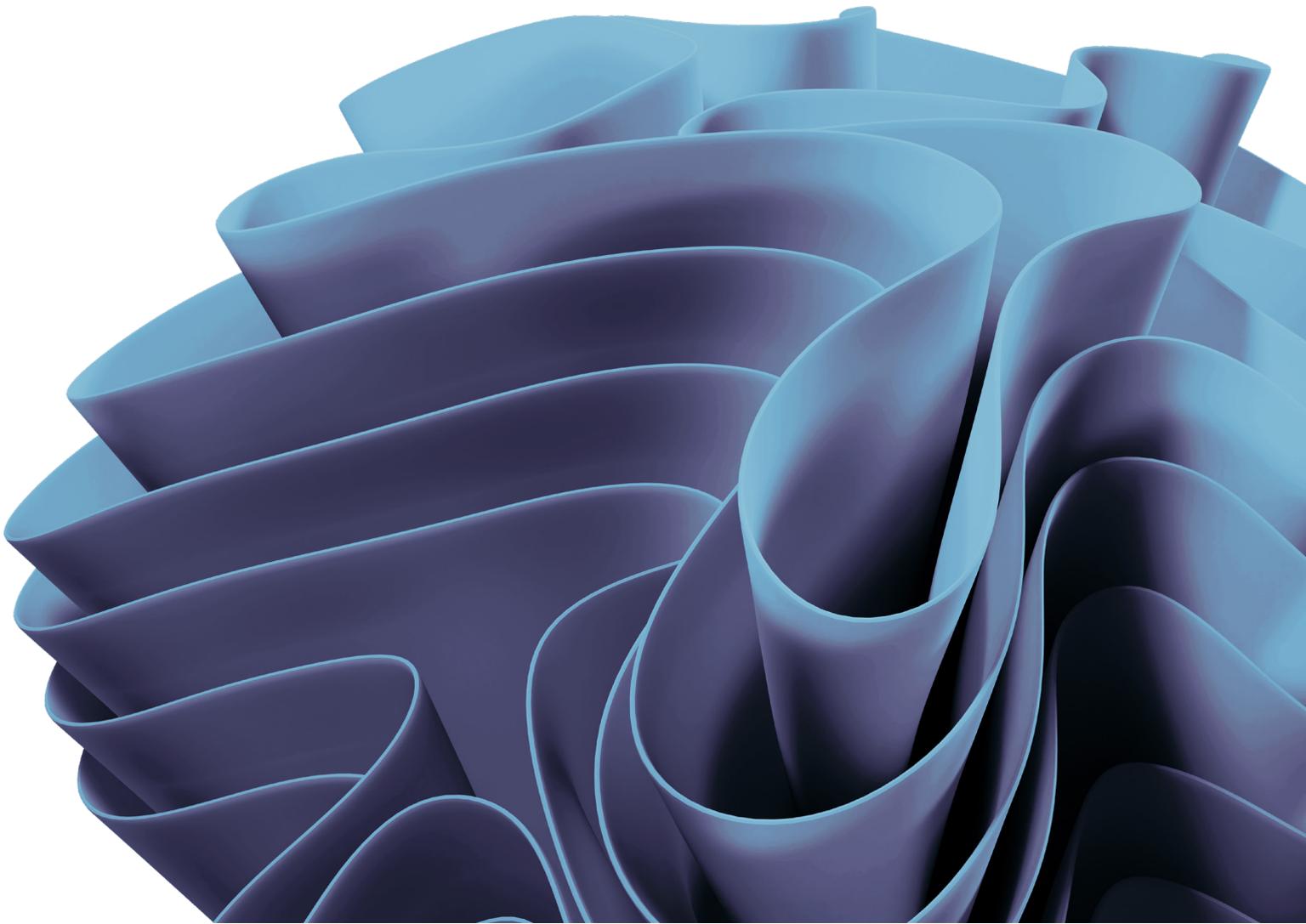


Reconceiving the global trade finance ecosystem

November 2021



About the authors

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Established by the ICC in August 2020, the Advisory Group on Trade Finance (AFT) is a cross-sector coalition of leaders in global trade and finance who pledged to highlight the issues faced by micro, small, and medium-size enterprises (MSMEs), advocate for better access to trade finance, and think about how the global trade ecosystem can better serve MSMEs. The ATF is co-chaired by Victor K. Fung, Chairman of the Fung Group, and Marcus Wallenberg, Chair of SEB, and its members include: Amy Jadesimi, CEO of Lagos Deep Offshore Logistics Base (LADOL); Flora Mutahi, CEO of Melvin Marsh; Takeshi Niinami, President and CEO of Suntory Holdings; Samuel Palmisano, Chairman of the Center for Global Enterprise; Mark Tucker, Group Chairman of HSBC Holdings; Jeremy Weir, CEO, Trafigura; and Zhu Min, Chairman of the National Institute of Financial Research at Tsinghua University. ICC Secretary General John W.H. Denton AO also joins the ATF as an ex officio member.

For more information on the AFT, please visit iccwbo.org.

About Fung Business Intelligence

Fung Business Intelligence monitors, analyses and reports on global developments in sourcing, supply chain, distribution and retail with a particular focus on China. As the knowledge bank and think tank of the Fung Group, it also leverages unique relationships and information networks to provide the Group's companies and their clients with research and consulting services to assist day-to-day decision making. Headquartered in Hong Kong, Fung Business Intelligence was established in the year 2000.

For more information on Fung Business Intelligence, please visit fbicgroup.com.

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This report is based on the efforts of contributors from across the globe spanning multiple organizations—representing the reach and the diversity of the trade finance ecosystem. The authors of the report know firsthand that without the tireless efforts and expertise of colleagues, partners, and industry participants, we would have little of value to share. It is not possible to name all who have contributed on so many levels, but we would like to thank in particular those who provided substantial insights and feedback to enrich the report.

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Foreword

Trade finance—which encompasses the financial services and instruments that facilitate the movement of goods and services¹—is essential to global commerce. Financial institutions are a critical facilitator of trade, with around 40 percent of global goods traded being supported by bank-intermediated trade finance.² This is especially important for emerging economies, as roughly half the value of trade finance applications originate from the Asia–Pacific region.³

Despite trade finance’s critical role, however, gaps in coverage have been recognized for some time, particularly for the micro, small, and medium-size enterprises (MSMEs) that serve an increasingly important role in global trade. A recent Asian Development Bank (ADB) study estimated that the gap in trade finance availability had reached \$1.7 trillion (15 percent higher than the ADB’s 2019 estimate of \$1.5 trillion), with rejection rates for MSMEs running at 40 percent. As a share of global goods traded, the gap increased to 10 percent in 2020 from 8 percent in 2018.⁴ A 2017 World Bank study indicated that 65 million MSMEs were credit constrained.⁵ Such shortfalls are widely recognized to be exacerbated by the impact of the COVID-19 pandemic and are expected to persist absent corrective measures.

As trade and supply chains grow more complex—involving more intermediaries, service providers, regulatory clearances, and certifications—MSMEs face greater challenges in accessing financing and, by extension, more complexity in market access and documentation. Multinational corporations have begun to leverage digital technologies that offer the promise of improved supply-chain efficiency and transparency, establishing new digital networks to facilitate trade and finance. By contrast, the fragmented nature and limited scale of MSMEs makes it difficult for them to capitalize on such opportunities.

Meanwhile, the broader financial sector continues to evolve rapidly, pursuing promising avenues like modernized digital platforms and networks and the accelerating digitization of transactions across all segments of society. Supply chains have proven to be fertile ground for early commercial blockchain applications, and many central banks are now exploring the potential of central-bank digital currencies (CBDCs). Such initiatives set the stage for potentially significant advances in efficiency and connectivity, enabling all players to interact more fluently while harnessing the power of data to provide more and better services.

The trade finance industry must similarly consider how to accelerate its transition to a more digital and interconnected ecosystem, leveraging new models to achieve inclusivity, close persistent funding gaps, and modernize processes that inhibit the industry’s progress.

¹ As defined by BIS, trade finance refers to products provided by banks and financial institutions to help businesses manage their international payments and associated risks, along with working capital. See “Trade finance: Developments and issues,” Bank for International Settlements, January 2014, [bis.org](https://www.bis.org). The research described in this report considered a broad set of financial instruments supporting business-to-business global trade, including risk-covering instruments (often referred to as documentary business, for example, letters of credit and guarantees), buyer-led finance and liquidity solutions (for example, supply-chain finance, dynamic discounting), and cross-border seller-side finance (for example, invoice discounting, factoring, pre-shipment finance).

² *Asia–Pacific Trade Facilitation Report 2019: Bridging trade finance gaps through technology*, UN Economic and Social Commission for Asia and the Pacific (ESCAP) and Asian Development Bank (ADB), September 2019, [adb.org](https://www.adb.org).

³ Steven Beck, Alisa Di Caprio, and Kijin Kim, “2017 trade finance gaps, growth, and jobs survey,” *ADB Briefs* (Asia Development Bank), September 2017, Number 83, [adb.org](https://www.adb.org).

⁴ Steven Beck et al., “2021 trade finance gaps, growth, and jobs survey,” *ADB Briefs*, October 2021, Number 192, [adb.org](https://www.adb.org).

⁵ Miriam Bruhn et al., *MSME finance gap: Assessment of the shortfalls and opportunities in financing micro, small and medium enterprises in emerging markets*, International Finance Corporation working paper, 2017, openknowledge.worldbank.org.

Analysis for this research paper suggests that we are nearing a turning point in the market—an opportunity to reconceive, redesign, and build an ecosystem that harnesses technology to overcome decades-old issues of access and inefficiency and to position the sector for the future. The current moment, during which the trade finance ecosystem contemplates a postpandemic landscape, appears to be an opportune one for action. Innovation will depend on deliberate action and a framework that encourages collaboration across all key players to enact more effective industry standards.

In August 2020, in the wake of tightening conditions in the global trade finance market linked to the COVID-19 pandemic, the International Chamber of Commerce (ICC) established the Advisory Group on Trade Finance (ATF), a cross-sector coalition of leaders in global trade and finance that pledged to highlight the issues faced by MSMEs, advocate for better access to trade finance, and think about how the global trade finance ecosystem can better serve MSMEs. The ATF is part of a global effort to work with all stakeholders to build awareness of trade financing's importance to a postpandemic recovery, inform governments' and multilateral institutions' interventions to mitigate the risks of short-term credit shortages affecting MSMEs, and provide thought leadership to help bridge persistent trade financing gaps, particularly in emerging markets.

The ATF, supported by McKinsey as its analytical knowledge partner, undertook with Fung Business Intelligence a research effort to understand and address the key trade finance challenges faced by MSMEs. This effort has involved two phases of data collection. The first phase was demand-side, or end-user, research involving interviews with more than 60 suppliers, buyers, and subject-matter experts from five export-intensive industries in 12 key producer economies to understand the pain points and opportunities of the trade finance ecosystem. The second consisted of a series of meetings and interviews with more than 100 subject-matter experts from the worlds of trade, finance, technology, multilateral organizations, and think tanks, with the goal of framing potential solutions to these trade finance challenges.

Key takeaways from the research confirm that challenges often vary from country to country, depending on the unique regulatory and economic environments, the state of local technological infrastructure and human capacity, and the complexity of trade processes. While banks continue to play a critical role in funding trade for MSMEs, they encounter technological, operational process, and other hurdles to extending credit, and these issues can vary significantly from country to country. Banks, large corporates, and MSMEs have embraced digitization with varying degrees of urgency, creating a gap between participants in the analog and digital worlds. Absent a change of mindset, there is significant risk of a widening gap, which could lead to a two-tier system that separates the haves from the have-nots.

The research put forward here could serve as the foundation for a new vision of a modernized global trade finance ecosystem. The proposed model recognizes the solid progress that networks and players in digitizing parts of the trade and finance processes have made. It also provides a framework for digitally connecting and facilitating interoperation among these networks through sets of shared standards, processes, protocols, and guiding principles.

An integral part of the potential vision set out here is an “interoperability layer”—a global framework of standards and policies that enables participants in the trade ecosystem to seamlessly connect to both present and future networks. Any ecosystem should lead to improved scale, efficiency, transparency, and inclusion in the provision of global trade and financial services, to the mutual benefit of all participants.

One key area where an interoperability layer could enable essential ecosystem advancements is sustainable finance, which has become increasingly embedded in both public and private corporate principles and companies' processes for setting specific targets to meet in order to deliver the measurable improvement their stakeholders expect. The definition of what

qualifies as “green” in the trade finance space remains inconsistent, but this paper can support a global trade finance ecosystem capable of advancing both current and future agreed-upon standards of sustainability and inclusive growth.

MSMEs—as well as all other trade participants—should have access to trade and financial services from a wide pool of global providers. This proposed vision would enable the establishment of broadly recognized digital identities for each participant, the incorporation of secure credit and trading data, and full visibility and process tracking. Common standards and protocols would enable portability within and across networks. Such a digital solution would also enable faster and better-informed credit risk assessment.

The proposed vision outlined in the report incorporates the extensive contributions of networks and organizations that have begun paving a path toward efficiency and innovation—for instance, by crafting well-designed standards that could constitute the foundation of a future trade finance ecosystem. The next five to ten years should bring significant gains in the proliferation and interoperability of new networks, aided by the appropriate overlay of effective governance and the consensus of industry participants. With good governance, these advancements could set the stage for new models and could expand and democratize trade by broadening the inclusion of existing and new market participants while applying technology to make trade faster, more fluid, and more transparent.

ATF looks forward to collaborating with the wide array of trade finance stakeholders, including the many entities already engaged in advancing the process, to realize this vision for a future-ready global trade finance ecosystem.

John W.H. Denton AO

Secretary General at ICC

Victor K. Fung

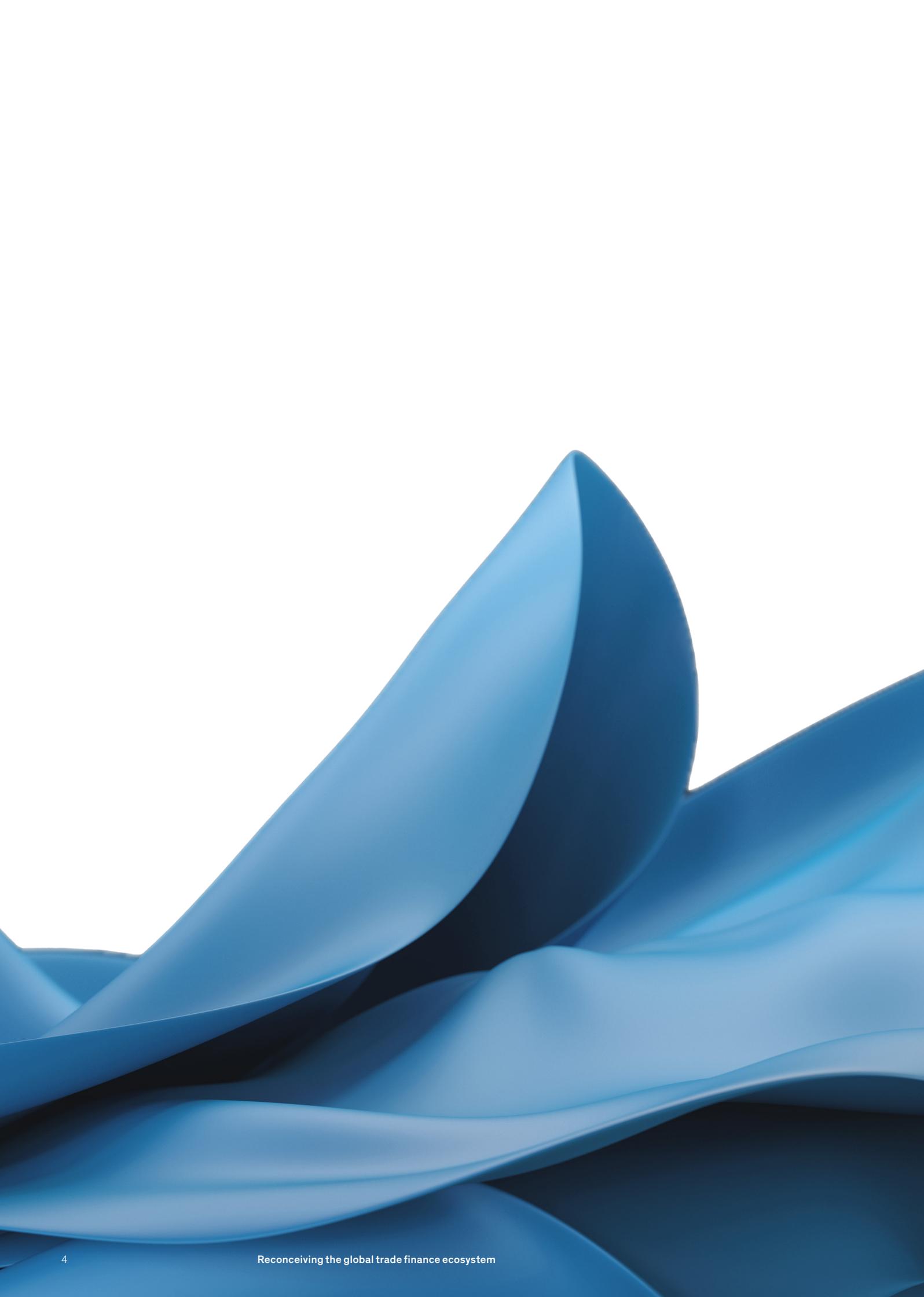
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Section 1

Reflecting the needs of all participants in the trade finance ecosystem

Trade finance emerged to respond to the needs of enterprises of all sizes around the world. Indeed, it encompasses a wide range of financial instruments that are essential for global cross-border trade.⁶ For instance, trade finance instruments allow enterprises to cover the inherent risks related to a cross-border trade transaction, whether counterparty risk or country risk. At the same time, trade finance allows exporters to get cash advances on their transactions, hence maintaining healthy levels of working capital, and enables the global supply chain to work smoothly while providing the appropriate flow of credit along the value chain.

For financial service providers, trade finance is among the most important products in the wholesale banking portfolio, notwithstanding its relatively small direct contribution to revenues. In fact, trade finance serves as an “anchor” product that, given its transactional and recurring nature, generates multiple and frequent interactions with business clients throughout the year. This intensity of interaction is a key determinant of the health of wholesale clients’ relationship with their financial provider.

This section begins with an overview of the current landscape, including market structure and types of participants, and then outlines challenges facing micro, small, and medium-size enterprises (MSMEs) seeking to participate in this ecosystem, and the opportunities for banks to help.

The market structure of global trade finance

According to McKinsey’s Global Banking Pools, the global trade finance market covered a value of approximately \$5.2 trillion in 2020, amounting to roughly 6 percent of global GDP. On the financial supply side, this translates into \$40 billion of annual banking revenues, accounting for nearly 2 percent of overall wholesale banking revenue.

Broadly, the scope of trade finance considered for the purpose of this research includes three types of products:

1. **Documentary business** includes traditional on- and off-balance-sheet trade finance instruments, such as letters of credit, international guarantees, and banks’ payment obligations, which allow enterprises to cover the risks inherent in cross-border trade transactions (for example, an exporter looking to manage country-related risks of its importer’s domestic market). Documentary business accounts for roughly 85 percent of total trade finance volume (Exhibit 1). By and large, this process is governed by an international standard administered by SWIFT, a global consortium connecting more than 11,000 financial institutions. Transactions rely on the participation of multiple parties, including logistics players, resulting in highly complex workflows and substantial paperwork. Indeed, although financial messages are regulated by SWIFT, documentary business transactions require a significant number of additional paper-based documents (for example, bills of lading), typically with nonstandard formats. Suppliers and buyers face further challenges with respect to compliance and regulation, including embargoes, blacklists, and anti-money-laundering rules.
2. **Buyer-led finance** includes products that enable both buyers and suppliers to optimize their working capital for cross-border trade through programs sponsored by buyers—for example, payables financing (also known as reverse factoring), which gives suppliers the option of receiving from a funding bank the discounted value of its outstanding invoices prior to their actual due date. An additional variant is dynamic discounting, which enables

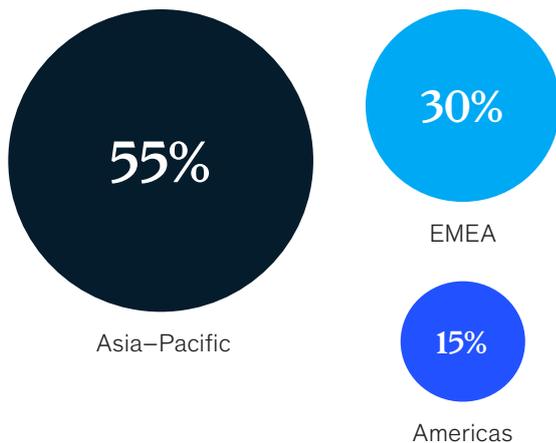
⁶ In this report, global trade refers to cross-border trade, and the vision proposed applies to cross-border trade. It is possible, however, that large markets could also achieve significant impact by adopting the measures outlined here for domestic trade.

Exhibit 1

The estimated \$5.2 trillion annual global trade finance volume is highly concentrated in Asia–Pacific.

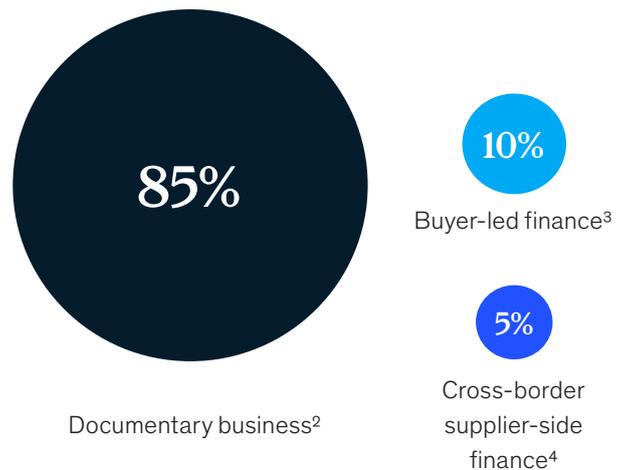
Regions

100% = \$5.2 trillion¹



Products

100% = \$5.2 trillion¹



¹ The scope of trade finance volumes represented covers the financing for international trade and supply-chain volumes (cross-border trade-linked opportunity) and excludes domestic trade financing, such as domestic factoring, and domestic guarantees.

² Examples include letters of credit and international guarantees.

³ Examples include payables financing and dynamic discounting.

⁴ Examples include receivables discounting and forfaiting.

Source: Capital IQ; FCI Annual Review; ICC Trade Finance Survey; IMF Direction of Trade Statistics; McKinsey research

buyers to use their own funds to pay an invoice prior to the original due date. These products help unlock working capital by optimizing cash flow; buyers can extend payment terms, and suppliers accepting a discount are paid sooner. The category accounts for less than 10 percent of trade finance volumes but is commonly regarded as an untapped market with the potential to grow to roughly ten times its current size, given that only a small share of payables is financed today. To tap this opportunity, some banks have developed fully automated supply-chain finance platforms based on legacy technology, which if successfully scaled, could achieve attractive cost-to-serve figures. Notably, in the past ten years, a few dozen fintechs exclusively focused on this business have emerged, further enabling financing for MSMEs. An increasing number of large corporates have signed up for buyer-led finance programs to create resilient supply chains. Reduced financing cost has attracted MSMEs to opt for early payments through these types of programs, which showed especially strong growth during 2020's liquidity crunch.

- Supplier-side finance** includes factoring, receivables discounting, forfaiting, and other products that address corporate sellers' financing needs by anticipating the liquidity resulting from commercial transactions. It accounts for roughly one-third of global trade finance volumes, when considering cross-border flows. Factoring is generally considered a more complex business than receivables discounting, as it often requires the formal transfer of credit (and related balance-sheet assets) from the corporate client to a bank.

Given this transfer on the books, cost to serve for supply-side banks depends hugely on respective countries' regulatory environments and each player's liquidity funding costs. Conversely, receivables discounting is considered among the most basic products for financing working capital, as it allows companies to transfer their sales invoices to banks in exchange for liquidity advances. Open-account trade opportunities and MSMEs' need for prompt payment combined with limited access to other financing avenues (including capital markets) drive high demand for this product.

In terms of geographic relevance, Asia–Pacific generates the largest share (55 percent) of trade finance volume (Exhibit 1). Its market dominance is fueled by increasing trade flows, both globally and regionally, as well as the continued dependence of large corporates on supply chains in the region. While the majority of the volumes involving Asia–Pacific are documentary business (about 90 percent), EMEA and the Americas have somewhat lower penetration for documentary business (80 to 85 percent) thereby indicating more adoption of buyer-led and supplier-side finance.

Overview of trade finance participants

The global trade finance ecosystem is complex, incorporating a wide array of diverse participants. Broadly, participants can be segmented into two groups (Exhibit 2):

- **Core participants** are parties playing an active role in any trade transaction, including the exchange of goods and financing. Core participants include enterprises and other organizations (for example, nongovernmental organizations [NGOs] and public entities) playing both buyer and supplier roles, financial institutions, technology providers, and logistics providers.
- **Facilitators** are parties not participating directly in trade transactions but critical in facilitating trade through policies and regulations. These include trade organizations, governments, and regulators.

In this section, we briefly introduce the market participants and discuss their main needs and challenges.

Core participants

Core participants include buyers and suppliers, which may be enterprises and other organizations, such as NGOs and public entities. Other core participants are financial institutions, technology providers, and logistics providers.

Buyers and suppliers. Buyers and suppliers in trade finance include enterprises and organizations of all sizes. Most, however, are MSMEs, which number approximately 400 million worldwide and serve as the backbone of economies around the globe, accounting for over 95 percent of firms and 60 to 70 percent of employment.⁷ This suggests that a healthy trade ecosystem requires healthy MSMEs.

With 600 million new jobs required by 2030 to absorb the growing global workforce, according to the World Bank,⁸ MSME development is a high priority for governments around the world. A primary constraint on MSME growth and international expansion is access to financing. In a World Bank survey of business owners, this was the second-most-cited obstacle facing respondents in emerging markets and developing countries. Large buyers seeking to maintain a lean and efficient supply chain and strong vendor relationships are increasingly pursuing solutions to support supplier financing, which is commonly necessary to accelerate production, shipments, and deliveries.

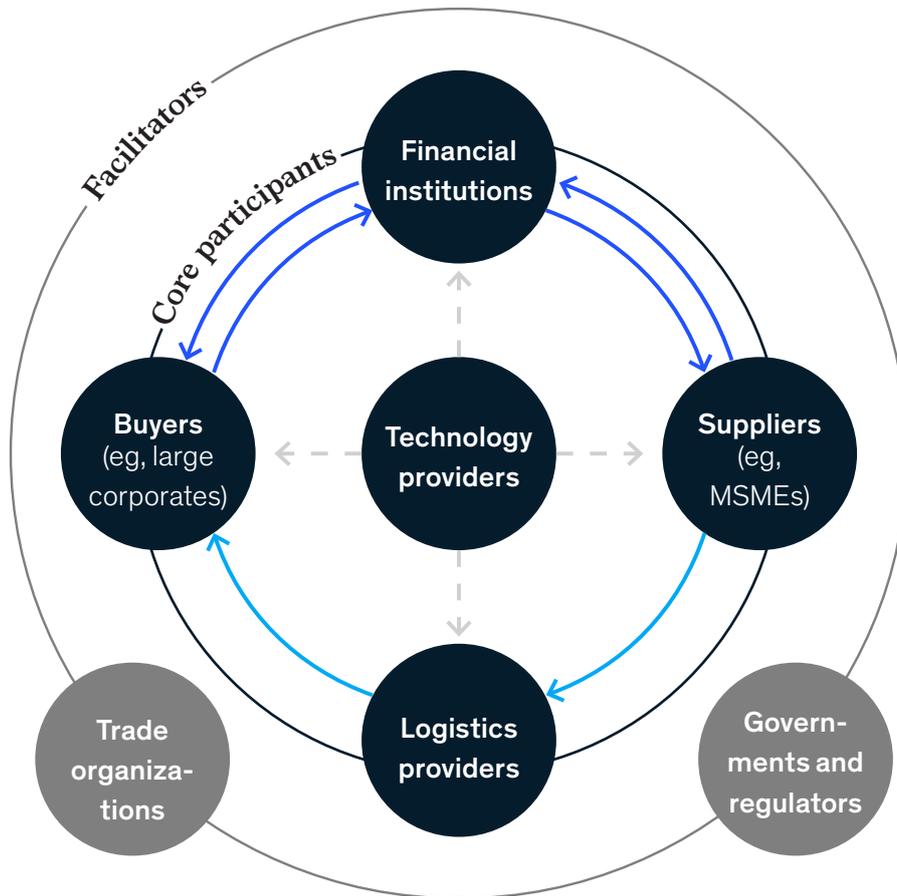
⁷ "Small & medium-sized enterprises," National Action Plans on Business and Human Rights, globalnaps.org.

⁸ "Small and medium enterprises (SMEs) finance," World Bank, worldbank.org.

Exhibit 2

The global trade finance ecosystem can be segmented into core participants and facilitators.

→ Exchange of goods or services → Exchange of money - → Technology services



Source: ATF analysis

Since buyers and suppliers are constantly seeking to expand their markets, participation in trade marketplaces—both physical and digital—plays an essential role in their strategies. To be of true benefit, digital marketplaces need to be interoperable with other marketplaces, and the services and technical interfaces between participants and marketplaces need to adhere to certain standards and protocols. Otherwise, the time and expense of connecting to each marketplace could become prohibitive.

Finally, buyers and suppliers are looking to operate as cost-efficiently as possible. Cross-border payments and trade document processing add up to a meaningful portion of trading costs. Any improvements in these areas brought about by leveraging new technology and alternative payment corridors will generate significant benefits in companies' overall cost profile.

Financial institutions. In the trade finance ecosystem, financial institutions provide the liquidity and the risk assessment needed for executing trade transactions, along with a wide range of services to satisfy a growing list of trade participants' adjacent requirements. Several types of institutions participate in the ecosystem, with the following being the most common:

- **Corporate banks** actively intermediate trade transactions, and in recent years competitive pressures have pushed them to become more efficient and offer more effective services. A bank's first tasks with a new client are to verify its identity and assess the suitability of and risks involved with maintaining a business relationship with that client. Banks also must keep abreast of evolving regulations in the countries where they operate and maintain a rigorous control and compliance environment. They need to make almost-constant investments in technology and digitization in order to keep pace in terms of innovation and cost efficiency. Increasingly, banks find that not every solution can be developed in-house, so they must continually scan the market and assess a wide range of innovations, such as core trade finance systems, applications supporting specific trade processes, and trade platforms that enable them to better distribute services across client segments and countries.
- **Institutional investors** are active participants in the secondary market, buying assets sold by banks to create capacity to issue further credit (often called the "originate to distribute" model). As an investable asset, trade finance has desirable attributes, including typically low default rates, attractive yields (compared with traditional instruments), short-term durations, and self-liquidating disposition. However, institutional investors to date have not embraced at-scale trade finance as an investable asset. Indeed, the trade finance market tends to be illiquid and nontransparent for reasons including technology limitations—resulting in the lack of a transparent electronic market—and limited risk-assessment expertise among institutional investors.

A key first step toward bringing liquidity to the trade finance market has been the recent expansion of the "trade as an asset" concept—the notion of transforming trade finance transactions into instruments readily exchangeable on securities markets. This model is being pursued by some specialized fintechs, making it one example of how digital technologies have opened new avenues of entry for potential participants. Such securitization and tokenization—that is, creation of a digital representation of these assets—could expand the market considerably. As institutional investors look to diversify their portfolios with these trade-related assets, digitization could provide a related boost in MSME funding availability.

- **Credit insurance companies** facilitate the overall functioning of the trade ecosystem by insuring businesses' accounts receivable from loss due to debtor insolvency, with the cost (premium) reflecting the credit risk of the insured entity. In addition, they can insure financial institutions against the risk of obligor nonpayment and help them manage credit exposure and regulatory capital allocations. Typically, the challenge for credit insurers is to gain access to and process increasing amounts of accurate information to inform more precise underwriting.
- **Export credit agencies (ECAs)** facilitate domestic companies' exports. Many countries have state-owned ECAs that provide loans, guarantees, and insurance to help manage the uncertainty implicit in exporting. Such entities play a key role in international trade by absorbing country risk, often beyond the level generally accepted by private insurers and lenders, especially in developing countries. Therefore, ECAs must constantly assess risk across multiple countries while also working with financial institutions and trade organizations to identify opportunities for exporters. These agencies are also exploring digital channels, which could help them make their products—which are often state aided—available to the broadest number of MSMEs in their countries.

Technology providers. Trade finance technology has adhered to established and traditional approaches for many years. More recently, however, technical innovations such as advanced optical character recognition, blockchain, application programming interfaces (APIs), and natural-language processing have emerged in the space, creating an ideal environment for the formation of digital trade marketplaces that bring together buyers, suppliers, financial

institutions, and other players in the trade ecosystem. Along similar lines, the Internet of Things—interconnected devices embedded in everyday objects—is increasingly important for data collection in trade. The full potential of this technology is still untapped, as implementations are still running at low volume or are still in the proof-of-concept stage.

After the Second Industrial Revolution, the introduction of steamships and railroads provided a catalyst to international trade, opening new routes and lower costs. Likewise, the digital revolution of the 1990s and early 2000s enabled companies to interact with far-flung suppliers and customers far more efficiently. One study found that a 1 percent reduction in trade costs can result in a 0.4 percent increase in trade flows.⁹ We are now witnessing another wave of innovation that could lead to further trade expansion and, more importantly, greater inclusion for MSMEs and developing countries.

A wide variety of companies participate in the trade technology space, with most falling into three categories:

- **Established software companies** provide the core technology systems that banks have relied upon for decades. Although trade remains a paper-intensive business, the past decade has brought signs of a wider digitization of trade processes. In recent years, most of these companies have transformed their core platforms into open architecture, cloud technology, and API-enabled systems. We expect that this technological evolution will continue and that the proliferation of standards—addressed in the next section—can be expected to provide a further boost.
- **B2B trade marketplaces** are one of the most dynamic categories in the fintech space, with many platforms competing to provide digital platforms connecting trade participants and offering a wide range of trade financial services, including procure-to-pay and electronic invoicing, supply-chain finance, dynamic discounting, and receivables financing. Financial institutions tend to work with multiple trade platforms, allowing them to reach market segments beyond their usual client base.
- **Digital disruptors**, primarily start-ups, are developing innovative solutions, including data analytics, simplifying the digitization of trade documents, and vessel-tracking technology. Potential applications of trade solutions are only scratching the surface, with innovations spanning artificial intelligence, distributed ledger technology, and the Internet of Things, to mention a few. The challenge facing these companies is to continue integrating the trade ecosystems via partnerships with banks and trade marketplaces in an interoperable manner.

Logistics providers. The logistics industry comprises a wide range of players offering services that help get products to their destinations efficiently. These businesses include freight forwarders, regional and global ocean carriers, and air-freight firms. Besides moving goods, these providers facilitate the flow of information, including the completion of documents (in particular, bills of lading) essential to the financing of trade flows. In addition, logistics providers constantly track the cargo, communicate with exporters and importers, interact with ports and customs authorities, and coordinate with warehouses and local distributors to ensure goods reach their final destination.

Standardization has long been a priority in the logistics industry. The introduction of the standard cargo container in the 1950s dramatically reduced the cost of loading and unloading a ship from \$5.86 per ton to just \$0.16 a ton, in addition to enabling greater security.¹⁰ The future standardization of information, in parallel with its digitization, stands to provide a similar boost to the future of trade ecosystems.

⁹ Jacques Bughin and Susan Lund, "Next-generation technologies and the future of trade," VoxEU CEPR, April 10, 2019, voxeu.org.

¹⁰ Anna Nagurney, "Today's global economy runs on standardized shipping containers," *The Conversation*, April 5, 2021, theconversation.com.

In a recent article offering predictions of digitization's impact on container shipping over the next five years,¹¹ the Digital Container Shipping Association (DCSA) pointed to developments including progress on customer experience, increased interoperability (with more platforms that have been built on standards), a focus on sustainability, and an acceleration of innovation as digital standards lower barriers for new businesses that will transform the industry.

Facilitators

The following descriptions of facilitators look at the main categories identified earlier: trade organizations, governments, and regulators.

Trade organizations. Numerous trade associations at the local, regional, and global levels provide support to trade participants. Their role continues to be crucial, and advances in technology and communications have enabled them to deepen and broaden their impact. One example is the International Chamber of Commerce, which represents more than 45 million companies across more than 100 countries. Many other domestic and bilateral chambers of commerce have an active role in shaping some of the rules, and some other associations, such as the DCSA and the Global Supply Chain Finance Forum, provide technical standards. In addition, a few supranational organizations (such as the United Nations) define some of the standards used in trade finance, as largely described in section 2.

Governments and regulators. Governments and regulators continue to play an essential role in the facilitation of trade services among market participants, as well as in fostering inclusion. Participants are bound by market regulations, which can be uneven across countries, creating challenges for a market that, by definition, crosses borders. Governments may be especially likely to take an active role when they determine there is a significant market gap. For example, in response to the challenges resulting from the COVID-19 pandemic, according to the OECD,¹² governments have been looking to their ECAs to fill any financing gaps left by the private market and to mitigate the impact of the crisis. Further, in an OECD survey,¹³ 43 percent of ECA respondents reported an increase in their business levels, and 64 percent reported taking measures to increase working capital support.

Key insights from the demand-side research

For the myriad of participating players—and those expected to join the ecosystem—to address the needs outlined in this section, they will need a thriving and resilient ecosystem. To provide input into designing such an ecosystem, this working group conducted an analysis informed by input from a wide range of subject-matter experts at organizations contributing to the global trade finance industry. The approach taken adopts a holistic view covering all market participants while ensuring that the sometimes overlooked needs of MSMEs are sufficiently addressed.

The research behind this report applied design-thinking methodology to identify “personas”—that is, typical archetypes of MSME end users of trade finance services.¹⁴ Interviews revealed very different behaviors among these users that can be mapped along two main dimensions, which we call technology readiness and financing and market access (Exhibit 3). Along these dimensions and based on attitudes and behaviors, five main personas were identified.

¹¹ “Five predictions for the next five years of digitalisation in container shipping,” Digital Container Shipping Association, September 28, 2021, dcsa.org.

¹² “Trade finance in the COVID era: Current and future challenges,” OECD, March 23, 2021, oecd.org.

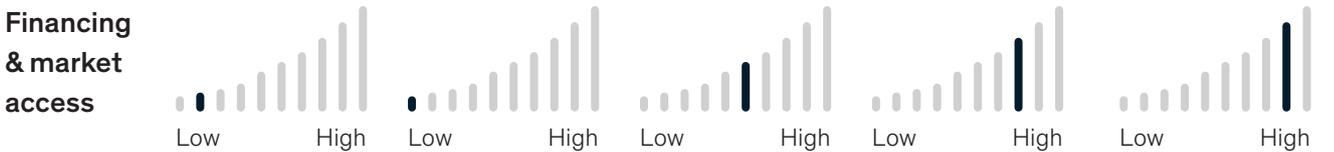
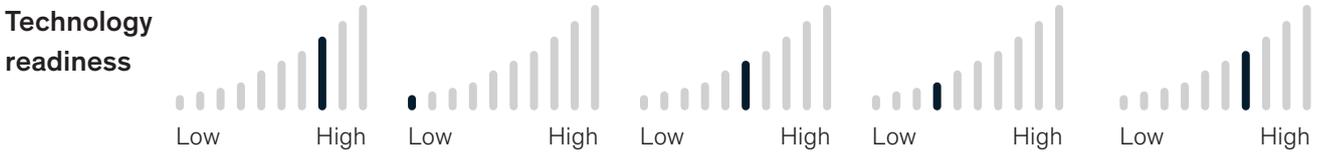
¹³ *OECD economic outlook, interim report September 2021: Keeping the recovery on track*, OECD, September 21, 2021, oecd.org.

¹⁴ As part of this initiative, interviews were conducted with over 60 suppliers, buyers, and subject-matter experts across 16 emerging-market countries and multiple key industry sectors to better understand trade finance end users' primary pain points.

Exhibit 3

The research identified five personas among trade finance end users.

	Prevalence of micro and small enterprises		Prevalence of medium-size enterprises		
Personas	Active entrepreneur	Traditional treasurer	Trade business manager	Prudent business owner	New-generation CEO
Needs	Looks for digital solutions and new business opportunities; often struggles with undeveloped infrastructure and bureaucracy	Has the simplest trade finance processes and needs; has limited ability to restructure supply chains or navigate new global market spaces	Is stable and confident but faces certain issues, mostly with regard to payment terms and access to certain trade finance products (eg, factoring)	Is experienced and content with current business; has good relations with banks with no capital constraints; has a cost-based mentality in choosing trade finance products	Owns medium-size conglomerates; is cash rich and has access to funding; is stable and steadily scaling the business



Source: Demand-side research based on interviews with 60 treasurers in 16 countries

The demand-side research (see details in the additional research section to this report) identified three broad categories of trade finance challenges facing MSMEs:

- **Access to liquidity.** Many MSMEs find themselves either lacking the necessary collateral or unable to meet risk assessment criteria required to leverage trade finance services. At the same time, banks may not feel empowered to employ nontraditional means of assessing supplier risk, due in part to their limited access to enterprise-related historical data. The lack of maturity of many regions' alternative finance markets often results in higher interest rates and capital costs for exporters. The vital areas of know your customer (KYC) and onboarding also remain major MSME challenges, complicated by the fact that banks' analysis of MSMEs is mostly based on static documentation rather than live data.
- **Transaction complexity.** Trade finance involves intricate workflows spanning multiple parties, often causing significant manual work and the exchange of paper documents (for example, bills of lading, purchase orders), resulting in high operational costs and elevated credit risk. The divergence of regulations across jurisdictions and differential risk characteristics across trade finance products often gives rise to unduly complex and opaque processes. For smaller firms that have limited back-office resources and are already facing bandwidth constraints, the effort required to overcome such administrative hurdles can be insurmountable, resulting in lost expansion opportunities.
- **Access to B2B markets.** Suppliers are looking for new buyers and new revenue sources, yet they often struggle to gain access to new clients because they lack knowledge or capacity or face other challenges in target B2B markets. Because of COVID-19, some businesses have faced payment delays from buyers and inflexible payment terms from their own suppliers, causing gaps in working capital that can inhibit the servicing of existing clients, let alone new ones.

Much of the current and potential global trade involves micro, small, and medium-size enterprises, but they face many hurdles to full participation in this global ecosystem. A deeper understanding of the global trade ecosystem can help participants do more to enable the growth of trade with these current or would-be buyers and suppliers. The next section examines how network interoperability might help.

Section 2

A vision for network interoperability for current and new market players



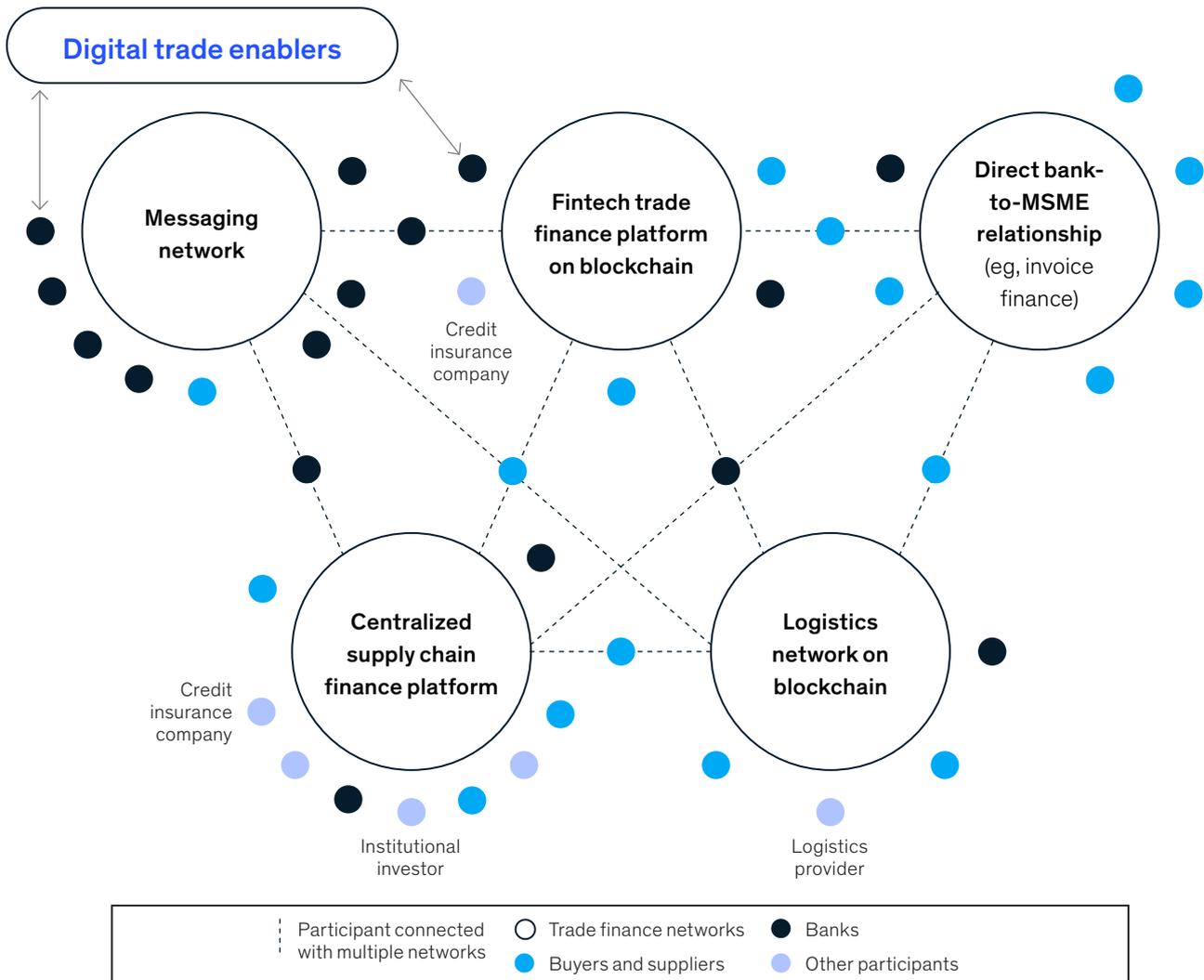
Technology is an integral part of global trade finance today—and has enabled many of the current systems and services used across the globe. Technology alone, however, cannot deliver the kind of fully integrated solution that is required to solve the many challenges faced by participants in the system. It must be accompanied by network effects and more collaboration among participants. This section outlines a vision for this reimagined ecosystem, along with the specific elements necessary to realize this vision.

From ‘digital islands’ ...

Over the past decades, advancements in technology have given rise to a variety of new trade finance approaches and players, each focused on addressing the shortcomings of legacy processes. Unfortunately, innovation has often resulted in “digital islands,” closed systems of trading partners usually leveraging proprietary technology and coalescing around specific use cases and pain points (Exhibit 4). While these structures may solve near-term challenges, they can also unintentionally create longer-term inefficiencies.

Exhibit 4

Simplified representation of the current trade finance market.



Source: ATF analysis

Such networks—essentially platforms enabling trade between groups of interconnected participants—can take many forms. For instance, established messaging networks link financial institutions with buyers and suppliers of all sizes for documentary services. Centralized supply-chain finance platforms address specific industries and use cases in the areas of payables finance and dynamic discounting. Fintech firms and networks have aimed to disrupt the status quo, often leveraging blockchain technology to facilitate transactions without the traditional level of financial institution involvement, and introducing value-added features such as data analytics, traceability, smart contracts, automated custom clearance, fraud mitigation, and permanent storage. Some standards do exist; for example, some buyers and suppliers use globally recognized digital identifiers and digital trade documents. But governance and adoption are fragmented and relatively low overall. And where there is adoption, the standards are usually utilized by a single entity and rarely embraced at a network level.

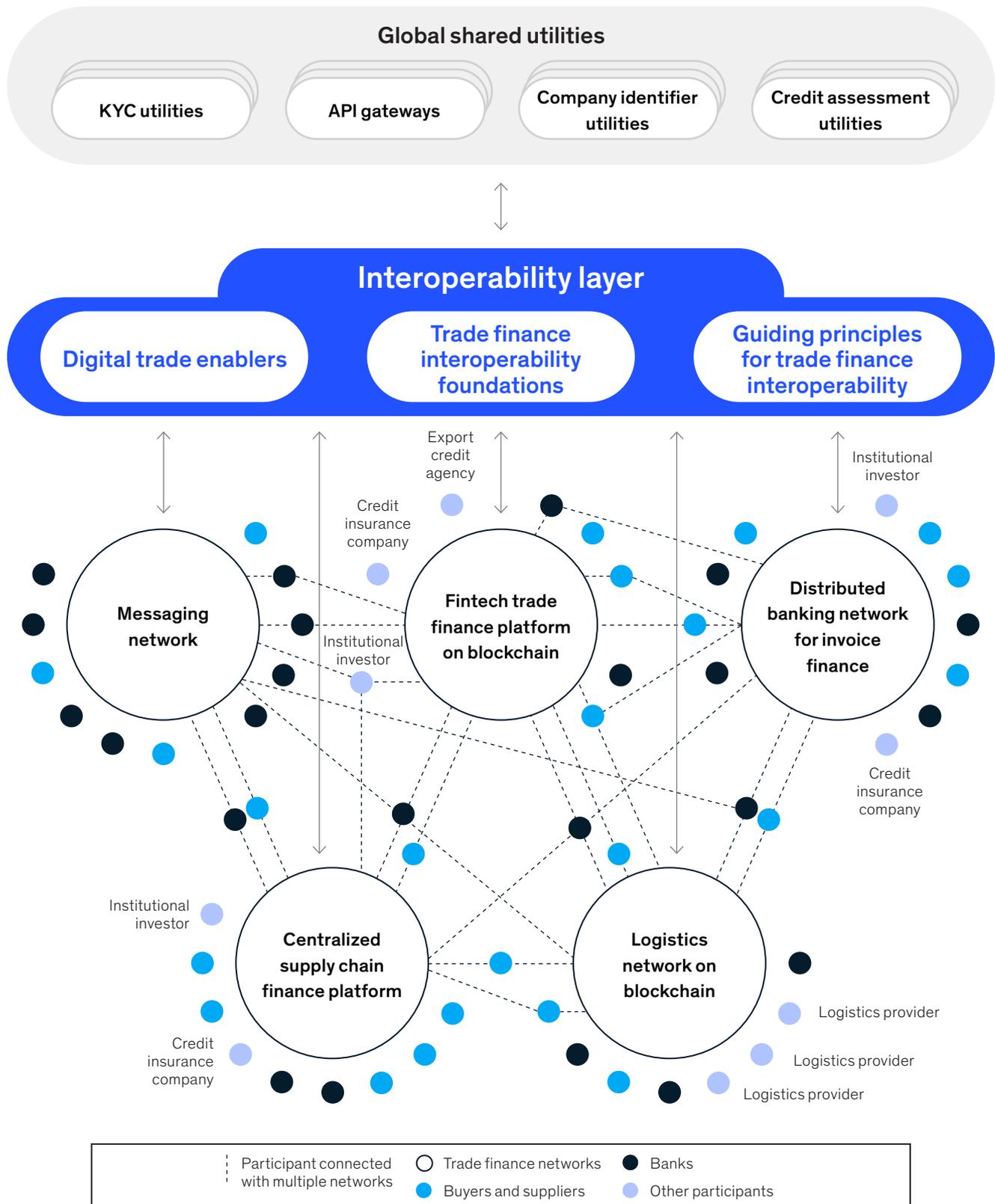
In this context, the future global trade finance ecosystem will necessarily encompass numerous networks. The vision put forward here embraces these existing networks but makes them interoperable and more accessible.

... to global interoperability

The key to this vision for a future global trade finance ecosystem is an “interoperability layer” fostering ubiquitous access across networks and platforms. Such a model would significantly improve global efficiency, in part by sharply limiting redundancies while simultaneously enabling the adoption of a series of global shared utilities and standards. Importantly, this model is compatible with the ongoing development of bespoke solutions addressing both current and prospective pain points that have impacts on specific sectors, geographies, and other subgroups.

The interoperability layer is a virtual construct designed to act as an umbrella for existing and future standards, protocols, and guiding principles—though to be clear, it is not a proposal for regulatory changes or replacement. Although the interoperability layer would provide no direct services to trade participants, its setting of standards and creation of a common taxonomy, for example, would be essential to the functioning of an efficient and truly interoperable ecosystem. The governance of this construct could be provided by a single global industry entity or by a consortium drawing from several that combined would provide an aligned framework for open standards, portability, inclusion, and best practices benefiting market participants across existing and new networks. The ultimate aim would be the convergence of all participants at a network level, to enable and facilitate adoption of the ecosystem in the shortest possible time, without it being dependent on the individual participant (Exhibit 5).

Simplified representation of the proposed vision for the trade finance ecosystem.



Source: ATF analysis

The interoperability layer would establish a global framework representing the common standard for seamless exchange and interaction of data among trade networks and participants. In doing so, the layer would promote adoption at scale of these operational interactions while defining and disseminating additional standards and protocols to fill additional market gaps identified over time.

This vision is inspired by examples of cooperation across existing trade ecosystem participants that have generated efficiencies in time, cost, and risk mitigation. The Chinese market offers just one example of how revamping online risk assessments can enable banks to process loan applications almost instantly, allowing millions of loans to be extended to MSMEs (see “How regulation and technology are reshaping trade finance in China,” page 49). For example, MYbank, an affiliate of Ant Group, working with hundreds of financial services partners, has served 40 million small and micro enterprises and rural clients since its founding six years ago.¹⁵

According to research conducted by the Institute of Digital Finance of Peking University and the Bank of International Settlements, such tech-based credit-scoring models outperform traditional bank models at predicting MSME loan default risk for at least three reasons. First, they leverage behavioral variables and network indicators, which have proven to be more stable than typical balance sheet variables. Second, where available, the models incorporate real-time transaction data in place of potentially dated financial metrics. Finally, they use machine-learning methods, which capture nonlinear relationships across variables better than banks’ traditional linear models do.

The proposed new interoperability layer for the global trade finance industry would be designed around four clear principles:

- An interoperability layer would serve as a virtual framework promoting the sharing of standards, processes, protocols, and best practices among the ecosystem’s trade finance participants. It is not intended to be a hardware or software entity to which parties must connect.
- An interoperability layer would help to foster collaboration among existing and new entities, thereby avoiding the proliferation of digital islands. In other words, it is not intended to “reinvent the wheel.” In recent years, many organizations have introduced protocols and standards to the market to achieve efficiencies; their work should be leveraged and adopted as part of the new vision.
- An interoperability layer would help to collaboratively define new standards or guidelines with relevant organizations supporting the trade finance market.
- An interoperability layer should promote financial inclusion through a construct in which all parties have a fair chance to participate, particularly in segments like MSMEs and emerging markets.

In essence, the proposal calls for an architecture of common standards and best practices to reconceive trade finance as more inclusive, collaborative, and digitized. Such architecture could encompass three main logical blocks: first, digital trade enablers, which would be standards enabling digitization of global trade at large (beyond trade finance); second, trade finance interoperability foundations, or standards enabling specific digitization of the trade finance industry; and third, guiding principles for trade finance interoperability, which would be nonmandatory recommendations for market participants focused on improving service levels while reducing cost to serve (Exhibit 6).

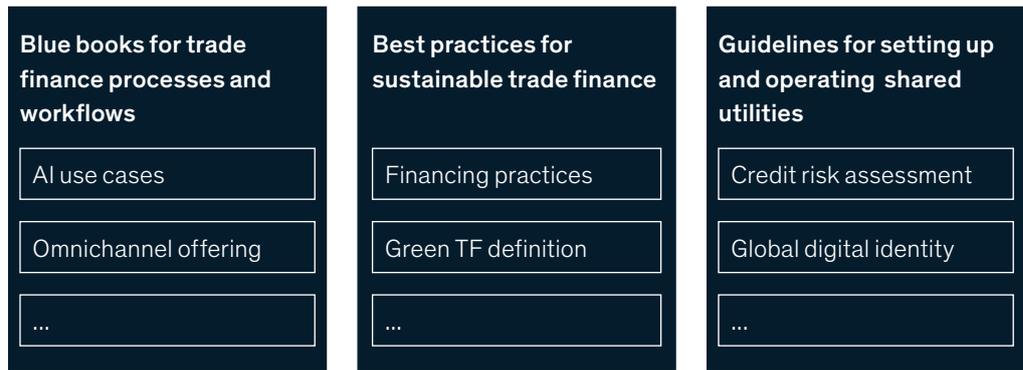
¹⁵ “MYbank’s use of digital technology leads to record growth in rural clients,” press release, Ant Group, June 23, 2021, antgroup.com.

Exhibit 6

Much of the logical architecture of an interoperability layer remains to be developed.

■ Ready to market ■ Existing, to be integrated ■ To be developed

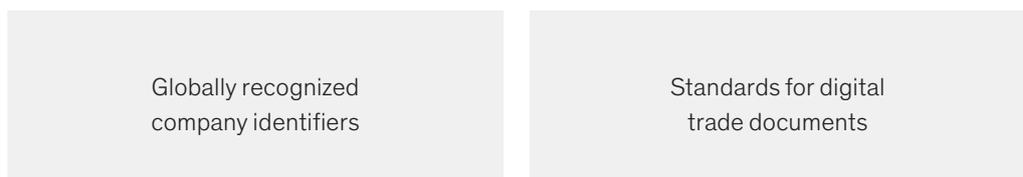
Guiding principles for trade finance interoperability



Trade finance interoperability foundations



Digital trade enablers



Source: ATF analysis

Some of the building blocks of such an architecture are already present in the market, though not at scale; others remain only partially developed. Hence, an interoperability layer could be viewed as central to three key missions (Exhibit 7):

1. Promote adoption at scale of existing trade finance standards for operational interaction
2. Design and disseminate additional global trade finance standards and protocols to fill market gaps
3. Develop blue books and identify guiding principles for improved collaboration among trade finance ecosystem participants

An interoperability layer would have a three-part mission.



Promote adoption at scale of existing trade finance standards for operational interaction

- Globally recognized company identifiers
- Standards for digital trade documents
- Trade finance product taxonomy



Design and disseminate additional global trade finance standards and protocols to fill market gaps

- Uniform trade finance data models
- Standards for trade finance APIs



Develop blue books and identify guiding principles for improved collaboration among trade finance ecosystem participants

- Blue books for trade finance processes and workflows
- Best practices for sustainability in trade finance
- Guidelines for setting up and operating shared utilities

Source: ATF analysis

The remainder of this section analyzes these three missions, describing in detail the various building blocks of a logical architecture and the potential role of an interoperability layer.

1. Promote adoption at scale of existing trade finance standards for operational interaction

Various efforts over recent decades have sought to bring agility, clarity, and transparency to the interactions of market participants. One barrier to progress has been a lack of common standards.¹⁶ In areas such as quality management and environmental management, ISO standards have enabled businesses to reduce their costs, increase productivity, and access new markets. MSMEs have been among the beneficiaries of having standards to follow. Extending the adoption of existing trade standards could deliver similar benefits to the trade finance ecosystem.

The core mission of an interoperability layer would be to support a comprehensive review and articulation of existing standards in the context of the evolution of the trade finance ecosystem, as well as to champion initiatives for at-scale adoption of the selected standards (bottom layer of Exhibit 6). Three trade finance initiatives that stand to be boosted by the wider adoption of standards by private and public entities, along with continuing advances in technology, serve as illustrations of the available gains.

Globally recognized company identifiers

When a company opens a financial institution account or an importer pays an exporter via a cross-border transfer, it is essential to unequivocally identify the counterparty of the transaction. This is required for KYC purposes and also to comply with certain international

¹⁶ Stephen Polasky, Belinda Reyers, and Heather Tallis, "Setting the bar: Standards for ecosystem services," *Proceedings of the National Academy of Sciences*, June 16, 2015, Volume 112, Number 24, pnas.org.

regulations requiring the screening of international flows for potential sanctions. Numerous initiatives have aimed at certifying a company's identity and by extension its suitability to engage in certain transactions. This may require validating not only its country of legal registry (or alternatively its association with a trusted network), but also its ownership and structure.

Given the wealth of alternatives, the most effective model would be one in which market participants are empowered to select a trusted identity provider based on scale, acceptance, and ubiquity, with the confidence of knowing it is interoperable with the broader trade ecosystem, fostering agility and cost efficiency. Identity provision could be managed by well-established industry utilities, which may be local, regional, or even global. Several existing initiatives aim to address these compliance and regulatory use cases:

- **Legal Entity Identifier (LEI).** Aimed at enhancing transparency in the global marketplace, the LEI provides clear and unique verification of the legal entities participating in financial transactions. It is based on an alphanumeric code developed by the Global Legal Entity Identifier Foundation (GLEIF), a body established by the Financial Stability Board (FSB). The LEI makes two key activities in a complicated process far simpler: verification of entities and tracking of an entity's history. Since its 2012 endorsement by the G20, roughly 1.9 million entities in about 200 countries have been issued an LEI. The FSB found adoption to be most successful when an LEI is required as part of an international standard-setting effort.¹⁷ This is the case with over-the-counter derivatives trading, where adoption is close to 100 percent in most jurisdictions. Outside this case, the report concludes, LEI adoption remains low. Based on previous analysis published by McKinsey, banks could collectively save \$250 million to \$500 million annually if LEIs were used to identify international entities and to automate the tracing of their history for the issuance of letters of credit.¹⁸ They could save another 10 percent (\$2 billion to \$4 billion) in client onboarding costs.¹⁹
- **European Digital Identify (EDI).** In June 2021,²⁰ the European Commission proposed the framework for an EDI that will be made available to all individuals and businesses in the European Union. Member states will offer businesses digital wallets, provided by either public authorities or private entities, capable of linking to their national digital identities. This initiative supports the EU Digital Compass that strives for 90 percent of SMEs to reach at least a basic level of digital identity by 2030, with three out of four companies employing cloud computing, big data, and artificial intelligence.²¹
- **Decentralized Identifier (DID).** Designed by the W3C,²² the organization that facilitates standards for the internet, the DID is a new type of identifier that enables verifiable and decentralized digital identities that can be leveraged by organizations as well as data models and is "self-sovereign," that is, not dependent on any issuing authority.

Standards for digital trade documents

A cross-border transaction typically requires that transaction participants produce and share a multitude of documents. These documents might include paper and electronic copies of purchase orders, invoices, bills of lading, receipts for customs tax payments, and other bureaucratic mandates. Many of these documents are key to trade finance as well, requiring significant manual back-office effort from financial institutions, which often receive physical

¹⁷ *Thematic Review of Implementation of the Legal Entity Identifier*, Financial Stability Board, May 28, 2019, fsb.org.

¹⁸ *The legal entity identifier: The value of the unique counterparty ID*, October 2017, McKinsey.com.

¹⁹ "The power of LEIs to transform client lifecycle management in banking: A U.S.\$4 billion beginning," Global Legal Entity Identifier Foundation, October 29, 2019, gleif.org.

²⁰ "Commission proposes a trusted and secure Digital Identity for all Europeans," press release, European Commission, June 3, 2021, ec.europa.eu.

²¹ Europe's Digital Decade: Commission sets the course towards a digitally empowered Europe by 2030," press release, European Commission, March 9, 2021, ec.europa.eu.

copies of these documents via the postal service. According to recent data from the DCSA, only 0.1 percent of bills of lading are issued electronically.²³

Significant potential exists for gaining efficiency by moving participants to electronic, transferable trade documents. This is especially true given COVID-19's added complexities, such as disruptions in shipping routes, restricted courier services limiting transfer of physical forms, and remote working arrangements for back-office employees who normally inspect incoming paper manually.

While numerous efforts have attempted to make electronic documents legally acceptable, two entities—the United Nations Commission on International Trade Law (UNCITRAL) and the DCSA—are particularly focused on overcoming the barriers to trade document digitization. UNCITRAL is a UN legal body focused on international trade law. For more than 24 years, it has promoted the harmonization of international business rules by aiming to modernize trade laws and remove or reduce legal obstacles to international trade flow, creating a common legal standard to enhance predictability in cross-border transactions. In 2017, it introduced the **Model Law on Electronic Transferable Records (MLETR)**,²⁴ giving legal recognition to the use of electronically transferable records as functionally equivalent to tangible documents, such as bills of exchange, checks, promissory notes, and warehouse receipts. The electronic nature of instruments also enables capturing dynamic information such as position of the ship carrying goods, thereby helping merge the logistics and finance aspects of supply chains. Despite the need for digitization created by COVID-19, few countries have adopted MLETR, with the notable exceptions of Bahrain and Singapore. In May 2021, G7 countries announced their commitment to promote its adoption, including a series of steps that participating governments should take to remove domestic legal barriers.

The DCSA is leading a process to develop open-source standards for an **electronic bill of lading (eBL)** to facilitate communication among customers, container carriers, regulators, financial institutions, and other industry stakeholders. Bills of lading are of particular importance among the many documents required for a cross-border trade transaction, because they confer title to the underlying goods and the majority of players along the trade value chain rely on them. In 2019, the group launched a multiyear e-documentation initiative, aimed at delivering standards for end-to-end shipping container digital documentation, covering a variety of components, including industry blueprints, data and interfaces, the Internet of Things, and just-in-time port-of-call e-documentation and cybersecurity.²⁵ These standards are being aligned with the United Nations Centre for Trade Facilitation and Electronic Business to ensure a global industry framework.

Trade finance product taxonomy

The highly specific nature of trade finance subject matter has led to the adoption of a range of expressions and terms that are often inconsistent, opaque, and even contradictory. For instance, “supply-chain finance” covers a wide range of products, programs, and solutions in the financing of commerce, including international trade. It has been used to refer to a single product or a comprehensive range of products and programs of solutions aimed at addressing the needs of buyers and suppliers, especially when trading on open account terms, in the increasingly complex supply chains in which many are involved.

²² “Decentralized Identifiers (DIDs) v1.0,” W3C, August 3, 2021, w3.org.

²³ *Standard for the bill of lading: A roadmap towards eDocumentation*, DCSA, December 2020, dcsa.org.

²⁴ “UNCITRAL model law on electronic transferable records (2017),” UN Commission on International Trade Law, adopted July 13, 2017, uncitral.un.org.

²⁵ “eDocumentation: Creating a foundation for paperless trade,” DCSA, dcsa.org.

In 2016, the Global Supply Chain Finance Forum, an organization supported by multinational trade organizations, released **Standard definitions for techniques of supply chain finance**,²⁶ in an effort to create a consistent and common understanding applicable to both domestic and international supply chains. This effort was executed by a team of senior practitioners, with guidance from an international and multi-industry group. The first edition includes definitions for eight identified core techniques. In 2021, to provide further clarity on the concepts discussed, the forum followed it with **Enhancement of the standard definitions for techniques of supply chain finance**,²⁷ based on in-depth discussion with industry experts.

This product taxonomy could be augmented with additional instruments, such as documentary business not currently covered in these publications, and to treat them as “living documents” requiring periodic updating. Widespread adoption by financial institutions of a taxonomy like the one proposed by the Global Supply Chain Finance Forum would greatly enhance clients’ ability to understand, compare, and select optimal solutions to their trade finance needs and consider the offerings as an attractive alternative to other financing models. Clients would be able to weigh the advantages and disadvantages of various alternatives and to engage in a clearer and more relevant dialogue with finance providers and supporting communities. In addition, the rapidly emerging array of trade platforms and marketplaces will greatly benefit from adoption of a standardized “trade finance language” presented in a glossary of terms and trade product classifications.

2. Design and disseminate additional global trade finance standards and protocols to fill market gaps

As described in the previous section, there have been many attempts to create a common set of standards across market participants. However, to date these standards have achieved only limited adoption relative to the scale of the global trade finance market. Given this background, the proposal’s mission (Exhibit 7) is to encourage the trade finance community to develop and adopt the additional elements necessary to foster greater industry agility and dynamism, especially in technological interoperability. In this vision, two core elements should be considered as primary additional standards to promote full technical interoperability in trade finance.

Uniform trade finance data models

Banks are growing adept at sharing information securely across institutions, given established underlying data strategies. A data model specifies the information to be captured, as well as how it should be stored and processed. In cases where a standard product taxonomy has been defined (as described in the previous section), a data model would govern how a specific product should be represented and would set rules about which records of a transaction are mandatory and which optional, how to tag such data into technical messages and storage systems, and which technical formats should be used for each record. The active engagement of all participants, including regulators, in the establishment of processes to address local barriers, will be critical.

In an environment where many separate organizations must exchange data, the information exchange must be coordinated to provide the greatest benefit to all participants. For decades, SWIFT has enabled the structured exchange of financial transaction data across

²⁶ *Standard definitions for techniques of supply chain finance*, Global Supply Chain Finance Forum, 2016, supplychainfinanceforum.org.

²⁷ *Enhancement of the standard definitions for techniques of supply chain finance*, Global Supply Chain Finance Forum, 2021, supplychainfinanceforum.org.

banks, giving rise to the proliferation of dozens of message types structured to best support a given transaction category, including letters of credit and international guarantees. In some cases, other enterprises have adopted these standards through Trade for Corporates, a SWIFT service offering a single channel for exchanging standardized corporate-to-bank trade data. A corporate entity of any size can, for example, apply to its bank for a letter of credit or guarantee and receive an advice from its bank.

Recently, fintechs have proposed new data models to interact with their new trade platforms. Some of these alternatives are based on blockchain technology. As another report published by McKinsey has highlighted,²⁸ trade finance makes a fitting application for blockchain, especially in the standard representation of data. As trade finance becomes more sophisticated in terms of products, services, and digital interconnectivity, a common, uniform data model spanning all products, channels, and events becomes more crucial for ensuring full interoperability.

A useful case study is the **International Swaps and Derivatives Association's Common Domain Model (ISDA CDM)**, which created a standard representation for transactions and products, enabling firms to develop interoperable and scalable automated solutions. Over time, firms in the derivatives market each established their own unique data structures. Rather than conferring commercial advantage, this disconnect resulted in the continual need for firms to reconcile their trade activity. Shared standards enabled the automation of this task, generating valuable efficiencies.²⁹ The trade ecosystem will similarly benefit from the harmonization of all data sets pertaining to trade finance transactions, with the end goal of increased visibility and transparency. A unified data model acts as a bridge between different ecosystems, allowing the contextualization of data sources across multiple services and providing a foundation upon which data can be consistently used, combined, and correlated.

A more recent example is the **Commercial Data Interchange (CDI)** launched by the Hong Kong Monetary Authority (HKMA) in June 2021 as one of the major initiatives under its Fintech 2025 strategy. CDI is a consent-data infrastructure that allows MSMEs to share their verified data with financial institutions for the purpose of trade and investment finance lending. A pilot is expected by the end of 2021 with a focus on commercial data to facilitate banks' use of alternative credit scoring. Broader success of the CDI will depend on active participation from stakeholders, including the banking industry and sector-specific data providers.

Standards for trade finance APIs

APIs have evolved into an efficient means for core participants in the trade ecosystem to interact. Such code is embedded seamlessly into millions of websites, enterprise resource planning (ERP) systems, and mobile devices, among other means, revolutionizing the way participants transact and access information. These interactions will become far more beneficial, however, as APIs employed for trade finance are standardized.

This may happen in one of several ways. API standards can be advanced by regulations, as was the case with the Payments Service Directive 2 (PSD2), the purpose of which was to increase pan-European competition and provide a level playing field among banks and nonbanks. It could also result from a bottom-up industry initiative such as the DCSA case previously discussed (see page 23), in which parties agreed to use standardized APIs to exchange electronic bills of lading. These approaches can converge: for instance, PSD2 did not explicitly define the technical coding of the API but instead paved the way for banks to agree on API standards to use for payment execution or the exchange account information.

²⁸ Brant Carson, Giulio Romanelli, Patricia Walsh, and Askhat Zhumaev, "Blockchain beyond the hype: What is the strategic business value?," June 2018, McKinsey.com.

²⁹ "ISDA Common Domain Model," ISDA, October 14, 2019, isda.org.

This has resulted in the creation of API working groups—including The Berlin Group, STET, and Polish API—to define the standards necessary to comply with PSD2 regulation.

At present, trade finance lacks a standard set of APIs to support its various services. As a result, some banks have defined their own proprietary B2B API catalogs to connect their enterprise to clients for the execution of trade finance transactions. If those clients wish to connect with another bank, they may need to devote additional cost, time, and resources to integrating those systems. In addition, technology providers and B2B trade platforms are adding their own API standards for their own proprietary trade products. This has resulted in the increase of API integrations that could otherwise be avoided through the standardization of trade finance APIs.

There is a clear sense of urgency in the market, as evidenced by a recently published McKinsey survey of API development in transaction banking.³⁰ More than 40 percent of banks surveyed cited the lack of API standards as their main challenge to further developing an API strategy. In the same study, several trade banking services, including invoice financing, supply-chain finance, factoring, and documentary trade finance, were deemed to have the greatest potential for growth in the API space over the next three years, by a factor of 2.5 to almost 8, compared with current API deployments.

3. Develop blue books and identify guiding principles for improved collaboration among trade finance ecosystem participants

Significant road remains ahead before broad adoption of current and future standards are embedded into the day-to-day transactional flow of participants in the trade ecosystem. The wider adoption of standards alone will not be sufficient; in numerous instances, trade players will benefit from applying certain best practices or outsourcing certain commoditized activities complementary to core trade transactions.

A third role for the interoperability layer would be to work as a global trade finance think tank in which trade participants can incorporate recommendations and achieve economies of scale that were previously unthinkable. An important pillar in reconceiving the trade ecosystem is the creation and use of blue books and best practices—compendiums of information, recommendations, templates, and processes to achieve further efficiencies. Though fully harmonized standards or regulations across all countries or even across broad groups may prove infeasible, such information sharing can achieve some of the same goals by adding clarity and fostering greater consensus across given segments of market participants.

Another potential role for an interoperability layer spans the three areas defined in the top layer of Exhibit 6: blue books for trade finance processes and workflows, best practices for sustainability, and guidelines for setting and operating shared utilities.

Blue books and workflows for trade finance processes

Blue books can enable the dissemination of common rules across different functions (legal, technical, operational) and geographies. Even if not always legally binding, such common practices trigger further economies of scale. In this regard, market participants will benefit from the deployment of proven processes created by industry associations or even private networks.

³⁰ Alessio Botta, Nunzio Digiaco, Reema Jain, Prakhar Porwal, Giulio Romanelli, and Adolfo Tunon, “From tech tool to business asset: How banks are using B2B APIs to fuel growth,” October 2021, McKinsey.com.

For instance, in the Asia–Pacific Trade Facilitation Report 2019,³¹ the UN Economic and Social Commission for Asia and the Pacific (ESCAP), and Asian Development Bank have identified a set of more than 50 trade facilitation measures based on best practices to streamline trade finance in the region. Their focus is on cross-border trade and MSMEs, which according to the report are the most vulnerable to trade uncertainty. The report predicts that implementation of the proposed measures could lower trade costs enough to more than offset current tariffs.

An interoperability layer, through its many trade organizations and evangelists in the industry, would be positioned to document and disseminate blue books and best practices for global interoperability. This guidance could include established and widespread practices, as well as recommendations for optimizing trade finance processes and workflows based on the latest technological advancements, promoting a continuous evolution of the industry’s service levels. Guidelines and best practices could address the following areas:

- **Interactions with B2B trade platforms and marketplaces**, explaining platform and marketplace archetypes, the role they play, and how to leverage their capabilities.
- **AI technologies, especially in the domain of natural-language processing**, which are currently being applied by fintechs and technology providers, for example, to reach nearly 100 percent automation in the processing of documentary business transactions.
- **Omnichannel for superior digital client interaction**, where guidance could be provided on web portals, ERP/API, and mobile—as well as for emerging and future channels such as the IoT and virtual reality.
- **Workflows for credit assessment based on real-time data**, as closing the \$1.7 trillion financing gap and fostering the inclusion of MSMEs, particularly in emerging markets, will require a substantial transformation of credit processes and workflows. An interoperability layer could provide a framework for commercial banks, credit insurance companies, ECAs, and institutional investors that shortens the credit assessment process and increases its accuracy.

Best practices for sustainability in trade finance

Public and private corporations have increasingly embedded sustainable finance³² in their principles, setting specific targets for companies to meet in order to deliver the measurable sustainability expected by their stakeholders. Investing with environmental, social, and governance (ESG) performance in mind has led to global sustainable investment now topping \$30 trillion.³³ These targets and investments are part of the effort that 195 countries committed to in 2015 at the UN General Assembly, where they agreed to address 17 Sustainable Development Goals (SDGs) by 2030.

The trade finance community realized that it had an important role to play in meeting these goals.³⁴ This is when sustainable trade finance products acquired a new dimension, and the agendas of financial institutions, ECAs, and trade organizations became more focused on sustainability objectives. Demand for new variations of trade products has increased, and many such solutions already exist. For instance, sustainable shipment letters of credit enable

³¹ Asia–Pacific Trade Facilitation Report 2019, September 2019.

³² “Sustainable finance involves making investment decisions that consider not only financial returns but also environmental, social and governance factors.” Ming Chun Tang, “Sustainable finance 101: How to mobilize funds for the planet,” *Landscape News*, June 14, 2021, news.globallandscapesforum.org

³³ The Organisation for Economic Co-operation and Development has defined ESG as a “set of sustainable principles that companies set up and adopt for the global well-being.” Investment data from Witold Henisz, Tim Koller, and Robin Nuttall, “Five ways that ESG creates value,” McKinsey Quarterly, November 2019, [McKinsey.com](https://www.mckinsey.com).

³⁴ See, for example, the ICC’s Global Export Finance Committee Sustainability Working Group white paper, *Sustainability in Export Finance*, ICC, September 2021, [iccwbo.org](https://www.iccwbo.org).

discounted financing for agricultural trade that meets sustainability standards, and letters of credit can be qualified as “green” if they are linked to projects (photovoltaic modules, for instance) aimed at mitigating climate change. In some sustainability-linked supply-chain finance programs, suppliers are rated against a set of guidelines, with those achieving a given threshold receiving financing at preferable rates. The adoption of sustainable trade finance should also encourage financial institutions to establish a new trade sustainable asset class to institutional investors. Also, SWIFT recently announced that its KYC Registry will become the first global utility to integrate the ICC’s Sustainable Trade Finance Guidelines on customer due diligence and has already been adopted by more than half of its member financial institutions.³⁵

These promising trends will face inevitable challenges. Today, the definition of what qualifies as “green” remains inconsistent, for instance, and there is not yet a clear taxonomy for sustainable trade. The lack of market standards and guidelines for the creation of new trade asset classes still poses a significant constraint, and further efforts will be required to drive wider adoption of the KYC Registry. An interoperability layer could contribute to the coordination and implementation of critical elements of the trade finance sustainability agenda, helping to close gaps in the trade finance market, including the taxonomy of trade finance sustainable products and archetypes of investment and finance practices.

Guidelines for setting up and operating shared utilities

Shared utilities can be structured as (profit or not-for-profit) organizations specializing in the provision of services where a pooling of resources and knowledge provides more effective outcomes than those achievable by individual market participants. A fundamental attribute is often a focus on nondifferentiated services, in which there is little to no benefit from users offering unique features or methodologies. A trade participant operating in several countries, for example, may find it convenient to leverage a utility specializing in digital identity, rather than independently tracking the differences and the pros and cons across various registrars.

The concept of shared utilities is not new, but the advancement of digital infrastructure and advances in data analytics, networks, and standards are poised to accentuate their importance. A 2019 McKinsey study determined that banks could, by transitioning nondifferentiated activities to modular industry utilities, improve their cost-to-income ratios by 200 to 400 basis points and their return on tangible assets by 60 to 100 basis points.³⁶ A long-standing example is that financial institutions have benefited from engaging companies specializing in cash transport rather than each maintaining its own armored-car fleet and bearing related (and duplicative) maintenance and security costs. Similarly, some banks have opted to outsource the acquiring and processing functions of their credit card business to utilities solely dedicated to scale and efficiency in those areas.

An interoperability layer could help trigger a proliferation of shared utilities capitalizing on the standardization and portability of common protocols. PSD2 is a clear example of a similar event that spawned such industry response in many European countries, giving birth to a new and thriving market of industry utilities focused on providing gateway services, which became a precursor of today’s API-based open banking ecosystem.

We anticipate that companies—both fintechs and established firms—will become interested in the provision of services to a new digital trade ecosystem, generating economies of scale and benefiting the market overall. We further envision competition across multiple entrants on

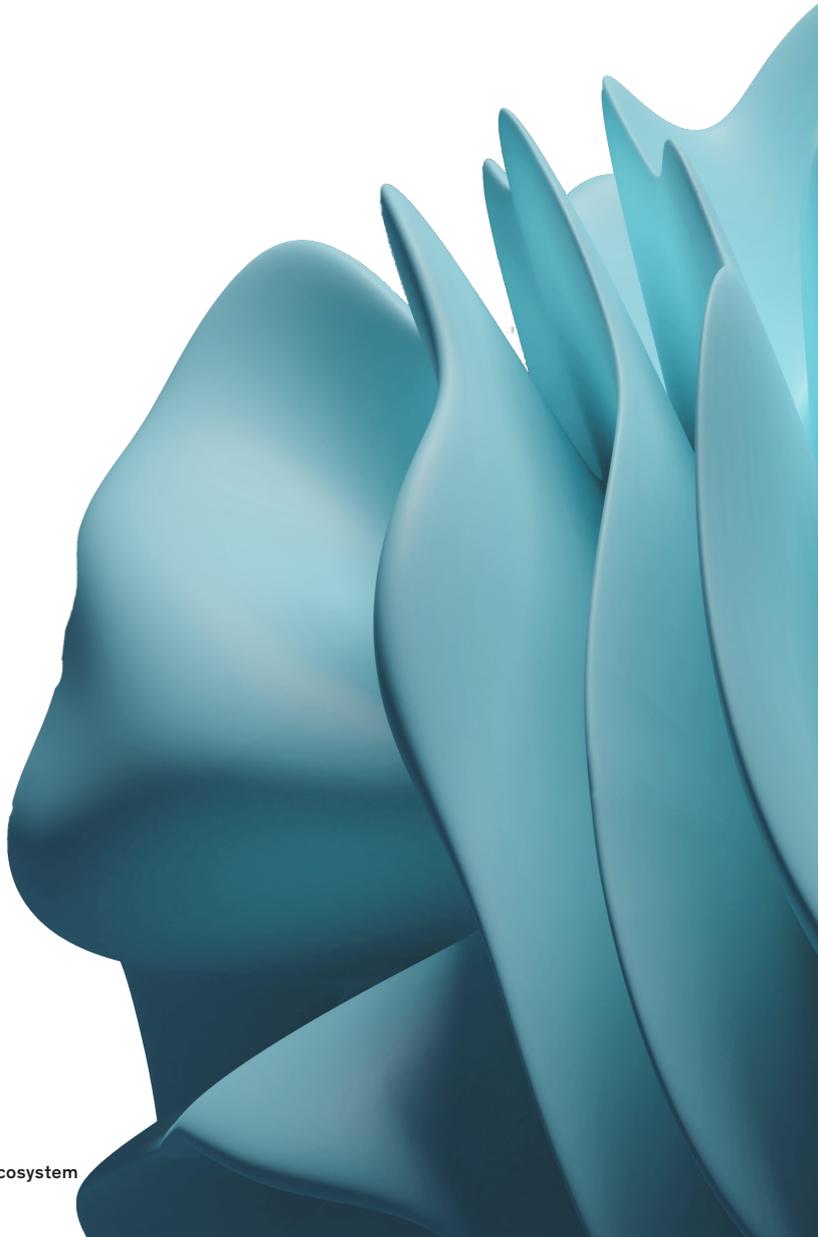
³⁵ “Swift and ICC collaborate to drive sustainability in trade finance,” SWIFT, 2021, [swift.com](https://www.swift.com).

³⁶ *The last pit stop? Time for bold late-cycle moves*, Global Banking Annual Review, October 2019, [McKinsey.com](https://www.mckinsey.com).

a decentralized basis in several areas where portability of identity and data can play a key role. The following are examples of potential industry utilities that would be enabled and powered by standards, blue books, and guiding principles issued and scaled up by an interoperability layer:

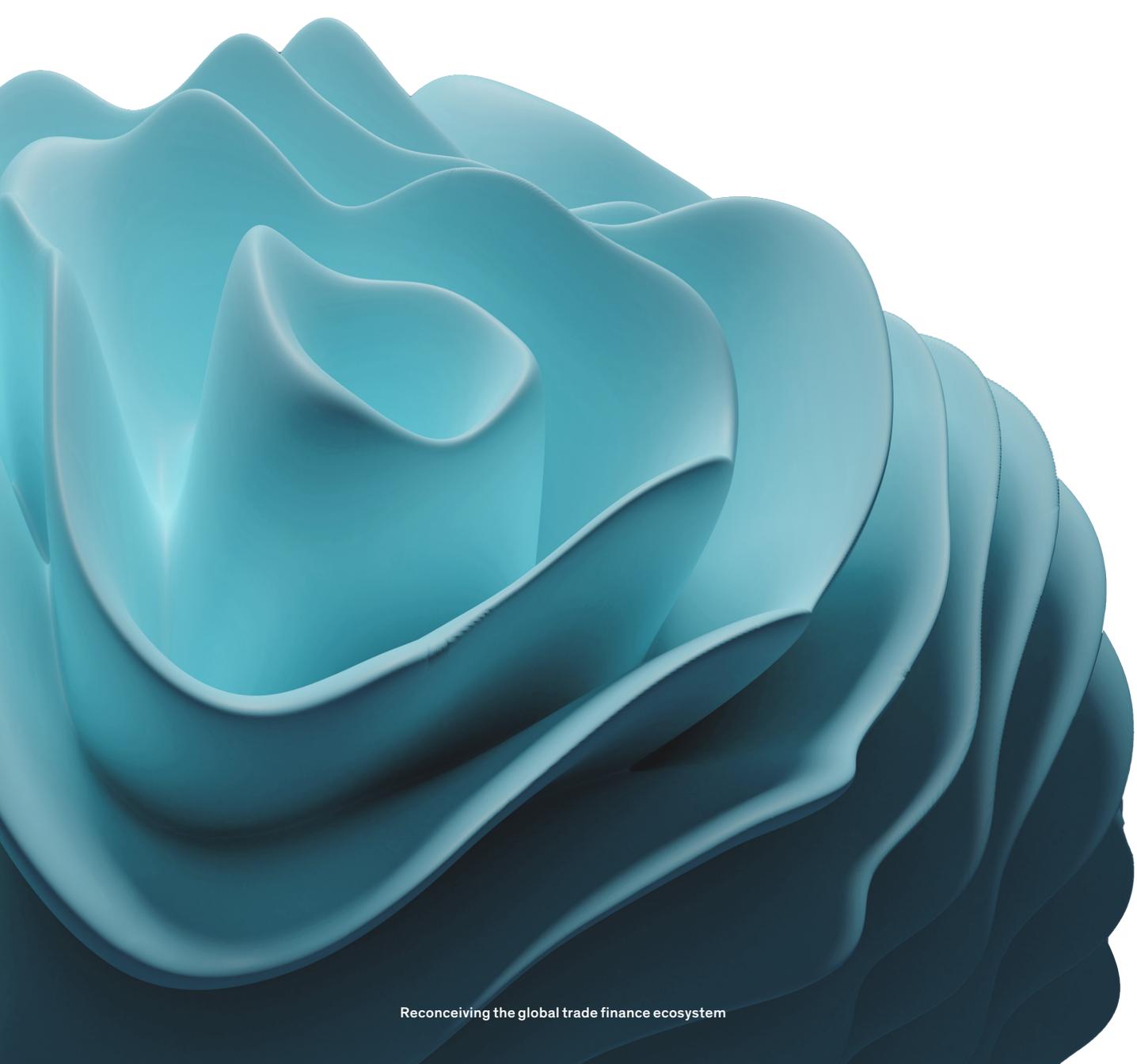
- **Real-time trade credit risk assessment**, at either the company or transaction level. Market participants employing these services would retain accountability for the underlying risk; the information sources, calculations, and models would be outsourced to a shared utility.
- **KYC and anti-money laundering**, the underlying processes of which are primarily based on accessing data from a common pool of sources. The expansion of digital identities, standards, and digital documents presents an opportunity to realize scale benefits in this nondifferentiated service.
- **Global digital identity**, which could guide market participants to various global providers of identity and their use cases. For example, a company operating globally may wish to leverage a service that unequivocally identifies a company and its shareholders, allowing faster and more secure onboarding.
- **API gateways for value-added services**, addressing an emerging market need. As more trade-related services become available in API format, banks and other financial service providers will aim to incorporate such services into their client journeys. For instance, many logistics players offer tracking services through APIs. Market participants could benefit from the use of one-stop gateways providing a single point of access to the broad market of such API providers.

An interoperability layer not only could facilitate trade finance but also could improve the performance of participants in the global trade ecosystem. The next section outlines the benefits of an interoperability layer for each segment of participants as they proceed through a potential three-stage rollout plan.



Section 3

Building a consensus for global interoperability



The recent proliferation of networks, digital standards, and digitization efforts are constructive steps toward trade finance modernization and inclusion, and they validate the belief that market participants—especially banks—recognize the importance of enhancing trade finance efficiency. The industry’s current challenge is to build on this momentum, scaling toward a unified goal of reconceiving the global trade finance ecosystem.

Every category of market participants would benefit from implementation of the vision proposed in section 2. This section highlights many of those benefits for each category. It then proposes a road map across three time phases and explains why the degree of market success will be a function of how well the participants are able to work together.

Benefits of a revamped ecosystem flow to all categories of ecosystem players

While participants in the global trade ecosystem can expect to realize benefits from implementation of the proposed vision, those benefits will differ somewhat depending on the category of participant (Exhibit 8). The following description of benefits applies to the participant categories introduced in section 1.

Exhibit 8

An interoperability layer would deliver substantial benefits to each participating segment.

Buyers and suppliers

- Increased access to liquidity
- Reduced transaction complexity and optimized costs
- Greater access to B2B markets

Logistics providers

- Optimized processes
- Reduced costs
- Enhanced security

Financial institutions

- Expanded credit capacity
- Broadened revenue streams and value-added services
- Streamlined processes and reduced costs

Trade organizations

- Support for foundational principles

Technology providers

- Accelerated time to market
- Extended market geography

Governments and regulators

- Update regulators with new standards
- Help stimulate local economies
- Enhanced monitoring and control



Source: ATF analysis

Buyers and suppliers

Perhaps the greatest potential benefit from a reconceived trade finance ecosystem will flow to the end users (both buyers and suppliers) of trade finance instruments. This is in alignment with the outlined core objective, which is to address the significant challenges faced by enterprises, especially MSMEs, and to increase inclusion in the trade finance ecosystem. Financial inclusion—comprising products and services that are accessible and affordable by all businesses—is a fundamental pillar of a healthy trade ecosystem. While the barriers to financial inclusion have been a longtime problem, a stronger coordination of all trade participants that is further leveraged by technology and standards will be a critical step in closing the MSME financing gap. Solving buyer and supplier pain points will, by extension, generate opportunities for the ecosystem players supporting them. Benefits for this segment would include increased access to liquidity, reduced transaction complexity, optimized costs, and greater access to B2B markets.

Increased access to liquidity. A more interconnected trade system will enable participants to access a wider and more transparent range of information, better equipping credit providers with the means to assess a trade transaction's risk, whether local or international. Access could translate into significant gains in funding availability across the trade finance spectrum, which would address the existing structural funding gap described earlier. This increased liquidity would result from banks allocating more funds to trade finance and from the participation of institutional investors, as described in the benefits to financial institutions.

Reduced transaction complexity and optimized costs. With the standardization of formats, digitization, and utilities such as KYC, all enterprises—particularly MSMEs, given their bandwidth constraints—stand to gain in efficiencies. Interoperability will help these enterprises streamline onboarding processes across various platforms. In addition, data sharing will lead to quicker and better KYC decisions, and the elimination of paper submission requirements will reduce administrative burdens.

For example, for many years, supply-chain finance programs have been constrained by cumbersome paper processes and a lack of agility, which increased time to market. Today, however, the newfound popularity of trade platforms is enabling companies to onboard suppliers in a matter of minutes and to access a wide range of financing options extending beyond traditional institutions. In addition, standardization and interoperability—for example, fulfillment of KYC requirements through a shared industry utility—could make it easier for buyers and suppliers to access new, fully digital trade finance services.

Greater access to B2B markets. A more digitally interconnected and open trade system will allow companies to engage with additional clients and suppliers, both locally and internationally. This is particularly relevant for MSMEs, enabling them to trade in additional geographies and/or with client segments that were previously out of reach.

Financial institutions

Although 40 percent of global trade is currently supported by bank-intermediated trade finance, coverage is not uniform across countries or segments, particularly in developing countries and with MSMEs. A full deployment of the interoperability layer would bring a substantial structural change to the financial industry as a whole, specifically benefiting existing providers (primarily banks) while also attracting much-needed new credit capacity to the industry (from entities such as institutional investors), drawn by added transparency, access to technology, and regulatory support. In addition, the ecosystem could bring additional revenue streams and value-added services while making the processes more efficient and cost effective.

Expanded credit capacity. Financial institutions, institutional investors, and credit insurance companies are often constrained by regulatory and legal factors, lack of information, cumbersome processes, and limited access to trade finance assets due to technology constraints. This proposed vision should activate several levers enabling financial institutions

to increase their credit capacity, whether by increasing investments in the trade ecosystem or reallocating more capital to this asset class. For instance, with the availability of more transparent data about participants and transactions, regulators and financial players will be in a better position to collaborate on reassessing existing regulations, potentially unlocking extra financing capacity to cover much of the estimated \$1.7 trillion funding gap that exists today.

This could become a renewed opportunity to accelerate the ongoing collaboration and dialogue already under way between private entities and regulatory authorities. An example of past collaboration is the Basel Committee on Banking Supervision, which has adopted changes in how the Basel I and II capital adequacy framework treats trade finance.³⁷ Ongoing increases in digitization, data availability, and transparency should similarly inform the dialogue surrounding future regulation.

Institutional investors are another important source of potential new financing. Until now, institutional investors have participated in this market at relatively low levels, in part because trade finance is not widely recognized as an asset type. With the introduction of common standards, advancements in securitization, market transparency, and technology, however, this could rapidly change. More specifically, a global product taxonomy would help create a common language for investors to understand the various flavors of trade finance across different providers and countries/segments. A platform for securitizing trade receivables could make the asset class interesting to institutions and family offices that are looking for safe returns and would create more liquidity. Uniform data models and standardized technology would offer increased transparency into trade finance assets, making it more practical for investors to participate in the secondary market at a relatively low cost per transaction. In another example, a standard global database of commodities—serving as a benchmark for various activities—could reduce the hesitation institutional investors currently display toward trade finance. The proposed standardization and digitization will make it easier for ECAs to reflect a wider portion of the country (and potentially counterparty) risk related to trade finance, which would unlock risk-weighted assets and create additional credit capacity and capital reallocation.

Broadened revenue streams and value-added services. Along with their financing role, financial providers play a key role in the provision of ancillary services to facilitate trade transactions. Financial institutions often bring together buyers and suppliers through their proprietary systems—or, increasingly, via B2B digital platforms and marketplaces—helping each to meet the ideal counterparty with whom to execute a transaction. KYC is an essential prerequisite for buyers and suppliers seeking to establish commercial relationships and therefore another opportunity to provide a value-added service. An interoperability layer could facilitate the expansion of company identifiers and/or the syndication of KYC best practices, providing a boost to the trade ecosystem.

Streamlined processes and lowered cost. Standardization has been a key barrier to the digitization of trade finance processes; once it has been achieved, more banks will be in a position to justify embarking on digital adoption journeys. Financing providers will greatly benefit from the wider adoption of standards, both existing and new, as well as from following broadly recognized blueprints.

A similar logic applies to institutional investors looking to connect with several originate-to-distribute platforms simultaneously. This approach will allow financial providers to spend less resources on implementation and to connect with more players under the same standard.

³⁷ *Treatment of trade finance under the Basel capital framework*, Bank for International Settlements, October 2011, bis.org.

Safeguarding the trade finance business, which is already hampered by high cost-to-income ratios, requires improving operational efficiency. Selected global and forward-thinking banks have completed technological transformations in some areas of trade finance. Those institutions have realized cost base improvements of 30 to 40 percent as a result of deploying technologies such as natural-language processing, robotics, and smart contracts. For example, a McKinsey analysis showed that blockchain in invoice finance could lower cost-to-income ratios by as much as 15 to 20 percentage points, significantly increasing the profitability of invoice financing.

Other players in the trade ecosystem

A revamped global trade finance ecosystem would also deliver benefits to many other groups of players. For technology enablers, the adoption of standards for the exchange of data, forms, or documents could greatly reduce time to market for services and products, and accelerate integration with clients or linkages to trade platforms. In addition, an interoperability layer—combined with the proliferation of cloud technology, APIs, and lower-cost hardware and software—could help expand affordable access to the trade ecosystem for MSMEs.

Standardization of trade documents or communication protocols will also bring a new level of efficiency to logistics players. For example, trade standards for eBL would optimize processes and reduce costs related to the use of paper documents. According to the DCSA, an adoption rate of just 50 percent eBL would save the industry €4 billion per year.³⁸ In addition, digital iterations of bills of lading or other shipping documents can be digitally signed and encrypted, reducing security concerns over forged, manipulated, or stolen documents.

For trade organizations, an interoperability layer would serve the broader mission of enabling members to develop to their full potential in serving new markets and clients. The ICC has long promoted simplification and wider adoption of standards. For example, its Digital Standard Initiative is considered one of the cornerstones for an interoperability layer (see sidebar “The International Chamber of Commerce’s Digital Standard Initiative”).

Finally advances in standardization, digitization of processes, and electronification of forms are likely to streamline governments’ and regulators’ tasks, which in turn could ease the administrative burden on those being regulated.

One aim of an interoperability layer would be to provide existing and future standards. Some standards—those related to product taxonomy and data models, for example—might not require specific regulation because there are already sufficient incentives for adoption (for example, cost optimization, client experience). In these cases, banks or other market participants could organize and scale up adoption. However, governments and regulators could help promote other standards—for example, digital trade documents, recognized company identifiers—through legal frameworks. For instance, the governments of Bahrain and Singapore were early adopters of MLETR—enabling market participants to embed a set of standard digital trade documents into their processes.

In some cases, governments and regulators could coordinate regionally to encourage adoption of standards. As an example, the African Export-Import Bank and the African Continental Free Trade Area promoted the Pan-African Payments and Settlement System (PAPSS)³⁹ to improve capacity for cross-border transactions and accelerate the growth of intra-African trade.

An interoperability layer could also help governments and regulators stimulate local economies and exports by addressing the often-underserved needs of MSMEs, which

³⁸ “DCSA takes on eBL standardisation, calls for collaboration: \$4 billion estimated in potential annual savings at 50% adoption rate for container shipping industry,” *Hellenic Shipping News*, May 5, 2020, hellenicshippingnews.com.

³⁹ “Afreximbank and AfCFTA announce the operational roll-out of the Pan-African Payment and Settlement System (PAPSS),” press release, Afreximbank, September 28, 2021, afreximbank.com.

typically represent a prominent share of the economy.

Finally, more transparent and accurate sources of data would provide governments and regulators with a framework for enhancing existing controls. For example, standards would enable countries to assess existing import-export processes and serve as a source of information for updating policies.

A road map to global interoperability

Realization of an interoperability layer would be possible only with the coordination and commitment of the broad community of trade finance participants. Implementing the target vision would represent a historical milestone in a market that has not substantially changed for decades or, in the case of some trade practices, even for centuries.

Given the complexity of the market, this effort may require five to ten years to reach a level at which most participants will realize its full benefit. However, some of an interoperability layer's building blocks could be deployed on an accelerated path, leveraging work that has already been done by trade organizations. This would require a very strong commitment, especially from banks, but would allow many players to experience tangible benefits of this report's target vision in a much shorter time frame—two to three years. This will only be possible through strong governance spanning a wide range of industries and geographies, sharing a set of common objectives and goals.

The proposed road map aims to help develop and scale up a set of standards, blue books, best practices, and shared utilities, with an objective of cementing the next wave of the trade ecosystem evolution. It is structured to accomplish this in three phases (Exhibit 9).

Phase 1: Mobilize the existing trade finance ecosystem

The first and one of the most critical objectives of phase 1 would be to establish proper governance, as this can stimulate stronger coordination and execution of an interoperability layer. Once this task is accomplished, the body "overseeing" an interoperability layer could quickly move forward to promote existing standards to achieve market scale while also identifying any critical missing elements and creating the road map for the rollout of new standards and blueprints necessary for subsequent phases. This phase may last approximately 12 to 18 months and will include the following actions:

Establish governance model for an interoperability layer. In a market encompassing multiple players, industries, and countries, close coordination is indispensable. It will be essential to leverage the resources of the various trade organizations and trade participants currently contributing to building a more cohesive global trade environment.

An interoperability layer's governing body could have the dual role of coordinating the promotion of existing trade standard initiatives and contributing to the development and dissemination of new standards to fill the gaps. For the former, the main actions would be spreading knowledge and adoption of existing standards while establishing dialogue across various markets and organizations. For the latter, a governing body could guide the development of new standards, blueprints, and recommendations. Equally important, it would leverage existing and new channels for wider adoption of new standards.

As various governance models may be plausible, the first task should be to determine which model is most practical and the best fit for an interoperability layer's mission. The ultimate model may range from a fully centralized one, in which an existing or new organization takes responsibility for leading the effort, to a distributed model of different degrees, or consortiums, in which various organizations accept a lead role on the different components, under the oversight of a steering committee.

Exhibit 9

The road map for implementing an interoperability layer proposes a ten-year journey in three phases.



Mobilize the existing trade finance ecosystem

- Establish governance model for the interoperability layer
- Launch detailed action plan to accelerate adoption of standards for digital trade enablement
- Finalize critical missing elements for trade finance interoperability foundations
- Build a road map to drive adoption of the key standards

Develop the reconceived ecosystem and begin scaling up adoption

- Finalize missing elements of the interoperability layer (eg, blue books, best practices)
- Promote broader adoption of the chosen standards applying a supply-side approach (starting with banks)

Scale up global efforts, with solutions addressing the needs of all market participants

- Support development of shared utilities, based on blue books and standards
- Scale up global adoption of the reconceived ecosystem by both the supply and demand sides

Source: ATF analysis

The first step in bringing this vision to reality has already been taken. Over the past year, the ICC has—through the ATF—secured contributions of expertise, ideas, and efforts from many trade participants, which have shaped the proposed model. The next step is for these parties to align with other trade participants to contribute to the development, execution, and promotion of the target vision.

Launch action plan to accelerate adoption of standards for digital trade enablement.

As we have discussed in this report, the accelerated adoption of existing standards by banks and their technology providers is a critical step toward the success of a potential interoperability layer. The benefits in terms of revenue growth, operational efficiencies, and credit risk control are clear. The plan for this accelerated adoption could lead off with globally recognized company identifiers and standards for digital trade documents—the two building blocks identified as digital trade enablers in Exhibit 6. Globally recognized company identifiers would allow participants to unequivocally identify a party for commercial, risk, and compliance purposes. In a world where thousands of companies are created each day, particularly in the MSME segment, this building block is critical. Broader standardization for digital trade documents through the MLETR standard is essential to helping all parties realize the agility and cost efficiencies they desire. In this first phase of the implementation plan, financial services industry forums and multilateral organizations such as trade associations

could play an important role in spreading the message regarding the importance of digital trade standards adoption. Also, an interoperability layer could issue and disseminate interim best practices for digital trade standards adoption that the entire ecosystems can start adopting pending potential enactment in local law.

Finalize critical missing elements for trade finance interoperability foundations. Laying foundations for trade finance interoperability should involve the building blocks shown in the middle layer of the logical architecture in Exhibit 6. This trade finance interoperability foundation has three building blocks:

1. **Trade finance product taxonomy.** As discussed in section 2, the Global Supply Chain Finance Forum has released a taxonomy focused primarily on open account trade documents. It does not, however, address the other important pillar of trade: documentary trade documents. The ICC has historically addressed the different elements of documentary credit via its Uniform Customs and Practice for Documentary Credits (UCP 600 being the most recent release, in 2007). However, this does not constitute a full taxonomy for documentary products. Therefore, one of the initial efforts for an interoperability layer's governing body to consider should be completion of a full taxonomy of trade finance products, so participants can unequivocally and consistently refer to names and features of trade products.
2. **Uniform trade finance data models.** The trade ecosystem would benefit from harmonization of all data sets pertaining to trade finance transactions, with the end goal of increased visibility and transparency. A unified data model would act as a bridge between ecosystems, allowing for contextualization of data sources across multiple services. It would serve as a foundation upon which data can be consistently used, combined, and correlated.
3. **Standards for trade finance APIs.** As described in section 2, APIs have become a core conduit for communication between corporate and banking systems. Over the past few years, adoption of API standards in the payments space had grown. While the development of APIs for trade is at a far earlier stage; only a handful of banks have embarked on full production. This could be an ideal moment for the formation of working groups, similar to the Berlin Group, and the UK's Open Banking Implementation Entity (OBIE), each of which has embarked on standardization initiatives for APIs in the cash space. An initial target could be to develop APIs for the eight techniques recognized in the Supply Chain Taxonomy and for the three documentary credit products (letters of credit, documentary collection, and guarantees).

In addition to these interoperability foundations, given how fast the market is moving, we would suggest prioritizing in this first phase also the development of best practices in sustainability for trade finance, including critical items such as green letters of credit based on sustainable development projects, sustainable linked supply-chain finance programs, or the adoption of a new trade sustainable asset class to institutional investors as a way to expand the market to MSMEs and other players. All these best practices, introduced in section 2, should be prioritized, given the relevance for the global economy. Equally important will be consideration of the recommendations in the recent ICC white paper *Sustainability in export finance*.⁴⁰

Build a road map to drive adoption of the key standards. In addition to establishing the governance model and promoting the adoption of an initial set of existing and new trade standards, it will be necessary to create a deeper and more detailed road map for the next phases. Besides defining and adopting standards, the road map should include best practices, recommendations, and guidelines.

⁴⁰ *Sustainability in export finance*, ICC, September 2021, [iccwbo.org](https://www.iccwbo.org).

In a first phase, an interoperability layer might work closely with existing industry initiatives such as the ICC's Digital Standards Initiative (DSI) and its Sustainability Working Group. For instance, the accelerated adoption of existing trade foundation standards aligns with the ICC's DSI effort (see sidebar "The International Chamber of Commerce's Digital Standard Initiative"), which promotes the unification of digital standards efforts among market participants, and advocates for adoption of electronic documents and expansion of standards to enable information sharing across the trade value chain. Such industry initiatives share goals and are jointly motivated to avoid duplication of effort. A road map will be of great importance, because the success of the implementation of current or new standards will depend on how key players embed these elements into their operating processes.

Phase 2: Develop the reconceived ecosystem and begin scaling up adoption

A second phase, which could extend over two to three years, would focus on the completion of the missing elements of an interoperability layer elaborated in section 1 and promote broader adoption of the standards, mainly on the supply side (that is, financial institutions). Main activities would include the following:

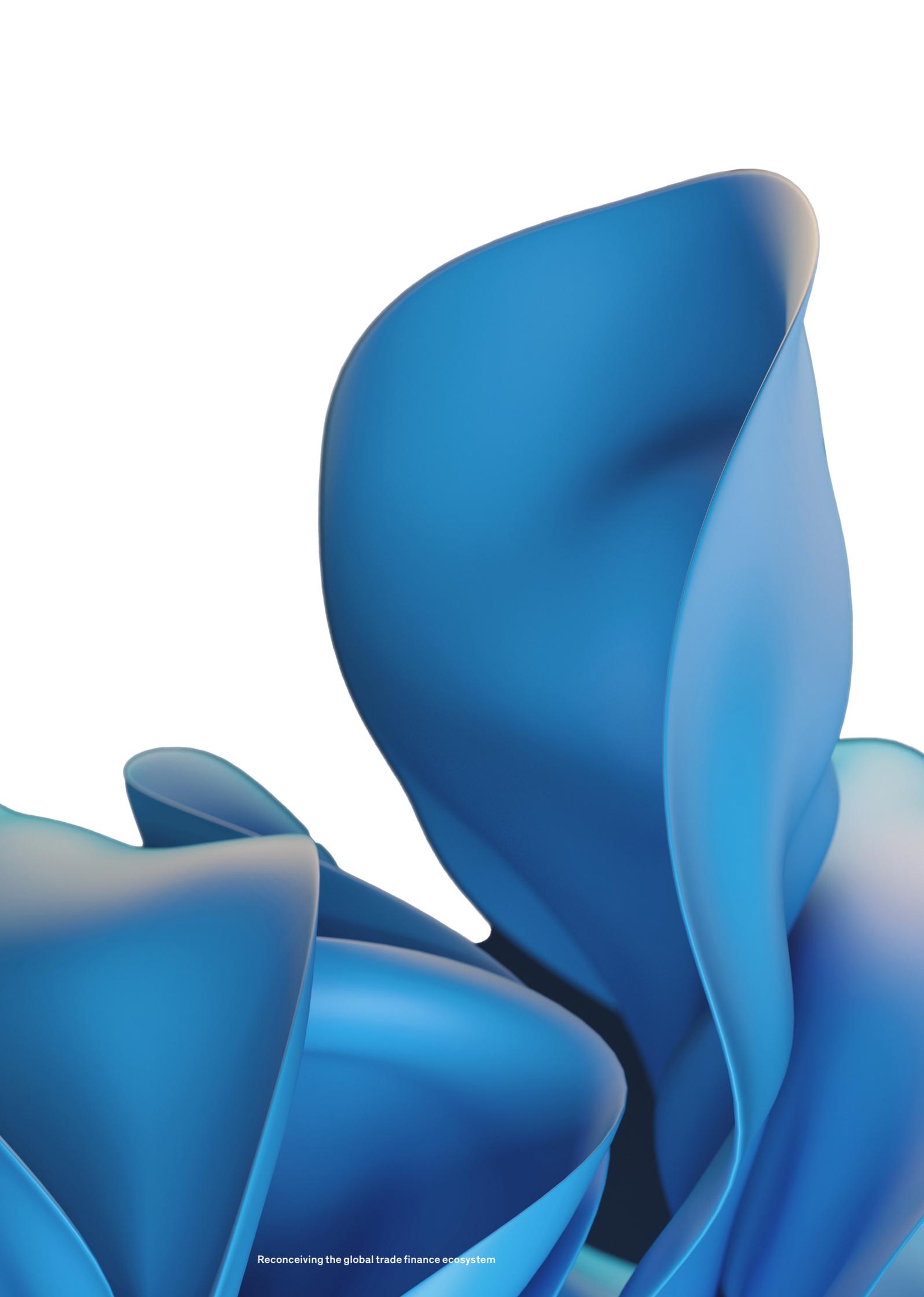
Finalize missing elements of an interoperability layer. Once existing standards have been developed and implementation of others has begun, it will be important to continue the work of finalizing the elements initiated in phase 1 (for example, blue books, best practices, and guidelines), as they are the building blocks for trade finance interoperability. They are essential for the trade market as a whole, because they provide the framework for platforms and participants to operate. Another necessary element is guidelines for setting and operating shared utilities, which, as the next section explores, provide the next level of efficiencies for certain core processes, such as credit risk assessment and onboarding of buyers and suppliers onto the digital identity solutions described in section 2.

Promote broader adoption of the chosen standards, applying a supply-side approach. Broader adoption of standards would be critical at all phases of the road map but particularly in this phase, as most standards and guidelines will be expected to be either released or close to release by this stage. Among the trade participants, the idea is to continue working primarily with financial institutions on the supply side for the adoption of these standards. Additional groups of participants would also play a critical role in this phase; for example, B2B trade marketplaces would adopt the standards to integrate financial institutions, buyers, and suppliers; nonbanking financial institutions would join the ecosystem at scale and push new liquidity into the system; and regulators may enable accelerated implementation through large-scale adoption of some standards. Toward the end of this phase, it is expected that all the participants in the trade finance ecosystem will start capitalizing on some of the benefits, including expanded credit capacity, reduced transaction complexity, and extended market geographies.

Phase 3: Scale up global efforts with solutions addressing the needs of all market participants

If phases 1 and 2 cement the building blocks for a whole deployment of trade standards and adoptions, mainly on the financial side, this would create a solid base from which to reach the last phase, estimated to take place in five to ten years. This phase includes the introduction of shared utilities and the global scale-up from the supply and demand sides, which effectively include the entire trade ecosystem.

Support development of shared utilities, based on blue books and standards. Shared industry utilities—deployed at a local, regional, or global level—would drive economies of scale and deliver the data required to complete certain parts of the trade value chain. For example, financial institutions would benefit by outsourcing certain administrative or noncore activities that today consume a good share of cost and time across the trade value transaction



chain. The cost, bandwidth, and complexity devoted to the trade processes could be managed downward by shared utilities specializing in these areas. Likewise, the standardization of data models, API, and compliance or credit risk blue books would allow for the broad adoption of such capabilities in the same way that cash transportation, merchant acquiring business, or clearing connectivity have been separated from the back offices of most banks. The shared utilities promoted and inspired by an interoperability layer could bring a new frontier of efficiencies, much as standards for containers or new means of transport have brought efficiency to the global trade ecosystem.

Scale up global adoption of the reconceived ecosystem by the supply and demand sides. One of the critical success factors for this action will be how the different trade participants have strengthened their links individually and through their respective business networks. In addition, by this point, the platform economy should have matured, and we should be witnessing in five to ten years a far more cohesive trade ecosystem, where digital islands could be considered an experience of the past. Leveraging both supply and demand sides could create a network effort where adoption of standards, best practices, and blue books would rise exponentially.

Exhibit 10 offers further details of the elements, levels of adoption, and phases that would be required for the consolidation of the future trade ecosystem.

New enablers are needed at each phase to support the journey.

Guiding principles for trade finance interoperability

	Existing enablers
Guidelines for setting up and operating shared utilities	
Best practice for sustainable trade finance	Sustainability in export finance (ICC, 2021)
Blue books for trade finance processes and workflows	Asia–Pacific Trade Facilitation Report (ESCAP, 2019)

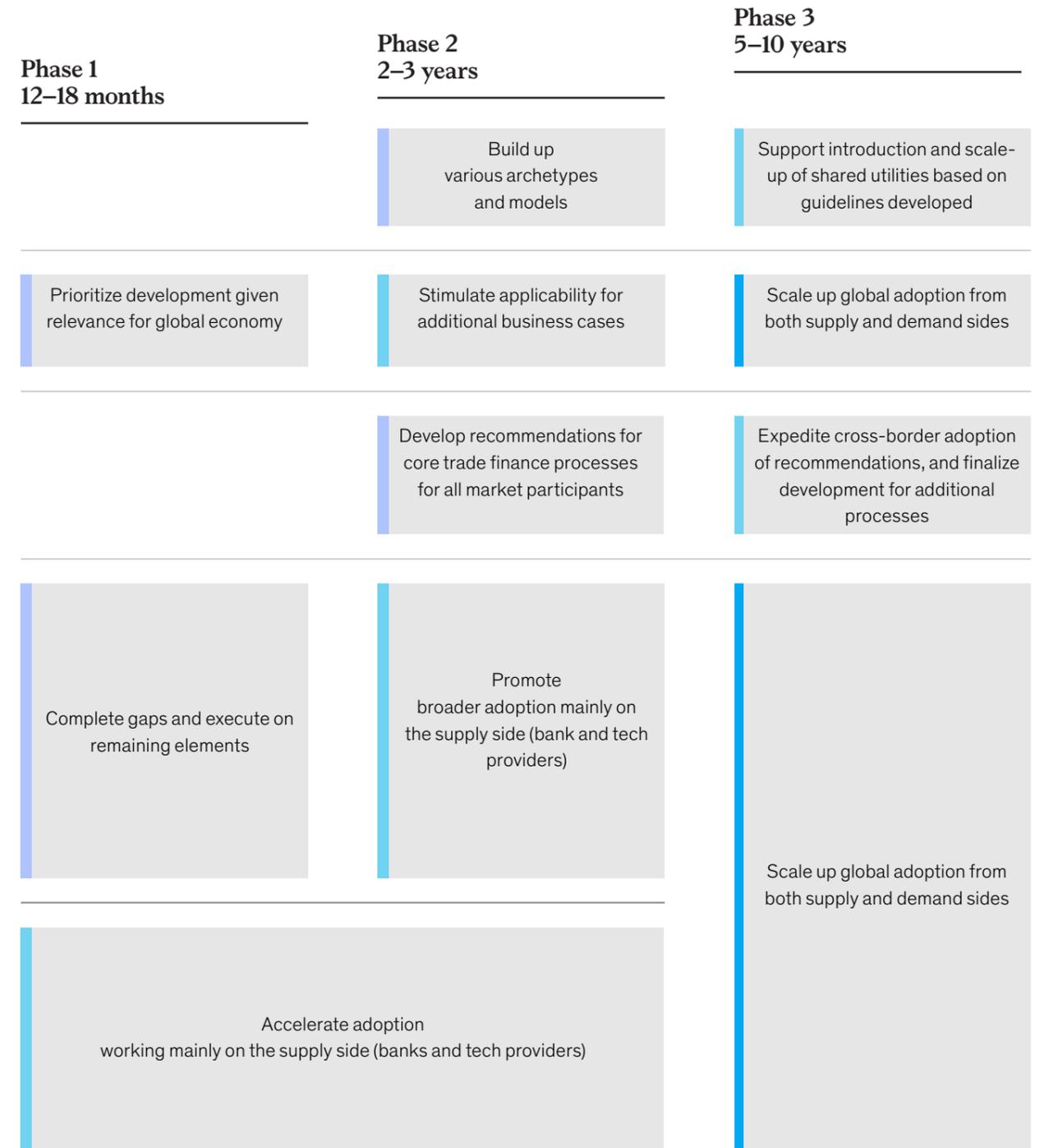
Trade finance interoperability foundations

Standards for trade finance APIs	
Uniform trade finance data models	Cat. 7 MT standards (SWIFT, since 1973 with various updates) Commercial Data Interchange (HKMA, 2021)
Trade finance product taxonomy	Standard definitions for techniques of supply chain finance (GSCFF, 2016)

Digital trade enablers

Global recognized company identifiers	Legal Entity Identifier (GLEIF, 2014) Decentralized Identifier (W3C, 2021) European Digital Identity (EC, expected 2022)
Standards for digital trade documents	Model Law on Electronic Transferable Records (UNCITRAL, 2017) Electronic bill of lading (DCSA, 2019)

Source: ATF Analysis



Source: ATF Analysis

Conclusion



The foreword highlighted the challenges the industry is facing—a \$1.7 trillion gap in trade finance availability exacerbated by the impact of the COVID-19 pandemic.

At the same time, the industry is facing a historic opportunity to cement its progress achieved so far, to build new capabilities, and most importantly, to launch a new wave of cooperation across its multiple participants for the benefit of all parties.

Many participants are already working on this. Fintechs are using blockchain and analytics to uplift end-user experience and create more visibility into trade finance assets. Banks are adopting natural-language processing and APIs to automate trade finance at scale. Logistics players have started to digitize their bills of lading. Trade associations are developing well-designed standards for digital trade that, despite not having reached high volumes of adoption, could constitute the basis for an accelerated path toward global interoperability. In this context, the ICC promoted the Advisory Group for Trade Finance, whose independent and novel research confirmed the complexity of the trade ecosystem in terms of the demand, offers, and market participants. For this reason, the first section of this report describes the needs of the ecosystem's core participants and facilitators.

At its core, as described in section 2, this proposal aims to address these needs by bringing into a single framework the three key missions of an interoperability layer: to promote adoption at scale of existing standards; to design and disseminate additional standards and protocols; and to develop blue books and identify best practices to improve collaboration among trade participants. Underpinning these initiatives is a recognition of the efforts of trade organizations and other participants to date.

Technology is already having an impact through the digitization of trade processes in financial institutions, the proliferation of B2B digital platforms, and the integration of institutional investors and logistics providers into the trade ecosystem. However, technology alone cannot deliver a global trade ecosystem that serves all participants. What is required as well is strong coordination and commitment from the entire trade community. To this end, this report has laid out multiple potential benefits for each trade finance participant and an implementation road map of actions to mobilize, develop, and scale up this global effort.

Trade finance sustainability represents a key component of today's trade finance ecosystem and has significant potential to foster the inclusion of MSMEs and the reduction of the trade finance gap within this decade. Therefore, the development and promotion of standards, recommendations, blue books, and best practices in this terrain will be essential for the effectiveness of the reconceived ecosystem.

Governance, collaboration, and execution are critical success factors that will ultimately determine the timing and the effectiveness of the initiatives proposed in this endeavor, as well as many others that will inevitably arise through innovation of all trade participants.

The overarching goal of the proposal described in this report is to build on the collaboration already gaining momentum among participants in the trade ecosystem, to cover gaps in existing operating models, and, most importantly, to promote the wider adoption through further coordination. If cooperation and execution throughout the global trade finance community can be inspired, the joint objectives—and an equitable distribution of benefits—are well within reach.



Additional research

The International Chamber of Commerce's Digital Standard Initiative

The Digital Standard Initiative (DSI), launched by the International Chamber of Commerce in 2020, is a collaborative cross-industry effort to advance the standardization of digital trade. The DSI is an outgrowth of various like-minded initiatives, many of which focused on digitizing processes through the development of open trade and technology standards. In addition to promoting interoperability, these efforts would ultimately lead to greater economic inclusion as well.

The DSI operates under the guidance of a governance board consisting of policy makers from governments and international organizations, including the government of Singapore, the Asian Development Bank, and the World Trade Organization.

The DSI aims to unify and digitize the global trading system by adhering to these principles: (1) reuse rather than re-create, (2) engage standard-setting bodies, (3) consider all available approaches and technologies, (4) prioritize accessibility to all trade participants, and (5) ensure appropriate capabilities within relevant industries are leveraged to overcome challenges.

A first important step of this initiative was the creation of a comprehensive knowledge center in July 2021. The knowledge center aggregates the relevant information and best practices for each of its key audiences—namely, company executives, policy makers, and developers—with the goal of fostering a wider adoption of the standards. For its initial phase, the DSI encourages market participants to adopt a set of standards, including those developed by the ISO (for example, for currency, country codes, messaging, and date/time), company identifiers (including LEI and DID), and digital trade documents exchange standards. The last category of standards so far adopted includes TradeTrust, a set of standards developed under the leadership of the government of Singapore to support the exchange of electronic trade documents; Digital Negotiable Instruments, a framework developed by the International Trade and Forfeiting Association; the Model Law on Electronic Transferable Records (MLETR); and the Electronic Bill of Lading, an open-source standard by the Digital Container Shipping Association.

Finally, the DSI encourages other organizations and market participants to develop and reach consensus on new sets of standards, examples of which include electronic warehouse receipts to provide proof of ownership for goods stored for safekeeping, uniform rules for processing of digital trade transactions, and digital trade attestations for cross-border taxes.

How regulation and technology are reshaping trade finance in China

Given its outsize share of activity in trade (roughly 30 percent of global flows) and continued high growth, the Chinese business ecosystem is poised to play a prominent role in the design and success of any enhancement to the global trade finance industry. For instance, recent measures by Chinese regulatory authorities designed to encourage broader and more inclusive lending to small and micro enterprises⁴¹ are promoting nontraditional sources for credit risk assessment while in parallel introducing new data protections.⁴²

In particular, China's Banking and Insurance Regulatory Commission has established objectives of significant growth in loan funding and number of borrowers.⁴³ To meet the goals, the five largest Chinese banks are expected to maintain growth rates of around 30 percent for small and micro loans. Reaching these ambitious targets will require the activation of a set of different levers, both commercial and operational.

On the commercial side, some banks are introducing financial-inclusion-focused key performance indicators, such as number of first-time borrowers, and tying a portion of internal performance appraisals to these measures at the local branch level. Based on regulatory recommendations, banks are also implementing incentives to remove long-standing friction points. For instance, in internal funds transfer pricing models, they are assigning at least a 50-basis-point benefit for inclusive loans made by large and joint-stock banks.⁴⁴

On the operational side, the Commission aims to promote the adoption at scale of new technologies through use of innovations such as big data. It also promotes the comprehensive use of financial technology to help firms actively participate in mechanisms for credit information sharing, such as bank tax interaction and bank-business cooperation, and organically integrates public enterprise-related data with internal financial data. Further, the Commission intends to deepen cooperation between banking and insurance companies, exploring innovative insurance-policy-pledged financing products for small and micro enterprises. This construct is expected to involve giving insurance institutions incentives to develop export and domestic trade credit insurance, while banks can enjoy greater latitude to provide trade finance services with the backstop of such insurance.

A broader goal is to revitalize the allocation of financial resources, leveraging financial technology and credit information to enhance lending capacities. This may involve tactics such as asset securitization and other transfers of loan assets from the originators' books, opening capacity for additional rounds of small and micro financing. Also, the disposal of nonperforming small and micro loans will be strengthened through write-offs and transfers in accordance with risk controls and regulations.

The combination of these initiatives could spawn completely new approaches to delivering financial services to small and micro enterprises. In this respect, partnership platform models involving fintech players and leading commercial banks are being deployed nationwide. These include collecting data from participating companies; leveraging innovative credit evaluation, digital technologies, and supply-chain finance solutions; and revitalizing existing credit resources through an originate-to-distribute model—all of which could improve small and micro financing. These

⁴¹ As per the policy published by China Banking and Insurance Regulatory Commission, the inclusive Small & Micro loan has been defined as "total amount of credit granted to a single borrower not more than RMB 10 million."

⁴² On November 1, 2021, China's Personal Information Protection Law (PIPL)—a comprehensive set of rules around data collection and protection—took effect. Applicable to the country's citizens and all companies and individuals handling their data, the PIPL aims to protect the rights and interests of personal information, regulate personal information-processing activities, and promote the rational use of personal information through data localization measures, restrictions on cross-border data flows, and continued surveillance and law enforcement powers. See "Personal Information Protection Law of the People's Republic of China," The National People's Congress of the People's Republic of China, August 20, 2021, npc.gov.cn.

⁴³ "China to further optimize financial services to SMEs," State Council, People's Republic of China, April 26, 2021, english.www.gov.cn.

⁴⁴ Refers to banks with combined features of a general partnership and a publicly traded company.

nascent networks are already ramping up. For example, CSCC Finance, a trade finance ecosystem launched in 2015, has registered more than 120,000 businesses and through October 2021 has handled over 13 trillion renminbi (\$2 trillion) of cumulative transaction volume and over 280 billion renminbi (\$45 billion) of factoring financing.⁴⁵

The Chinese trade finance market is also seeing innovation in the blockchain arena. Trusple, for

example, is a blockchain-based international trade and finance service platform designed to reshape the international trade ecosystem. Another key platform is the central bank's blockchain trade finance platform backed by the People's Bank of China, which has established cross-platform interconnection with Hong Kong's eTradeConnect to facilitate cross-border trade and finance services.

⁴⁵ CSCC Finance, yijr.com.

Detailed insights from our demand-side research

The ICC and Fung Business Intelligence, with McKinsey as knowledge partner, conducted interviews with over 60 suppliers (mostly MSMEs), large buyers, and subject-matter experts across 16 emerging-market countries and multiple key industry sectors to deeply understand CEOs' and treasurers' trade-related needs, primary pain points, behavior, and the business impact of the existing trade finance market gap. We conducted ethnographic research via one-on-one sessions tailored to each interviewee's context and driven by a structured interview guide featuring open-ended questions. These were followed by a series of ideation workshops to enrich the understanding of challenges faced and to explore the framework for potential solutions.

Supplier personas

Across geographies, suppliers were segmented based on two key criteria: technological readiness and access to financing and markets, as depicted in Exhibit 3. While no such generalizations can be expected to provide a precise picture, the analysis revealed five broad personas,⁴⁶ which may help inform strategies to migrate all varieties of MSMEs to a next-generation ecosystem.

- **Active entrepreneurs (low tech readiness, low access).** Active entrepreneurs lead companies that are typically the smallest among the five cohorts (up to 120 FTEs and \$10 million annual revenue) and transact with relatively small, regional customers and larger global businesses using the services of local banks. They typically focus on scaling the business and modernizing production lines. Goods transfers are mainly by sea, using local ports, with time-consuming trade cycles—lead times of two to three months from inquiry to start of production and 50 to 80 days for raw-material ordering and transport. While they are looking for digital solutions and new business opportunities, they often struggle
- with underdeveloped infrastructure and bureaucracy. Key pain points for them include repetitive processes and paperwork with little optimization for repeat procedures.
- **Traditional treasurers (low tech readiness, low access).** Suppliers in the group called traditional treasurers focus mostly on the near term and known aspects of the business, with limited ability to restructure supply chains or navigate new global market spaces. Orders are often brokered by a large intermediary and are likely to be built around a single, undiversified market structure. Supply-chain processes are mostly managed manually, with digital banking not yet prevalent. Such businesses often lack access to international capital markets (due to insufficient capital) and have very limited negotiating power. As a result, they rely largely on private capital for bridge financing.
- **Trade business managers (moderate tech readiness and access).** With a typical focus on consumer goods (for example, garments) for large US- and Europe-based customers, trade business managers tend to have more FTEs yet relatively low revenue (about \$20 million). These companies often own real estate, have sufficient access to secured loans, import raw materials from abroad, and communicate with their banks mainly in person or via email. The trade cycle generally takes three to four months. Exports are mostly by sea, usually with a 30-day payment schedule. Uncertainty regarding payment terms and customers' creditworthiness complicates factoring, and high local-currency interest rates (10 to 20 percent) make investment capital prohibitively expensive, leaving CEOs and treasurers to view equity as the most logical source of funding.
- **Prudent business owners (low tech readiness, high access).** Suppliers classified as prudent business owners focus mainly on larger US retailers and brands. Their businesses have a well-established structure and strong relations with banks and customers but face competition from low-cost regions and pressure to relocate production to other countries for cost and geopolitical reasons. These suppliers are often interested in

⁴⁶ Personas are aggregate portraits of users based on ethnographic research. They illustrate how target users differ, and they encourage a people-centered approach.

upgrading equipment, automating production processes, and enhancing staff training. The trade cycle takes roughly five to ten months from order to payment receipt, with goods shipped by sea. Prudent business owners typically consider trade finance products provided by institutions to be insufficiently developed or overly costly, limiting viable options.

- **New-generation CEOs (high tech readiness and access).** New-generation CEOs head medium-size corporations (with about 4,000 FTEs, making them the largest of companies in these five cohorts) built on a diversified consumer base of high-growth and large, stable businesses. Leaders are focused on keeping the company's balance sheet as debt-free as possible. Management approaches investment decisions cautiously and typically employs letters of credit or insured shipments to mitigate risk. Companies led by new-generation CEOs have developed robust processes to monitor the creditworthiness of their own customers but can encounter difficulty in assessing the credit risk of non-customer prospects. High domestic borrowing rates can render investment opportunities infeasible.

Trade finance challenges

For the five personas and the MSMEs they lead, the demand-side research identifies three broad categories of trade finance challenges:

- **Access to liquidity.** Many MSMEs find themselves either lacking the necessary collateral or unable to meet risk assessment criteria required to leverage trade finance services. For their part, banks may doubt they can employ nontraditional means of assessing supplier risk, partly because of their limited access to enterprise-related historical data. Many regions' alternative finance markets lack maturity, resulting in higher interest rates and capital costs for exporters. The vital areas of know your customer (KYC) and onboarding also remain major MSME challenges, complicated by the fact that banks' analysis of MSMEs is mostly based on static documentation rather than live data.

Banks continue to play a critical role for MSMEs as a source of trade finance and payment services in emerging markets. Most

MSMEs we interviewed choose not to use third-party providers of financing solutions outside of banks. Feedback from the research also affirms the complexity of existing relationships between banks and MSME suppliers, however. Even where trade finance products are actively marketed, many MSMEs find it difficult to secure loans due to perceived onerous terms (for example, annual revenue thresholds and/or collateral requirements). As a result, many MSME owners express a preference for financing their operations with personal funds to avoid debt altogether.

- **Transaction complexity.** Trade finance involves intricate workflows spanning multiple parties, often causing significant manual work and the exchange of paper documents (for example, bills of lading, purchase orders), resulting in high operational costs and elevated credit risk. The divergence of regulations across jurisdictions and differential risk characteristics across trade finance products often give rise to unduly complex and opaque processes. For smaller companies that have limited back-office resources and already face bandwidth constraints, the effort required to overcome such administrative hurdles can be insurmountable, so these companies lose expansion opportunities.
- **Access to B2B markets.** Suppliers are looking for new buyers and new revenue sources, yet they often struggle to gain access to new clients because they lack knowledge or capacity, or they face other challenges in target B2B markets. Because of the economic impact of COVID-19, some businesses have faced payment delays from buyers and inflexible payment terms from their own suppliers, causing gaps in working capital that can inhibit the servicing of existing clients, let alone new ones.

The research behind this report confirms that country and sector factors play significant roles as well. Challenges across countries can vary based on a given country's regulatory and economic environment, as well as the state of local technological infrastructure and the complexity of documentary trade processes. For instance, while Chinese MSMEs report good levels of liquidity availability, thanks to long-standing bank relationships, Thailand's MSME suppliers reported greater liquidity issues stemming from extended

payment terms and rising raw-material prices amid extensive collateral requirements and complex, paper-intensive processes. India's MSME participants noted similar challenges, including a shift from letters of credit to open account terms in response to cost factors and lack of bank flexibility on covenants.

COVID-19's economic impact has varied from one market or industry to another. In apparel, for example, many small export-oriented manufacturers expressed that they have suffered more than their larger counterparts from delayed payments and a lack of orders. For manufacturers of equipment and components, the increasing cost of raw materials and the volatility of currency markets have often been challenging during the pandemic, despite growing demand for their products. In the consumer electronics sector, even large buyers report poor visibility into supplier pipelines. This inefficiency has prompted many buyers to require that suppliers maintain additional buffer inventories, further increasing the need for working capital throughout the supply chain. Unanticipated supply-chain dependencies with downstream MSME vendors, as well as some tier-one suppliers facing financial strains, have contributed to the widely reported multi-month production delays for critical product lines.

Supplier pain points, according to buyers

On the other side of these trades, workshop interviews with a diverse group of buyers indicate broad recognition of the difficulties faced by MSMEs across industries—particularly in accessing low-cost capital, which buyers attribute

to financial providers employing risk assessment mechanisms that can lead to MSMEs being categorized as high-risk. Buyers identified the following supplier pain points:

- **Payables finance.** Some large retailers have negotiated payment terms as long as 150 days, and their success has forced intermediaries to similarly prolong terms to their vendor base, including MSMEs.
- **Capital costs and fraud.** In the commodities trade in particular, buyers cited fraud as the source of a further liquidity crunch. Some MSMEs, already facing higher costs of capital, were priced out of the market as banks restricted trade finance lending in commodities due to overexposure and a wave of fraud and defaults.
- **Digital documentation.** Digitized invoice financing has greatly streamlined transaction complexity for some businesses, but where banks are not yet equipped to process digital transactions, even the biggest buyers have struggled to digitize. Digital transactions are often further inhibited by the requirements of government counterparties, especially customs.

In general, suppliers seem comfortable with sharing company data if it contributes to improved workflow. In interviews, they expressed awareness that financial institutions might collect a broad array of data. They asked that, in return, the institutions use the data to make documentation processes faster and more efficient.

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