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Working Paper

Embracing Digital in Trade Finance

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Banks' traditional trade finance businesses face potentially existential threats. The assurance of delivery and payment that banks provide, respectively, to importers and exporters is less valued in a world of easy communication, abundant information and growing legal certainty. And the laborious, paper-based processes surrounding trade-finance are threatened by digital alternatives that are not only cheaper but faster and more reliable. This BCG Working Paper looks at the technological threats to traditional trade finance – specifically documentary trade and collections – and how banks might respond. Indeed, if embraced correctly, digital innovation can bring significant upside for banks. BCG estimates suggest that such technology has the scope to reduce operational and compliance costs of paper-based trade by 10 to 15%, provide a platform to grow revenues by 5 to 15%, and help banks capture strategic advantage going forward.¹

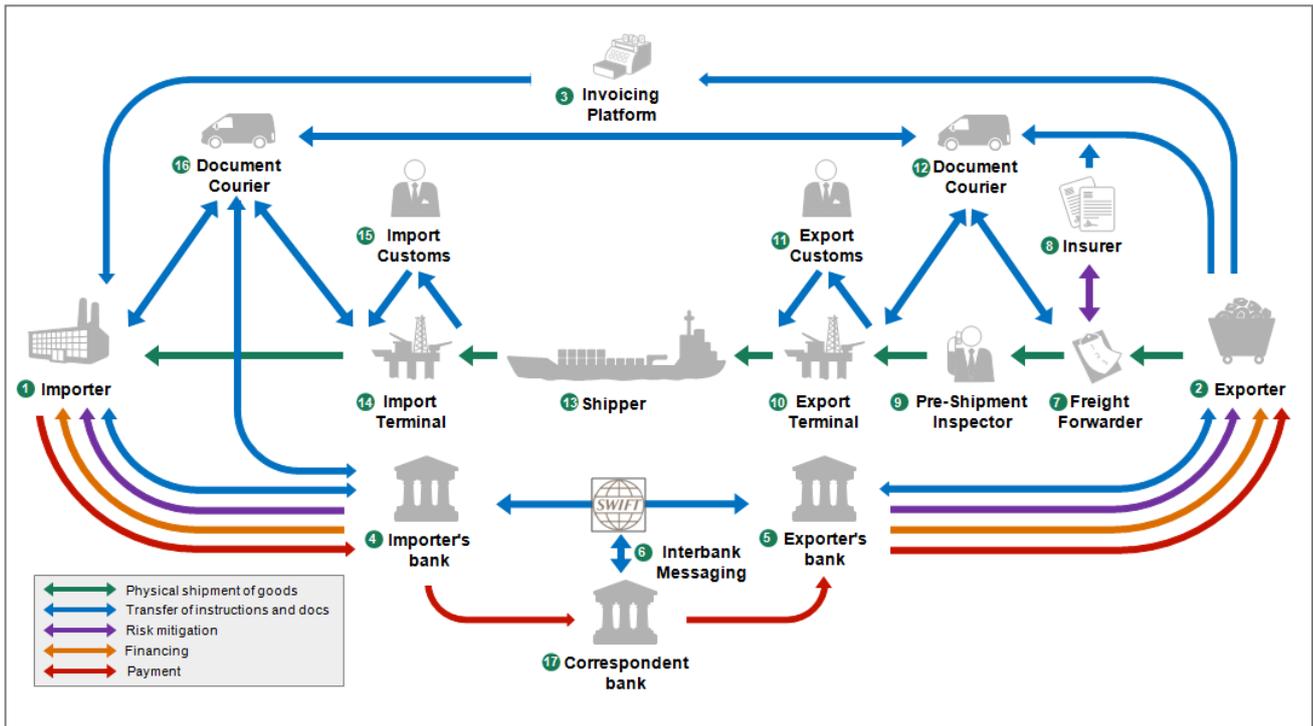
The changing dynamics of trade finance

Trade is a risky business. The buyer might pay without receiving the goods, and the seller might hand over the goods without being paid. These risks are exacerbated in international trade because the normal solution is unavailable. The buyer and seller cannot meet and simultaneously exchange the goods and the money. Without something to assure them, the trade won't happen because the importer will not want to part with his money until he has received the goods and the exporter will not want to part with his goods until he has received the money.

Trade finance provides this assurance. It has been doing so for millennia, with letters of credit, performance guarantees and import/export loans appearing as early as 3000 BC. In the modern world, trade finance is provided primarily by banks, which therefore play a central role in international trade (see Exhibit 1).

¹ Estimates based on BCG client experience. Note impact is dependent on banks' current position plus appetite for change and technology adoption.

Exhibit 1: The international trade “ecosystem”



The enormous growth in global trade over recent decades means that trade finance is a significant source of revenue for banks, totalling about \$45B globally² in 2014. Beyond this direct revenue, trade finance is often the foundation of a wider banking relationship with business customers. Obtaining a letter of credit, for example, requires importers to provide the kind of information required to obtain credit more generally. Having done so, they might as well source their other credit needs from the same bank.

The ecosystem of global trade depicted in Exhibit 1 has been stable for many decades, and banks’ role within it apparently secure. But things are likely to change materially.

The growth of international trade has made it less risky. A firm that imports or exports large quantities of goods over an extended period is made trustworthy by the “discipline of repeat transactions”. Many will also be disciplined by the need to protect a global brand. Legal certainty has also been improved by the accumulation of case law and by an expanding network of trade agreements.

² BCG Trade Finance Revenue Pools, including letters of credit, documentary collections and financed open account trade

Then there is the extraordinary new ease of international communication and the abundance of information provided by the digital revolution. An importer and exporter on opposite sides of the world can know each other well without the help of banks or other agents.

When traders trust each other, they do not need to pay for the assurance provided by banks. A growing portion of international trade is now transacted by “open account”, whereby the exporter has no guarantee of payment beyond his confidence in the importer. Increasingly, letters of credit are used only in trade involving emerging markets or immature firms.

Retail international trade is now increasingly conducted via online exchanges such as Alibaba and eBay. Banks play no greater role than is involved in facilitating payments between end customers and these exchanges. The risk to banks is that they will find themselves in the same position in wholesale international trade, losing the revenues they now earn across the trade value chain and losing the basis for wider banking relationships with trading firms.

The answer is to embrace the digital revolution that inherently threatens them. Going digital will allow banks to reduce the cost of their now laborious processes, making the (extra) assurance they can provide worth the small cost to clients. And it will allow them to provide front-end services that will keep customers on-board and keep banks relevant across the trade value chain.

Banks cannot stop the technological advances undermining their traditional business model. Nor can they ignore them. As SWIFT point out in their recent paper, the "degree of readiness" for innovation in trade "varies significantly across financial institutions".³ Banks must find ways to remain central to the trade finance ecosystem as it digitalizes.

³ SWIFT | Digital Trade and Trade Financing

Front-end innovation: Creating a digital “face”

Financial firms continue to innovate in the area of customer interfaces. More and more tasks that once required interaction with a bank employee can now be performed by interacting with its computer system via user-friendly front ends, often available on mobile devices.

Some of this innovation is being led by so called Fintechs – new technology-based competitors of traditional banks. For example, Tungsten and Market Invoice are using slick customer interfaces to simplify and reduce time-to-cash, and in-turn win business in the receivables finance space.⁴

But established trade banks are also innovating. For example, Deutsche Bank has launched its Autobahn platform which offers clients an ever-growing range of market-leading of apps for liquidity and cash-flow management, supply chain management, transaction execution and more. Deutsche has followed Wells Fargo in this space. The American bank launched its Commercial Electronic Office (CEO) platform 15 years ago and released new features on a quarterly basis ever since. They aim to create true cross-device compatibility, providing all CEO users with the same experience whether they are using a laptop, tablet or smartphone.⁵

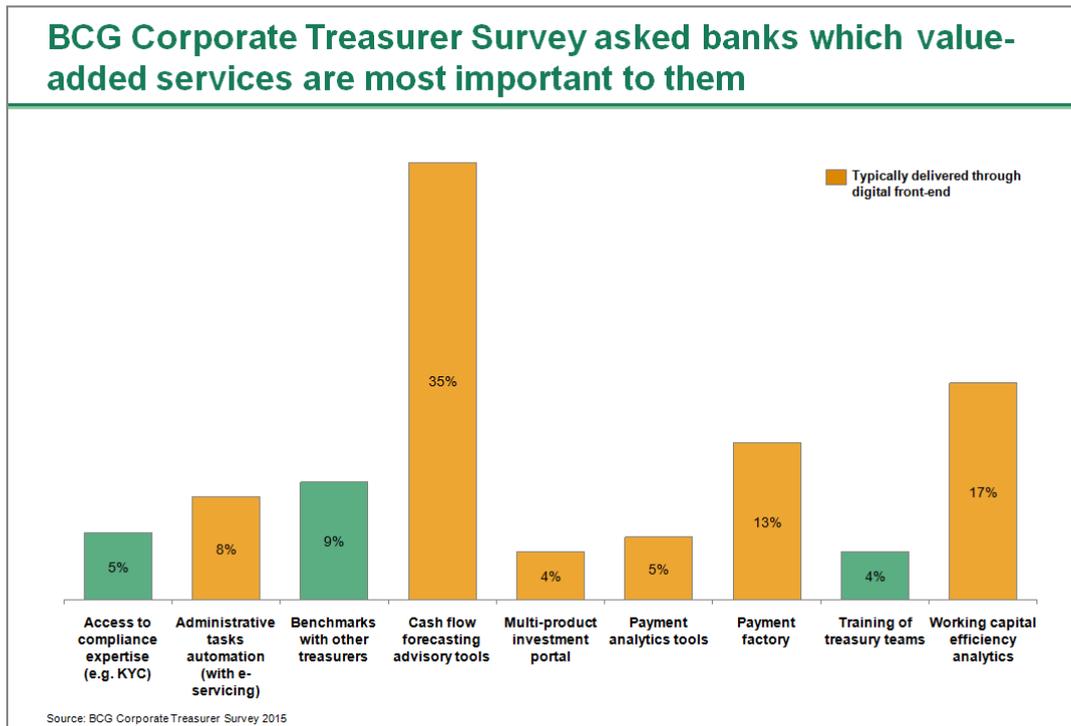
Digital customer interfaces can reduce banks’ labour costs, which is especially useful when serving small, low-spending customers. However, this is not their primary motivation. Banks are responding to the preferences of customers, most of whom now demand the instant, anywhere-anytime transacting that can be supplied by a digital interface.

These platforms can also supply complementary services, such as forecasting and benchmarking tools, that customers value and from which banks can earn revenues (see Exhibit 2).

⁴ AltFi | Is Online Invoice Finance Poised for a Shake Up?

⁵ Forbes | How Wells Fargo Learned To Innovate Around the Customer

Exhibit 2: Tools & analytics most important bank value-adds for Corporate Treasurers



Of course, large corporates and smaller businesses have different needs. Banks must “work around” large corporates to enable high-volume repeat transactions through seamless integration with the firm’s enterprise resource planning (ERP) system, while providing flexibility for more complex, specialised requests. A few banks now have solutions teams dedicated to providing the required “plumbing” from the beginning of the corporate client on-boarding process. Such customization can create a “sticky” relationship between a corporate and its bank.

Smaller businesses are typically more open to using standardised bank-designed processes and are more dependent on self-service channels. Digital front-ends are thus of critical importance to these clients. And because small firms lack the resources to build the kinds of forecasting, benchmarking and other analytical tools which are common in the ERP systems of large corporations, they gain disproportionate value from the provision of such services by banks. As do the banks. When clients use these tools they supply the bank rich information about their businesses – information the bank can use to offer products to the clients who need them, and at the right times.

Role of Digital in operational excellence

The trade ecosystem described in Exhibit 1 is still largely paper-based, a legacy of its evolution in the pre-digital era. Various attempts have been made at moving the market to “paperless” trade, the best known being the EU-initiated Bolero project. The benefits of paperless trading go beyond lower operating costs for banks and lower fees for importers and exporters. Digitally documented trading is faster, more certain, more traceable and more secure against fraud than paper-based trading.

Despite these advantages, the various paperless offerings have so far gained little traction. This is explained by the variety of participants in the process. Banks and large corporates will have the scale to benefit from investing in the digital technology but small traders and some freighting firms may not, especially in emerging markets. And although government agencies will have the required scale, they may lack the efficiency incentives. In countries where customs agencies are also make-work schemes, digitalisation may be unwelcome, especially to the public sector unions.

Nor is it obvious why banks should want to adopt a technology that, while reducing their operating costs, also reduces their fee income and interaction with clients. Indeed, without near universal adoption, banks will not even get much cost benefit from paperless trading, since they will need to continue running a paper-based process in parallel and bear the extra costs and risk that arise from interactions between them (see also Section 4 below).

For these reasons, completely paperless trade is unlikely to happen anytime soon. Nevertheless, banks can go paperless internally, creating a digital “ring-fence” around their operations so that they incur the effort and costs of handling paper only at points of entry and exit.

Optical character recognition

Optical character recognition (OCR) is central to the overhaul of trade operations. Most global trade banks are using the technology today but are yet to realize its full potential.

We see three generations of OCR technology:

- *Standard OCR* recognizes text and handwriting from trade documents, enabling data input employees to “copy and paste” content into back-end fields
- *Intelligent OCR* learns and recognizes document templates to automatically transfer paper-based text and handwritten content into back-end fields
- *Machine intelligence OCR* automatically transfers paper-based content into back-end fields and checks documents for consistency to enable straight-thru-processing

Selected trade banks have already deployed intelligent OCR, although the fine-tuning is ongoing. Once perfected, the rewards are significant. Citi raises the question as to whether such technology could increase productivity of some tasks by even up to 50%.⁶

Machine intelligence remains in the concept stage. Nevertheless, it is on the radar of more advanced trade banks, and there are good reasons for banks to innovate here sooner rather than later:

- In the medium-term it could significantly increase operational efficiency and reduce cost-to-serve in trade finance
- Early adopters would have a competitive advantage, especially for lower-margin products such as letters of credit
- The technology is “future-proof” given that paper-based trade is unlikely to be completely eradicated, and that machine-intelligence is equally applicable to digitalised documents

Digitalizing compliance

Trade finance is covered by a host of regulations, including Know Your Customer (KYC), anti-money laundering (AML), and an obligation to abide by trade sanctions imposed by governments. Such regulation of trade finance is not only becoming more comprehensive and changeable but is more strictly policed, exposing banks to significant operational risk in terms of reputational damage and fines (which have become much heavier post-crisis). Effective compliance is thus a key driver of performance. And it is significant operational

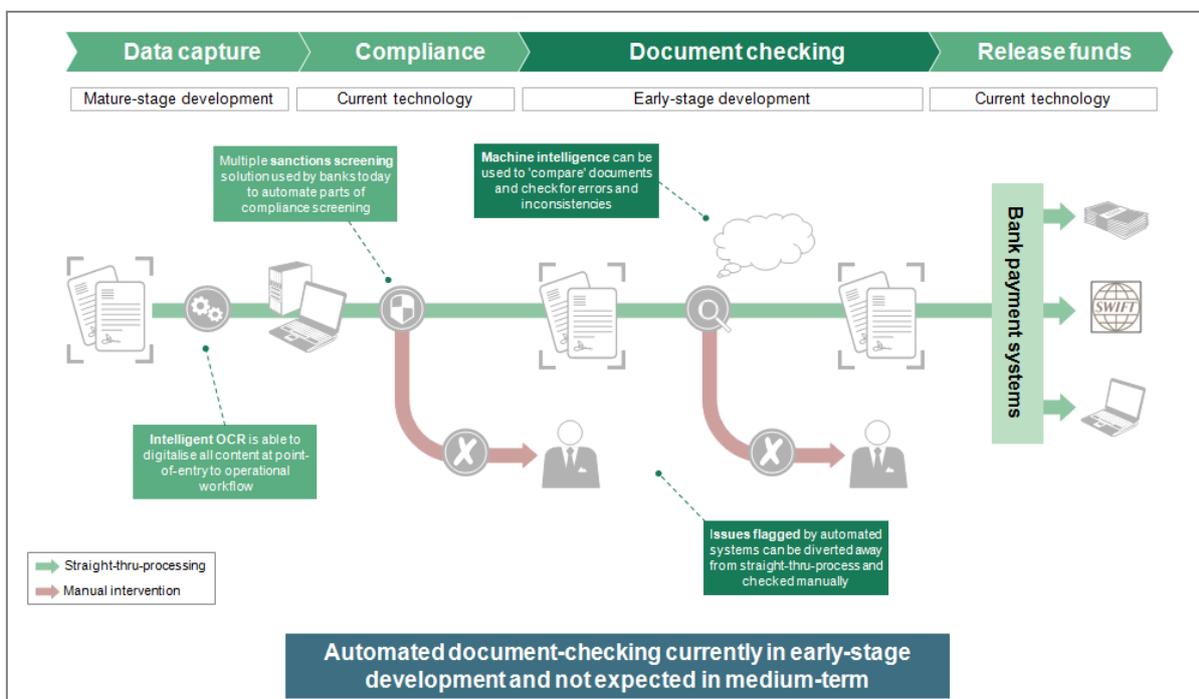
⁶ Citi | Global Trade — Reflections on the Past Three Decades, 2013

burden. BCG case experience suggests it accounts for up to 25% servicing capacity. Getting it right requires both investment and management focus.

The filtering technology that most banks rely on today produces a high rate of false-positives and hence increases the cost of “manual” checking and overrides. Basic solutions, which simply scan transaction data for keywords, are unable to take account of the context of a blacklisted keyword and make the correct judgement. Several solutions in the market already use artificial intelligence and Big Data to make filtering more effective. For example, Thomson Reuters World Check uses both technologies to build profiles and identify networks of high risk entities before they are officially blacklisted. Such technology has reduced false-positives by as much as 50%.⁷

The inflexibility of currently standard systems also drives up costs. When regulations change, as they increasingly often do, this should require no more than “turning a dial” in an agile system designed to accommodate such changes. As things stand, however, regulatory change often requires systems overhauls – far from a best-in-class system built for straight-thru-processing (see Exhibit 3).

Exhibit 3: Leveraging Digital to drive best-in-class operations



⁷ Thomson Reuters | Top 10 Reasons for Using World-Check | risk.thomsonreuters.com

Prospects for more disruptive innovation

Recent years have seen three notable technologies with the potential to further drive change in trade finance: SWIFT MT798 messaging, Bank Payment Obligation (BPO) and electronic bills of lading.

Despite their apparent advantages (see below), take up has been slow. As of SIBOS 2014, MT798 was live at about 20 corporates and 30 banks, despite having been launched in 2008. Similarly, as of October 2015, only 20 banks offer BPO, including just 6 of top 15 trade banks. The story is the same for electronic bills of lading: the technology has long been available but is still far from mainstream.

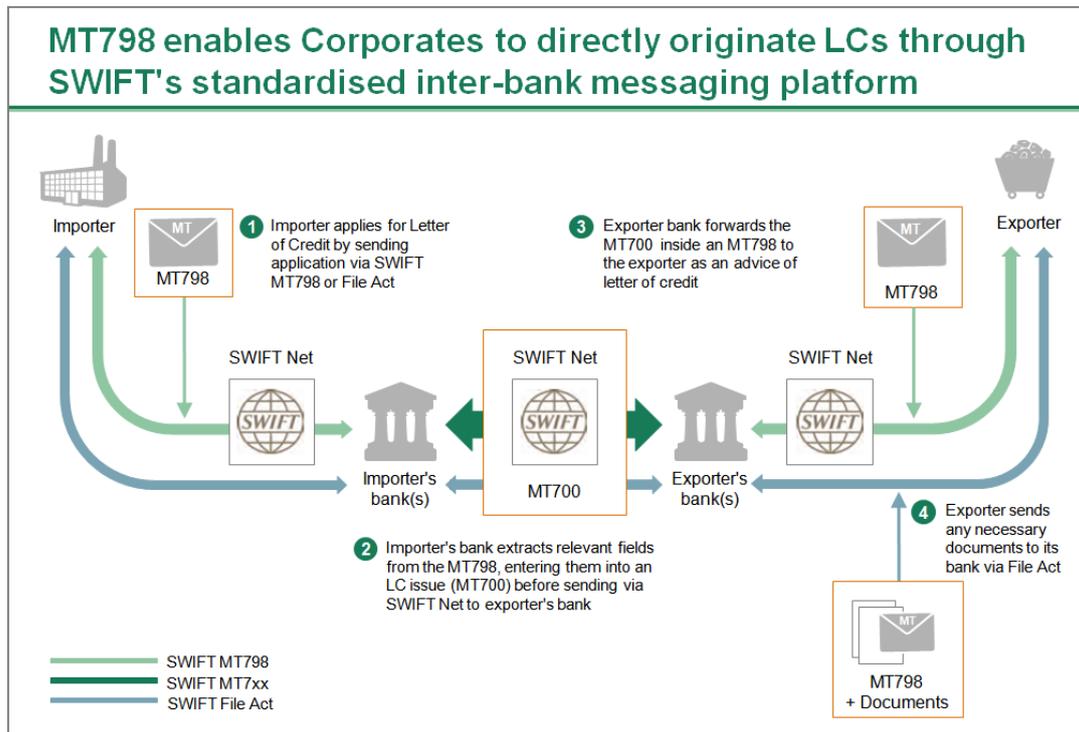
Why have banks and corporates been so slow to adopt these new technologies? The answer is that once banks have digitalised their own operations (see Section 3), the gains from the further digitalisation of trade are likely to be small. As we explain below, these innovations bring not only operational efficiencies but adoption costs and uncertain economic consequences for banks, threatening to make relationships less sticky and to cannibalise current trade finance revenues.

MT798: Limited advantage for the big players

MT798 offers corporates improved efficiency through integration with their ERP and simplified multi-bank access. It allows treasurers to consolidate all trade transactions and manage them under a single view.

Yet there are obstacles to the widespread adoption of MT798 by corporates: the complexity and cost of integrating it with a firm's ERP, the narrow scope of the technology, operational risks arising from deployment, limited savings and the presence of alternative solutions. MT798 is likely to benefit only corporates that are accustomed to ERP-integration, multi-banked and heavy users of LCs versus other supply chain solutions. The current rate of adoption suggests that this is a niche market.

Exhibit 4: How MT798 works⁸



The benefit to banks is also unclear. Of course, MT798 could increase digitalisation, reduce costs and ease access to new customers. However, some banks fear that MT798 will disrupt what has traditionally been a “sticky” business, opening the field to competitors. The “platform-agnostic” nature of MT798 reduces dependence on bank channels, both human and digital, potentially reducing customers’ willingness to pay and devaluing banks’ proprietary platforms.

Other banks take the more positive view that MT798 can deliver material advantage. One senior banker we surveyed claimed that “many banks are missing the boat” by not embracing the technology. MT798 eliminates the need for smaller local banks, allowing the big players to sweep market share and extend their network with little investment on the ground. Digitalising and standardising communication flows could also help banks to identify corporates with multi-bank exposures and to better understand their businesses for liquidity management purposes.

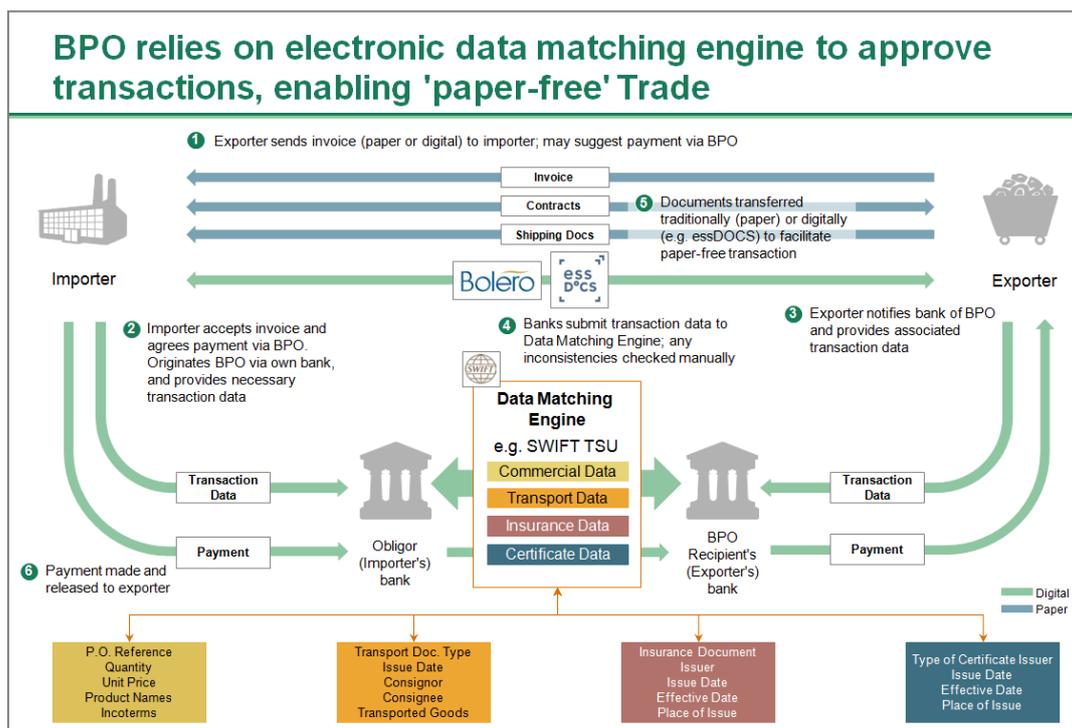
⁸ Citi | SWIFT MT798 – Frequently Asked Questions [adapted]

Speaking to banks, it is clear that, over time, most will become MT798-enabled. But they continue to differ in how actively they push the platform. Some banks see MT798 as the logical way forward for traditional letters of credit and guarantees, with little value in resisting change. Others, however, view MT798 as a threat and will prefer to “wait it out”, moving only in response to corporate demand.

Bank Payment Obligations

The Bank Payment Obligation (BPO) is often positioned as providing similar functionality and security to LCs but with the added convenience seen in open account trade. It has several advantages for corporates. It is quicker and often cheaper than an LC (partly because of a shorter credit utilisation period) while still avoiding the settlement risk inherent in open account trading. Being digitalised, it also reduces transactional complexity and cost for banks.

Exhibit 5: How BPO works



However, there are barriers to the adoption of BPO by banks:

- *Investment* To launch the instrument, banks must spend time and money on developing the required governance, marketing, risk management and operational expertise. And systems must be modified to share transaction data with a central matching engine (e.g. SWIFT's TSU)
- *Cannibalization* Banks fear losing fee-rich LC business as customers opt for more operationally efficient BPO. Not all bankers are concerned, however. A Head of Trade at a global bank told us: "Only about 5% of global trade flows are financed with LCs – and these customers will continue to do so. BPO growth will come from the 95%."
- *"Network effects"* To execute a BPO transaction, corporates and banks on both importer and exporter sides must be live users. When take-up rates are low, a bank will get little value from adopting the technology. Even today, only about 50 corporates and 20 banks can use BPO

Corporates face similar barriers to adopting BPO:

- *Investment* Adopting BPO requires corporates to overhaul well-integrated and longstanding processes, incurring expenses in time, disruption and adjustment on top of the direct investment costs
- *Sup-optimal trade-off* BPO is quicker and cheaper than an LC but not as safe. It is safer than open account trading but not as quick and cheap. This "middle trade-off" between safety and ease will suit only a portion of corporates
- *"Network effects"* As noted above, BPO requires the banks and corporates on both ends of the transaction to be able to send and receive BPO. While take up is low, each individual firm has little incentive to adopt BPO, creating a vicious cycle which keeps take up low. Indeed, given that banks are not actively promoting BPO, corporate awareness of the instrument remains low

Despite these impediments to widespread adoption, BPO has some strong advocates, believing it has potential to deliver revenue upside for banks. BPO-secured transactions open doors to exporter receivables financing and FX transactions that are not possible with open account trade. By taking the leap and adopting BPO, banks will make it more

worthwhile for other market participants to also adopt it. And if they can devise effective cross-sell and pricing strategies – such as pricing BPOs at a discount to LCs but at a level that still delivers margins – then, far from cannibalising revenues, BPO may prove a source of significant additional value.

Electronic Bills of Lading

The concept of electronic bills of lading (eB/Ls) is by not new – it has been theorised since the 1980s⁹ – but only in more recent years have functional solutions from Bolero and essDOCS become available. These digital document platforms aim to pave the way towards paperless trade, combining both technology and guidelines to transfer shipping documents instantly between parties. The infrastructure can be extended to the wealth of other documents supporting a trade transaction.

The benefits for corporates and banks are clear. For corporates, electronic bills of lading accelerate the transfer and presentation of documents, shortening the payment cycle and, potentially, improving the working capital position of exporters. Digitalized documentation is also cheaper to process, more traceable and more secure. Banks enjoy these operational benefits, plus the integration with SWIFT and proprietary bank platforms.

Yet, again, the adoption of eB/Ls remains low because it is constrained by the now familiar obstacles. There are many participants in the trade ecosystem who, for reasons of size or lack of sophistication, are unlikely to invest in the technology. And, so long as adoption is far from universal, little is to be gained by banks investing in the technology. They will still have to maintain the old paper-based processes.

Blockchain

While the trade finance community is proving slow to adopt the latest technology, discussion is shifting to the future and yet more disruptive innovations. What one banker we surveyed called the “arrogant assumption with BPO that only we can do the

⁹ Bolero | The Bolero Electronic Bill of Lading (eBL)

document-checking process,” may soon be undermined. Distributed ledgers built on blockchain technology can validate ownership, certify documents and make payments. This could ultimately restrict banks’ role in the trade ecosystem to nothing more than providing financing.

Deutsche Bank has publically expressed an intention to explore applications for blockchain in payments, transfers of asset ownership and smart contracts – all of which are relevant to trade. It is unlikely, however, that any bank can establish a standardised blockchain network on its own. Several large investment banks, including Goldman Sachs, Credit Suisse and JP Morgan, recognise this and are supplementing their independent efforts by backing the start-up R3CEV, with the intention of developing universal standards for blockchain in financial services.¹⁰ On the other hand, infrastructural players such as SWIFT and Bolero may be better positioned to take advantage of this space owing to their position as third party entities. Casting the net wider, financial services-focused blockchain firms such as Ripple Labs could also play major roles here. The general consensus amongst banks and non-banks, however, is that mainstream blockchain applications in trade finance are at 5+ years away.

Implications for banks

Banks need to keep innovating across the trade value-chain: front-end platforms, operational enablers and end-to-end instruments or technologies. This is not only a matter of cutting cost. It is a matter of serving customers’ changing needs better and continuing to capture value from trade. If they do not, new technology and fintech competitors threaten to shunt banks out of a space they have historically dominated.

Uptake of next-generation trade instruments or technologies, such as BPO and MT798, will be driven by client demand. Over time clients will favour solutions that drive down their

¹⁰ Financial Times | Blockchain initiative backed by 9 large investment banks

costs and increase efficiency while maintaining sufficient protection. Early adopter banks that can serve these needs will be strategically advantaged.

Banks should focus on three takeaways:

- Respond to customers' preferences and deliver added-value functions on the front-end. While these are not yet drivers of purchase, the gap between best-in-class and those farther behind is widening
- Do not underestimate the importance of best-in-class operations. Ramp up efforts in deploying OCR and machine intelligence. Lower costs, agility and speed of service could all come as rewards, and give early adopters competitive advantage
- Stay ahead of the technology curve. For now, banks have a choice on how proactively to push MT798, BPO or eB/Ls but, at the minimum, they should build the plumbing to open the tap and turn these on when client demands change

Or, to sum things up in the words of one banker we surveyed: "Banks should not resist change; disruption will always happen".

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