

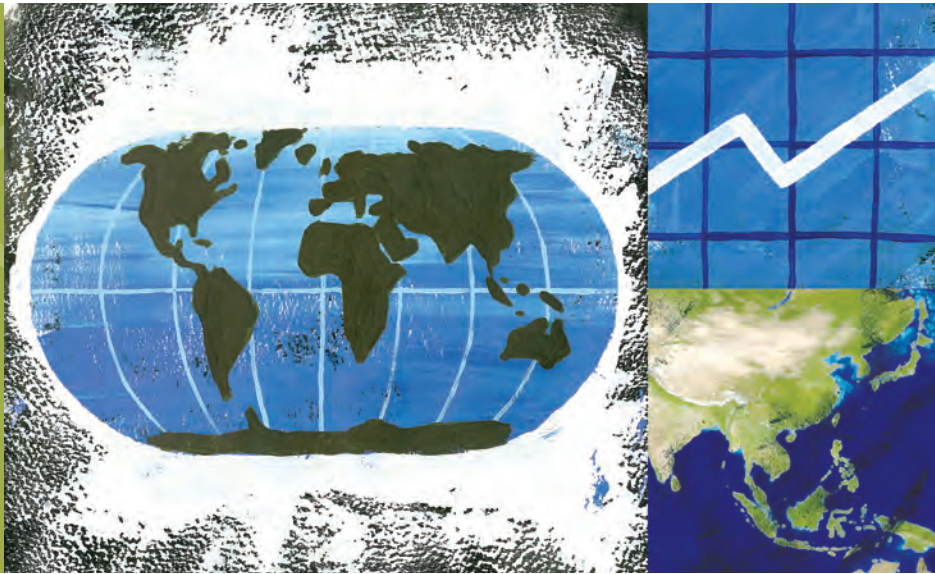
Financial Services Practice



Global Payments 2015: A Healthy Industry Confronts Disruption

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Introduction

Global payments revenues have been growing at rates in excess of expectations. Asia once again—particularly China—is the primary engine propelling the global numbers, but all regions, even those where revenues have recently been in decline, are contributing to the surge. Payments growth is currently a truly global phenomenon.

Looking ahead, however, McKinsey expects that global payments revenues will begin to reflect the flip side of Asia's prominence as a growth driver. The expected macroeconomic slowdown in Asia-Pacific (APAC), in other words, is dampening expectations for payments growth overall. However, the turnaround in other markets will make up for some of this decline. McKinsey expects this rebalancing of

revenue growth between emerging and developed markets will lead to tempered but still healthy revenue growth of 6 percent annually through 2019.

The most recent McKinsey Global Payments Map reveals several additional trends of note. As in 2013, growth in 2014 resulted primarily from volume rather than margin growth (\$105 billion versus \$30 billion). And although liquidity-related

while transaction-related revenues, more driven by payments-specific trends and the ongoing migration of paper to digital, will continue to grow at historical rates. Further, the digital revolution in customer behavior and the intensifying competition will likely revive the war on cash, giving further impetus to transaction-related revenues. Still, with CAGRs of 9 percent in EMEA and 7 percent in North America, liquidity revenues should continue to grow as interbank rates recover from historically low levels.

McKinsey also anticipates a rebalancing of revenue growth. During the last five years, payments revenues grew by 18 percent CAGR for APAC and Latin America combined, comparing favorably with flat revenues in EMEA and North America. During the next five years, however, these growth rates will be 6.5 percent and 6.0 percent, respectively.

Setting aside changes in macroeconomic fundamentals that are difficult to predict, McKinsey foresees four potential disruptions that will alter the payments landscape during the coming years.

- **Nonbank digital entrants will transform the customer experience, reshaping the payments and broader financial services landscape.** The payments industry has recently seen the entry of diverse nonbank digital players, both technology giants and start-ups, that are presenting increased competition for banks. While start-ups have generally not been a major threat to the banking industry in the past, McKinsey

Setting aside changes in macroeconomic fundamentals that are difficult to predict, McKinsey foresees four potential disruptions that will alter the payments landscape during the coming years.

revenues (those linked to outstanding transaction account balances) were again the largest revenue growth contributor (53 percent), transaction-related revenues (those directly linked to payments transactions) climbed more strongly in EMEA and North America, contributing more to revenues than in any year since 2008.

McKinsey expects the contribution of transaction-related revenues to continue rising through 2019, growing faster than liquidity revenues (7 percent and 5 percent CAGR), and contributing more to global payments revenue growth for the period (\$360 billion compared to \$220 billion). The impact of weakening macroeconomic fundamentals, primarily in APAC, will mostly impact worldwide liquidity revenues

believes things will be different this time due to the nature of the attackers, the prominence of smartphones as a channel, and rapidly evolving customer expectations. To maintain their customer relationships and stay relevant banks will need to respond to these changes with new strategies, capabilities and operating models.

■ **Modernization of domestic payments infrastructures is underway.**

The industry is currently going through a wave of infrastructure modernization that is required to compete effectively with nonbank innovators and address evolving customer needs. More than 15 countries have modernized their payments infrastructures in the last few years, and many others are in the planning stage. Because infrastructure upgrades are costly at both the system and bank levels, banks need to find ways to build products and services on top of the infrastructure that provide value to end users and accelerate the “war on cash,” in order to recover these investments as quickly as possible.

■ **Cross-border payments inefficiencies are opening doors for new players.**

The entry of nonbank players and new infrastructure demands is not limited to domestic payments: they will also affect cross-border payments. To date, banks have done little to improve the back-end systems and processes involved in cross-border payments. As a result, cross-border payments remain expensive for customers, who also face numerous pain points (e.g.,

lack of transparency and tracking, slow processing times). However, as nonbank players increasingly encroach on the traditional cross-border turf of banks—moving from consumer-to-consumer (C2C) to business-to-business (B2B) cross-border payments—they will force many banks to rethink their longstanding approaches to cross-border payments.

■ **Digitization in retail banking has important implications for transaction bankers.**

The digital revolution will extend well beyond consumer payments and retail banking, causing significant changes in transaction banking. As customers grow accustomed to faster and more convenient payments on the retail side, they will soon demand similar conveniences and service levels in transaction banking. In fact, recent research by McKinsey & Company and by Greenwich Associates already shows a growing preference for digital channels among companies. And having witnessed the impact of nonbanks in consumer banking, transaction bankers are becoming more aware of the nonbank threat in their own backyard, and of the potentially major downside of failing to invest in digital infrastructures and services.

Overall, McKinsey expects to see the payments industry continue growing at a moderated yet healthy rate during the next five years. But within that growth there will be rebalancing of revenue sources and, more importantly, powerful disruptive forces will begin to reshape the global payments landscape.

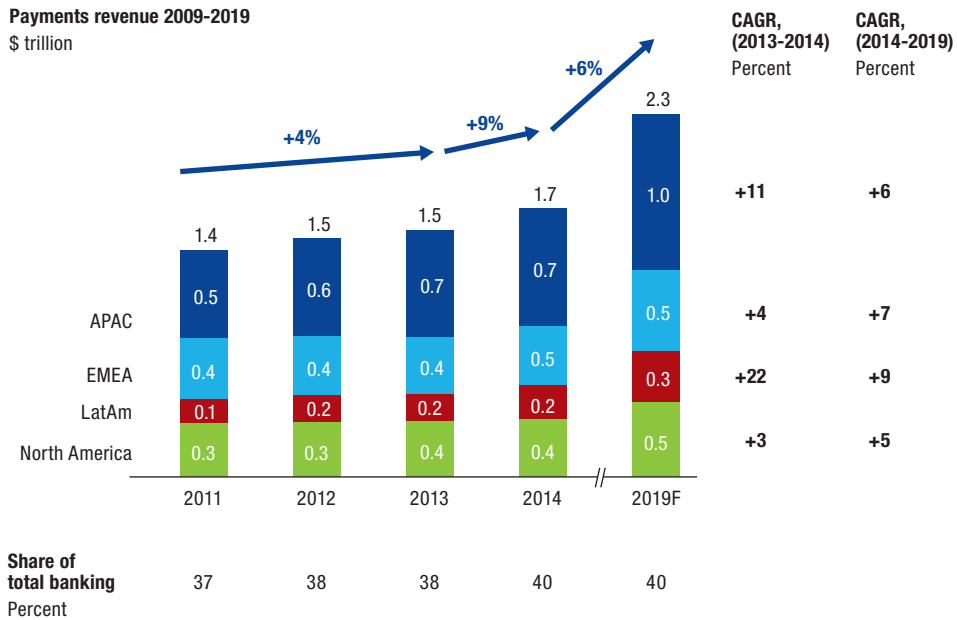


The Global Payments Industry: Healthy Growth, Shifting Drivers

The global payments industry had an extraordinary year in 2014, clearly exceeding the most optimistic expectations. Revenues rose 9 percent, which was double 2013's growth, climbing from \$1.5 trillion in 2013 to \$1.7 trillion in 2014. Global payments also increased its share of total bank revenue from 38 to 40 percent. Future revenue growth will likely remain in a healthy range, although macroeconomic and interest rate uncertainties could affect performance. McKinsey expects annual global payments revenues to increase at a relatively stable annual rate of 6 percent during the next five years, exceeding \$2 trillion by 2020 (Exhibit 1, page 6).

Exhibit 1

Global payments revenues grew 9% in 2014, compared to 4% the years before, and are expected to grow 6% per year for the next 5 years



Source: McKinsey Global Payments Map

A truly global growth period

APAC continued to be a major center of growth in 2014, adding approximately \$75 billion in payments revenues, and accounting for about 55 percent of the industry’s revenue growth worldwide. Within Asia, China was again the leading performer, contributing \$65 billion, or 87 percent of total regional revenues. Revenue growth in Latin America was also strong, surging 22 percent to \$200 billion. Brazil clearly led this region, accounting for about 60 percent of its total payments revenue. Both North America and the EMEA also enjoyed steady albeit more modest revenue growth (about 4 percent in both regions). In the European Union, which

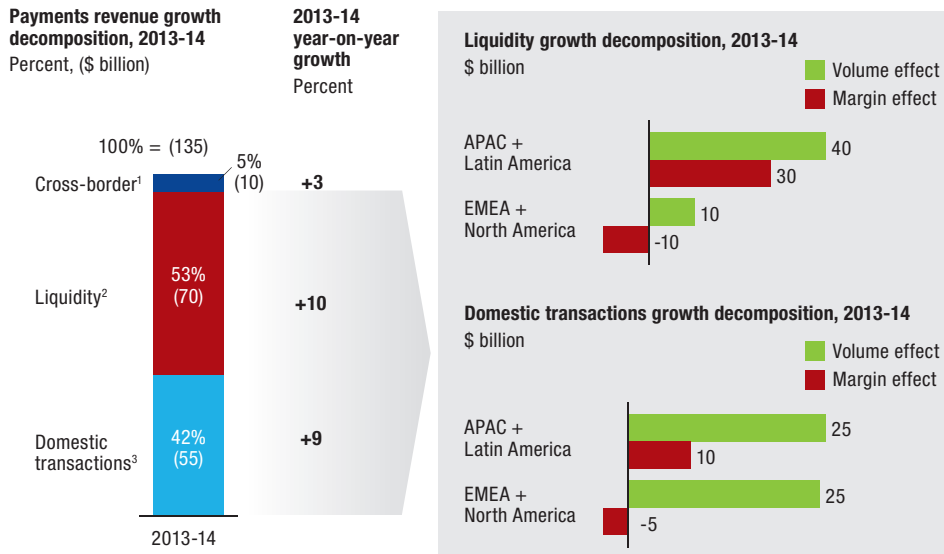
was the primary source of the revenue erosion that occurred in EMEA during the preceding years, 2014 payments revenue rebounded and grew about 2 percent.

Volumes over margins

A closer look at the sources of payments revenue growth reveals that liquidity (outstanding balances-related revenues) and domestic transactions contributed 53 percent and 41 percent of 2014’s revenue growth, respectively. The remaining 6 percent resulted from cross-border payments. As in 2013, revenue growth was fueled primarily by volume increases (outstanding balances in the case of

Exhibit 2

Growth in EMEA and North America has been driven by volume only, as margins remain under pressure



¹ Fee, float and FX income from trade finance and cross-border payments services.

² Net interest income and maintenance fees on liquid assets (overdrafts) and deposits (current accounts and transactional savings accounts; i.e., savings accounts from which transactions can be done without restrictions).

³ Fee and float income on domestic transactions and fee, float and net interest income on credit card accounts.

Source: McKinsey Global Payments Map

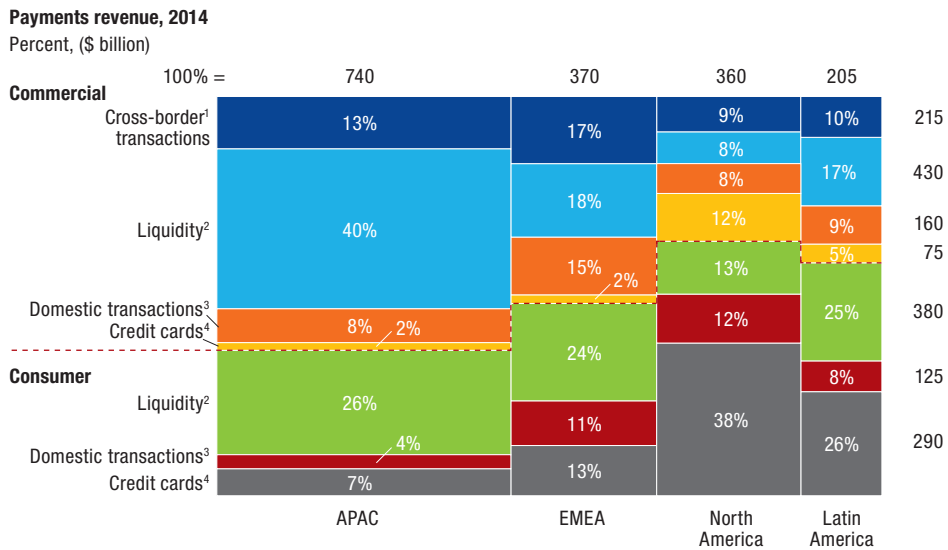
liquidity, and payments flows in the case of domestic and cross-border transactions). These volume increases, rather than margin growth, accounted for 80 percent of worldwide payments revenue growth. In fact, at regional levels, revenue growth from margin improvements was driven exclusively by APAC and Latin America. In EMEA and North America, both net interest margins on outstanding balances and fee margins on payments flows declined during 2014 (Exhibit 2).

It is important to note that strong regional variations persist in the sources of payments revenue. Asia, the largest region, for instance, relied strongly on liquidity revenue, which represented over 65

percent of its 2014 total revenue. At the same time, however, the region's domestic transactions grew faster (15 percent) than liquidity (13 percent) for the first time in eight years. Electronic payments (credit cards, debit cards and credit transfers) were a major factor, contributing more than \$14 billion to the region's total revenue growth. Similarly in EMEA, liquidity contributed the largest share of revenue (nearly 45 percent). However, given near-zero interbank rates in Europe, revenue growth for the EMEA region came largely from domestic transactions, which grew 13 percent and were fueled by volume growth in electronic payments. By contrast, North America derived about half of its payments revenue from credit cards,

Exhibit 3

Leading revenue sources differ across regions



¹ Fee, float and FX income from trade finance and cross-border payments services.
² Net interest income and maintenance fees on liquid assets (overdrafts) and deposits (current accounts and transactional savings accounts; i.e., savings accounts from which transactions can be done without restrictions).
³ Fee and float income on domestic transactions (excluding credit cards).
⁴ Fee, float and net interest income on credit card accounts.

Source: McKinsey Global Payments Map

and only 21 percent from liquidity—a mix that has generally been stable for the last decade. In Latin America, credit cards were also an important revenue source, contributing about 31 percent, although liquidity generated 42 percent of revenue. It is also interesting to note that in Latin America, as in APAC and EMEA, domestic transactions (excluding credit cards) were the fastest-growing revenue source, having increased 25 percent last year (Exhibit 3).

Moderating growth outlook, overall

The growth prospects for payments industry revenue through 2019 now seem more modest than recent experience

might suggest. Fueled by a recovery from the Great Recession and strong Asian economic growth, payments revenues grew an average of 8 percent annually from 2009 to 2014. McKinsey anticipates this rate will moderate to about 6 percent annually for the next five years. This is below the 8 percent projected by McKinsey last year, and reflects a revised outlook for global macroeconomic growth. The outlook for liquidity revenues in Asia is the chief reason for this less optimistic forecast. In particular, McKinsey anticipates slower growth of China’s liquidity revenues. This will be prompted by slower growth in outstanding balances caused by the macroeconomic slowdown, as well

as lower net interest margins that will follow the significant monetary easing that China will likely initiate to restore economic growth. Because China contributed more than 20 percent of global payments revenue growth in McKinsey's 2014 projections, the impact is substantial. That said, APAC should continue to contribute more than any other region to overall payments revenue growth (40 percent of the expected growth between 2014 and 2019).

While the payments revenue outlook for Asia of 6 percent CAGR through 2019 is considerably below last year's 11 percent forecast, the corresponding outlooks for Europe (7 percent CAGR) and North America (5 percent CAGR) remain largely unchanged. McKinsey anticipates that the contribution to revenue growth of these two regions will climb to 41 percent in 2019 (up from 18 percent in 2014). Latin America is also expected to enjoy strong growth, continuing the 9 percent CAGR predicted last year. Overall, after several years of depressed performance in developed countries, McKinsey expects to see a rebalancing of revenue growth between developed and emerging markets.

Transaction-related revenue takes the spotlight

The revised outlook for liquidity revenues in the APAC region directly affects the outlook for global liquidity revenues. McKinsey is therefore reducing its outlook from the 55 percent

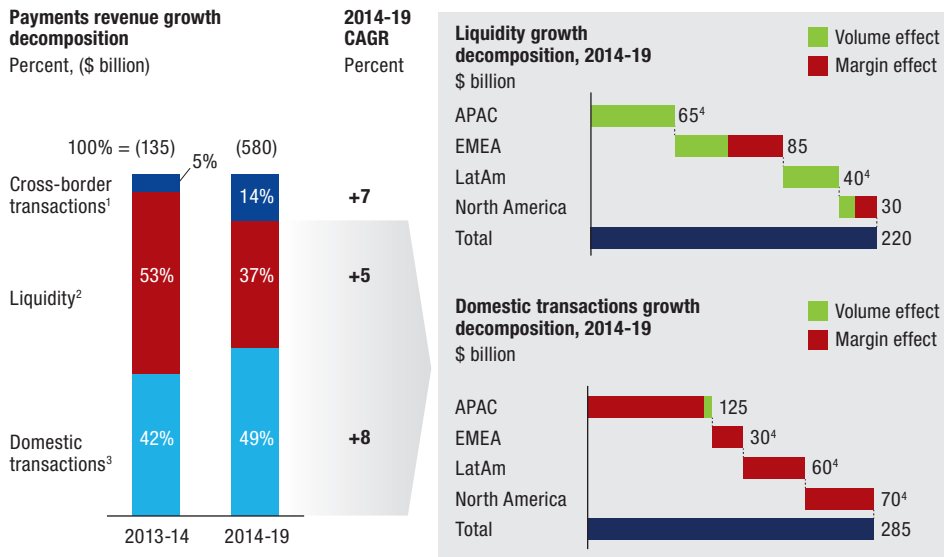
contribution of liquidity to payments revenue growth projected last year to approximately 37 percent for the next five years. The corollary implication is that transaction-related revenue contribution is expected to contribute 63 percent of revenue growth rather than 45 percent.

The dynamics, however, vary significantly by region (Exhibit 4, page 10). Given the expected rebound in interest rates and associated higher balances in Europe, McKinsey expects liquidity revenue to contribute about 60 percent of EMEA's revenue growth for the 2014-2019 period. EMEA will also contribute about 40 percent of global liquidity revenue growth, more than any other region. At the same time, net interest margins on transactional accounts are expected to improve in North America during the coming years, contributing positively to payments revenue growth from liquidity, although less so than in EMEA.

Unlike in EMEA, transaction-related revenue will be the most important driver of growth in the three other regions. In APAC, domestic and cross-border transactions are expected to contribute 55 and 15 percent of the growth through 2019. This is remarkable because APAC is the region that has relied most on liquidity revenues (they represented two-thirds of APAC's revenues in 2014). This could be the start of a shift in the region's payments revenue mix. In North and Latin America, domestic transactions (more specifically, credit card volume) growth should also generate most of the

Exhibit 4

Liquidity revenue growth will be fueled mostly by revival in EMEA, while APAC will drive transaction revenue growth



¹ Fee, float and FX income from trade finance and cross-border payments services.
² Net interest income and maintenance fees on liquid assets (overdrafts) and deposits (current accounts and transactional savings accounts, i.e., savings accounts from which transactions can be done without restrictions).
³ Fee and float income on domestic transactions and fee, float and net interest income on credit card accounts.
⁴ Only net volume effect is shown, as margin effect is negative.

Source: McKinsey Global Payments Map

growth, accounting for 65 percent and 55 percent of overall payments revenue growth, respectively.

The increasing reliance on transaction-related revenues is a positive sign for the overall resilience and robustness of the payments industry. Compared to liquidity, transaction-related revenues are less exposed to changing macroeconomic and interest rate conditions, and are driven more by trends within the payments industry. Among these are continuing migration from paper-based to digital payments, intensifying competition, increasing regulatory pressure and rapidly changing customer behavior. Together, these trends are providing a tailwind for

the war on cash. As the shift to cashless transactions continues—and even accelerates—transaction-related revenues, both domestic and cross border, should grow approximately 7 percent annually, consistent with McKinsey’s 2014 forecast. However, the trends underlying the transition from cash to electronic payments also suggest that transactional fee margins will be under pressure. In Western Europe and North America, fee margins remained stable in 2014 after dropping about 20 percent from 2007 to 2013 (Exhibit 5). While liquidity margins should resume climbing after falling to extremely low levels, McKinsey expects fee margin pressures to persist, and even extend to regions currently less impacted

Exhibit 5

Domestic payments faced substantial revenue margin erosion

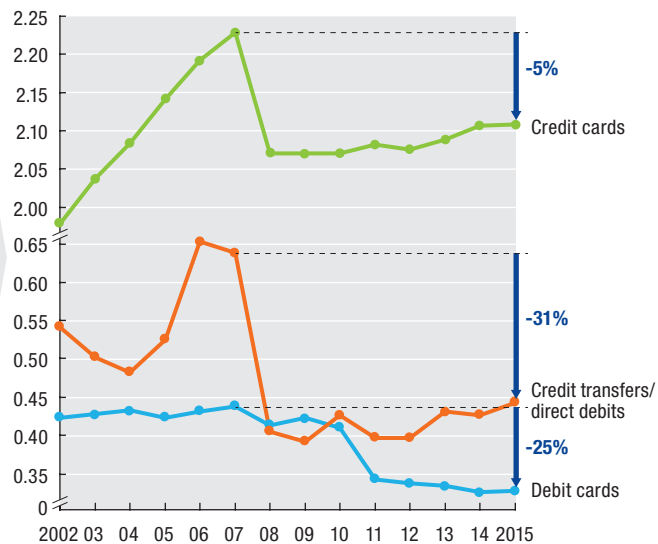
Increasing regulatory pressure has led to substantial revenue margin erosion

EU, U.S. and local European regulations have put card interchange fees under pressure for more than five years; the full impact of EU interchange fee regulation will be visible in 2016.

Incident fees, mostly on credit cards, have been under scrutiny in the UK and U.S.

The EU's Payments Services Directive imposed a one-day float cap (2008), which substantially impacted credit transfer economics in European countries such as Italy.

Revenue per transaction,¹ North America and Western Europe
\$



¹ Includes transactional fees, float income and incident fees.

Source: McKinsey Global Payments Map

(APAC and Latin America). Regulatory pressures, in fact, seem unlikely to ease. For instance, the full impact of the EU's interchange-fee regulations has yet to materialize, and competitive pressures continue to intensify. The good news here, however, is that margin erosion should continue to be more than offset by volume growth.

Another wave in the war on cash

The growing popularity of digital payments and commerce among providers and consumers is fueling the war on cash in two respects. First, the ease of accepting electronic payments is increasing while the cost is going down. For example, the availability of mobile

point-of-service (POS) solutions is a trend that many expect will continue growing as competition rises from non-card payments alternatives. Credit transfers and direct debit-based solutions, such as SEQR and Pingit, are being introduced at the point of sale, thereby enabling smaller merchants—and even consumers—to accept electronic payments. Second, the growth of digital commerce has become a natural ally in the war on cash because cash payments are less prevalent there than in traditional non-digital commerce. In 2014, digital commerce grew by 22 percent (while overall consumption grew by 6 percent) and now accounts for 3 percent of personal consumption worldwide. McKinsey expects digital

commerce to continue growing at twice the rate of personal consumption. This trend should, in turn, generate growth in electronic payments, which will likely accelerate, doubling card payments volume by 2019.

Commercial payments will continue to grow faster than retail payments (7 percent to 5 percent). Cross-border payments will feed this expansion. The

contribution of cross-border payments to total payments revenue growth will climb from 5 percent in 2013-2014 to 14 percent in 2014-2019. Commercial payments will benefit most from this growth because 80 percent of cross-border payments revenues are B2B-related. Emerging Asian and Eastern European economies will experience the greatest cross-border payments growth.



A Changing Landscape for Banks and Nonbanks

Setting aside unpredictable macroeconomic events that influence the payments industry—primarily its liquidity-related elements—McKinsey expects the key industry disruptions in the coming years will be those caused by the ongoing digital revolution, and by new insights from digitally collected data. Digital technologies continue to evolve rapidly and reshape how people around the globe live, communicate and do business. The impact of technological advances on financial services, and on the payments industry specifically, is intense and, for many, unsettling. Financial institutions and other payments providers have

ong been accustomed to the ups and downs of economies and financial markets, but the powerful forces of digital technology are now causing groundswells that threaten traditional players' once solid foundations.

While many areas of the payments landscape are at risk of disruption, four deserve special attention. First, large and small nonbank entities, including technology, communications and financial services firms, will continue to make inroads—some of which might create

begin to demand equally convenient and secure services.

The combined impact of these disruptive forces is likely to dramatically reshape the payments industry in the next five years, and will be decisive in determining how the revenue growth picture develops.

As always, disruption also brings opportunity. Success in this reshaped landscape will come to those who keep pace with technological change, customer expectations and the quest for innovative payments solutions.

The digital banking revolution that started in retail payments is making its presence felt in transaction banking, as companies begin to demand equally convenient and secure services.

substantial impact. Second, the ongoing transition to digital payments technologies will place more strain on legacy systems, forcing upgrades that will require substantial investments, but also presenting opportunities to unlock new revenue streams. Third, cross-border payments services have not kept pace with the shift to a global economy and digital age, creating compelling opportunities for banks and nonbanks alike. And lastly, the digital banking revolution that started in retail payments is making its presence felt in transaction banking, as companies

Disruption 1: Nonbank digital entrants are transforming the customer experience

The proliferation of nonbank digital players continued in 2014 and through 2015. In the next five years, increased competition will likely further reduce margins on domestic transactions while accelerating volume growth in electronic payments, reducing the use of cash and checks. A few recent developments are especially notable. Facebook entered the payments space by offering users the convenience of free peer-to-peer payments through its Messenger app. This followed the 2014 launch of Snapchat's Snapcash, a similar feature. And Samsung announced its acquisition of LoopPay (unveiled later as Samsung Pay), a mobile wallet that competes with Apple Pay and Google's recently-announced Android Pay. Meanwhile, Flipkart, India's largest e-commerce player, bought a majority stake in the payments services platform

FX Mart, a digital wallet that will enable consumers to buy from Flipkart as well as third-party sellers.

In addition to these moves by technology leaders, global investment in financial services-related startups soared from \$3 billion in 2013 to \$12 billion in 2014, a growth rate three times the rate of overall venture capital investment, according to CB Insights. And *Time* magazine reported that barely six months into 2015, financial technology startups had already raised over \$12 billion from venture investors, placing them on track to double the backing they received the previous year. Payments is at the epicenter of financial innovation, with an estimated 35 percent of financial technology firms active in the payments arena, according to McKinsey's Panorama Fintech Database. In fact, over one-third of the world's 37 financial technology "unicorns" (startups with values of \$1 billion or more) focus on payments, according to Finovate.

While banks have always faced attackers, history suggests that most startups will never gain solid footing. During the dot.com boom of 1997 to 2000, fewer than 10 of more than 450 payments startups survived, with PayPal being the most notable. However, McKinsey expects this time to be different, for the following reasons:

1. The nature of the attackers: For the first time, banks are competing against the world's largest and most valuable companies. Technology titans such as

Apple, Google, Facebook, Amazon, Microsoft, Tencent and Alibaba, that already have loyal and highly engaged user bases, are integrated into many aspects of their customers' lives, and have vast cash reserves. These companies also benefit from revenue streams beyond payments. This makes them formidable competitors, who can rapidly drive adoption and usage of their services from consumers and merchants alike. Consequently, they are able to reap value from the existing payments value chain and upend pricing models by providing payments services either free or for significantly below-market prices. For Apple, increased use of Apple Pay means more iPhones are sold; greater use of Android Pay means more Android platform users for Google; greater use of AliPay means more e-commerce sales for Alibaba; and greater use of P2P payments through Facebook Messenger is a first step towards building an engaged user base that will eventually lead to more ad revenue for Facebook or even the development of a commerce platform.

2. Smartphones are an important new channel: Global smartphone penetration by population is expected to exceed 50 percent by 2017, according to Forrester. As more people use them to meet a variety of everyday needs, there may be a segment of users that prefers to access financial services through third-party mobile apps, rather than bank apps. In fact, in the U.S., 33 percent of millennials (ages 15-34) believe that within next five years they will not even need a bank.

And nearly half believe that technology startups will entirely change how banks function, according to the Millennial Disruption Index.

The explosion of smartphone apps has led the way for in-app payments. In several markets, McKinsey expects that app-based payments will rival browser-based payments for e-commerce by 2020. Merchant payments are undergoing a transformation as merchants adapt to consumers' need to make online, mobile and in-app payments. Nonbank attackers are creating new acceptance solutions that target merchants willing to use mobile devices to manage their businesses. About 7 percent of small merchants in the U.S. now use smartphones as their POS systems, according to McKinsey's 2014 Small Business Survey. And 33 percent said they would consider doing so in future. Similarly, 6 percent now use tablets for payments, and 44 percent might in the near future.

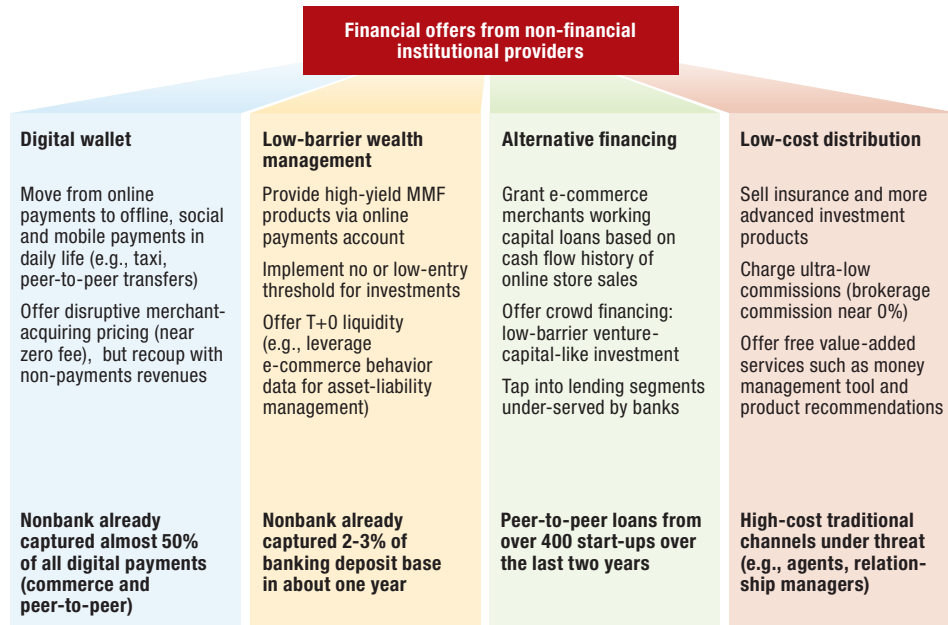
3. Rapidly changing customer expectations: As consumers grow accustomed to the benefits of using technology in their daily lives, their expectations also grow. Nonbank digital entrants have used superior design and user interface to build solutions that often surpass consumer and merchant expectations in terms of end-to-end customer experience. By integrating payments into commerce, nonbank attackers have created more seamless, personalized and interactive experiences, contributing to increased conversion rates. Many of these

innovations have become increasingly "table stakes" product features, such as Apple's fingerprint authentication and Amazon's one-click payments. The ultimate friction-free experience might now be the set-it-and-forget-it feature found in apps such as Uber and Lyft, which make the act of payment essentially disappear. For merchants, players such as Stripe and Braintree are making the payments processing experience easier. Others are going a step further; Swedish player Klarna enables online merchants to receive payment guarantees in real-time with an email and zip code from a consumer. Consumers later choose a payment method, including an option to pay only after the merchandise is received, or through an installment plan. In all cases, Klarna pays the merchant and takes the full risk. As financial technology players raise the bar ever higher for the customer experience, banks must become more customer-centric in the design of their products and services.

This shifting payments landscape might ultimately lead to consumers meeting their financial needs in very different ways. A look at the success of Tencent's WeChat in China provides a glimpse into where control of payments can lead. With 549 million monthly active users, WeChat aspires to address every aspect of its users' lives through its mobile app, the cornerstone of which is the WeChat wallet, which enables seamless transactions on the WeChat platform once users link their bank account or credit card. Users can then use the app to manage

Exhibit 6

The recent evolution of payments in China shows the risk of nonbank disruption is not theoretical



Source: McKinsey Payments Practice

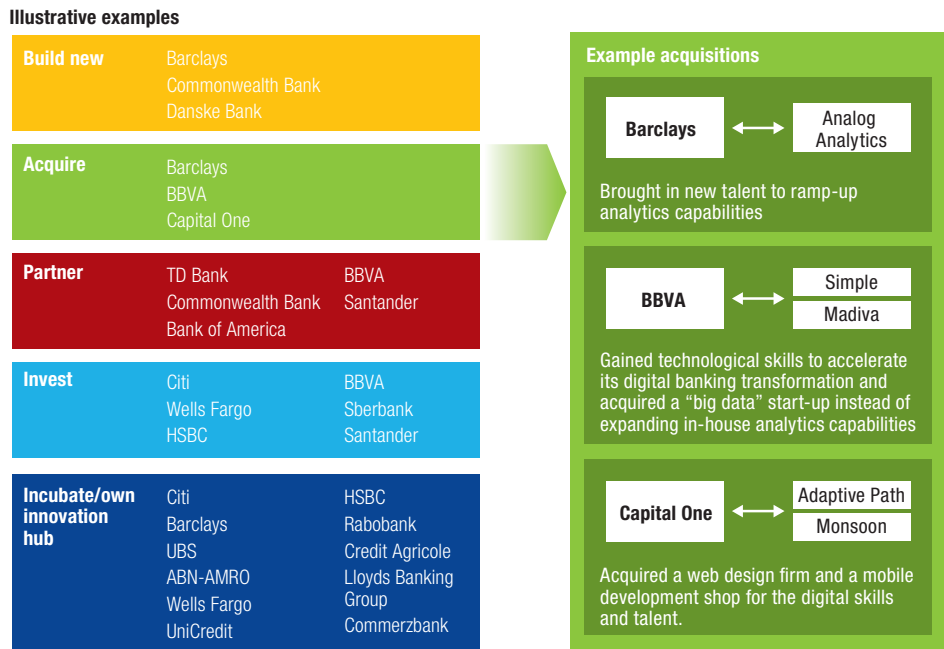
a credit card statement, pay utility bills, hail a taxi, order a food delivery, buy movie tickets, send money to friends, get a banking statement, book a doctor appointment, find geo-targeted coupons and more.

Thus, while relatively little of the \$4.7 trillion in bank revenues Goldman Sachs predicts is at risk from nonbank attackers has been realized to date, and the impact from these digital entrants on payments volume and revenue growth trajectories is not yet fully apparent, the disruption threat is a matter of strategic importance. To the extent these nonbank players use payments to gain control of the customer interface “front door,” they will then own the customer relationship

and the ability to influence consumer behavior, reshape industry economics, and potentially penetrate higher-margin financial services. The evolution of payments in China has started down this path already and may portend the future path for global payments (Exhibit 6). The long-term disruptive threat is that direct, front-end consumer relationships are disintermediated and banks run the risk of being relegated to the “pipes” that other players use to move money, a much less profitable business model than today. ING Direct, for example, reported to investors that owning the payments relationship allows them to unlock two or three times more banking revenue per customer.

Exhibit 7

Banks are responding to nonbank attackers in different ways



Source: McKinsey Payments Practice

Recognizing that the competitive landscape has changed, many banks are responding (Exhibit 7). The most proactive among them have built their own solutions. In 2013, Danske Bank in Denmark launched the most successful bank-owned P2P service to date through its MobilePay standalone app, which has attracted more than two million users (out of the total Danish adult population of 4.5 million). Perhaps most telling is the fact that 70 percent of the users are non-Danske Bank users. In merchant payments, Commonwealth Bank of Australia, has introduced "Albert," a mobile device enabling merchants to accept payments, enrich the customer in-store experiences (for instance, by

conveniently splitting a restaurant bill) and improve business productivity (through inventory management and loyalty program management).

Other banks have acquired solutions, such as BBVA's purchase of Simple, a digital banking app with a superior user interface and customer experience. In addition to acquiring technology or products, many banks find that obtaining digital talent through acquisition is faster than hiring in-house. For example, Capital One acquired digital design capabilities through its acquisition of Adaptive Path, a web design and consulting firm, and mobile capabilities through its acquisition of Monsoon, a 40-person mobile development shop.

As banks realize that their size and culture make it challenging to innovate at the pace of nonbanks, a number are partnering with fintech players. TD Bank, for instance, has partnered with Moven to incorporate the startup's personal financial management services into the TD mobile app.

The most common response from banks to date has been to invest in fintech or incubate startups through an accelerator or innovation hub. Several banks are creating their own venture funds; for example Santander is partnering with Monitise on a joint venture to invest in and build new fintech startups (this is in addition to Santander's own fintech startup fund).

Perhaps the biggest shift in how banks are operating is the use of crowdsourcing (e.g., hackathons and contests) to generate ideas. Citigroup is one example of a bank taking this approach. Most critically, banks are opening up their software to allow outside developers to build applications. By sharing proprietary code through application programming interfaces, banks can harness the creativity and innovation of outside developers to build new apps, products and services.

Banks that can develop a holistic digital strategy, assess their internal capabilities and needs, systematically scan innovations for partnership and acquisition opportunities, develop products and services that create delightful customer experiences, and engage and rapidly respond to customer needs will be best-positioned to not just defend against nonbank attackers and

disruption, but grow and deepen their customer relationships.

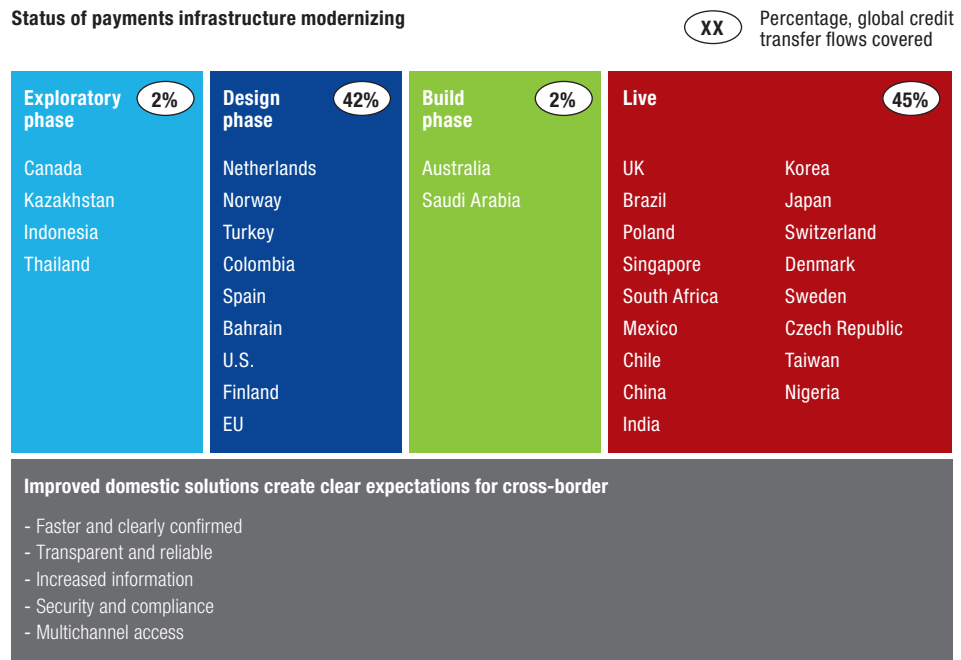
Disruption 2: Payments infrastructure modernization is already underway

The payments world is rapidly evolving as players introduce new products, digital channels and technologies. In fact, technology advances such as cloud computing, agile development and advanced analytics are driving a convergence of payments, commerce and loyalty. Today's consumers and corporates seek faster and more secure payments, quick access to funds and the ability to use their channel of choice. And most notably, nonbank innovators are intruding on the payments turf by addressing these changing needs in new and unique ways, as discussed in disruption 1.

The challenge is that most of the global payments infrastructure (e.g., clearing houses) leveraged by incumbent players (mostly banks) still operates on systems designed to accommodate the demands of the pre-digital era. Consequently, the industry finds itself at the beginning of an infrastructure modernization wave around the globe. More than 15 countries, representing 45 percent of global credit transfers, have already migrated to modernized infrastructure. If countries currently building or designing new infrastructure are added to the mix, more than 90 percent of today's credit transfers could benefit from modernized "rails" within the next few years (Exhibit 8, page 20).

Exhibit 8

Domestic payments systems are rapidly moving to new modernized infrastructure



Source: McKinsey Global Payments Map

Large-scale infrastructure improvements can range from notification and confirmation upgrades to new clearing and settlement processes, and the benefits can range from reduced processing times to enhanced privacy and security. Although consumers and businesses expect such improvements, they require significant investments: the cost of modernizing one country's domestic payments infrastructure is hundreds of millions of dollars. In addition to this major cost burden—which needs to be agreed upon and shared by the banking community at the country level—individual banks face two related challenges:

1. They must develop a perspective on how they will use the new infrastructure capabilities to design and commercialize the products consumers and businesses are demanding.
2. They must identify the internal infrastructure and operational changes needed to fully leverage evolving industry infrastructure.

Infrastructure modernization—if well designed and executed—could improve end users' experiences, fulfill critical needs (e.g., emergency B2B supplier payments) and unleash a wave of market innovation. As countries build new infrastructures, banks will need to modernize their internal

legacy infrastructure and operations, which are often designed for batch, not real-time, processing. Banks' core platforms will need to be updatable in real time, fraud platforms and processes will need to be very near real time, and clearing systems must be capable of handling exchange of information, posting of transactions to the customer and funds availability all in real time. The move to 24/7 availability will also require operational changes. Without the right level of internal infrastructure preparedness, banks face risk; for example, three banks in the UK have suffered recent outages as their payments systems were challenged to process digital transactions. Facing infrastructure improvement costs that can range from \$5 million to more than \$100 million, banks must build a business case to capitalize on the opportunity.

To realize the opportunities presented by infrastructure change, banks need more than internal infrastructure and operations changes; they also have to think about how they will use the new infrastructure to design and commercialize innovative products. Modernized infrastructure provides significant opportunities to develop end-to-end solutions to address emerging consumer expectations. And it is these innovative solutions that will enable banks to retain their central position in the client relationship and to compete effectively over the long term.

To develop solutions that answer consumers' needs, it is important for banks to clearly identify the use cases and pain points they are trying to address. Most recent innovations building on

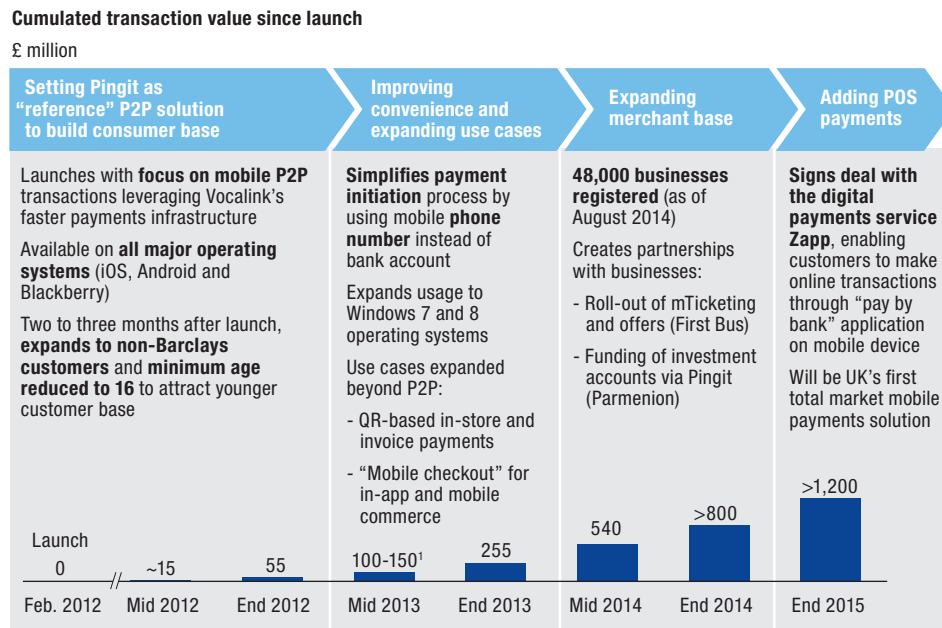
modernized infrastructure focus on C2C, a segment in which cash (and in some countries, checks) often still holds a predominant position. Examples of such solutions include: Pingit (UK), FAST (Singapore), MobilePay (Denmark) and ANZgoMoney (New Zealand).

Infrastructure change is also likely to have a radical impact on POS payments, where card-based solutions are expected to encounter growing competition from ACH-based solutions supported by mobile applications, as is already occurring in the UK. Following ApplePay's announcement about entering the UK market, Barclays decided to more aggressively market its Pingit instant credit transfer solution for POS payments. Instead of entering into a partnership with ApplePay (a solution built on international card schemes), Barclays partnered with Zapp to provide its "Pay by Bank" service through the Barclays Pingit app starting in October 2015 using the Faster Payments Service infrastructure (Exhibit 9, page 22).

In the B2B arena, infrastructure evolution is more nascent, but may be the largest opportunity. In the U.S. and several other countries, businesses large and small still often pay by check. Modernized infrastructure could accelerate the transition from checks to digital payments; for example, the richness of data coupled with advancements such as tokenization have the potential to increase the level of e-invoicing, straight-through-processing, and ultimately, the shift away from paper instruments. Also, modernized infrastructure will enable more extensible

Exhibit 9

Case study: Barclays' Pingit



¹ Estimated based on available statistics released through 2013

Source: McKinsey Payments Practice

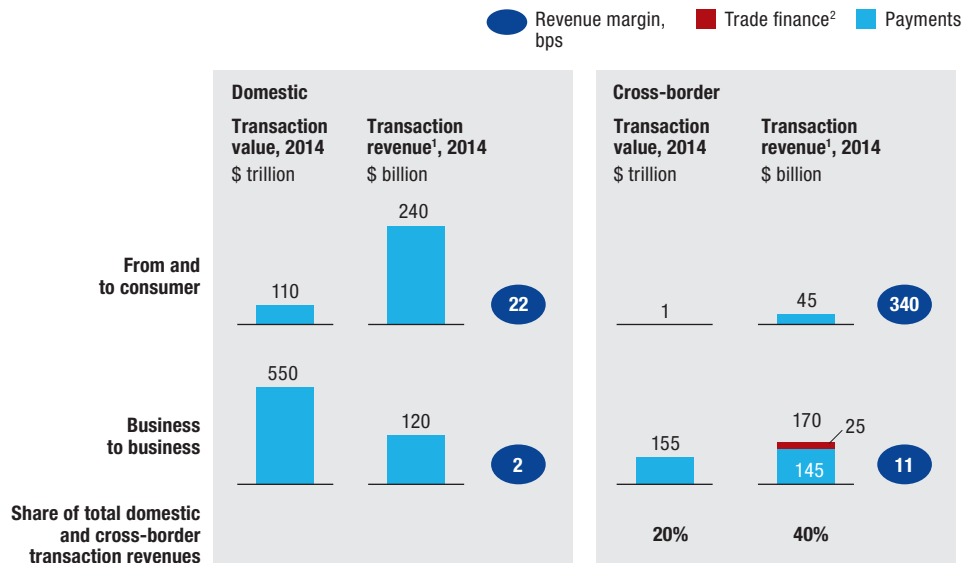
messaging and conversations between counterparties with richer information (e.g., for B2B you can send payments indicating the invoice, if it's a partial payment, which discounts applied and how it matches to the invoice). The most obvious opportunities for improving the corporate client experience are in cross-border payments, where pain points in both international trade and corporate international liquidity management are legion. The fact that the features and capabilities of modernized domestic infrastructures necessarily vary according to country and customer needs will make cross-border standardization and true interoperability challenging. However, a growing movement to adopt

the XML language and the ISO 20022 standard should create momentum for interoperability.

Banks should be proactive on two fronts. First, product developers should be thinking now about how to improve existing products and which new business opportunities to pursue. This will also be important to inform infrastructure design. Second, banks should develop a clear strategy for transforming their internal payments infrastructures to meet changing industry and customer demands. This means, for instance, preparing to capitalize on new technologies when they become available, rather than several years later.

Exhibit 10

Cross-border payments represent 20% of global payments flows and 40% of transactional revenues



¹ Includes transaction fees, float income, FX fees and excludes revenues not directly linked to individual transactions, mostly maintenance fees, net interest income and incident fees related to cards (revenues which are typically captured under domestic transactions but can not be broken down by counterparty, hence are not shown on this chart).

² Trade finance only includes fee revenue from documentary business and not revenues from trade-related financing.

Source: McKinsey Global Payments Map

Disruption 3: Cross-border payments inefficiencies are an open door for new players

Cross-border transactions, which include cross-border payments and documentary business services such as letters of credit, documentary collections and guarantees, generate approximately 40 percent of the payment industry's transaction-related revenues, yet they comprise nearly 20 percent of its total volume (Exhibit 10). More importantly, while domestic payments have been migrating toward more efficient systems and products during the last few decades, their cross-border counterparts have changed very little. Faced with significant margin erosion, banks have

pared costs and pursued efficiencies in their domestic payments and other transactional products. Nothing of note has been done, however, to improve the back-end systems and processes that enable cross-border payments to work. An alignment of cross-border revenue margins to domestic level, driven by increasing competitive pressure, would cost the industry more than \$150 billion revenues and put major cost efficiency pressure on banks cross-border payments operations.

Cross-border payments continue to be expensive. According to a McKinsey survey on cross-border payments pricing and customer experience in 2015, consumers pay a fee of between €20 and €60 on top

of the prevailing foreign exchange spread. The high cost does not translate in to high speed: these payments typically take three to five working days to complete. Often, there is also a significant lack of transparency in pricing, timing and tracking. Many consumers still find cross-border payments inconvenient to initiate because they often have to be done at a branch office, or require the filling in of many cumbersome fields. Obtaining trade finance can be even more painful, with high rejection rates for small and medium enterprise (SME) applications, lengthy manual document verification and sanctions checks. A sight letter of credit transaction can take 10 to 15 days to obtain payment after submitting the documents.

Customer experience in making cross-border transactions and documentary business is poorly aligned with today's expectations. This mismatch provides an open door for attackers.

High margins and low efficiency in cross-border payments have long drawn the attention of nonbank money transfer operators like MoneyGram and Western Union, who together capture approximately 40 percent of cross-border C2C payments revenues worldwide. (This is the payments segment where nonbanks hold the largest share.) Historically, these players have largely targeted unbanked consumers, differentiating their offerings based on speed and convenience rather than pricing.

After decades, however, there are finally signs of change. Over the last five

years, digitally enabled attackers have intensified competition by changing the ways payments are made. By offering superior consumer value propositions for C2C transfers, TransferWise, Xoom and others have gained significant traction. More recently, nonbank players have begun to pursue the more lucrative realm of cross-border payments involving businesses, starting with SMEs (Exhibit 11). This sector represents 75 percent of cross-border payments revenue, and McKinsey anticipates that it will grow rapidly due to the expanding economic role of these businesses and the growing fragmentation of supply chains. Maintaining their current 95-plus percent share in this sector will be especially challenging for banks, because nonbank rivals often link cross-border payments with other services such as alternate sources of financing or fully digital FX services.

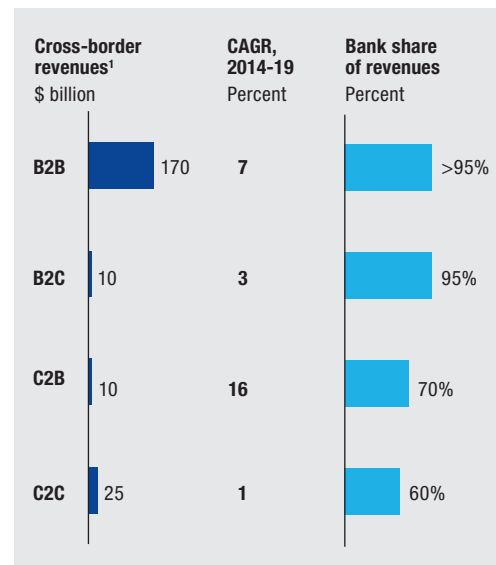
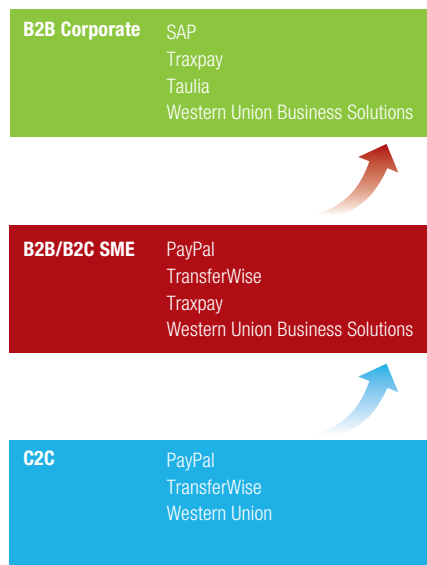
The new wave of innovation generated by financial technology providers is unsettling to many banks, especially those with strong transaction banking franchises. And importantly, the threat relates to both front-end (customer interface) and back-end (infrastructure) operations.

- **Front end:** As noted above, a number of nonbank players that have had success in C2C cross-border payments are starting to offer solutions designed to target cross-border pain points in the SME sector. These solutions often include support for integrated accounting software (e.g., Intuit with Paypal), supply-chain finance or dynamic discounting (e.g., Taulia). For

Exhibit 11

Disruption is moving from consumer-to-consumer to SMEs and business-to-business, where banks get the bulk of their cross-border revenues

Selected examples of cross-border solutions



¹ Fee, float and FX income from trade finance and cross-border payments services. Source: McKinsey Global Payments Map

trade, some solutions redefine the customer need by introducing alternate services such as conditional payments (e.g., Traxpay) and alternative financing (e.g., Alipay), all of which weaken the bank-customer relationship.

- Back end:** Two models related to the back end of cross-border payments are gaining ground. The first is a movement to interconnect infrastructures to provide low-cost processing, as Earthport is doing with its near-global payments batch processing services. Although transaction volumes are rising, this model has yet to achieve profitability. The second model uses distributed ledger

or “blockchain” technology. Although the technology is still in the early stages of development, firms using the technology are gaining some traction. For example, a number of banks have tested the potential of Ripple, a player providing cross-border payments solutions based on “blockchain” technology, and a few (e.g., Fidor Bank in Germany) have signed partnerships with the company. In trade finance, multibank platforms such as Bolero and TSU/BPO are promising to revamp manual back-end processes with matching of electronic data and e-bill of lading, although they have yet to build extensive usage among banks.

To maintain their strong footprint in cross-border payments, banks need to rapidly move away from the existing correspondent bank model, which is burdened with customer pain points. They must think broadly and strategically about the future of cross-border payments—and do so soon, because the industry is already on the move. The approach should be holistic, incorporating both front- and back-end operations while taking advantage of the spectrum of communications and payments technologies. The challenges are clear. First, the lack of standardization in formats and harmonization of back-end systems. Research from Traxpay indicates that about 60 percent of B2B payments require manual intervention and that each intervention requires at least 15 to 20 minutes. Second, the rising cost of regulatory compliance must be addressed. And third, maintaining large international correspondent bank networks has become an expensive luxury that even leading transaction banks can no longer afford. Banks have therefore been gradually downsizing these networks. J.P. Morgan, for example, reportedly cut ties with 500 network banks, mostly in the Middle East, in 2013 and 2014.

Tomorrow's solutions will go beyond utility models based on legacy systems and old-school correspondent banking to the adoption of future-proof digital technologies and industry standards that provide cross-country integration and greater transaction-level efficiency.

For trade finance, banks should also invest in performance optimization and supply-chain finance as well as engage in innovative partnerships. These moves can help banks redefine their international networks and reduce the need for manual intervention (investigations and reconciliation) and deliver customer value throughout the transaction cycle. Some banks are already investing in the future of cross-border payments. Citi Worldlink enables business customers to use a single window to make multicurrency purchases, aggregating them for lower rates. Worldlink also lets users make electronic cash and check payments in more than 135 currencies without having local currency accounts.

To defend their position in cross-border transactions, banks need to move swiftly and surefootedly. Financial technology players move quickly, particularly where significant opportunities are clear.

Disruption 4: The transition to digital in retail banking has important implications for transaction banking

The digital revolution is now well developed in the consumer world, and is spreading quickly into the realm of retail banking. It will likely be a surprisingly short jump from there to transaction banking, once corporate leaders start demanding the level of banking convenience for their companies that they enjoy as individuals.

Of course, digital technology is not new in transaction banking. It is already integral to a number of commercial banking processes and services. Examples range from online portals, such as HSBCnet (which has provided real-time balance and transaction reporting, as well as payments creation and custom advice for remittance data, for a decade), to mobile alerts for payments and account balances.

One powerful influence is the consumerization of corporate banking. As corporate banking customers become accustomed to digital technologies, multichannel access, streamlined logistics (e.g., Amazon

Companies have stepped up their use of digital channels. A 2014 McKinsey survey reveals that 70 percent of mid-size businesses in the U.S. and Europe use and strongly prefer digital channels, especially for payment approvals, account information and foreign exchange transactions. Trade finance and other paper-based cash management products and services that have been slow to digitize are gradually making the transition to digital. A Greenwich Associates survey of large European enterprises indicates that the share of trade finance conducted electronically increased from 39 percent in 2012 to 44 percent in 2014. Technology is also an important criterion for selecting a bank, as reported by 80 percent of respondents to the 2014 McKinsey survey. Fifty-five percent cited online and mobile services as being important as well.

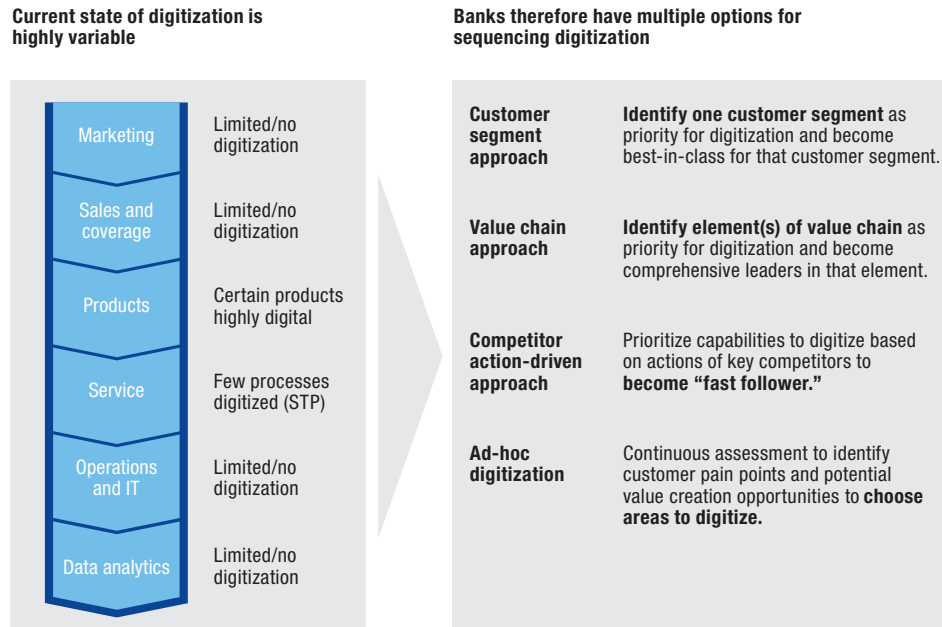
The transition to digital technologies has become a high priority for many corporates, and global banks will need to deliver. A survey by the Economist Intelligence Unit of 208 banking executives found that 46 percent consider implementing digital strategies a priority, while 36 percent said the same of responding to regulation. Leading banks have been making efforts to adapt to changing customer preferences, with initiatives focusing on specific market segments or on particular parts of the value chain, ranging from marketing, sales and coverage, products, multichannel service, operations and IT and data analytics support (Exhibit 12, page 28).

The transition to digital technologies has become a high priority for many corporates, and global banks will need to deliver.

Prime, two-hour grocery delivery) and social media in their personal lives, they question why they cannot receive similar services in the business world. They ask, “Why are my reports not up-to-date? Why don’t I have real-time access? Why does it take weeks to set up a new account?” Companies are demanding fast, flexible, convenient and ubiquitous solutions. They seek the benefits of multichannel and multibank integration coupled with real-time access and control.

Exhibit 12

Banks are pursuing very different approaches to digitization



Source: McKinsey Payments Practice

Several banks have emerged as leaders in these areas. RBS, for example, uses BizCrowd, an open online forum for procurement, to attract customers. Wells Fargo's Commercial Electronic Office product has become a one-stop-shop for businesses with \$10 million to \$500 million in turnover. And Citibank's suite of digital products includes Citi Supply Chain Finance, now regarded as one of the most advanced and stable supply chain financing solution; Citi Velocity, which is focused on FX; and Citi Direct BE, a single-access portal that can be used from 100 countries and in 24 languages across mobile, Web and app for real-time visibility and analytics, as well as enterprise resource planning integration. In

operations and IT, Bank of America has adopted SWIFT's electronic bank account management service to standardize data exchanges for account opening, maintenance and closure via XML messaging. Banks such as Deutsche Bank, BNP Paribas and Bank of Tokyo-Mitsubishi have adopted 3SKey—a multibank personal digital identity solution—to deliver a seamless channel experience across different banks. On the data analytics front, Société Générale offers simulation tools that lead customers through the financing journey and facilitate financial decision-making.

Despite this progress, there is not yet a true digital champion. No bank has holistically transformed itself across its entire

Exhibit 13

Multibank foreign exchange platforms are already disrupting the market

Illustrative examples of successful multibank FX platforms

FXall

Over 400 currency pairs
More than 1,300 institutional clients globally
Execution edge/technology focussed – 2/3 of staff in technology

360T

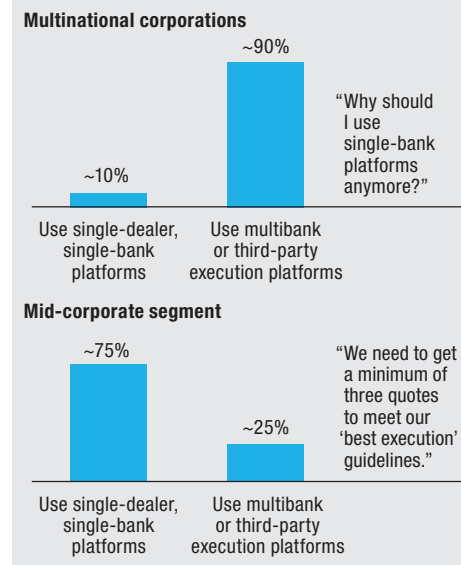
Buy-side customers in 90 countries
150 market makers in all currency pairs

FX Connect

First multibank network in 2000
More than 150 liquidity providers
55 providers connected to platform
23 out of 25 top investment managers use FX Connect

Source: McKinsey Payments Practice

90% of large corporate banks are using multibank platforms



organization and value chain. This is not a surprise, considering the varying levels of digitization across an organization and the economic realities facing banks. Banks must cope with legacy inflexible back-end infrastructures that cannot address today’s client needs, and the prospect of full-scale transformation is much more daunting for banks than it is for nimble nonbank players.

While nonbank technology players lack the scale and capability of large banks, they can quickly disrupt and redefine the customer experience. They are not subject to the legacy infrastructures and complex regulations that are typical for most banks. Some attackers have achieved respectable growth and

share of corporate treasurers’ wallets. In the case of multibank platforms for foreign exchange this is especially true (Exhibit 13). Similar examples exist in supply-chain finance, where players like Prime Revenue will likely emerge in the list of top five providers, having more than 17,000 supplier customers and experiencing 50 percent growth during the first three quarters of 2014.

As noted earlier, banks have been confronting the attacker challenge in a number of ways. Deutsche Bank recently extended the capabilities of its Autobahn app to include access to the bank’s wealth of sales, trading and research knowledge, along with seamless access to its transaction-banking services. Other banks seek

to innovate in human capital; Citibank's Citi Mobile Challenge is designed to attract and mentor new talent. Others pursue acquisition and partnership: In the U.S., BBVA Compass partnered with Dwolla to enable mass payments for small businesses, individuals and organizations. Some even establish their own venture funds for acquiring successful startups, (e.g., Santander).

To gain a strategic edge and fend off nonbank competitors, banks must recognize that digital technologies can do much more than simply automate processes. They must invest to enhance specific aspects of their businesses, but they must go beyond this to institutionalize a mindset of digital transformation, at the front and back end, that will make them more customer-centric and flexible.

* * *

Two-thousand fourteen was an exceptional year for the payments industry, with revenue growth more than double that of the prior year. That strong performance, however, resulted partially from a surging economy in Asia,

especially in China. Because that surge has already moderated to a significant degree, future industry performance will be more modest: McKinsey foresees the industry growing at a 6 percent annual rate through 2019.

While the payments outlook continues to be relatively robust, players will nonetheless need to be at their best. Rapid advances in technology and telecommunications will continue to drive change in the way people and companies do business—change that is already making legacy systems inadequate. Customer expectations will continue to keep pace with evolving technologies, thereby opening doors for innovative banks and nonbank players alike.

A quartet of potentially major disruptions will lead to an increasingly uneasy industry environment, an environment that will reward the banks and payments players that understand the payments industry and the changes in customer needs, and who can be innovative and nimble in responding to those changes.

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McKinsey's Global Payments Practice is a network of more than 100 partners worldwide serving a broad range of institutions (banks, credit card companies, transaction processors, payments cooperatives, technology firms and nonbanking firms) on strategic, organizational and operational issues in retail and wholesale payments. The practice is recognized as a leader on topics such as payments profitability, SEPA and the cost of cash, credit card strategy and marketing, cross-bank payments strategy, mobile payments and card processing.

McKinsey Global Payments Map

The McKinsey Global Payments Map has been the industry's premier source of information on worldwide payments transactions and revenues for two decades. The map gathers and analyzes data from more than 40 countries. For information on the McKinsey Global Payments Map, or to contact the McKinsey Global Payments Practice, e-mail paymentspractice@mckinsey.com.

