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**Cross border e-commerce
Series 1 whitepaper**

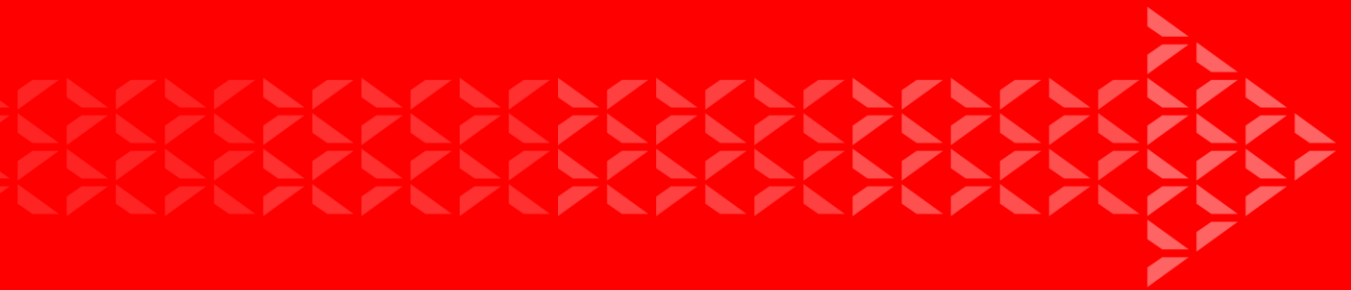
Navigating the cross border e-commerce landscape



Challenges, solutions and the path forward



Moving e-commerce forward



Navigating the cross border e-commerce landscape

Challenges, solutions and the path forward

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1 Backdrop of CBEC

1.1 Definition of cross border e-commerce

Cross border e-commerce, the international buying and selling of goods through online platforms, has gained substantial traction. It involves transactions between buyers and sellers from different countries or regions using electronic marketplaces.

CBEC, short for Cross Border e-Commerce, refers to dutiable / non-dutiable shipments of tangible goods across borders, conducted through e-commerce.

Characteristics

1. Online ordering, sale, communication and, if applicable, payment
2. Cross border transactions/shipments, Physical (tangible) goods, and
3. Destined to consumer/buyer (commercial and non-commercial)

Process Considerations

1. Time-sensitive goods flow
2. High volumes of small packages
3. Participation of unknown players
4. Return/refund processes required

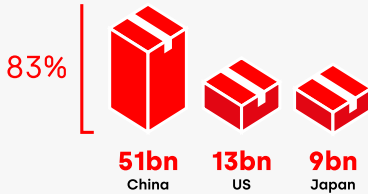
However, this rapid growth poses new challenges, particularly in customs clearance, risk management, and harmonised processes. The complexity and time-consuming nature of customs clearance, along with potential data submission issues, create hurdles for businesses. Additionally, the demand for facilitated supply chains and efficient customs procedures necessitates a delicate balance between control and expediency for customs authorities. Improving these aspects is crucial for sustained competitiveness and growth in cross border e-commerce.

1.2 Cross border e-commerce market overview

CBEC has emerged as a significant driver of global trade, experiencing exponential growth across all regions and economic statuses. This surge can be attributed to factors like the rise of the middle class, widespread smartphone usage, improved online payment systems, and the proliferation of affordable and efficient shipping options, as well as the expansion of online marketplaces. Consequently, ecommerce trade has become an indispensable aspect of the global economy, with small and medium-sized businesses benefiting from newfound access to untapped markets and customers.

e-Commerce Market Overview

Global retail is growing. In 2020, retail e-commerce sales amounted to USD4.28 trillion worldwide and in 2021, the figure amounted to USD4.28 trillion. This figure is forecast to grow by 56 percent over the next few years, reaching USD6.3 trillion in 2023, and by 2026, over USD8.1 trillion.



2,760 packages are shipped per second in 2018
US has the highest parcel revenue, generating \$119 billion in 2017

200 billion parcel by 2025
Global parcel volume was 87 billion in 2018 and surpassed 100 billion in 2019



In 2023, the number of digital buyers stands at **2.64 billion**. This makes up 33.3% of the population worldwide. I.e. one out of every three people is an online shopper.



Before the COVID-19 Pandemic, e-commerce statistics showing a consistent growth year over year for the last few years of 12–20%.



COVID-19 has accelerated the e-commerce industry's growth and more businesses are joining the e-commerce business than ever before. Number of online shoppers will continue to increase, rising to 2.71 billion in 2024 and 2.77 billion in 2025.

Across all the regions exponential growth is projected as shown below.

1. North America

- Percentage of online buyers among the population: **79.8%**
- Average online spending growth rate: **7%**
- 82% of the US population buying online, Mexico (75%), Canada (73%)

2. Europe

- Percentage of online buyers among the population: **72%**
- Average online spending growth rate: **2.23%**
- UK (87%), Sweden (84%), Germany and the Netherlands (83%)

3. Asia and Oceania

- Percentage of online buyers among the population: **53.4%**
- Average online spending growth rate: **2%**
- South Korea (88%), Australia (84%) and Japan (71%)

4. Latin America

- Percentage of online buyers among the population: **4.6%**
- Average online spending growth rate: **2.59%**
- Argentina (78%) and Brazil (50.6%)

5. Africa

- Percentage of online buyers among the population: **43%**
- Average online spending growth rate: **32.5%**
- Kenya (65%), South Africa and Nigeria (63%)

6. Middle East

- Percentage of online buyers among the population: **43%**
- Average online spending growth rate: **97%**
- UAE (89%), Bahrain (83%) and Qatar (81%)

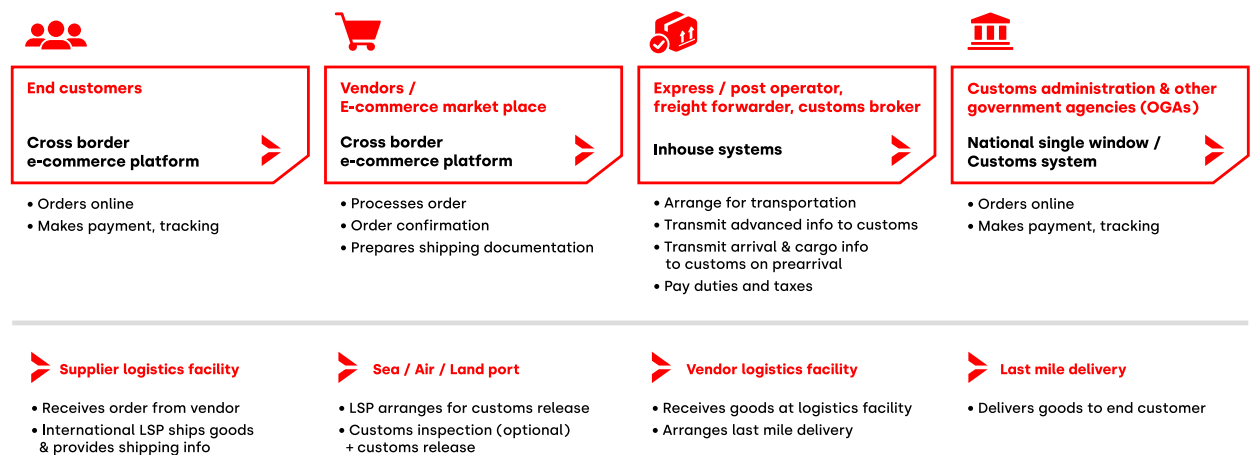
To tackle existing challenges faced by e-commerce players, we endeavour to offer solutions that leverage automation, technology, and data analytics while fostering partnerships to enhance the overall customer experience. Through in-depth exploration, we aim to shed light on the implementation challenges and opportunities, providing valuable insights into the promising future of this ever-evolving industry.



2 CBEC and regulatory compliance

One of the main challenges in cross-border e-commerce is navigating the clearance process. This entails ensuring that goods adhere to the customs regulations and requirements of the destination country prior to entry, involving customs authorities, freight forwarders, and clearance agents. Dealing with regulatory compliance and customs clearance ranks as the top challenge for over half of online retailers engaging in cross-border e-commerce. This encompasses understanding and adhering to diverse regulations and requirements of each country, along with the accurate submission of customs data. Streamlining this complex process is vital for enhancing cross-border e-commerce efficiency and success.

The diagram below illustrates the entire process, encompassing regulatory aspects, physical goods flow, with Customs & OGAs clearance at the tail-end of the process.



This customs clearance challenge often results in delays and increased costs for various stakeholders. Some of the factors that contribute to delays and added costs include:

1. Incomplete or incorrect documentation, which can also trigger fines or penalties.
2. Higher inspection rates, mostly because of inexperience with the clearance processes and the other relevant compliance requirements.
3. Different and complex regulations and procedures imposed on different stakeholders in different stages of the supply chain, causing confusion and increased error.
4. Communication issues and language barriers between customs authorities, businesses, and freight forwarders.

Even a regular cross border movement poses significant challenges, particularly in customs clearance. The authorities, usually customs, demand comprehensive information about the goods, including product details, tariff classification, origin, composition, and price. In addition to determining dutiable value and applicable taxes, various documents such as licenses, certificates, and packing lists are necessary for smooth clearance. Understanding the complex regulatory framework involved adds to the difficulty.

Cross-border e-commerce faces similar requirements, with varying rules and regulations across countries. Unlike traditional supply chains with limited stakeholders and predetermined product ranges, e-commerce involves numerous parties and greater product volume, making the entire process considerably more intricate. To streamline and improve this process, a thorough understanding of the diverse regulatory environments and collaboration among multiple stakeholders is essential.



3 Current challenges

Cross-border e-commerce (CBEC) is a fast-growing sector that plays a crucial role in global trade. Customs administrations are grappling with the evolving landscape, encountering numerous challenges in clearing e-commerce cargo. Key challenges faced by customs administrations and government agencies and proposed potential process improvements are illustrated below:

- Ecommerce customs processes often rely on the Electronic Single Window, combining postal declarations and express/courier manifests. Initially effective, this method struggles with the surge in ecommerce transactions due to online shopping growth, leading to inefficiencies.
- Simplified postal declarations lack detailed information, enabling misuse by importers and freight forwarders. This misuse poses security threats, revenue losses, and delays in clearance procedures.
- Customs faces dual challenges: meeting high-speed ecommerce demands driven by volume and ensuring thorough due diligence and risk assessment within tight timelines. Balancing resource allocation and revenue adds complexity and compromises risk management in ecommerce clearance.
- The De-minimis allowance, intended for low-value goods, is frequently exploited, causing revenue loss, and disadvantaging local businesses that compete with untaxed or lightly taxed online purchases.

These challenges impact the entire ecommerce ecosystem, leading stakeholders to grapple with resultant issues. Several common problems are illustrated below:



Customs

- Revenue leakage concerns
 - a. Lump sum declared due to consolidation of goods
 - b. Misuse of de-minimis value
 - c. Fraudulent personal identification
- Limited data availability, goods visibility, traceability, and reconciliation
- Clearance only after arrival of goods can slow clearance
- Inability to conduct comprehensive risk assessment due to high volume of parcels
- Security concerns



OGAs

- OGAs have no / minimal control for e-commerce goods import
- Lack of / no information sharing; inability to conduct risk assessment
- Security concerns



Business community

- Current submission via eSW does not facilitate bulk submission
- Inability to leverage on data from in-house systems for reuse
- Data formats not aligned to international standards (CBEC/WCO/CN22)

In addition to the mentioned challenges, various process, system, and policy factors also impact the ecommerce ecosystem. These aspects are elaborated upon in the following sections:

3.1 Legal framework — Return of goods for cross border e-commerce retail

The return of goods in Cross-border eCommerce (CBEC) significantly affects Customs administrations, and the absence of specific provisions and clear procedures creates concerns for e-vendors, platforms, marketplaces, and consumers. It is imperative to address this issue while enhancing legislation. China Customs, for instance, introduced the "return center warehouse mode" in 2021 (Announcement No. 70, General Administration of China Customs), directing consumers to send goods directly to the return center warehouse in the Customs control area. This innovative approach streamlines return procedures and shortens the return cycle for CBEC retail goods.

3.2 Limited customs resources

The surge in global e-commerce, accelerated by the COVID-19 pandemic, has overwhelmed customs resources. E-commerce sales have increased dramatically, leading to a tenfold rise in recent years. This growth highlights the urgent need for substantial technological upgrades in postal services to manage the influx of online orders effectively.

To tackle the challenge of limited resources and the rapid expansion of e-commerce, the WCO Framework of Standards (FoS) offers 15 global standards. These standards emphasize the importance of sharing advance electronic data for efficient risk management and smoother handling of cross-border shipments.

The WCO advocates for customs administrations to adopt compliance programs like Authorized Economic Operator (AEO), employ cutting-edge technologies such as non-intrusive inspection (NII) equipment and data analytics, and prioritize risk assessment to balance control and facilitation in cross-border e-commerce. This includes using advanced data to streamline risk assessment processes, focusing resources on high-risk goods, and utilizing non-intrusive inspection methods like CT and X-ray scans along with intelligent image analysis and cross-referencing techniques to ensure secure yet swift clearance.

Some administrations are also establishing cyber security and risk management centres dedicated to e-commerce for added protection.

3.3 Challenge — Infrastructure, high-volume shipments

Cross Border eCommerce (CBEC) has experienced rapid growth, making efficient clearance of high-volume shipments crucial for success. However, many Customs administrations lack the necessary resources, both physical (e.g., warehouses) and digital (e.g., software), to manage CBEC-originated goods effectively.

Customs and other government agencies are struggling to conduct thorough assessments and due diligence on parcels due to the high volume of goods expected from CBEC. This has led to compromises in risk management.

From a revenue generation perspective, there are concerns about potential revenue leakage due to the consolidation and declaration of goods. This could lead to situations where multiple parcels for the same item are shipped to the same recipient to avoid paying legitimate duties and taxes. Additionally, the misuse of de minimis value is possible as parcels become smaller, resulting in lower values. There's also a risk of fraudulent personal identification being used to deceive or defraud others for economic gain. Considering these aspects, Customs should prioritize granular data for better visibility and risk assessment.

However, supporting item declarations at the parcel level comes with challenges such as 1) Volume of parcel declarations 2) The infrastructure needed for processing these declarations 3) Limited customs officers to perform clearance procedures like inspection etc. 4) Business rules, risk rules & clearance procedures. As such, it's crucial to separate CBEC regulatory clearance processing from regular cargo procedures. This separation should involve distinct procedures, processing rules, and streamlined clearance using fewer customs officers. This decoupling needs to extend beyond just procedures to the infrastructure itself. Given these limitations, relying heavily on technology becomes essential for CBEC. The upcoming sections will outline and explore available options for customs and government agencies to create CBEC solutions.

3.4 Challenge — Advance electronic data

Cross Border eCommerce requires the integration of advanced electronic data between Customs declaration systems and foreign marketplaces. Standardization of datasets is crucial for e-vendors and e-platforms to transmit information to Customs authorities efficiently. Many Customs administrations are already adopting initiatives like SECUREX from Universal Postal Union (UPU) to enhance this integration. Strengthening and perfecting these standards will enable Customs to fully leverage data for risk assessment and preferential operator programs, unlocking the potential of Cross Border eCommerce.



4 Why de-minimis is losing its relevance in today's context and how countries are adapting to it?

Cross Border eCommerce (CBEC) policies have been centred around the establishment of de-minimis thresholds in various countries. These thresholds dictate the maximum value of goods a customer can purchase from foreign e-vendors and e-platforms without facing taxes or customs duties. Recently, a significant trend has emerged as major countries are doing away with these thresholds. The motivation behind this policy change is to ensure fairness among domestic producers and markets, reduce customs revenue loss, and combat fraudulent practices by traders.

Numerous studies and experiences have revealed that the de-minimis exemption has been exploited by unscrupulous sellers from outside the EU. They intentionally mislabel goods, such as smartphones, to take advantage of the exemption, giving them an edge over their EU competitors. This exploitation has resulted in an estimated annual fraud of €7 billion, burdening EU treasuries and ultimately impacting other taxpayers. Consequently, the EU removed its de-minimis threshold as of — 1 July 2021 (https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3098), and Singapore followed suit by introducing GST for such purchases from 1st Jan 2023.

Technological advancements have enabled Customs administrations to eliminate the de-minimis policy with minimal operational impact. However, for administrations with inadequate technological systems, the removal of de-minimis thresholds can lead to delays in goods clearance.

The decision regarding whether to increase, reduce, or remove de-minimis thresholds remains a subject of intense debate. The Global Express Association (GEA) provides data on the de-minimis policies of 85 countries, revealing a lack of uniformity in their approaches (https://global-express.org/index.php?id=271&act=101&profile_id=1&countries%5B%5D=2&search_terms=&question-filter=&qid_34=1&qid_34_optid=1&qid_35=1&qid_36=1&qid_92=1).

Some countries set their de-minimis as low as USD 10 to 30 (e.g., Albania, Bangladesh, Canada, Mexico, Pakistan), while others maintain high thresholds, such as USD 600 in the United States. This disparity highlights the need for discussions on CBEC policies at international organizations like the WCO and UPU to promote greater alignment and understanding among nations.

4.1 Global best practices of customs cross border e-commerce models

Australia, Korea, the United States, the European Union (EU), and China stand out as nations that have meticulously documented their customs cross-border e-commerce models, offering invaluable case studies. Despite sharing a common objective, each country has carved its unique and effective path. In our next Cross Border eCommerce Whitepaper Series II, we will delve extensively into these insightful case studies, placing a spotlight on the distinctive approaches adopted by these prominent nations.



5 Industry perspective & implications for business

5.1 The stakeholders

In cross-border e-commerce, various players contribute to the industry's functioning ecosystem. Key participants include consumers who seek a seamless buying experience while purchasing products online from different countries.

Online marketplaces like Amazon, Alibaba, and eBay act as intermediaries, connecting buyers and sellers worldwide. E-commerce retailers either utilize these marketplaces or operate their own platforms.

Logistics and payment providers further facilitate cross-border transactions. Logistics companies, like FedEx, DHL, and UPS, handle goods movement across borders, while payment providers, such as PayPal, Stripe, and Square, ensure secure online transactions.

In addition to these major players, research firms, trade associations, and consultants also contribute to the ecosystem. For this paper's scope, we'll focus on these larger entities that offer comprehensive solutions.

Notably, postal operators play a significant role, particularly in last-mile delivery to end customers. They also offer value-added services, like warehousing, fulfilment, and returns management.

5.2 Challenges faced by industry players

5.2.1 Customs clearance process

The industry faces a significant challenge in navigating the clearance process, which entails complying with customs regulations of the destination country before goods can be admitted. This complexity involves various stakeholders, including customs authorities, freight forwarders, and clearance agents.

Customs clearance and regulatory compliance pose the most significant hurdles for over 50% of online retailers engaged in cross-border e-commerce. These challenges encompass understanding and adhering to diverse regulations in each country and ensuring accurate and complete customs data submission.

Customs clearance challenges lead to delays and increased costs for stakeholders due to:

- Incomplete or incorrect documentation, potentially resulting in fines or penalties.
- Higher inspection rates due to inexperience with clearance processes and compliance requirements.
- Varied and complex regulations at different stages of the supply chain, leading to confusion and errors.
- Communication issues and language barriers between customs authorities, businesses, and freight forwarders.

By addressing these factors, we can streamline customs clearance processes and mitigate the associated delays and costs.

5.2.2 Data submission and human error

Cross-border e-commerce shipments present significant challenges for customs data submission, an integral part of the clearance process, affecting various stakeholders. Varying customs regulations by country make it difficult to stay updated and adhere to all necessary requirements.

As indicated above, for goods owners, the primary challenge lies in ensuring accurate and complete data submission. This includes complex information such as product description, value, country of origin, and tariff classification, which can be time-consuming to collect. Providing incorrect data can lead to customs delays, fines, and even shipment seizure.

Freight forwarders and clearance agents face their own unique challenges with customs data submission for cross-border e-commerce shipments. Managing the substantial data volume for each shipment is time-consuming, especially when handling multiple shipments simultaneously. Additionally, they must stay well-versed in the ever-changing customs regulations of each country they operate in, as non-compliance can result in significant financial and reputational consequences.

5.2.3 Inability to leverage on data residing in in-house systems

The business community's service level expectations have been impacted by various challenges as discussed earlier. Traditional methods like postal declarations through front-end or ESW systems further contribute to slow and delayed clearance processes. Some of the issues customs faces stem from the insufficient availability or submission of quality data. Customs and ESW operators often offer Host-to-Host integrations with standardized formats (e.g., CBEC/WCO/CN22) to expedite submissions. However, the challenge with standardization lies in its limited adoption across the business community. Many businesses use proprietary standards, necessitating substantial investments to align with standardized formats. Given the diverse range of stakeholders like traders, shippers, eCommerce platforms, vendors, and various agencies in the supply chain, achieving data format standardization is complex due to established systems and formats.

To address this, an optimal solution architecture proposes the incorporation of an eCommerce gateway for data exchange. This gateway should be a versatile platform capable of ingesting and converting various data formats, facilitating seamless connection and transformation across all stakeholders. This approach ensures easy utilization of data stored in stakeholders' in-house ERP systems. Onboarding stakeholders becomes simpler, encouraging businesses to utilize their existing systems and willingly share data with customs to streamline clearance procedures.

5.2.4 Challenges specific to postal operators

In many countries, postal operators are an essential part of the last-mile delivery in cross-border e-commerce. However, the increasing parcel volumes pose significant challenges, causing delays, longer processing times, and higher costs. Another issue is the lack of harmonization in cross-border regulations, making it difficult for postal operators to navigate different customs and tax procedures.

To address these challenges, postal operators have taken steps to improve their operations. The Universal Postal Union's (UPU) e-commerce platform offers a standardized global solution, enhancing harmonization and simplifying processes. Additionally, some operators leverage technology, such as robotics for efficient sorting and processing, and blockchain for improved package traceability and security.

By adopting these initiatives, postal operators can compete with other e-commerce platforms and provide better services for customers. For example, the United States Postal Service (USPS) explored blockchain technology, aiming to create a tamper-proof record of all package transactions for enhanced transparency and security.



6 Importance of open & flexible data standards

Amid increasing global awareness of environmental, social, and governance (ESG) issues, regulatory changes are swiftly unfolding. Governments worldwide are implementing new rules to promote sustainable development and circular business models. This surge in regulations highlights the urgent need for transparent data sharing among value chain stakeholders, policymakers, consumers, and other stakeholders.

To meet these demands, stakeholders are adopting digital data exchange platforms that utilize standardized data models. These platforms facilitate the collection, analysis, and sharing of structured data throughout the value chain. By adhering to standards, the data becomes accurate, reliable, and interoperable, ensuring seamless exchange between different systems and compliance with regulatory reporting requirements.

Transparency plays a vital role in building trust and gaining a competitive edge in the market. Overall, the growing focus on digital data exchange, transparency, and standards in global supply chains represents a positive development for companies and society.

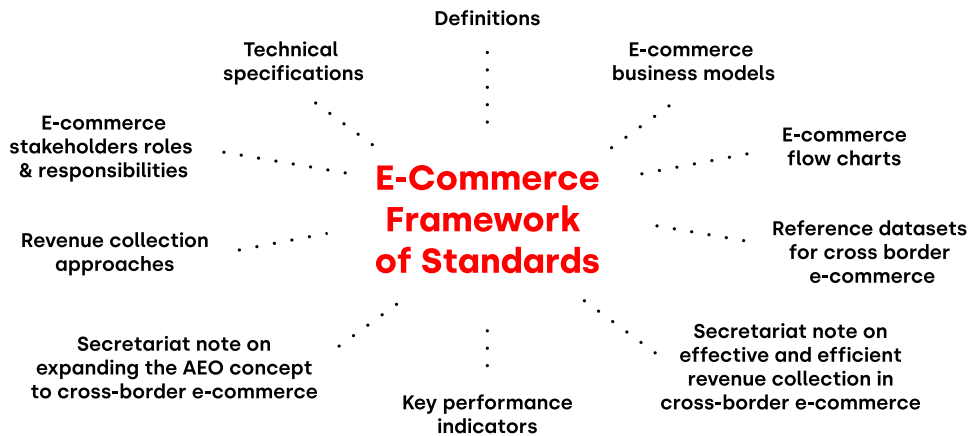
6.1 WCO standards and best practices

The WCO has addressed the challenges of cross-border e-commerce by providing its members with numerous standards and guidance materials, primarily contained in the WCO E-Commerce Package¹.

6.1.1 E-commerce framework of standards

The package contains the June 2018 Framework for Cross-Border E-Commerce, which consists of 15 baseline global standards. These standards primarily focus on facilitating the exchange of advance electronic data (AED) to enhance risk management. Additionally, the framework promotes the utilization of innovative technologies like Authorized Economic Operator (AEO) concept, non-intrusive inspection (NII) equipment, and data analytics. These measures collectively aim to promote secure, sustainable, and safe cross-border e-commerce. The package also includes supporting documents that aid in its effective implementation.

1 <https://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/frameworks-of-standards/e-commerce.aspx>



6.1.2 Joint WCO—UPU messaging standards for advance electronic information

The WCO and the Universal Postal Union (UPU) have collaborated to create electronic messages for pre-advice and potential pre-clearance of postal items, known as the WCO Data Model Declaration Derived Information Package². Additionally, the UPU's Postal Technology Centre has established an electronic Customs Declaration System (CDS)³ using the Joint WCO/UPU Customs-Post EDI message.

6.1.3 Pre-loading advance cargo information (PLACI) for air and postal shipments

The PLACI standards for air and postal shipments were developed to enhance air cargo security and were incorporated into the WCO SAFE Framework of Standards⁴. To address the implementation of PLACI in civil aviation, the WCO-ICAO Joint Working Group on Advance Cargo Information (JWGACI) was established in 2014. This group's purpose is to discuss and recommend ways to share and utilize advance cargo information (ACI) for security risk analysis by Customs and civil aviation authorities. Through this collaboration, they aim to bolster air cargo security together.

6.1.4 Revised CN22/23 with additional data elements

In 2016, several forms were updated to improve customs processes and postal service. The forms⁵ include CN 22 for packages under 2 kg or valued below 300 special drawing rights (SDR), CN 23 for packages valued above 300 SDR, CP 71 for dispatch notes, and CP 72 for manifold sets. The changes introduced additional columns on CN 22, such as the Harmonized System (HS) code and country of origin. It also added "sale of goods" and "returned goods" as reasons for export, along with sender and addressee telephone numbers. An optional S10 barcode was also included. These amendments aimed to support Customs in better risk profiling and efficient duties and tax collection, while enhancing service delivery for postal administrations.

² https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/safe-package/wco-dm-v3_6_0-dip-aei.pdf?la=en

³ <https://www.upu.int/en/News/2021/3/UPU%E2%80%99s-Customs-Declaration-System-improves-data-quality-and-reduces-labour>

⁴ https://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/frameworks-of-standards/safe_package.aspx

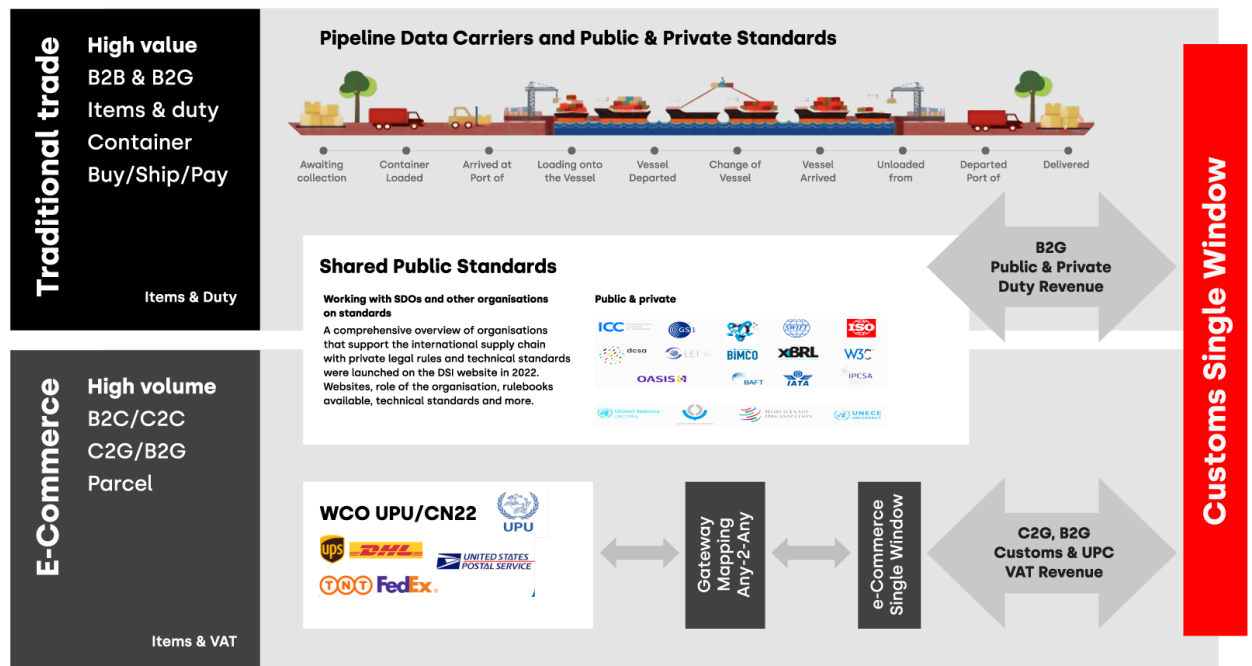
⁵ https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/activities-and-programmes/e-commerce/revise-dn22_23-and-cp72_en.pdf?la=en

6.2 Challenges when it comes to implementing standards in e-commerce

E-commerce involves a multitude of systems and players, resulting in various data formats and standards. Unlike the Containerized/Conventional Cargo digital twin, the eCommerce ecosystem consists of smaller players with basic IT capabilities. They use diverse systems, from custom-built in-house solutions to ERPs and spreadsheets. The Global Trade ecosystem is transitioning from AS-IS data push digitization to Web.3 TO-BE data pull digitalization over the next two decades.

The main challenge in adopting data standardization is the significant investment required from industry players. To address this, future e-commerce solutions should incorporate flexible gateways with any-to-any mapping capabilities, effectively resolving this industry-wide issue.

Traditional B2B & B2G trade involving containerised and break-bulk trade



Evolving eCommerce trade via express 3PL parcel and post, B2C, C2C : B2G, C2G

6.3 Global trade ecosystem, the digital twins — the containerised/break-bulk and parcels/duty VA

It is the TO-BE that will overcome existing challenges in cross border clearance – thus significantly automating customs 'green-lane' clearance, optimizing cross border revenue collection, and reducing cross border risk. The upper part of the diagram reflects traditional B2B cross border trade, containerized, deep sea, air, river, coastal, road, rail. The lower (blue) portion of the diagram reflects the rapidly growing eCommerce (express delivery) B2C & C2C cross border trade. The traditional B2B has the myriad of standards bodies, both public and private as categorized by the International Chamber of Commerce (ICC), Digital Standards Initiative (DSI) etc. In the eCommerce or CBEC context, there are a few considerations as below:

- Use of WCO/UPU standards for parcel level B2C C2C eCommerce is evident within Corporate Express 3PL's and some Customs Single Windows where Customs has a clear separation of B2C eCommerce as distinct to B2B global trade.
- Corporate Express 3PL's (for e.g. DHL, UPS, etc.) represent excellent end2end eCommerce logistics platforms, operating between the Seller and Buyer, tracking logistics of the parcel post based on WCO/UPU standards and with own proprietary platforms with own tracking number, and with own interfaces to major country Customs, these platforms are 'locking' and non-interoperable.
- CBEC will be initially supporting existing non-trade standards-based platforms, progressing with the evolution of standards based, interoperable (SME embracing) platforms.
- Corporate Express 3PL's are bespoke and have developed bespoke interfaces to Customs and OGA's. reflecting 'just enough' deployment of WCO/UPU. However for smaller players in the ecosystem this bespoke approach may not be feasible
- A key enabler will be for the CBEC platform to address the current disparate non-standards-based eCommerce ecosystem, and also WCO/UPU based to the extent that these exist. Hence the need for a CBEC Gateway with any2any mapper capabilities, mapping Express delivery eCommerce platforms, business stakeholders, small players etc. to Customs Single Windows
 - Use of WCO/UPU standards however for B2C & C2C trade is negatively impacted by introducing risks of misuse of "de minimis" resulting in significant Customs revenues loss.
 - VAT/GST can be an effective replacement for the "de minimis" which can circumvent this impact and can increase revenues. It can also simplify and duty regime, reduce risk and ease of Customs workload.



7 Solutions for e-commerce

Cross-border e-commerce will continue to grow, necessitating solutions to address identified challenges. These solutions may involve technology implementation, regulatory harmonization, and improved stakeholder cooperation.

7.1 Green lanes and facilitated supply chains

Customs authorities worldwide play a vital role in regulating cross-border e-commerce. Their main objective is to enforce local laws and ensure proper payment of duties and taxes for incoming goods. To achieve this, they conduct inspections, review documents, and verify data from businesses. While essential for protecting local industries and promoting fair trade, these processes can create challenges such as delays, added costs, and increased complexity for e-commerce businesses.

On the other hand, e-commerce businesses require efficient supply chains and green lanes to swiftly ship goods across borders. Streamlined processes are crucial to reduce delays, costs, and enhance customer experience. This is especially vital for small and medium-sized enterprises with limited resources to handle complex regulations and customs procedures.

These two goals can pose a risk of becoming a zero-sum game. Customs authorities' efforts to control cross-border trade might clash with businesses' need for streamlined supply chains and green lanes. This conflict could lead to increased inspection rates and additional documentation requirements, resulting in delays and higher costs for businesses. Consequently, it may discourage their involvement in cross-border e-commerce and impede their growth.

Balancing customs control and facilitating e-commerce is crucial for supporting all stakeholders. Achieving this requires implementing a range of measures, such as:

1. **Pre-clearance and early data acquisition:** Collaborating with businesses before goods reach borders for data verification and documentation checks can eliminate the need for extensive inspections, expediting clearance. By establishing strong connections with stakeholders like Ecommerce platforms, data can be acquired well in advance, enabling smoother clearance even before cargo arrival.
2. **Harmonization of regulations:** Enhancing cooperation between customs authorities across countries simplifies the intricate landscape of regulations. Examples include adopting unified GST and VAT models, which foster easier navigation for businesses amidst complex rules and requirements.
3. **Technology-driven automation:** Embracing automation and technology optimizes customs clearance by reducing errors and enhancing data precision. Agile technology frameworks facilitate cross-border e-commerce while maintaining control. Employing a risk-based assessment system enables customs to prioritize high-risk shipments for scrutiny, ensuring efficient processing without compromising control.

4. Capacity building for businesses: Customs authorities can aid businesses by offering programs that guide them through the intricacies of customs procedures and compliance. This support facilitates smoother interactions between businesses and regulations, fostering successful trade outcomes.

By striking a balance between customs control and e-commerce facilitation, all stakeholders can profit from cross-border e-commerce growth. Utilizing methods like pre-clearance, risk-based approaches, harmonizing regulations, automation, and capacity building, customs authorities can foster the sector's expansion without compromising on effective customs control.

7.2 How technology can help

As discussed in earlier paragraphs, technology is crucial for e-commerce businesses in managing the vast amount of data linked to cross-border shipments. It aids in collecting, submitting, verifying, and ensuring data accuracy.

Some ways technology can help include:

1. Automation streamlines e-commerce data collection and submission, reducing errors and delays. It generates shipping labels and necessary paperwork with accuracy.
2. Data analytics optimizes shipping processes, identifying cost-saving areas and enhancing efficiency for e-commerce businesses.
3. Blockchain ensures secure and transparent data storage and sharing, especially for sensitive e-commerce information.
4. Digital platforms centralize shipping data management, reducing errors and providing better control for e-commerce businesses.
5. AI and machine learning verify and correct data, ensuring regulatory compliance and minimizing mistakes.
6. Technology promotes harmonized trade data, aligning with the World Customs Organization's goal for a common and streamlined dataset, particularly crucial for cross-border e-commerce.

7.2.1 Continue with postal declarations or create new paradigms

Many countries are embracing progressive approaches to regulate ecommerce, focusing on CBEC (Cross-Border Ecommerce) methods. This involves simplifying parcel declarations, enhancing data documents, setting new standards, involving stakeholders, and creating a favourable environment for ecommerce growth. This shift away from traditional postal declarations aims to overcome challenges highlighted earlier.

For instance, the U.S. Customs and Border Protection (CBP) has developed an ecommerce strategy to handle the shift from large shipments to small parcels in international trade. This includes adopting new methods and procedures while upholding their trade facilitation and enforcement mission. Similar innovative approaches are being adopted globally, encompassing both procedural and systems aspects.

Reference: <https://www.cbp.gov/trade/basic-import-export/e-commerce-strategy>

Below is a concise analysis of traditional postal declaration methods versus the modern CBEC standards for addressing challenges in ecommerce regulatory clearance:

Assessment Criteria	Traditional Approach	CBEC Approach
<p>Standards adopted / International best practices</p>	<ul style="list-style-type: none"> • Using Postal Declaration • Follows traditional way using a simplified/postal declaration which was originally designed for courier goods/postal and not eCommerce goods • No specific data standards • Difficult to transition to a VAT/GST model when vendor collects duties/taxes • No segregated/dedicated regime 	<ul style="list-style-type: none"> • Should be based on WCO Recommendations for eCommerce Clearance • UPU-CN22/CN23 Data Standards • CBEC should be ready for VAT/GST model, making it future proof • Segregated regime • Followed by many advanced economies like US, Singapore, Canada, Australia, etc.
<p>Advance electronic data and risk management</p>	<ul style="list-style-type: none"> • Inability to collect advanced order information • Postal declaration is only done when cargo arrives in border 	<ul style="list-style-type: none"> • CBEC recommends for connectivity to Vendor platform (Amazon etc.) to capture order information in advance • Early risk assessment can be done, even before cargo arrives at border
<p>Facilitation and simplification – benefits to business</p>	<ul style="list-style-type: none"> • Submitted by clearing agent, no provision for end user to submit. No support for C2C scenario (Consumer to Consumer) • Need registered clearing agent to submit • Does not support Accreditation of E-Commerce Platform Vendors • Return of goods/parcels handling could be tedious • Postal declaration processing is handled similar to normal cargo 	<ul style="list-style-type: none"> • Can be submitted by clearing agent/freight forwarder or even end user • Direct host to host submission through eCommerce gateway. Any data formats supported • Considerations for submission for Consumer to Consumer i.e. C-2-C scenarios • Supports Accreditation of E-Commerce Platform Vendors similar to AEO • CBEC approach is better suited for return processing including handling refund/adjustment of duties/taxes • CBEC is segregated from normal cargo, easier to apply rules/business logic specific to eCommerce

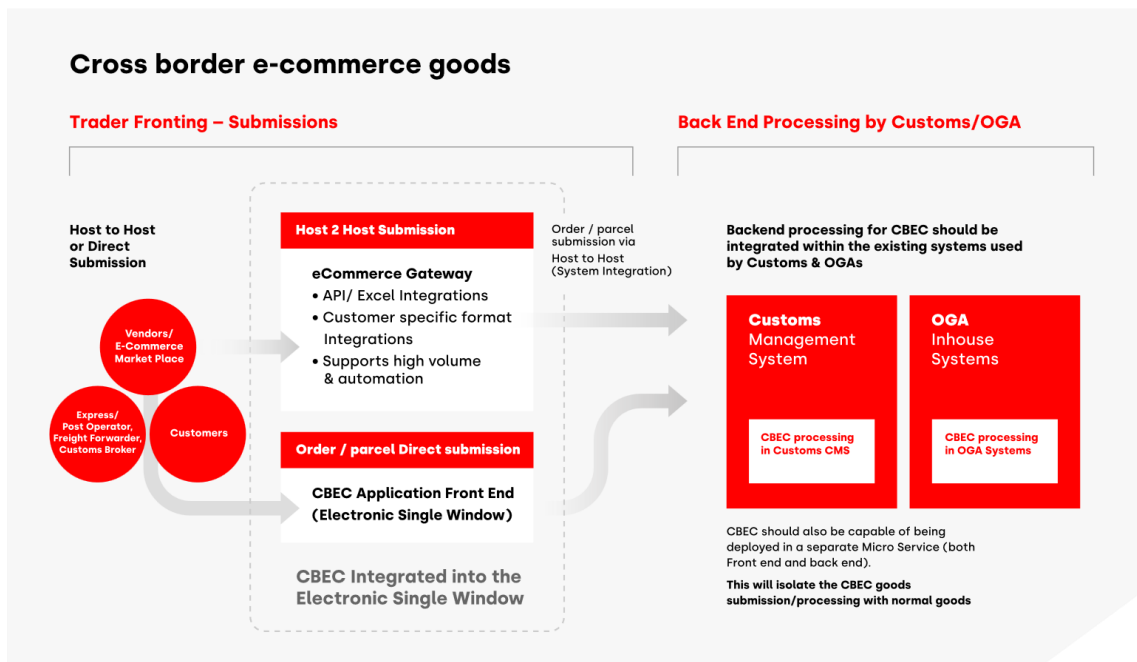
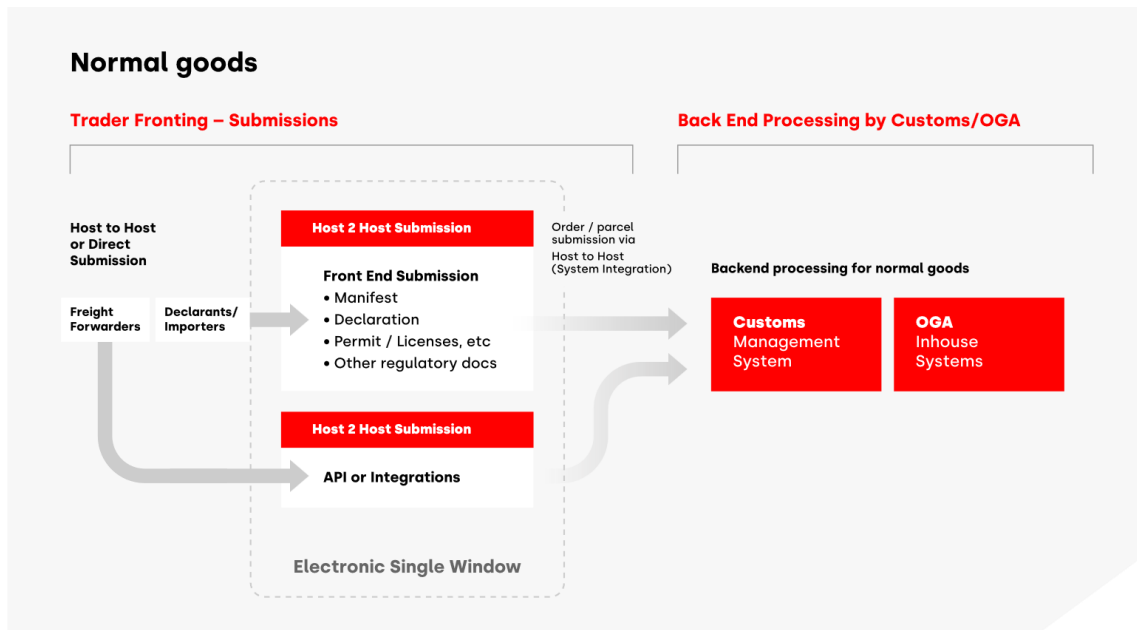
Assessment Criteria	Traditional Approach	CBEC Approach
<p>Fair and efficient revenue collection</p>	<ul style="list-style-type: none"> • Models of Revenue Collection – Traditional way, i.e. through clearing agent or freight forwarder. This is not international standard 	<ul style="list-style-type: none"> • Models of Revenue Collection – Intermediary (Vendor) based collection fully supported. Vendor is responsible for D&T. This is international best practice, also recommended by WCO • This also makes CBEC ready for VAT/GST approach to eCommerce
<p>Risk, safety and security</p>	<ul style="list-style-type: none"> • Misuse of De-minimis is possible • OGA involvement & information sharing with OGAs will be minimal or tedious • Controlled list of goods for Postal 	<ul style="list-style-type: none"> • Realtime & advanced intervention by OGAs • No restrictions on goods for eCommerce as OGA intervention is possible • Ecommerce specific risk rules in CBEC
<p>Technical architecture and scalability</p>	<ul style="list-style-type: none"> • Fully coupled with normal cargo clearance • No segregated architecture (Separate Microservices). Vertical and Horizontal scaling becomes difficult • Not scalable as it only supports fixed data formats 	<ul style="list-style-type: none"> • CBEC approach is to fully segregate from normal cargo • CBEC includes an eCommerce Gateway – which supports any-to-any mapping. This makes it easy for businesses to submit data and integrate with their backend systems • Scalable services based on volume as it is segregated from normal cargo
<p>Future proof</p>		<ul style="list-style-type: none"> • Is future ready for VAT/GST and vendor collection revenue models • Flexibility to apply eCommerce specific processing as it is segregated from normal cargo • Highly scalable architecture

7.2.2 An optimal technical architecture

The CBEC approach suggests an open and flexible architecture that incorporates WCO recommendations on ecommerce, international best practices, and standards adopted by countries with specialized ecommerce standards. This aims to enhance efficiency in regulatory clearance and compliance costs. Cross-border e-commerce is separated from the regular cargo clearance process, providing regulators and businesses greater flexibility and efficiency.

As previously discussed, the two processes can be seen as digital twins. Therefore, technical de-coupling is essential to align with this architectural separation. Ecommerce and traditional cargo exhibit distinct characteristics in terms of data intensity and volume. Ecommerce involves high volume but low data, while traditional cargo has lower volume but higher data requirements. Due to these inherent differences, separate setups, infrastructure, service commitments, and uptimes are necessary. When planning CBEC solutions, technical architects should account for these factors to deploy optimized solutions effectively.

This diagram illustrates how it can be achieved:



CBEC regime provides the business community such as eCommerce marketplace/ Vendors, Express/Postal operators/ Freight forwarders, Customs Broker, 2 methods for submitting order/parcel information:

1. Host to Host Submission: Businesses connect via the e-commerce Gateway for seamless data integration into Customs/OGAs systems. This approach, favoured for its efficiency and volume handling capacity, relies on system integration.
2. Direct Submission: An alternative for lower volumes or C2C eCommerce scenarios, involving order/parcel data submission through web or mobile interfaces. This data flows through the CBEC Front End integrated with the Electronic Single Window for further processing.

Distinct from traditional cargo processes, CBEC hinges on system-to-system data submission. This separation demands a dedicated Micro Services architecture (Front and Backend), safeguarding normal cargo operations from e-commerce disruptions and vice versa.

Key points:

- CBEC submissions will be predominantly Host2Host, necessitating a robust integration layer capable of handling high volumes.
- Item-level data submission is crucial for CBEC's success, increasing submission volume significantly. Infrastructure and architecture must anticipate and accommodate this growth.
- CBEC integrates seamlessly within the current SEW/CMS architecture, achieved through a highly scalable design, utilizing segregated cloud resources.
- With a digital platform in place, Customs can reduce inspection rates, as CBEC leans on Digital Inspection. Advanced Shipment information prior to goods arrival expedites clearance through improved risk assessment.
- The CBEC platform should possess the flexibility to configure risk profiles, rules, and thresholds specific to cross-border eCommerce, enhancing efficiency.
- Future-proofing the platform involves readying it for VAT/GST and a vendor collection revenue model. This adaptability ensures it remains effective as eCommerce continues its high-volume growth.

7.2.3 Data exchange

Data format standardization is a challenging goal, but essential for efficient data exchange. To streamline this process, businesses can adopt automation tools like electronic data interchange (EDI), enabling error-free electronic data sharing with customs. This accelerates clearance and minimizes manual processing costs.

An e-commerce gateway, supporting API, Excel, EDI, and custom formats, enhances high-volume transaction support. This flexible gateway converts and connects data, aligning with stakeholders' ERP systems. Such automation fosters smoother communication and collaboration among stakeholders. Cloud-based platforms further facilitate real-time interaction between goods owners, freight forwarders, clearance agents, and customs authorities, all while data remains securely housed in in-house ERP systems.

7.2.4 Data submission

To ease customs clearance and data challenges, businesses can utilize automation technologies like customs management software to automate the data submission process. This software generates customs documentation and electronically submits it to customs authorities for both goods owners and agents. When importing on behalf of customers, e-commerce businesses can efficiently collect and verify customer data by employing digital channels. Customers can input their information during purchases, and digital verification tools can then ensure its accuracy and completeness.

Furthermore, e-commerce businesses can enhance their data management by partnering with trusted third-party service providers to verify customer data and ensure regulatory compliance. Leveraging technology in this way streamlines data collection and submission, leading to improved efficiency, cost reduction, and reduced errors and delays. Ultimately, this optimization contributes to a better customer experience, fostering the growth of cross-border e-commerce.

7.2.5 Data and documentation

Automation is essential for generating clearance documentation and electronically submitting it to customs and relevant authorities, alleviating language barriers through automated translations for product descriptions, marketing materials, and customer support. Additionally, automation ensures companies stay informed about changing regulations by providing timely alerts and notifications, mitigating the risk of non-compliance and associated fines and penalties.

7.2.6 Data analytics

Data collection is just one part of the story; proper data management is equally important. Regulations like GDPR and CCPA restrict how businesses collect, store, and utilize customer data. Building trust with customers is crucial for them to willingly provide their preferences, addresses, and payment details. Following the rules enables e-commerce platforms to gather substantial data, which can have various benefits beyond optimizing operations.

After collecting and submitting data through appropriate channels, it becomes valuable for:

1. **Market Research:** E-commerce platforms collect data on customer behaviour, preferences, and trends to gain insights into their target audience and enhance marketing strategies.
2. **Advertising Optimization:** Customer data allows e-commerce platforms to create targeted ads that resonate better with their audience by analysing their behaviour and preferences.
3. **Product Development:** Leveraging customer data helps businesses understand demand and create new products that are more likely to succeed in the market.
4. **Partnership Opportunities:** E-commerce platforms use customer data to identify potential partners for cooperation, collaborations, and cross-promotions based on shared target audiences and mutual value.

Additionally, data collected will be monetized by selling it to third-party companies for market research and advertising purposes.

7.2.7 The digital platform, a central hub or gateway for e-commerce

The digital platform streamlines cross-border e-commerce processes. The eCommerce Gateway enhances data flow efficiency and exchange, boosting overall cross-border e-commerce processes, compliance, and data quality. This concept enables stakeholders, like vendor platforms (e.g., Lazada, Amazon), to connect for information exchange. For instance, vendors can share order details in advance, aiding customs' early risk assessment and faster clearance. The gateway facilitates all required information exchanges for e-commerce clearances.

Key design principles include accommodating various data formats submitted by agents, forwarders, or importers through Host-to-Host submission. The gateway serves as a central hub for e-commerce clearance compliance. It ensures seamless integration of new stakeholders, offering flexibility for different data formats and seamless conversion as needed by customs. It supports various protocols (API, FTP, Web Services) and formats (XML, JSON, EDI) while handling high-volume submissions due to the industry's growing cross-border e-commerce trend.

7.2.8 The e-commerce buyer customer experience & satisfaction

Customer experience is a critical aspect of cross-border e-commerce, without which the entire system would fail. It is vital for both governments and business stakeholders to address the challenges and prioritize customer satisfaction.

Customer expectations:

1. **Fast delivery:** Customers demand efficient shipping, especially for expedited orders.
2. **Transparency:** Customers want real-time tracking from shipment to delivery.
3. **Cost-effectiveness:** Customers seek reasonable pricing, including shipping fees.
4. **Hassle-free returns:** Customers expect easy returns and quick refunds.
5. **Responsive customer service:** Customers want easy access to support for inquiries and concerns.
6. **Secure payments:** Customers require protection for personal and financial data during online transactions.

To succeed in the competitive e-commerce market, market players must have access to a green lane for rapid, cost-effective delivery and a seamless user experience. To achieve this, the platform should focus on smooth traffic flow, accommodating a large volume of users and sales. This means designing an easy-to-use interface for selling, buying, checking out, and payment processing, while also providing clear shipping options and visibility.

A comprehensive solution addressing customs clearance and data submission challenges must prioritize streamlining the customer experience. The platform should automate data collection, transformation, and compliance for cross-border shipments, ensuring accurate calculations of taxes, duties, and VAT, where applicable. This way, customers can buy and sell without unnecessary hindrances.



8 Trends & the way forward

8.1 What is next?

As cross-border e-commerce continues to flourish, governments worldwide recognize the need to capitalize on this thriving trade. Many countries are investing in port infrastructure and technology to tap into this vast market.

China serves as a prime example of this trend. According to Statista, in 2020, cross-border e-commerce transactions in China amounted to 1.69 trillion yuan, constituting about 20% of the country's foreign trade. This share surged to an impressive 36% in 2021. The Chinese government played a pivotal role in this growth by committing around \$2.2 billion USD from 2016 to 2019 to support cross-border e-commerce development. India, too, has followed suit with its "Digital India" program, investing \$18 billion USD over five years to boost cross-border e-commerce activities.

However, not all measures require substantial financial investments. Regulatory streamlining and data-sharing agreements can also facilitate cross-border e-commerce. The extent of funding necessary depends on each country's unique needs and objectives.

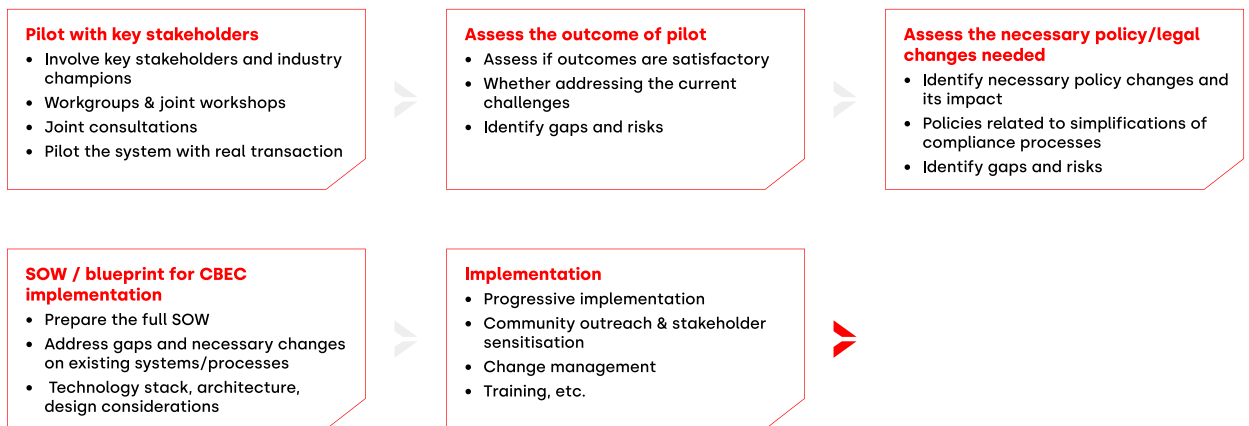
Government investment in technology and infrastructure greatly accelerates e-commerce growth, benefiting all stakeholders involved. Establishing systems that facilitate cross-border sales and purchases enhances consumer trust, improves efficiency for service providers (clearance, logistics, and payment processing), and strengthens the competitive position of marketplaces and online platforms.

8.2 Considerations and a progressive approach that customs can take

Customs and Single Window Operators seeking to address ecommerce challenges through new solutions or system extensions should follow a progressive approach, as outlined below. Begin with a pilot involving key stakeholders to assess:

1. The solution's coverage of existing pain points and challenges.
2. The potential for enhanced business buy-in and adoption, as businesses can voice their needs.
3. Identification of any necessary legal or policy changes to support the solution.

The pilot's outcome will complement the final implementation, benefiting from lessons learned and feedback. This approach ensures a more effective and informed rollout.



8.3 Conclusion

Cross-border e-commerce is a rapidly growing market with immense potential, but it also presents challenges. To fully benefit from this expanding market, collaboration between businesses and governments is essential.

Challenges include customs clearance, data submission, and regulations. However, technology, such as blockchain and AI, can streamline processes and increase efficiency. Automation is a must-have solution to simplify customs clearance and data submission, reducing errors and delays.

Collaboration and communication among all supply chain players are crucial. Customs authorities seek control, while businesses require efficient processes. By working together, freight forwarders, express companies, customs authorities, and e-commerce businesses can optimize operations and reduce delays and costs. A uniform application of regulations is essential to avoid misinterpretations.

Cross-border e-commerce's importance cannot be overstated. It allows businesses to stay competitive and expand their markets in today's interconnected world. A comprehensive single platform that offers streamlined services can alleviate pain points.

The final challenge is data. Customs data submission complexity requires accurate and detailed information about shipments. Harmonized data sets can help global players comply with regulations consistently, reducing errors and language barriers when dealing with different systems or requirements.

