

Singapore Business Federation Recommendations for Accelerating Regional Adoption of Cross-Border Paperless Trade

Introduction

Global trade of physical goods, valued at \$25.3 trillion in 2022 according to World Trade Organization (WTO) estimates, remains largely paper-based and process intensive.¹ According to the Standards Toolkit for Cross-Border Paperless Trade developed by the International Chamber of Commerce (ICC) Digital Standards Initiative (DSI), each cross-border transaction typically requires up to 36 documents and 240 copies, with approximately four billion documents in circulation at any one time.² Additionally, processing a Bill of Lading (BL), a paper-based legal document required for the transportation of goods, takes 16.4 hours on average across trade parties for every shipment.³ This extensive documentation process consumes substantial resources, including paper, personnel, and time required for printing, handling, and transporting numerous pages among various parties to ensure the continuity of trade operations. Yet, less than one percent of trade documents is currently fully digitalised.

The overreliance on paper that require physical transmission of extensive paperwork leads to inefficiency, high costs, and risks. These include payment delays, human error, and fraud in international trade. The ICC estimates that at least one per cent of transactions in the global trade financing market, or around \$50 billion per year, are fraudulent. Of that figure, around \$2.5 billion of annual fraud costs are realised as losses for financiers, according to a 2022 report by ICC and Monetago.⁴ Banks, traders, and other parties have lost at least \$9 billion through falsified documents in the commodities industry alone over the past decade, according to data compiled by Bloomberg. By digitalising trade documents, online platforms can reduce the likelihood for banks to be presented with doctored documents.

Digitalisation offers a potential boost for business. A McKinsey study estimated that adopting electronic Bills of Lading (eBL) would enable as much as \$40 billion in additional global trade volume through reduced trade friction, particularly for emerging markets. Additionally, at least 28,000 trees a year could be saved by reduced friction in the container trade.⁵ The main container shipping lines could also save as much as \$6.5 billion a year in direct costs if they moved to full adoption of eBL.

Last year, Singapore Business Federation (SBF) proposed a Cross-Border Paperless Trade Roadmap encompassing four elements: (i) Recognition: Ensuring that legal frameworks and legislations are conducive and in line with model laws developed by the United Nations Commission on International Trade Law; (ii) Efficiency: Identifying and harmonising documents and data fields critical for interoperable digital trade; (iii) Verification: Achieve data trust and security through the use of appropriate technologies, frameworks, and platforms; and (iv) Adoption: Lowering the barriers to adoption of paperless trade for MSMEs through capacity building efforts and other enablers.

APEC-wide Pilot Trials and Focus Group Discussion on eBL

Despite the clear benefits of paperless trade, adoption among businesses has been notably slow. To find out the reasons behind this reluctance to transition from inefficient and costly paper-based methods, SBF

¹ https://www.wto.org/english/res_e/booksp_e/trade_outlook23_e.pdf

² <https://iccwbo.org/news-publications/policies-reports/standards-toolkit-for-cross-border-paperless-trade/#anchor-download>

³ <https://economictimes.indiatimes.com/small-biz/trade/exports/insights/the-4-billion-pieces-of-paper-keeping-global-trade-afloat/articleshow/104147319.cms?from=mdr>

⁴ <https://www.adb.org/sites/default/files/publication/932456/adb-brief-280-driving-digitalization-global-trade.pdf>

⁵ <https://www.thestar.com.my/business/business-news/2023/10/05/paper-documents-keep-global-cargo-trade-afloat?ref=news.summarizely.ai>

initiated pilot trials and organised a focus group discussion with industry stakeholders to gain a deeper understanding of the practical challenges of digitalising trade processes from the business perspective.

Through the APEC Business Advisory Council (ABAC) network, 19 associations and private sector companies from various industry sectors across participating economies in Asia-Pacific Economic Cooperation (APEC), including freight forwarding, shipping, banking, textile manufacturing, and Fast-Moving Consumer Goods (FMCG) met with digital trade platforms to explore piloting the transfers of digital trade documents including electronic Bills of Ladings (eBLs). The aim of the pilot discussions was to foster greater confidence in digitalising trade processes within the region and to provide insights on the barriers to adopting paperless trade. Through these discussions, valuable insights into the journey of paperless trade adoption, challenges faced, and the support required from the perspectives of individual businesses were gained.

A successful pilot cross-border trade transaction took place between traders in Hong Kong, China, and Thailand. Discussions with other businesses based in Chile, New Zealand, and Thailand are still ongoing.

Case Study on Paperless Trade Pilot between Tessellation Group and Supara Group

On 8 May 2024, a pilot was successfully completed between Tessellation Group (Hong Kong, China), the seller, and Supara Group (Thailand), the buyer, via the Singapore Trade Data Exchange (SGTraDex) platform. Through virtual demonstrations and sharing sessions with SBF and SGTraDex, Tessellation Group gained an understanding of the technology, process, and potential benefits. They conducted internal assessments and identified Supara Group as a potential trade partner for the pilot. Tessellation Group decided to move forward with the pilot after successfully agreeing with Supara Group on the conduct parameters, and details of the pilot. The trade documents identified and required to be sent by Tessellation Group for the trade flow were the invoice, house BL, and Certificate of Origin (CO).

Both companies were interested in the trial to experience and assessed the merits of digitalising trade documents. While the pilot was Supara Group's first experience using a digital trade platform, Tessellation Group had earlier tried other digital trade platforms a few times but was still not familiar. Tessellation Group's primary motivation for using the platform was to simplify processes and reduce the costs of doing trade. From Tessellation Group's experience, digital trade platforms were most useful for more complex trade flows with multiple transactions. For shorter supply chains with straight forward transactions, document exchange using email could be faster; in such cases, digital platforms need to provide more values other than secure file-sharing tools.

Reflecting on their experiences, the pilot participants noted that buyers and sellers had low motivation to drive adoption of digital trade platforms should forwarders and carriers be reluctant to do so; greater adoption and familiarity among forwarders and carriers would allow traders to use digital trade platforms regardless of which forwarder or carrier they select for each trade. They also called for simplified integration of internal company systems with the trade platforms and more government support, particularly from APEC economies, to encourage wider adoption. There was also the issue of a duplicative process whereby the original paper CO had to be physically couriered to the buyer in Thailand, as required by Thailand's customs authorities. The digital transaction on the SGTraDex platform was quick and cost-effective, but this was negated by the time taken for the paper CO and BL to be couriered, and the cost element to the seller having to incur paper BL surrender fees to the freight forwarder. It would thus be important for customs authorities to accept digital versions of all trade documents for the entire end-to-end trade transaction process to be digitalised, and for traders and others in the supply chain to benefit.

Both companies remain open to continuing the use of digital trade platforms but emphasised the need for broader acceptance by customs and regulatory authorities. Stronger government support and wider adoption among forwarders, carriers, and traders were also needed to realise the full benefits of paperless trade.

In addition to the pilot, SBF held a focus group discussion (FGD) on eBL on 19 June, in partnership with Singapore government agencies. The session brought together over 50 participants from key supply chain players and stakeholders, such as banks, carriers, and traders, to share their perspectives, provide practical feedback, and discuss the gaps and enablers of cross-border paperless trade. Companies involved in a first fully paperless and interoperable eBL-backed Letter of Credit (LC) transaction also shared their insights.

The FGD highlighted the lack of critical mass as a key issue preventing faster adoption of eBLs. Adoption of digital trade platforms faced a "chicken and egg" dilemma - banks sought to be led by client demand before adopting these platforms, while clients felt they had no choice in using systems that banks provided. Despite this, most participants acknowledged the benefits of digitalising trade documents. Many businesses, including banks and carriers, were exploring paperless trade initiatives, but were waiting for critical mass to be achieved before committing fully to implementing digital infrastructures. Participants urged for continued efforts to raise awareness among a larger pool of ecosystem players and ensuring buy-in among key document issuers like the carriers.

The second prominent issue the FGD surfaced was that many businesses still faced challenges with digitalising business processes as a whole. If a company's internal processes were not sufficiently digitised, they would not have the capability or incentive to digitalise trade documents. Both the ability of digital trade platforms to plug seamlessly into other digital business solutions (e.g. accounting and sales systems), and the network effect of different supply chain partners participating can compound the benefits of digitalising trade processes. Conversely, rigid corporate governance structures and bureaucracy can also hinder digital transformation, especially in companies with inflexible frameworks and little local autonomy.

Cost was another key concern raised by the participants. The presence of multiple platforms can result in increased fees for users, even if these platforms were interoperable, with participants suggesting that cost-sharing agreements between platforms could potentially mitigate this issue. Additionally, while digitalisation promises significant cost savings, these benefits do not always evenly extend to MSMEs, and BL issuers may gain better returns from the systems which they had already put in place.

Case Study on Interoperable eBLs-backed LC Transactions between Singapore and Indian Banks and Companies

Singapore and Indian banks and companies successfully kicked-off the first live eBL underpinning a Letter of Credit (LC) transaction using the TradeTrust⁶ Framework, for a shipment between Singapore and Indian in 2023.⁷

Maersk issued the eBL utilising public blockchain technology for a shipment of scrap metal. DBS Bank and ICICI Bank used the eBL to provide trade financing. Jindal Stainless secured a LC from ICICI Bank to finance the shipment. Maptrusco shipped the scrap metal from Miami, USA to Gujarat, India and received the LC proceeds via DBS Bank. DBS Bank transferred the eBL to ICICI Bank, which then used its TradeChain platform to transfer the eBL to Jindal Stainless. Upon arrival of shipment in Gujarat, Jindal Stainless presented the eBL to Maersk to take over the cargo.

The live transaction successfully showcased the digitalisation of cross-border trade financing documentation that can be applied across different systems, aimed at improving the speed, efficiency, and accuracy of information required in shipment transactions. This resulted in cost savings for companies and enhanced access to trade financing. Globally, this is the first shipment to undergo a fully paperless LC transaction process involving traders, shippers, and banks utilising multiple different systems. This project was implemented in close partnership between government agencies (i.e.

⁶ <https://www.imda.gov.sg/how-we-can-help/international-trade-and-logistics/tradetrust>

⁷ <https://www.ledgerinsights.com/tradetrust-blockchain-maersk-dbs-shipment/>

Singapore's Ministry of Trade and Industry, India's National Institute for Transforming India (NITI) Aayog, Enterprise Singapore, and Singapore's Infocomm Media Development Authority (IMDA)) together with industry partners (i.e. DBS, ICICI Bank, Maptrusco, Jindal Stainless, and A.P. Moller-Maersk).

Challenges & Recommendations

Building on the framework from last year and incorporating insights and outcomes from the FGD and eBL pilot discussions, SBF has identified four key stages of challenges faced by businesses on the journey to adopt paperless trade: (i) Internal inertia and lack of familiarity with technology; (ii) Lack of domestic legal recognition or acceptance of digital documents; (iii) Competing priorities and perceived high initial costs and complexities; and (iv) Added complexity in coordinating multiple parties involved in trade transactions to be onboard and a fragmented ecosystem. Details of these challenges and SBF's recommendations to address them as follows.

Challenge 1: Internal Inertia and Lack of Familiarity with Technology

Many companies adopt a “don't fix what isn't broken” mindset, while others have deeply ingrained processes and cultures resistant to change. A study found that cultural resistance and a lack of awareness about digital benefits are significant barriers to digital transformation.⁸ Internal stakeholders often hesitate to adopt new and unfamiliar processes or platforms, due to comfort with current systems or fear of the unknown.

This internal inertia is further compounded by a lack of understanding of cybersecurity technologies. Uncertainty about their benefits and usability fosters fears that public blockchains may risk confidential business information. The World Economic Forum (WEF) noted that the biggest barriers to digitalisation are internal processes and a lack of digital skills among employees.⁹ These concerns drive a fear of unexpected disruptions to existing workflows, presenting a significant challenge for businesses that prefer to stick to the “tried and tested” or to be late adopters of technology.

Companies that have not yet digitised their operations are even further from embracing digitalisation and transitioning to paperless trade. Only four percent of today's organisations have achieved a fully digitised and automated workplace according to the WEF.¹⁰ Another research from CI&T noted that only seven percent of businesses succeed in meeting or exceeding their digital transformation targets.¹¹ Without foundational digital processes in place, such as electronic record-keeping and digital communication systems, these companies face significant hurdles in integrating digital trade solutions.

Recommendation

- 1.1 Partner with private sector entities, such as consultants and trade associations, to enhance capacity-building efforts and empower businesses with the confidence, skills, and knowledge needed to embrace digital transformation.

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⁸ <https://www.capgemini.com/wp-content/uploads/2017/07/Digital-Transformation-A-Road-Map-for-Billion-Dollar-Organizations.pdf>

⁹ https://www3.weforum.org/docs/DITL_Maximizing_Return_Digital_WP.pdf

¹⁰ <https://www.weforum.org/agenda/2023/02/digital-company-transformation-work/>

¹¹ <https://ciandt.com/uk/en-gb/digital-efficiency>

Capacity-building efforts could be enhanced to equip businesses with the knowledge and capabilities necessary to embrace and implement digitalisation. This can be achieved by developing comprehensive training programs that address the specific needs and challenges faced by these companies in the digital landscape.

Governments can play a pivotal role in this process by partnering with trade associations, chambers of commerce, and industry consultants to deliver practical training and workshops. These partnerships can help ensure that the training programs are tailored to the unique requirements of specific sectors and are delivered by experts with a deep understanding of the industry.

Challenge 2: Lack of Domestic Legal Recognition or Acceptance of Digital Documents

Without governments, regulatory authorities, or banks recognising digital documents, some businesses find the cost and time efficiency benefits of digitalising trade processes can be significantly reduced. This lack of recognition disrupts the seamless exchange and processing of documents digitally, requiring the implementation of additional interfaces between hardcopy and digital copies, thus negating the benefits of digitisation.

Even in jurisdictions where digital documents are legally recognised, there can be a lack of acceptance among stakeholders who prefer traditional paper-based processes due to trust and familiarity. This reluctance to embrace digital trade documents may stem from concerns about data security, reliability of digital platforms, and the potential for technical glitches or cyber threats. The lack of acceptance of digital trade documents along the supply chain can create strong disincentives as digital-to-hardcopy interfaces require manual processes that are manpower-intensive and prone to errors.

Recommendation

- 2.1 Accelerate the legal recognition of documents, records, and signatures in line with the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Transferable Records (MLETR).
- 2.2 Implement freely accessible government digital infrastructure such as National Single Windows and digitalise regulatory documents, systems, and processes.
- 2.3 Promote interoperability of digital trade platforms and use of international standards

Recommendation 2.1: Accelerate the legal recognition of documents, records, and signatures in line with the UNCITRAL MLETR

In April 2020, as an emergency measure to protect trade during the COVID-19 pandemic, the ICC called on all governments to enable a transition to paperless trading by removing any legal requirements for paper documentation.¹² Their statement also encouraged governments to consider longer term changes to legal frameworks, including the adoption of the UNCITRAL MLETR, a legislative instrument which confers legal recognition to electronic transferable records. SBF urges governments to align their regulations with modern trade practices by accelerating domestic legal reforms to confer legal recognition to digital documents. Furthermore, such a move will provide businesses with a strong signal and confidence that the region has embarked on its digitalisation journey and provide businesses in this region the impetus to keep pace with global trade practices.

¹² <https://iccwbo.org/news-publications/policies-reports/icc-memo-to-governments-and-central-banks-on-essential-steps-to-safeguard-trade-finance-operations/>

Recommendation 2.2: Implement freely accessible government digital infrastructure such as National Single Windows and digitalise regulatory documents, systems, and processes

SBF believes that governments can drive broader industry adoption of digital documents by taking the lead to digitalise their own systems and processes. Given that businesses interface with multiple government agencies on various regulatory, permit, tax, and grant applications, this would greatly strengthen the business case for companies to invest in digital systems, leading to enhanced familiarity with digital documents among businesses and create the critical mass needed to overcome early adoption challenges. By creating a favourable environment for businesses to implement digital B2G systems, Governments will indirectly reduce the barriers for businesses to adopt B2B digital trade platforms, as businesses seek to reduce the instances of digital-to-hardcopy interfaces.

Recommendation 2.3: Promote interoperability of digital trade platforms and use of international standards

Interoperability between digital trade platforms enables seamless data exchange between different systems and facilitates the use of standardised documents and data formats. The ICC has reported that the lack of harmonised legal frameworks for electronic documents remains a significant barrier to digital trade. The uncoordinated digitalisation efforts have resulted in multiple “digital islands”, each with its own set of standards and rules. In this fragmented ecosystem, one-to-one connections are possible, but one-to-many connections proved costly and complex.¹³ The ICC DSI’s Key Trade Documents and Data Elements (KTDDE) collates and defines 36 key trade documents, which are vital to the health of the international trade ecosystem and offers an invaluable guide to digitalising any process, whether B2B or B2G across any global supply chain and covering all sectors.¹⁴ By employing international standards, businesses and governments can ensure consistency in documentation and fosters interoperability crucial to achieving a fully integrated and efficient digital trade ecosystem.

Challenge 3: Competing Priorities and Perceived High Initial Costs and Complexities

Transitioning from paper-based systems to digital ones can be costly, involving significant upfront investments in technology, training, and system integration. The perceived complexity of revamping established processes can also be daunting. Employees may need time and training to adapt to new systems, which can be particularly challenging for MSMEs. This is particularly pronounced in certain Economies which challenges are compounded by disparities in digital literacy and capabilities. With limited capacity, MSMEs tend to prioritise day-to-day operations over long-term initiatives with extended payback periods. As a result, digitalising trade documents might not be a priority, especially when immediate returns on investment are unclear.

Recommendation

- 3.1 Provide fiscal incentives for companies to adopt digital trade processes so as to reduce the payback period and financing pressure, especially for MSMEs.

Recommendation 3.1: Provide fiscal incentives to encourage companies to adopt digital trade processes

Governments can consider offering fiscal incentives to businesses to help offset the initial high investment costs associated with trade digitalisation. By reducing the payback periods for individual businesses, the

¹³ <https://www.tradefinanceglobal.com/posts/standards-for-digital-trade-exist-lack-of-awareness-is-the-problem-a-deep-dive-into-icc-dsi-and-wtos-standards-toolkit/>

¹⁴ <https://iccwbo.org/news-publications/news/icc-digital-standards-initiative-launches-complete-framework-for-supply-chain-digitalisation/>

incentives make the transition more feasible and enhance the business case for companies of all sizes, unlocking cost and time efficiency benefits for the entire supply chain.

Challenge 4: Added Complexity in Coordinating Multiple Parties Involved in Trade Transactions to be Onboard and a Fragmented Ecosystem

Among companies ready to begin pilot trials, some face difficulties in coordinating the various parties involved in trade transactions, such as buyers, sellers, banks, shipping lines, and freight forwarders. The initial enthusiasm of several businesses for digitalising trade processes wane when they encountered reluctance from their business partners.

A significant challenge in the external ecosystem is the lack of critical mass. Digital trade processes depend heavily on network effects, and efficiency gains are maximised when all participants are engaged. With fragmented efforts to encourage the adoption of digital solutions, participants recognise the benefits of digitalisation but wait for their trading and business partners to take the first step. Banks and carriers play crucial roles in this ecosystem as key enablers of digital trade. Banks are integral to trade finance, providing essential services such as letters of credit, guarantees, and payment processing. Carriers, on the other hand, are responsible for the physical movement of goods and the issuance of essential shipping documents such as eBL. Their roles as key intermediaries in trade transactions can help create the momentum needed to reach critical mass in the trade ecosystem.

Recommendation

- 4.1 Collaborate with key supply chain stakeholders, including banks and shipping companies, to develop digital systems and digitalise their trade processes, thereby creating a 'queen bee' effect, encouraging other companies along the supply chain to follow suit.

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Governments can collaborate with key supply chain players, such as banks and shipping companies, as other companies in the supply chain typically conform to systems and processes of the key players. This grants these players significant influencing power. By assisting them in digitalising their processes, these companies can act as “queen bees”, promoting the widespread adoption of digital solutions throughout the supply chain. Governments can also take the lead in advocating such transformation and initiating or showcasing projects, initiatives, and trade transactions to demonstrate benefits and increase mindshare.

Role of Private Sector in Accelerating Paperless Trade Adoption

While governments play an integral role, the private sector can also accelerate adoption of paperless trade in two significant ways: (i) Platforms can collaborate with various stakeholders of the supply chain to ensure that the benefits of paperless trade extend to all stakeholders of the supply chain such as manufacturers, logistics providers, freight forwarders, and retailers, thereby enhancing overall efficiency and inclusivity; and (ii) Digital trade platforms can establish inter-platform agreements to reduce costs for users, making digital solutions more accessible and economically viable for businesses of all sizes. By fostering partnerships and cost-sharing initiatives, the private sector can encourage the widespread adoption of paperless trade.

The example of the electronic Air Waybill (eAWB) highlights how private sector leadership can play a crucial role in accelerating the adoption of paperless trade. The International Air Transport Association (IATA) began efforts in the early 2000s to digitalise air cargo documentation. The eAWB allows for the electronic exchange of information between parties involved in the shipment of goods, including shippers,

consignees, airlines and freight forwarders. This technology has significantly streamlined the air cargo industry, reducing paper usage, improving efficiency, and increasing data accuracy and security. In 2010, IATA launched the e-Freight initiative, which included the development of the eAWB standard to replace paper air waybills with electronic versions. By 2014, over 50 airlines had adopted the eAWB. IATA set ambitious targets for the industry, achieving 50 percent eAWB penetration by 2016 and 68.8 percent by 2020.¹⁵ The COVID-19 pandemic further accelerated the adoption of eAWBs, demonstrating their importance in maintaining the flow of essential goods. As of November 2022, over 85 percent of the air cargo industry had adopted eAWBs as the default contract of carriage for all air cargo shipments on enabled trade lanes, with a goal of reaching 100 percent by 2025.

Recommendation

- 5.1 Establish a standing committee in inter-governmental groups to monitor the progress of paperless trade adoption in the region and facilitate exchange of best practices

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SBF recommends the establishment of a standing committee within inter-governmental groups such as APEC to oversee and accelerate the implementation of paperless trade across the region. This committee could be responsible for monitoring progress of the adoption of the MLETR, identifying challenges in the ecosystem, and facilitating the exchange of best practices and technical expertise among the economies. Additionally, the committee could develop and maintain a living document, detailing a list of documents and data sets to be standardised, harmonised, and exchanged through extensive public and private stakeholder consultations. By providing continuous oversight and support, the committee could enable the exchange of knowledge and expertise, accelerating digital transformation across the region. This collaborative approach would allow the economies to learn from the experiences of various economies and adopt effective strategies and technologies.

Conclusion

SBF believes there is significant scope for the region to enhance adoption of cross-border paperless trade which will enhance the efficiency, resilience, visibility, inclusiveness, and sustainability of supply chains. This requires coordinated efforts between governments and stakeholders to establish regional norms, promote best practices, and provide the much-needed political support to advance the agenda. SBF looks forward to regular and open dialogues with businesses and in the region to further discuss and implement these recommendations on Accelerating Regional Adoption of Cross-border Paperless Trade.

¹⁵ <https://aircargonext.com/news/history-of-e-air-waybill-tracking/>