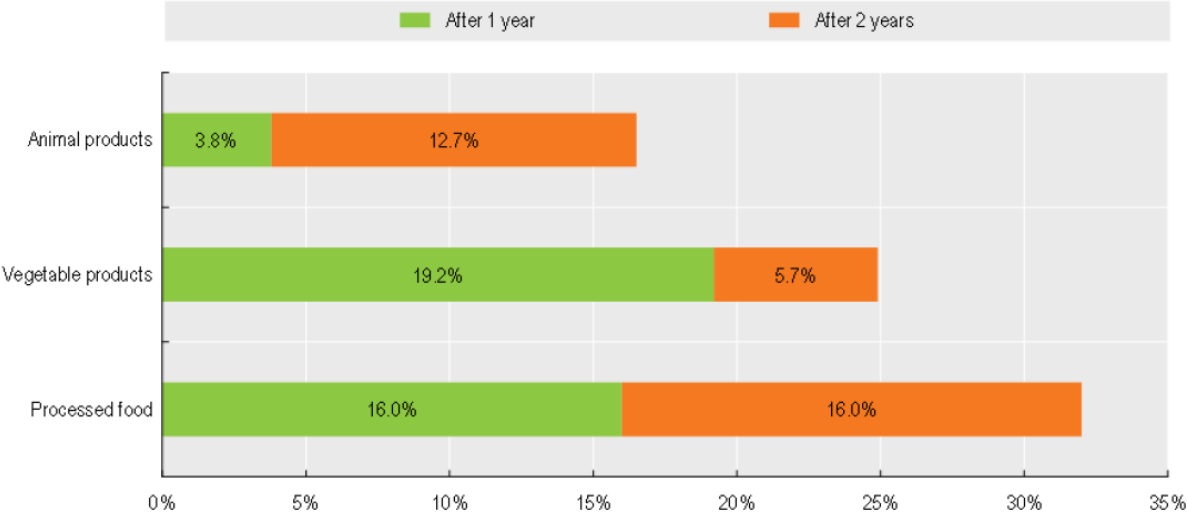
What is delivered?

Regional and global value chains have resulted in numerous goods and services being produced across a range of geographic locations rather than purely originating from a single jurisdiction. Moreover, in a more complex trading environment, goods are increasingly being processed, made or manufactured from raw materials, parts, components, inputs and services obtained from an integrated supply chain, all cutting across commerce of various economies, regions and continents.

For all goods e-certificates of origin can play a major role in speeding up global value chain trade and delivering benefits for the government and the business involved.

APEC economies also have a significant interest in perishable goods and the positive impact of paperless trade. van Tongeren and Baragwanath (2021) show that when impediments are removed to paperless trade, the effects can be significant for perishables.

Figure 2 Export values increase after implementing SPS e-certificate



Source: OECD estimates in van Tongeren and Baragwanath (2021)

Who are the actors in the supply chain

A key motivating factor for further developing the paperless trade agenda is that it can reduce barriers for smaller firms to enter global markets (MSMEs, SMEs, indigenous firms, and women-led firms).

While larger firms have the resources and the people to deal with the transaction costs associated with trade, smaller firms have high fixed costs and variable costs. Anything that would reduce these costs (such as paperless trade) will improve participation rates by smaller firms, e.g. the OECD commented at the APEC Business Dialogue that more efficient consultation processes and appeal processes increase the probability that smaller firms will stay in exporting by approximately 3 percent.¹¹

At the APEC Customs Business Dialogue, MSMEs, SMEs, indigenous firms, and women-led firms made a number of comments about how fixed and variable costs could be reduced:¹²

Traders may require assistance from the government. Government has an educational and outreach role to play. Also, other businesses could have a role in mentoring MSMEs and SMEs.

Indigenous firms wanted lasting relationships, so the first step was to engage with the government on how they might want to participate in paperless trade. Of crucial importance was:

- Understanding and clarity of what is required.
- When regulations change, small business need more than just a notification on a website. They may require further understanding. This means engaging with Customs administrations, freight forwarders, customs brokers, and other government officials.

¹¹ Comment made at the APEC Customs Business Dialogue, 2021.

¹² Participants at the APEC Customs Business Dialogue, 2021.

Simplification of rules around customs procedures was critical. With regular updates and changes occurring all the time, it can cause frustration and hold-ups. This could include:

- Even more detailed guidance on how to approach phytosanitary certificates/data, etc.
- Sample digital templates need to be made available.

Standardised, predictability, consistency and simplification of customs forms will help improve understanding. This leads to compliance which in turn increases trust.

For small businesses, success is the efficient movement of goods or services. If they have completed all their compliance issues and one document is missing, then the whole process comes to a halt. A delay for a small company is a brand hit (relative to a larger company) so ensuring the small companies have the confidence and the tools to comply with customs administrations. This is now much more important as we move into an era of paperless trade. To be successful will require increased engagement with firms by Customs administrations – this will drive increases in trade participation.

Factors that calibrate the degree of paperless trade

A critical issue will be the willingness of political leadership to lock in the digital changes made because of the pandemic. While one-off shocks such as the pandemic are uncontrollable, the way governments react to them is.

The political attitudes and trade policy settings are crucial in the development of paperless trade. This includes politicians setting out why paperless trade is important for their respective economies. Politicians also need to make a case for change and set out the evidence of paperless trade benefits.

Implications and stylised criteria

In an ideal world, the experiences of those involved in paperless trade will highlight how e-certificates improve compliance with regulations and policies, reduces errors and fraud, supports risk management and builds trust.

Ideally, these experiences will show that when electronic phytosanitary certification systems are used, the number of participants in e-systems quickly multiplies. This will help governments increase participation in trade and in some cases, even increase revenue.

We expect competence and capacities to be enhanced at the institutional level, leading to more efficient service delivery. At the industry level, time savings will occur, as well as improvements in communication. It also should lead to higher levels of trust among trading partners and greater confidence in the authenticity of certificates issued.

We have used a number of criteria to reflect the ideal system:

Efficiency is broadly about maximising outputs obtained from available inputs, but there are different variants used in economics:

- Technical efficiency refers to the most cost-effective way of providing a given service, for instance, reducing the fixed costs of exporting.

- Allocative efficiency refers to the ease with which resources can move from one area to another. Governments will reduce costs on monitoring complying firms and increase resources on illicit trades or continual non-compliance.
- Dynamic efficiency refers to innovation and changing to new activities over time. This is the most important long term benefit of paperless trade initiatives.

If the introduction of paperless trade systems can reduce transaction costs, it will improve technical efficiency. To the extent that it shifts resources from one less productive activity to a more productive activity, it also enhances the allocative efficiency of resource use. If it also allows new, more efficient ways of doing business, it improves dynamic efficiency.

Effectiveness refers to the delivery of outcomes from paperless trade that aligns with the stakeholders' expectations: government, business and the general public. If these results are delivered, then the likelihood that paperless trade initiatives become established increases.

Certainty, integrity and accountability are required as a bottom line. A corrupted system will lead to distrust and a lack of participation by business. Products that cross international borders need to comply with the rules and regulations that exist in those jurisdictions.

Simplicity will assist MSMEs, SMEs, indigenous firms and women-led firms in exporting. The simpler the processes means reduced barriers to exporting and reduce fixed and variable costs for businesses.

Fairness and equity require a focus on smaller businesses. More resources will need to be spent on outreaches to these businesses to encourage them into exporting.

Flexibility of customs systems will also underpin paperless trade:

- Customs administrations may require flexibility in dealing with smaller firms. This will require judgement and more focused outcomes rather than process.

Table 2 Idealised criteria

Possible criteria	What are we looking for under each criterion?	Comments
Efficiency	Is there a net benefit under each of the different efficiencies?	Needs to deliver benefits to participants.
Technical efficiency (scale)		It must reduce the fixed costs of entry for smaller firms. This requires increased outreach by Customs administrations.
Allocative efficiency (matching)		It must reduce costs to firms that comply and increase resources aimed at illicit trades or continual non-compliance. Firms have reduced variable costs with faster clearance.
Dynamic efficiency (innovation)		The collection of digital data enables risk to be managed more effectively and facilitates the cross border movement of legitimate goods.

Possible criteria	What are we looking for under each criterion?	Comments
Effectiveness	Will it deliver outcomes in line with governments, exporters, and importers priorities?	Paperless trade must provide more effective resource deployment, faster clearance and release, improve revenue collection, increase trader compliance, reduce costs and enhance supply chain security.
Certainty, integrity and accountability	Are the processes secure?	The base of all other benefits is secure systems, difficult to forge.
Simplicity	Can firms new to exporting participate easily?	For smaller firms to participate on an ongoing basis requires easy access to automated systems.
Flexibility	A focus on outcomes for MSME.	A major challenge for Customs administrations but critical area of support.

Source: NZIER

References

- APEC. 2010. "Assessment and Best Practices on Paperless Trading to Facilitate Cross Border Trade in the APEC Regi." APEC#209-CT-01.11. <https://www.apec.org/Publications/2010/06/Assessment-and-Best-Practices-on-Paperless-Trading-to-Facilitate-Cross-Border-Trade-in-the-APEC-Regi>.
- Duval, Yann. 2017. "Digital Trade Facilitation: Paperless Trade in Regional Trade Agreements." *ADB Working Paper Series*, 42.
- González, Javier López, and Marie-Agnes Jouanjean. 2017. "Digital Trade: Developing a Framework for Analysis." 205. *OECD Trade Policy Papers*. OECD Trade Policy Papers. OECD Publishing. <https://ideas.repec.org/p/oec/traaab/205-en.html>.
- Ha, Sung Heun, and Sang Won Lim. 2014. "The Progress of Paperless Trade in Asia and the Pacific: Enabling International Supply Chain Integration," 45.
- Liang, Lee Hong. 2020. "2020 and Covid-19 Turbocharge Digitalisation and Virtualisation for Shipping." *Seatrade Maritime*. 2020. <https://www.seatrade-maritime.com/technology/2020-and-covid-19-turbocharge-digitalisation-and-virtualisation-shipping>.
- McKinsey & Co. 2020. "How COVID-19 Has Pushed Companies over the Technology Tipping Point—and Transformed Business Forever." 2020. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever#>.
- OECD. 2019a. "Digital Trade." Trade Policy Brief. <https://www.wita.org/wp-content/uploads/2020/06/Digital20trade.pdf>.
- . 2019b. "Seizing the Productive Potential of Digital Change | OECD Economic Surveys: Estonia 2019 | OECD ILibrary." 2019. <https://www.oecd-ilibrary.org/sites/af0dff7-en/index.html?itemId=/content/component/af0dff7-en>.
- . 2019c. "The Critical Role of Trade Facilitation in Supporting Economic Diversification and Structural Reforms." In *Aid for Trade at a Glance 2019: Economic Diversification and Empowerment*. Paris: OECD Publishing. https://www.oecd-ilibrary.org/development/aid-for-trade-at-a-glance-2019_f57c8757-en;jsessionid=cBmBBOCOW43skaVtflNo1Qly.ip-10-240-5-35.
- Tongeren, Frank van, and Tom Baragwanath. 2021. "Digital Opportunities for Sps Systems and the Trade Facilitation Effects of Sps Electronic Certification."
- UNCTAD. 2020. "Paperless Trade Facilitation in 2019: Global and Asia-Pacific State of Play." 2020. <https://unctad.org/news/paperless-trade-facilitation-2019-global-and-asia-pacific-state-play>.
- United Nations. 2014. "Estimating the Benefits of Cross-Border Paperless Trade," 36.
- . 2016a. "Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific." ESCAP. 2016. <https://www.unescap.org/resources/framework-agreement-facilitation-cross-border-paperless-trade-asia-and-pacific>.
- . 2016b. "Framework Agreement Cross border Paperless Trade Asia." 2016. https://tfig.unece.org/contents/Framework_Agreement_Cross_border_Paperless_Trade_Asia.htm.
- . 2017. "Paperless Trading: How Does It Impact the Trade System?" United Nations. http://www3.weforum.org/docs/WEF_36073_Paperless_Trading_How_Does_It_Impact_the_Trade_System.pdf.
- . 2019. "Digital and Sustainable Trade Facilitation: Global Report 2019." <https://www.unescap.org/resources/digital-and-sustainable-trade-facilitation-global-report-2019>.
- United Nations Economic Commission for Europe. 2006. "A Roadmap towards Paperless Trade." ECE/TRADE/371. https://unece.org/fileadmin/DAM/cefact/publica/ece_trd_371e.pdf.

- . 2017. “White Paper: Paperless Trade. Version 1.” 2017. https://unece.org/fileadmin/DAM/cefact/GuidanceMaterials/WhitePapers/WP-PaperlessTrade_Eng.pdf.
- Whelchel, Robert J. 1986. “Is Technology Neutral?” *IEEE Technology and Society Magazine* 5 (4): 3–8. <https://doi.org/10.1109/MTAS.1986.5010049>.
- WTO. 2015. “World Trade Report 2015 Speeding up Trade: Benefits and Challenges of Implementing the WTO Trade Facilitation Agreement.” https://www.wto.org/english/res_e/publications_e/wtr15_e.htm.

Part 2

The Pathway to Paperless Trade

This section provides the framework to enable paperless trade. The building blocks of paperless trade are key to successfully implementing paperless trade. These are a combination of the following interrelated components:

- infrastructure,
- legal and policy cooperation,
- border agency collaboration,
- risk management,
- data and data standards, and
- trade stakeholders.

The paperless trade guidelines focus on how a customs administration could deliver paperless trade in the following order of enablers:

- Automated systems
- Legislative frameworks
- Electronic clearance procedures
- Publication of information.

UN Global Survey on Digital and Sustainable Trade Facilitation

To help economies benchmark and reduce the time and cost of trading across border, the UN Regional Commissions jointly conduct the UN Global Survey on Digital and Sustainable Trade Facilitation. The Survey currently covers 143 economies around the globe, and 58 measures related to the WTO's Trade Facilitation Agreement (TFA). The measures relating to paperless trade have been used to as a benchmark for this framework.

Single Window

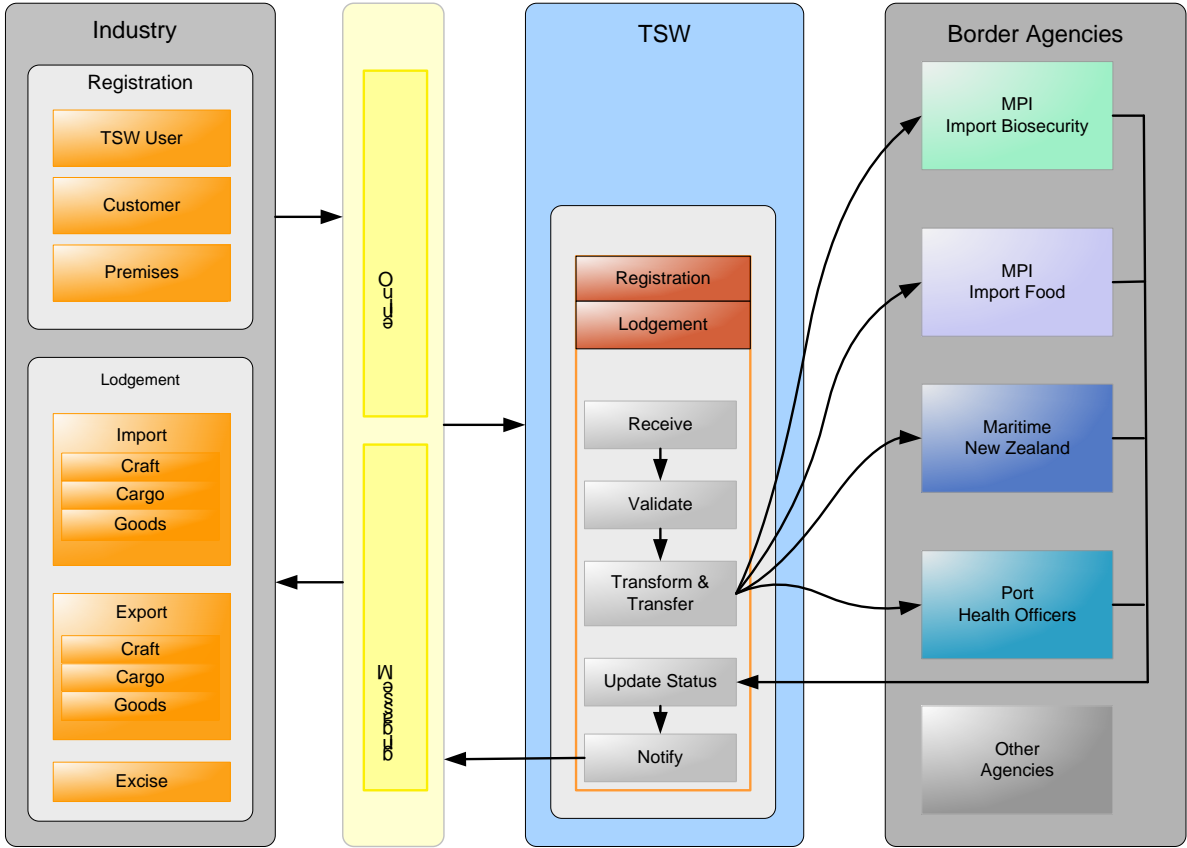
To enable paperless trade requires an automated system such as a single window. Single windows are not the only type of automated system used by Customs administrations, however regional developments, some Free Trade Agreements, the WTO TFA, and new objectives of the SCCP have all encouraged the development of single windows for trade.

Some APEC members and various international bodies (WCO, UN, World Bank) have considerable experience in the development and use of single windows to facilitate trade. A single window can facilitate cross border exchange of data, also known as single window interoperability. In view of members WTO TFA commitments and the direction provided by the SCCP Strategic Plan 2021-2024, the guidelines will focus on paperless trade using a single window and incorporate the experience of some APEC members. Single window defined

While single windows are designed in several ways, the following definition is widely accepted internationally:

a single window is a facility that allows parties involved in trade and transport to lodge standardised information and documents with a single-entry point to fulfil all import, export, and transit-related regulatory requirements. If information is electronic, then individual data elements should only be submitted once (UNECE 2015).

Figure 3 Stakeholders and data exchanges in a single window environment



Source: NZ Customs

The functionality of the single window is important and needs to reflect the statutory role of all agencies at the border (e.g. customs, biosecurity, maritime and health) and meet the needs of stakeholders. A single window may include the following functions:

1. Single submission of data that enables risk assessment and targeting;
2. Clearance for all imports and exports;
3. Duty assessment and collection;
4. Export certification for animal and plant products;
5. Assessment and collection of port charges;
6. Intervention results, analysis, and performance reporting;
7. Notification of cargo status to ports, airlines and freight forwarders; and
8. Collection and transfer of trade statistics data.

Data and Data Standards for the Single Window need to be defined

The WCO Data Model (WCO DM) provides all competent cross-border regulatory agencies with a common standard and technology neutral regulatory data exchange. This enables the timely sharing of information with Single Windows in economies with the same data standards, thus opening up new perspectives for networking for global trade (WCO Data Model – A Global Standard for Seamless Cross Border Transactions).

Data is the foundation of every modern transaction. Inconsistent data can be a burden to traders if each economy requires a different standard, or has a different interpretation. The need for new and improved data is continuous as requirements for cross-border information are constantly evolving.

The WCO has identified the following benefits of the WCO DM for the operation of a national single window:

1. Facilitate trade by providing a global standard for data requirements needed for the release of goods via electronic means;
2. Reduce costs to government and trade in terms of standards and systems maintenance, as well as future development requirements;
3. Decrease the cost of regulatory reporting, while enhancing the quality of reported data;
4. Eliminate unnecessary intermediaries by providing direct access to government services;
5. Eliminate redundancy in data collected from, and submitted by, economic operators;
6. Harmonize and enhance the implementation of new policies and programmes, such as AEO programmes and AEO MRAs, and ensure delivery of associated benefits;
7. Give international traders the capability to build a simplified interface with Customs and multiple government agencies, as well as offer a single access point to meet regulatory requirements in full;
8. Enhance the risk management capabilities of all related cross-border regulatory agencies, as their critical data needs can be met by a single submission to the Single Window;
9. Enable Customs to build up inter-agency operational communication that minimizes operational costs, investment and staff resource normally associated with border controls; and
10. Provide all cross-border regulatory agencies and their trade partners with a common operational vocabulary, language and syntax.

Structured data provides enhanced risk management capabilities for border agencies

The adoption of the WCO DM will provide border agencies with options to make compliance easy and hard to avoid while achieving high assurance. This will enable a focus on high-risk illegal border activity.

The adoption of the WCO DM will allow customs administrations to use an intelligence-led, targeted risk management approach to managing the border. This involves intelligence products (such as risk profiles, specific information about commodities, entities, or persons, and analytic modelling used to identify trends and anomalies in data) being applied in advance of the physical movement of goods across the border to identify risk items.

Border Agency Cooperation for the Single Window

Economies should ensure that their authorities responsible for border controls and procedures that deal with the importation, exportation and transit of goods cooperate and coordinate their activities in relation to the operation of the single window to more effectively facilitate trade.

Legal frameworks for paperless trade need to be flexible

Technology-neutral and nimble regulatory regimes are required to maximise the benefits from digital goods and services (Australian Productivity Commission and New Zealand Productivity Commission 2019).

Much of the detail in legislation can become outdated over time due to changes in business practices and technology. Taking a principles-based approach to the legislative framework to accommodate changes such as existing information becoming outdated, new information requirements, and changing technologies, provides flexibility for customs administrations and certainty for exporters.

A principles and outcomes-based legislative framework will support an agile approach that enables border processes to be amended to respond efficiently to changing trade, travel and revenue collection environments, as well as information, intelligence and enforcement requirements.

Legislative flexibility

New Zealand has provided the following example of legislative flexibility in relation to paperless trading for certificates of origin (CoO).

The Joint Electronic Verification System or JEVS implemented in 2016 moved from a paper-based Certificate of Origin system to a secure technology solution that sends electronic origin data to one of our trading partners. This enables electronic verification of CoO. Under JEVS, the data elements from CoO are transmitted electronically from the New Zealand single electronic gate to the single electronic gate in the destination market (and vice-versa) as close as possible to the time of certificate issue.

JEVS streamlined and accelerated customs clearance procedures by enabling the customs administration in the destination market view and authenticate New Zealand-issued certificates of origin (the document evidencing the origin of a good) in real time. It provided significant benefits to New Zealand traders by removing transaction costs.

Moving to an electronic verification system required changes to information required on a customs form. Changes were made by updating the principles-based 'rules' within the legislation, rather than changing the primary legislation. New Zealand was able to change our policy, procedures, and legislation to implement JEVS in just six weeks.

Utilising 'rules' ensures any necessary updates can be made quickly and efficiently, without changing primary legislation, which can be time consuming.

Legal framework for a single window

As a key part of the infrastructure required to deliver paperless trading, the regulatory regime, or legal framework, that enforces the use of a single window is a key consideration for customs administrations and other agencies. Single windows need to be addressed in an economy's legal framework.

Submitting electronic import and export declarations

Allowing import and export declarations to be lodged electronically into a single window via the internet or via electronic data interchange (EDI) using the data elements of WCO DM is considered a good option for traders. This is cost-effective and simple mechanism for traders with limited capital and limited understanding of trade infrastructure.

Every individual who wishes to lodge an electronic declaration is required to be registered and issued with a declarant code and a unique user identifier (UUI). A UUI is similar to a personal identification number (PIN) and identifies the person submitting the declaration. The PIN is the electronic equivalent of the signature of the declarant.

The information provided in the electronic lodgement provides the basis for customs clearance and risk assessment. Additional information or documentation is only required if needed, such as verifying details or the examination of the goods.

The digitalisation of documents and record-keeping systems, automation, robotics, and use of other technologies has increased. Remote audits can now be undertaken. It has been shown that access to digital data can improve audits by Customs and presents a great opportunity to further enhance the effectiveness of post clearance auditing rather than the physical examination of goods.

To facilitate trade, post clearance audit is used to ensure compliance after the goods have been released from Customs.

Submitting Electronic Inward Cargo Report (Air and Sea)

Implementing an electronic Inward Cargo Reporting (ICR) through a single window system for air and sea cargo may include the following functionality:

- advance information about the arrival of cargo;
- movement of cargo as international or domestic transshipment; and
- clearance of low value shipments.

This information can be used by the border agencies to assess the risk of arriving cargo and plan in advance any activity required to manage that risk.

If owner or operator of a craft (or their agent) submit the ICR prior to the time of arrival in the destination economy it will allow the risk assessment to be completed before physical arrival of the goods and allow for immediate release unless further processing is deemed necessary.

The data can also be used to write-off low value consignments that are exempt from customs duties (de minimis). By refocusing revenue collection to more efficient areas, Customs administrations can streamline border clearance and reduce the cost to traders. Effective De minimis arrangements are important for micro small and medium-sized enterprises (MSMEs)

as they face a disproportionate compliance burden with respect to the completion of customs formalities and higher transaction costs.

Electronic application and issuance of import and export permits

Issuing permits and licenses electronically using the Single Window will reduce time for traders. Registered users can enter applications for permits and licences into the single window. Permits and licences can be issued electronically using either a PIN or QR code as secure electronic signature.

Electronic Applications and Issuance of Certificates

A Certificate is a document widely used in international trade transactions, which attests that the product listed therein has met certain criteria in a particular economy. A government authority or a competent authority (e.g. Chambers of Commerce) can issue it. The UN Global Survey on Digital and Sustainable Trade Facilitation notes that progress on the transition from paper based to electronic certificates is still needed.

An APEC study in 2011, conducted for the Paperless Trading Sub-Group (PTS), analysed the benefits of an Electronic Certificate of Origin (e-CO) between exporters in Korea and importers in Chinese Taipei. The study found that there have been significant benefits to traders in terms of time and cost savings. The outcomes from the study are still considered relevant today.

COVID-19 has created some additional challenges for traders to meet their overseas market requirements. Due to uncertainty with supply chains, courier services and people working from home, some APEC economies have accepted e-copies or scanned copies of Certificates to facilitate trade on a temporary basis. In the majority of cases, a paper copy is still required to be submitted within a designated timeframe. While the temporary acceptance of Certificates caused by COVID-19 trade disruption by APEC economies is positive, the requirement to also submit a paper copy still imposes significant costs on traders.

If applicable, in a single window environment, an electronic Certificate should be submitted with the lodgement electronically.

The guidelines in Part 3 take this a step further by encouraging economies to accept electronic versions of all trade documents for the reasons outlined in this section.

E-payment or refund of Customs duties and fees

Implementing procedures allowing for the electronic payment or refund of duties, taxes, fees, and charges collected by customs incurred upon importation and exportation will:

- speed up cross border transactions;
- reduce costs for traders;
- enable and support other electronic transactions; and
- simplify procedures.