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# McKinsey on Payments

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*McKinsey on Payments* is written by experts and practitioners in the McKinsey & Company Global Payments Practice.

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# Foreword

Kausik Rajgopal

Welcome to the 23rd issue of *McKinsey on Payments*. This issue marks the publication's ninth year, and we look forward to continuing to deliver our perspectives on the ever-evolving payments landscape.

Our lead article (page 3) looks at a business on the cusp of significant change. In its fundamentals, correspondent banking—that is, one financial firm carrying out transactions on behalf of another—has actually altered little since it first emerged centuries ago. Today, three forces are leading to change: increasing customer expectations, regulatory demands and the emergence of digital innovators. (If this trio of forces sounds familiar, it is because few financial services sectors have been immune to their impact.)

In correspondent banking, the stakes are high. Global losses for banks of up to $230 billion (70 percent) could follow if cross-border revenue margins were to fall to domestic levels. The answer for banks is not to retrench, of course, but to harness the forces at work. Banks need a new model. This may lead to lost revenues in the short-term, as banks modernize and streamline processes and enhance the value they bring to clients. But improved operational performance and more customer-friendly solutions should lead to a balancing growth in volume.

Our second article examines consumer finance (page 11), where the interests of banks and retailers often start out in sync, but can gradually diverge as the design and operation of credit products grow apart from the aims of the retail businesses they support. Partnerships that begin by boosting sales for retailers and new customer acquisition for banks can falter as, for instance, bank and retailer views of customer creditworthiness become misaligned. New models are needed that preserve banking credit mechanisms while keeping strong links to store operations. For instance, if banks and retailers took a broader view of credit that incorporates the incremental margin from goods that might go un-

sold, it might bring them into closer alignment. Rethinking consumer finance gets trickier as markets mature, but there are ways to improve no matter the level of development.

Rapid advances in digital marketing are leading payments firms to a decisive moment, according to our next article (page 18). In order to protect their relationships with their customers, banks need to expand their value proposition to cover the full spectrum of a customer's experience to search, shop, buy and engage with products and services. With their vast stores of historical customer payments data, banks are in a strong starting position to understand buying behavior. To get to the next level they must focus on the three "d"s of data aggregation, decisioning, and distribution.

Next is an interview with the CEO of Turkey's Interbank Card Center (BKM), Soner Canko (page 25). Mr. Canko's role places him at the heart of payments innovation in the country, working with member banks towards the goal of a cashless society. He talks with us about the unique challenges and opportunities in the Turkish market, the future of payments in emerging markets, and the new National Payments System his organization helped to develop.

Our issue concludes with a look at the increasing role of application programming interfaces (APIs) in financial services (page 30). Once a tool for internet giants such as Amazon and Google, APIs are now emerging across the banking landscape–enabling transactions that do not compromise the systems integrity of the institutions involved. Many banks, however, are just now considering their approach to APIs. A good starting point is to consider which API approach—public, private or internal—is the best fit for the bank's long-term strategy. The decision will have important implications in terms of risk, technology, security, operations and economics.

We hope you find the articles in this issue thought-provoking and informative. As always, we look forward to your comments and questions.

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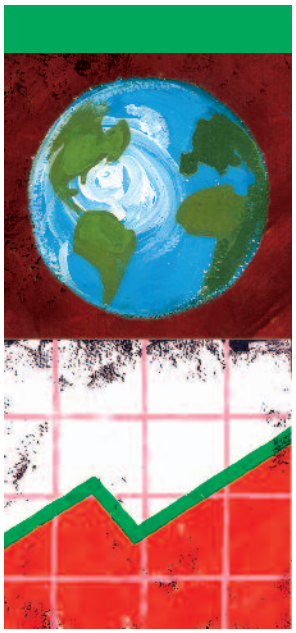

# Rethinking correspondent banking

Correspondent banking—in which one financial institution carries out transactions on behalf of another, often because it has no local presence—has been used as the instrument for cross-border payments since the time of the Medicis. The intervening centuries have brought surprisingly little in the way of fundamental change, and banks still generate considerable value from cross-border payments. According to the 2015 McKinsey Global Payments Map, these transactions represent 20 percent of total transaction volumes in the payments industry, yet they generate 50 percent of its transaction-related revenues (Exhibit 1, page 4).

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What's more, revenue margins in cross-border payments have remained healthy over time. As margins for domestic payments were squeezed by regulation and competition in recent decades, banks were forced to pare back costs and improve the efficiency of their systems and products. But cross-border payments have not yet experienced such pressures, so banks have had little incentive to work on their back-end systems and processes or to develop innovative customer offerings.

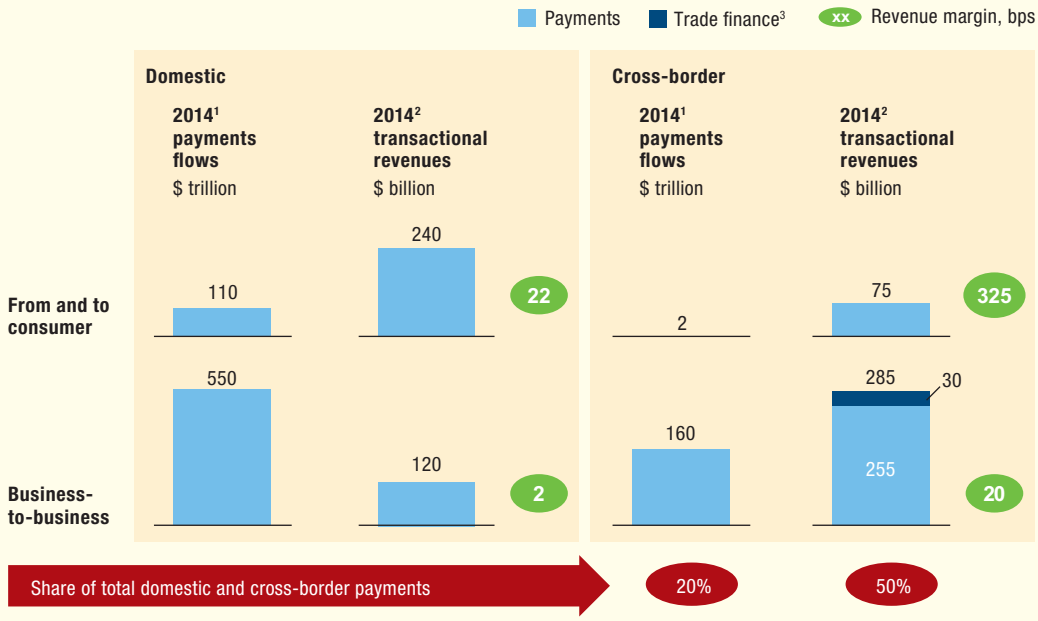
That is now changing. The traditional correspondent banking model for cross-border payments has come under acute pressure from customers, regulators and competitors alike:

- Customer expectations for real-time, digitally enabled cross-border payments are growing as domestic retail payments undergo rapid digitization.
- Regulatory compliance is driving up the cost of cross-border payments systems and forcing banks to review their correspondent relations.
- Digital innovators are attracting customers with new solutions and enhanced value propositions that threaten not only to cut banks out of their correspondent banking relationships but also to loosen banks' ties with end customers, at least where payments-related activities are concerned.

If these growing pressures were to drive cross-border revenue margins down to domestic levels, industry revenues would drop by 70 percent, inflicting losses of $230 billion on banks globally. To avert this stark

Exhibit 1

## Cross-border payments represent 20% of global payments flows but 50% of transactional revenues




[1] Excluding flows between banks.

[2] Includes transaction fees, float income and FX fees; excludes revenues not directly linked to individual transactions, mostly maintenance fees, net interest income, and incident fees related to cards.

[3] Includes fee revenue from documentary business but not revenues from trade-related financing.

Source: McKinsey Global Payments Map

scenario, banks need to embrace change and grow the market by delivering new customer solutions through far more efficient operations. This article examines how correspondent banking is changing and proposes options for banks to consider to defend and enhance their position in cross-border payments.

### Drivers of change

Three forces are driving change in correspondent banking: the customer imperative, the efficiency squeeze and the nonbank offer.

#### The customer imperative

As consumers and businesses grow accustomed to the benefits of using technology in their daily lives, their expectations rise. In financial services, digital entrants are offering products and services with thoughtfully designed user interfaces that provide a great experience in terms of transparency, convenience, price and speed. These benefits are gradually becoming table stakes for all participants in the industry. Meanwhile, domestic payments are moving to real-time solutions at marginal cost to the user. Cross-border payments have yet to embrace these developments, and the gap between customers' expectations and their experience is widening.

In fact, cross-border payments continue to be expensive, slow and lacking in transparency on both costs and delivery times. In 2015, a McKinsey survey on consumer cross-border payments found that consumers typically pay a fee of €20 to €60 on top of the prevailing foreign-exchange spread. And this fee does not even guarantee timely delivery: although most cross-border payments could in theory be executed in one to two days, the survey revealed that a typical retail cross-

border payment took three to five working days to complete.

More positively, the correspondent banking network still provides distinctive benefits to users. It remains the only solution that is genuinely ubiquitous. It can reach any country or currency and can be used by anyone with a bank account. It is also safe. Banks act as trusted providers of both bank accounts and the elaborate compliance-driven regulatory framework that guarantees necessary security for the cross-border payments that underpin the global economy.

Even leading transaction banks can no longer afford to maintain large international correspondent bank networks, and have been closing down less profitable locations.

**The efficiency squeeze**

Maintaining an open global network across many different standards and under a strict regulatory framework incurs high costs for banks, making cross-border transactions considerably more expensive than domestic payments. Even leading transaction banks can no longer afford to maintain large international correspondent bank networks, and have been closing down less profitable locations and reducing the extent of their networks. During 2013 and 2014, one leading U.S.-based global bank stated that it had cut ties with 500 network banks, mostly in the Middle East.

The complexity of cross-border transactions brings with it a relatively high failure rate. A 2015 study by Traxpay indicates that about 60 percent of business-to-business (B2B) payments require some kind of manual intervention, each taking at least 15 to 20 minutes. Major variations in account structures, messaging and bank systems generate far more corrections, investigations, returns and stalled payments than are seen in domestic payments or in payments where one party controls the transaction from beginning to end. Over 90 percent of the resulting costs are incurred in banks' efforts to manage counter-party bank relationships in the back office, rather than in the technologies and networks that handle the value transfers between banks. As a result, the cost of handling international payments is counted in dollars, not cents.

**The nonbank offer**

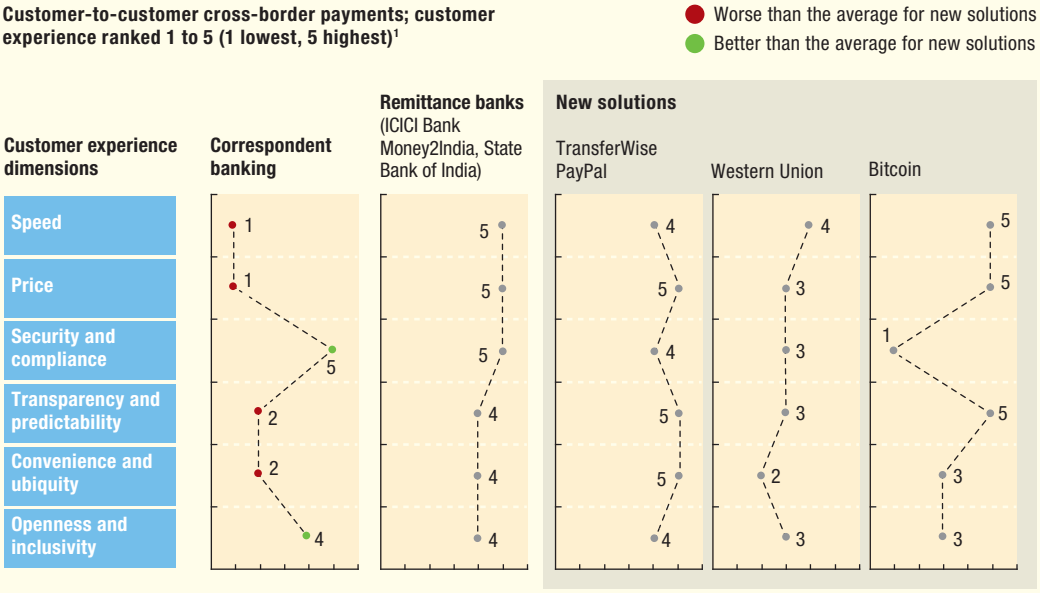
The high margins and low efficiency of cross-border payments have long attracted the attention of money-transfer operators (MTOs) such as MoneyGram and Western Union. In the past, these companies mostly targeted unbanked or under-banked consumers and differentiated their offerings by speed, convenience and predictability rather than price. They barely competed with banks, as each institution targeted different segments: banked customers and businesses for banks, and unbanked customers using cash-to-cash payments for MTOs. Today MTOs command some 40 percent of global revenues for cross-border consumer-to-consumer (C2C) payments, but less than 5 percent in the business-to-consumer (B2C) and B2B segments.

But things are changing. PayPal was the first successful digital player to threaten banks' payments business. More recently,

Exhibit 2

## New solutions outperform correspondent banking on most dimensions of customer experience

**Customer-to-customer cross-border payments; customer experience ranked 1 to 5 (1 lowest, 5 highest)[1]**




[1] McKinsey researchers acted as retail customers and transferred €100 or the local currency equivalent back and forth across a set of corridors (routes between the sending and receiving countries, such as UK to India) chosen to be representative of the market conditions encountered by customers across the globe.

Source: McKinsey Global Payments Practice

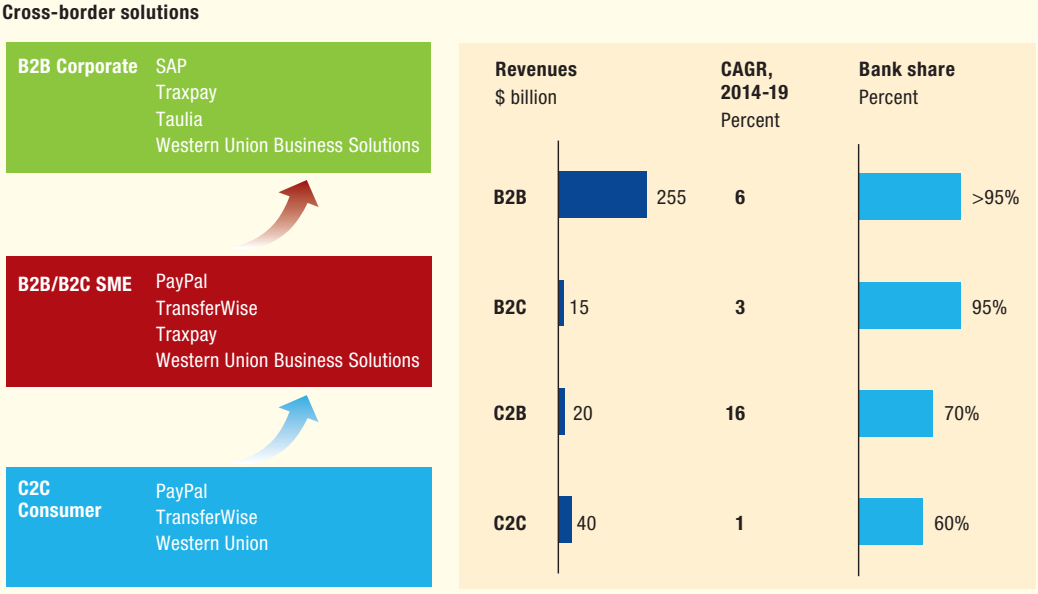
digitally enabled attackers have intensified competition by altering the ways that payments are made. Companies such as TransferWise and Xoom have gained traction with banked as well as unbanked customers by offering superior consumer value propositions for C2C cross-border transfers, outperforming traditional correspondent banking offerings on key dimensions such as price, speed, convenience and transparency (Exhibit 2). For instance, TransferWise provides full upfront transparency on fees, exchange rates and delivery time at a very low cost. Seeing the opportunity, MTOs are rapidly boosting their digital capabilities. Some banks, including India's ICICI, have also started offering customer experiences comparable to those provided by digital attackers, and are bypassing the traditional correspondent banking infrastructure.

This disruption is now moving up at an accelerated pace from C2C to business-driven cross-border payments, starting with small and medium-sized enterprises (SMEs) (Exhibit 3). Companies such as Traxpay and Taulia provide business solutions for financial supply chains that mimic the features of consumer digital offerings, including payments functions. Western Union's wu.com offers an increasing array of business services. Companies such as Earthport deliver cross-border mass payments such as payroll at lower costs using a direct link to local automated clearing houses.

These solutions often include support for integrated accounting software (as PayPal provides with Intuit), supply-chain finance or dynamic discounting (like Taulia). For trade, some solutions redefine the customer need by introducing services such as conditional payments, as Traxpay does, or alternative fi-

Exhibit 3

**Disruption is shifting from consumer to SME and corporate, where banks derive most of their transaction revenues**




Source: McKinsey Global Payments Map

nancing, like Alipay. All of these innovative offerings weaken banks' relationships with their customers.

Such moves by new players are triggering change in correspondent banking. As Exhibit 3 shows, B2B cross-border payments account for almost 80 percent of all cross-border payments revenues, and this segment is expected to grow rapidly as the economic role of SMEs expands and their supply chains fragment. For banks, maintaining their hefty share of this sector—more than 95 percent—is a battle worth fighting, especially since new rivals increasingly offer links to other services such as alternative sources of financing or fully digital foreign-exchange services.

Overall, the new wave of innovation set in motion by financial technology providers is proving unsettling for many banks, especially those with strong transaction banking franchises that have the most to lose.

## Rethinking correspondent banking

Banks are aware they need to act. At Sibos 2015 in Singapore, a session on the need to reinvent correspondent banking attracted the second-largest attendance of the week. Cross-border payments must become cheaper, more transparent and more efficient. Although change will mean forfeiting some revenues in the short term, success will bring substantial rewards in the form of structurally lower costs, higher volumes as SMEs and commerce globalize, and opportunities to cross-sell to satisfied customers.

But banks face a challenge. How can they quickly change while continuing to meet customer expectations, remain compliant and maintain their global reach? Moreover,

this is not a time for going it alone: collaboration will be key to ensuring reach and adoption. There are three major initiatives that banks need to pursue in parallel:

**1. Redefine core processes and customer value proposition**

Change is inevitable in cross-border payments. Smart banks will work to future-proof their products by accelerating operational redesign and rethinking their customer value proposition.

Banks that prepare now will capitalize on the opportunities that emerging interbank capabilities will create, including shorter cycle times, increasing cross-sell opportunities and lower operational costs.

Legacy architecture will need to be overhauled to meet the coming real-time imperative. That means reconstructing core banking platforms so that they can be updated in real time; ensuring that fraud platforms and processes can operate in very near real time; and making clearing systems capable of handling real-time exchange of information, posting of transactions to customers and funds availability. Operational changes will also be needed to move toward 24/7 availability.

Even with today's internal and interbank operational constraints, banks have ample opportunities to revisit their cross-border payments value propositions to bring them more into line with those of attackers, especially where pricing and transparency are concerned.

Banks that start to prepare now will be able to capitalize on the opportunities that emerging interbank capabilities will create, including shorter cycle times, increasing cross-sell opportunities and lower operational costs. Getting ahead of the curve will enable them to benefit from changing customer expectations, while taking advantage of the global footprints that give them a distinct advantage over new attackers.

**2. Move to correspondent banking 2.0**

Banks can already deliver payments in less than a day, and at cost levels comparable to those of attackers. However, this applies only to clean straight-through-processing (STP) payments between banks that strictly adhere to industry practices. Not all payments follow this pattern, and the exceptions dramatically increase the overall cost to the system. Increasing the share of STP payments or differentiating them from the exceptions would allow banks to bring cross-border payments to market at prices on a par with attackers' offerings, while safeguarding margins. And this could happen in a very short time frame.

To reduce inquiries and corrections and speed up payments times, banks could establish a clear set of enforceable obligations on how to initiate and collect payments, and set maximum limits on response times between banks. This could be achieved with today's technology, but would require strong commitment among participating banks and an enforcement mechanism for any failure to comply with requirements—neither of which is in place yet.

Another major improvement would be for banks to inform payors in advance about the total cost of a transaction and its "crediting" time, as well as confirmation when the beneficiary is credited. The real-time tracking of payment status would be even better. No technical wizardry would be required, but banks would need to share information, handle confirmations diligently and ensure they communicate appropriately with customers. To make this happen, banks could introduce a binding industry rulebook enforcing the sharing of standardized information across the payments journey and defining who charges for the transaction.

These modifications could usher in a new world of cross-border payments where transactions are handled in a real-time flow and delivered on the same day anywhere in the world with full upfront end-to-end pricing transparency and real-time tracking for the customer. Such a value proposition would match or even exceed those of emerging providers hampered by local infrastructure capabilities.

### 3. Investigate new infrastructure technologies with a mid- to long-term view

In this age of digital innovation, banks are paying a lot of attention to new networking technologies that promise greater efficiency, especially distributed ledger solutions such as blockchain. Such technologies bypass existing infrastructure and connect banks directly across the world, as well as provide alternative sources of settlement, such as the concepts developed by Ripple. (See "Toward an Internet of Value: An interview with Chris Larsen, CEO of Ripple Labs," *McKinsey on Payments*, Volume 8, Number 21, May 2015.)

However, solutions based on these technologies are still in their infancy. It will take time for them to achieve universal reach in destination and currencies, resolve compliance questions, and equip themselves to handle the high-value, high-volume payments required for international trade. To be valid alternatives they would also need to enable full connectivity across all countries, currencies and bank accounts worldwide—a massive undertaking.

The immediate focus of these new solutions should be on reducing banks' back-office costs rather than improving infrastructure. Early blockchain initiatives are therefore likely to focus on internal operations first.

Finally, solutions based on distributed ledger technologies still require banks to make correspondent-like agreements to define the rights and obligations of participants in these systems. Technology alone is not a sufficient condition for success. As a result, the investments that banks make in simplifying and tightening their existing correspondent banking relationships are likely to be useful even when new technology-based solutions reach maturity.

* * *

Tomorrow's cross-border payments will go beyond utility models based on legacy systems and old-school correspondent banking. They will adopt future-proof digital technologies and industry standards that promote cross-country integration and greater transaction efficiency. Such moves can help banks redefine their international networks, reduce the need for manual intervention in investigations and reconciliation, and deliver customer value throughout the transaction cycle.

These changes will mean much lower prices for cross-border payments and lower shares for banks, forcing them to review their commercial and operational set-up. However, a business with improving operational performance, more accessible global commerce solutions and better service to customers can accelerate volume growth, be more profitable, and make corporate and retail customers happier.

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# Consumer finance: Bringing banks and retailers back into alignment

Credit availability for shoppers is essential for retailers, as both a sales enabler and a profit generator in its own right—in some markets financing profits even surpass those from retail operations. Banks have likewise come to rely on retail credit as a source of customer acquisition, a lever for deepening relationships and a driver of incremental net interest margins. Credit cards are of course the most common—though not the only—tool enabling such lending, extending from closed-loop private label cards to cobrand relationships to bank-branded general purpose cards. Models such as installment plan lending and rent-to-own also fill key niches in developing and mature markets.

**Clecio Dias**

**Julio Giraut**

**Flavio Litterio**

**Emily Slota**

**Gustavo Tayar**

Despite the maturation of new channels like e-commerce and m-commerce, several basic consumer finance truths remain, and are most readily observed in traditional settings:

- Consumer finance remains the entry point to formal credit markets for many consumers.
- Retailers—both brick-and-mortar and online—still need credit offerings to establish a competitive edge as a sales lever and profitability booster.

However, as retail credit markets evolve the interests of banks and retailers can become misaligned. A case in point: the widespread availability of credit cards for consumers in many markets has removed friction from the sales process and simplified commerce for a growing segment of the population. Yet this model often distances the design and operation of credit products from the core retail businesses they are intended to serve. Retailers can lose the ability to manage credit offerings in coordination with store promotions and operations. This leads to the rejection of customers who would on balance be desirable to retailers (taking into account both credit risk and commercial margin) despite falling below banks' approval thresholds.

Moreover, the need to integrate the online and offline components of the consumer decision journey makes execution far more

complex. To maintain the effectiveness of consumer lending, and to reaffirm its initial objective of helping retailers increase sales and engage consumers, new models are needed. Such models should preserve the credit mechanisms provided by financial institutions, while tightening linkages to store operations. The path forward, however, will differ based on the stage of a given market in terms of consumer finance market maturity.

As retailers and banks pursue emerging consumer credit opportunities, their perspectives are at times aligned, paving the way for collaboration, and at others in conflict.

### The market stages of consumer finance evolution

Consumer finance typically takes hold as a given market's financial and retail sectors begin to mature. As retailers and banks pursue emerging consumer credit opportunities, their perspectives are at times aligned, paving the way for collaboration (e.g., private-label relationships), and at others in conflict (e.g., fighting for the same set of customers). The development of a consumer finance market tends to occur over four phases:

- **Incipient phase:** Limited availability of consumer finance, and little retail sector formalization. A lack of effective credit models prevents banks from entering the market in a meaningful way—there are no formal credit bureaus and limited data sources from which to draw. Consequently retailers leverage sales data to inform credit decisions. However, the sector is typically insufficiently consolidated to deliver standardized offers. Credit risk is high, but exposure limited for parties with access to data.
- **Nascent phase:** Retailers offer consumer credit programs. Consumer lending begins to be viewed as a viable business rather than a mere lever for sales enablement. As retailers assume more credit risk, they become increasingly vulnerable to macro shocks. Retailer and bank credit cards gain penetration among affluent consumers, while middle class and underbanked consumers remain underserved.
- **Maturing phase:** Established consumer lending products are offered by retailers, with the primary goal of stimulating sales. Retailers remain responsible for issuance, decision making and collections. As data becomes more widely available, banks leverage their expertise to build and deploy risk models, allowing them to issue general purpose credit cards to a broader middle-class segment. Partnerships between retailers and banks emerge as a way to serve the middle market.
- **Mature phase:** Banks meaningfully enter the consumer lending arena, usually through cobrand partnerships with retailers. The primary goal of consumer credit shifts to maximizing profit. Consumer finance becomes a stand-alone business unit, with performance targets set independently from the retail business. With equal access to credit scoring data and off-the-shelf decision models, third-party disruptors enter the market with new approaches, threatening to disintermediate banks and redirect profits from the value chain.

## One region, two stories

Chile is a prime example of a market in which retailers evolved faster than banks in consumer finance. Falabella, one of the country's largest merchants, developed a financial operation that eventually acquired a bank charter. Falabella's CMR card launched in the 1980s to address of the lack of consumer financing options, quickly becoming one of Chile's leading credit cards by offering financing options associated with loyalty programs.

In the early 1990s Falabella further explored opportunities in the financial arena, creating a bank by the end of the decade. Through the bank the retailer expanded its portfolio of products to include mortgages and auto loans, but kept its focus on consumer lending and continued to leverage Falabella's retail outlets. Many bank branches were within Falabella's stores, later evolving into independent branches.

Closely linking its financial and retail operations allowed Falabella to offer customers a unique proposition—a card with a lower interest rate than bank card alternatives, combined with a loyalty program and other benefits. At the same time, Falabella's retail operation was able to build customer loyalty and use financial information for targeted promotions. CMR is currently Chile's largest credit card issuer, with 4.6 million cards as of 2014.

The potential downside of having an independent financial operation was minimized by the scale of Falabella's business, given its predominant market share in Chile's retail sector. By chartering a bank, it was also able to diversify its portfolio to some degree, mitigating its risk.

During the same era, Brazil's consumer credit market took a different path. Until 1994, extremely high inflation all but prevented Brazilian banks from offering consumer credit. Consequently, most retailers developed in-house consumer lending operations, building sizeable portfolios. Once inflation was controlled, client acquisition became a focus for consumer banks. Retailers were attracted into bank partnerships by significant upfront signing bonuses and the prospect of mitigating future credit losses.

As these partnerships progressed, however, retailers believed too much emphasis was being placed on the financial side of the equation. Card approval rates plunged as the market matured, limiting retail sales growth.

Under this model, the core product offering—primarily cobranded open-loop credit cards—provided little incentive for customers to stay loyal to a given retailer, opening up opportunities for purchases at competitors' stores.

The financial performance of these acquired portfolios eroded for banks as well. Card-inactive and cancellation rates ballooned, keeping portfolios immature for longer and significantly stretching the payback periods for upfront acquisition costs. Both banks and retailers grew unhappy, suggesting the need to explore new partnership models rebalancing bank and retailer interests. Banks have pulled out of most small and medium retailer partnerships; meanwhile, retailers with sufficient scale have been looking to redesign their bank partnerships or, failing that, to restart their internal financial operations. With a stronger foundation established upfront, such turmoil could have been averted.

There are variations to this pattern, of course. When banks grow in sophistication more rapidly than retailers, outright sales of consumer credit portfolios can occur. For retailers, such portfolio sales further widen the gap between the credit function and the core business, negatively impacting the consumer finance value proposition on two fronts. Retailers can no longer leverage consumer lending to enhance the profitability of their core business. They also lose the ability to use consumer lending to boost sales during hard times, as banks typically hold the final say on credit decisions and lack incentive to sacrifice financial profitability to support the retail operation.

Conversely, when retailers evolve more rapidly than banks, they can be emboldened to enter retail banking directly. While retailers may find this scenario appealing in concept, they must overcome some significant challenges to make it work. First, retailers often lack the operational scale and capabilities to match banks' efficiency in financial functions such as credit, collections and processing, not to mention regulatory and compliance issues. Retailers also have access to fewer sources of capital, and thus face challenges in funding financial operations at competitive cost structures.

Since retailers and banks will naturally have different business objectives, a flexible ownership structure of consumer finance operations is required for an integrated approach to take hold.

Retailers face another challenge in risk management, managing credit portfolios far less diversified than those of banks. This leaves retailers more vulnerable to economic downturns—as demonstrated in the early 2000s when many of Brazil's retailers were forced to sell their consumer credit portfolios to banks, or after the 2008 financial crisis when several U.S. retail issuers (including Target and Kohl's) sold their portfolios following bouts with charge-offs.

### The makings of a new model

There are compelling reasons to maintain tight integration of consumer finance with retail operations, creating benefits for all parties—banks, retailers and consumers.

When deciding to extend credit to a consumer from a purely financial perspective—the norm when retail and financial services businesses grow apart—both banks and retailers miss out on the incremental margin from goods that otherwise go unsold. This factor alone, if incorporated into decisioning, can justify increased approval rates for retailers with a large sub-prime consumer base.

Partnerships between retailers and banks have ample win-win potential. Banks possess the scale and portfolio diversity to better absorb credit losses, de-risking retailers' operations. Additionally, the opportunity for retailers to cross-sell and up-sell clients deemed low priority for standard credit and banking products is too lucrative to dismiss without further analysis. The key is identifying actionable measures that prioritize long-term customer value across both sectors, rather than merely the projected value of the financial relationship.

Since retailers and banks will naturally have different business objectives (much of the gap can be attributed to regulatory mandates on banks to standardize credit processes, for instance), a flexible ownership structure of consumer finance operations is required for an integrated approach to take hold. Partnerships continue to make sense, perhaps complemented by more independent retailer-owned operations.

A holistic decisioning approach requires a credit product portfolio extending beyond cobranded cards into installment plans and open-loop cards. Retailers (or banks) may not be comfortable with the risk of extending monthly renewable credit lines for some

customers, but may be willing to finance a single purchase, or to require a couple of payments before delivering a valuable good. These alternative financing methods, when properly combined and implemented, can dramatically increase approval rates among sub-prime clients (Exhibit 1).

Commercial prices and interest rates can be jointly set for financed goods, displayed as a monthly installment amount rather than the full price for consumers financing their purchases. In this fashion, commercial prices can be adjusted for consumers who do not need financing, enhancing retailers' competitiveness across segments.

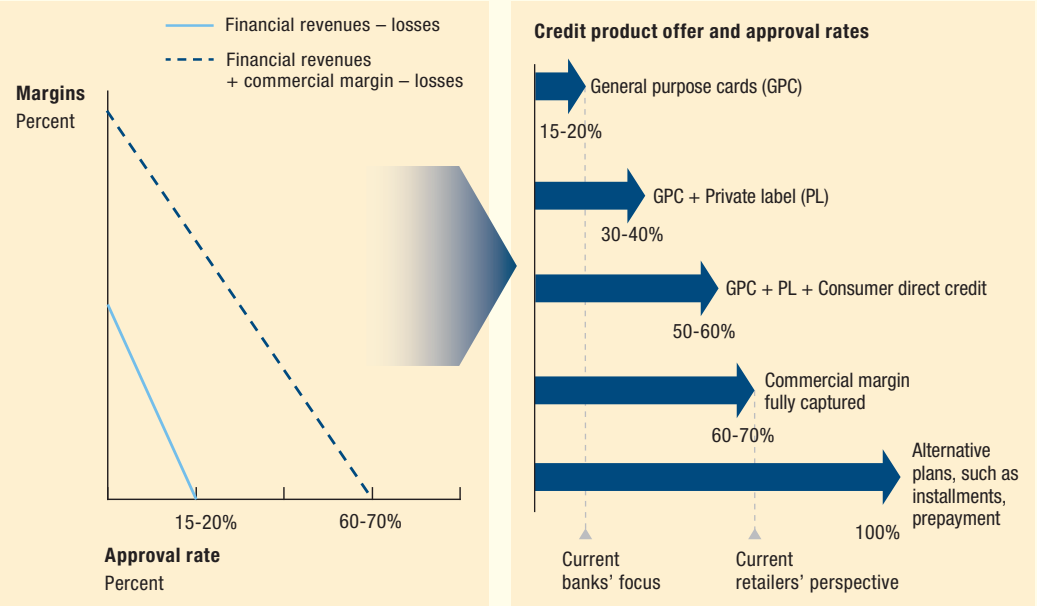
New advanced analytics solutions and digital interfaces and processes are capable of supporting an integrated view of consumer finance, not only from a credit decisioning perspective, but also in terms of customer engagement, infrastructure and the retailer-bank relationship (Exhibit 2, page 16). Customer relationship management and loyalty programs can be designed in an integrated fashion, rewarding both brand loyalty and desired client payments behavior.

## The way forward

In *incipient markets*, where banks and retailers are relatively underdeveloped, the goal of building a market is shared and straightforward. Retailers and banks begin to craft partnerships with clear rules of engagement, documenting future roles and objectives as the market evolves. These partnerships should be basic, with simple products and straightforward operations. Three factors characterize an effective partnership:

Exhibit 1

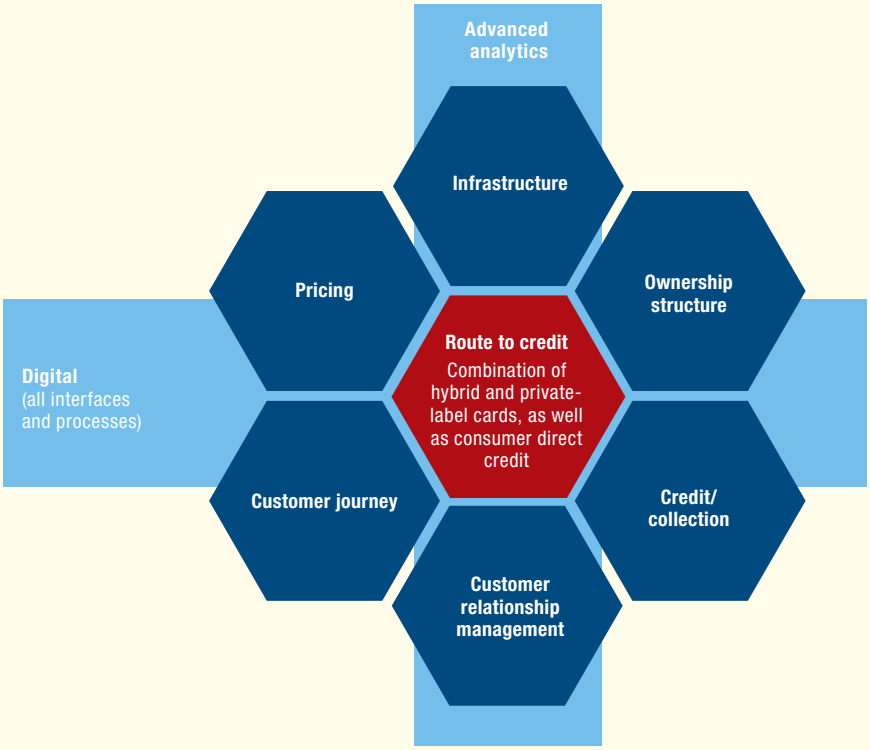
**An integrated margin perspective allows for higher approval rates**




Source: McKinsey analysis

Exhibit 2

**Advanced analytics and digital interfaces can support an integrated view of consumer finance**




Source: McKinsey & Company

- Clear responsibilities for both parties
- Clear and aligned ambitions in terms of retail support, integration and financial results. Partners should define the breadth of financial products, design and agree to high-level financial and commercial models, and build a business case
- Simple commercial processes/tools and credit, collection and pricing models

In *nascent markets*, partnerships should strive to optimize their operations, focusing on developing key capabilities. Retailers need to develop distinct products for different consumer segments and customers with diverse credit profiles. The ability to provide targeted offers (value-added features, pricing, payment conditions) becomes a key differentiating factor as competition grows. As retail operations move online, consumer lending capabilities must evolve to ensure a consistent customer experience.

To strengthen credit, collections and cross-sell models, retailers must develop robust data architecture, a structured process for data-gathering and cleanup, clear use cases, and either the right in-house analytical talent or the right partnerships.

In *mature markets*, the challenge shifts to the banks. With increasing credit penetration and heightened competition, banks

must innovate to maintain gains and competitive advantage. They should explore opportunities to enhance consumer loyalty and leverage dynamic pricing at the point of sale (POS). A review of differentiation strategies for prime versus sub-prime clients is worth exploring. It will be essential for banks to pursue new avenues of growth, such as offering consumer finance solutions to smaller retailers to increase market reach. Integrated POS solutions will make infrastructure available to do so, and merchant acquirers can become a promising channel for distribution.

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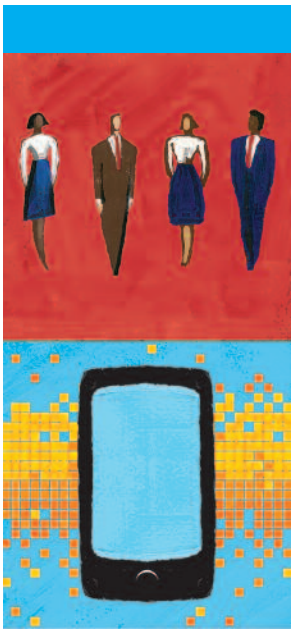
Through its evolution consumer finance has diverged from its original purpose, with the retail and the financial components growing apart. The time is ripe for a new model—enabled by innovative technologies—that better integrates the financial elements of consumer lending (e.g., credit and collections) and core retail activities such as store operations and loyalty, while also integrating online and offline commerce. This new approach will encourage ongoing partnerships between retailers and banks, and result in better offers for consumers.

**Clecio Dias** *is a senior expert,* **Flavio Litterio** *is a partner and* **Gustavo Tayar** *is an associate partner, all in the Sao Paulo office.* **Julio Giraut** *is an associate partner in the Bogota office, and* **Emily Slota** *is an associate partner in the Lagos office.*



# Digital marketing transformation: Payments at a crossroads

Technology has been slow to deliver on the promise of one-to-one marketing, in part because innovations have been a challenge to digest. However, powerful analytical tools and the near ubiquity of smartphones and tablets in developed economies are enabling organizations of all sizes to create highly personalized digital shopping environments and address individual customer needs and preferences at scale. The new competitive threats and opportunities accompanying these advances have led payment incumbents to a crossroads: They must now decide whether to remain focused strictly on payments (and banking) or more broadly on retail marketing.

Jason Heller

No matter how broadly or narrowly payments firms decide to compete in the digital ecosystem, personalized marketing will be critical for strengthening customer relationships, and to get it right banks and other payments organizations must organize their technology, processes and people around the three "d"s of data aggregation, decisioning and distribution.

### Digital is where the growth is

Most banks now recognize that digital will be the central channel for engaging individual customers. Already, 80 percent of purchases are digitally researched in some way. By 2020, one in every five dollars of consumer spending will be transacted digitally—online or by mobile phone. As the technology continues to evolve and consumers increasingly prefer digital tools, payments will be seamlessly integrated within a highly personalized shopping experience, where, for example, a single click takes care of initiation, authentication and authorization (Exhibit 1). The strength, durability and profitability of customer relationships will depend not only on how well various channels—branch, ATM, online and mobile—are integrated, but also on the bank's ability to engage individual customers with highly personalized and relevant interactions.

### Keep it simple or go on the offensive?

Advocates of the narrow focus on "payments" will say, "keep it simple, stick to the basics of lending, deposits and transactions." Banks, after all, still own the payment, and performance is strong. Despite 20 years of rapid change brought by technological innovations, regulatory challenges and market upheaval, the old operating model still serves. And today mobile payments are barely 2 percent of total consumer spending. The payments business is strong, representing a growing share of total banking revenues, and ROI is good.

However, ROI is not the only metric, and a smooth-running back-office may find itself living a Kodak moment. Digital disrupters, including Alipay, Amazon, Apple and Tencent, are threatening traditional banking relationships by building payments habits among consumers and providing low-cost marketing, payments and even financing capabilities to merchant organizations of all sizes. Small challengers, from Stripe to Starbucks, are also gradually capturing revenue and are increasing market share at the expense of long-established payments services providers.

### Owning the payment is key in the digital ecosystem

These challengers aim to control the entire user experience, including the interface between consumers, merchants and the clearing and settlement networks. Data-driven marketing organizations understand that with the right analytical tools the payment is the key to recognizing which search behaviors result in a purchase decision. This strategically vital insight positions them to win customers

Exhibit 1

**The U.S. digital payments environment will undergo rapid transformation between now and 2020**


Source: McKinsey Global Payments Practice

with compelling offers, discounts and loyalty benefits. The ability to craft winning offers at scale also enables them to collect marketing fees from merchants.

To protect their relationships with both consumers and merchants, banks and other incumbents must adopt personalized marketing. In the digital world, building highly relevant and emotively appealing experiences is essential to keeping customer relationships dynamic and profitable. Personalization supports this goal of dynamic engagement on three levels: functional (addressing specific information and transaction needs), emotive (appealing to the customer's personality) and social (supporting interactions with peers and merchants as well as with the payments service provider). In addition, the measurable benefits of the personalized approach are significant: increased customer loyalty, lower costs for new customer acquisition and revenue increases of up to 20 percent.

Banks should reach beyond the payment and compete for share of total marketing revenue. This means expanding the value proposition to include both payments and marketing along the full shopping continuum.

To illustrate how the narrow payments offering would take shape in a digital banking app, functionality would be limited to primary deposit and credit card accounts and payments services, including person-to-person, bill payment, online, in-app and in-store payments. A program of medium scope would extend to other areas of financial services, including mortgages, insurance and investments. Again, the first task is to define the scope of the digital payments offering (or payments "wallet"). To what extent should it be incorporated within a banking app or, alternatively, stand alone as a separate app (e.g., a robust digital wallet)? As an indication of the importance of digital payment capabilities, digital wallets are expected to account for significantly higher digital transaction value than card-on-file and key-entered payments by 2020 (Exhibit 2).

While one-to-one marketing in the narrow and medium programs would enable a bank to anticipate individual customer needs within a familiar range of financial services (e.g., for credit, investments, mortgages, insurance), the bank will in all likelihood find itself continually on the defensive, as data-driven challengers constantly attack the payments offering, seeking to win customers with stronger, more relevant offers and benefits.

To counter, banks and non-bank incumbents should reach beyond the payment and compete for a growing share of total marketing revenue. This means expanding the value proposition to include both payments and marketing along the full breadth of the search-shop-buy-evaluate continuum. A number of banks are repositioning their payments offering within the broader retail shopping experience, for instance, by serving as a personalized marketing channel for sellers and a shopping assistant for consumers. The revenue gain from this aggres-

sive strategy can potentially far exceed the 20 percent increase that some companies have achieved with one-to-one marketing.

Whether an organization's payments strategy is primarily defensive or aggressive, to compete in the digital ecosystem requires optimizing data assets within the "3-D" framework: data aggregation, decisioning and distribution.

## Optimize data assets within the 3-D framework

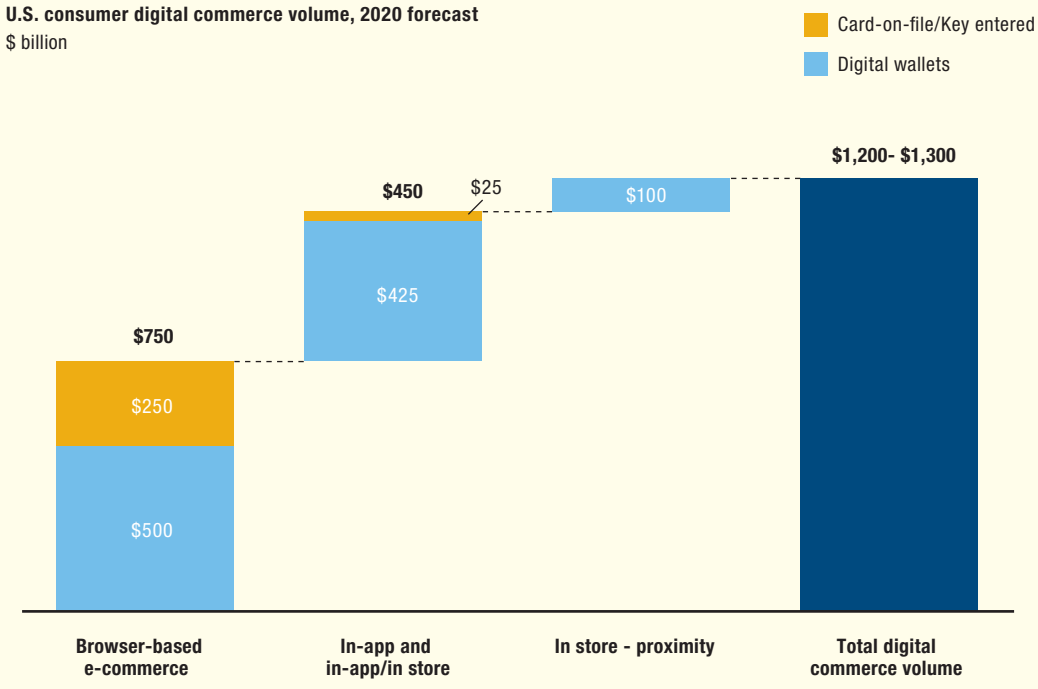
Banks and non-bank payments organizations have highly valuable data, and their data stores are growing exponentially due not only to more frequent interactions through digital channels, but also to the steady growth in electronic payments volume. The amount of data appended to the payments transaction is also growing. With their vast stores of historical data, banks in particular have unmatched potential to understand how different types of customers spend: where they shop, how much they spend, how often and how they fund their purchases.

However, their ability to take advantage of personalized marketing in a cost-efficient way is hampered by gaps in each area of the 3-D framework.

**Data aggregation:** In the area of data aggregation, traditional payments organizations must find ways to gain a real-time view

Exhibit 2

**By 2020, the primary digital spend battleground will be in-app and e-commerce**




Source: eMarketer; Forrester; McKinsey analysis

of the customer journey from one transaction to the next. They can partially fill this gap by incorporating data from external, third-party sources into their analysis (e.g., appended data from partnerships and marketing technology and data vendors, including aggregators, social media, search engines). In addition, banks should increase the frequency of digital interactions with their customers. Digital wallets, as distinct from banking apps focused mainly on current accounts and monthly bill payments, are one way to establish daily interactions with customers.

The acceleration of messages into the pipeline and the continuous feedback from the customer in the form of search histories, response rates for messages and offers, and purchase behavior results in a digital engagement that is increasingly responsive to individual customer needs.

**Analysis and decisioning:** Data analytics is another area where banks have clear strengths, for example in credit card fraud screening, monitoring account activity and know-your-customer review. But banks are only scratching the surface and must go beyond conventional approaches to market segmentation (e.g., based on needs and preferences) in order to recognize patterns that precede a transaction and identify triggers that are likely to accelerate a purchase. This means using the diverse data points (starting with age, income and location, but also including spending history, current search history) generated at each customer interaction (search and comparison, social media, as well as direct interactions through the bank's digital channels) and then crafting the right message to be delivered at the right time through the right channel.

**Distribution:** The third area of the framework is distribution. The ability to deliver messages (and collect customer feedback) through any channel—tablet, ATM and connected appliances—is crucial. In addition to familiar channels such as email, text message, Web browser or call center conversation, customers can be engaged through connected TV and even the refrigerator. Wallets and other digital banking apps are two-way channels, serving as a conduit for pushing messages and collecting data. The acceleration of messages into the pipeline and the continuous feedback from the customer in the form of search histories, response rates for messages and offers, and purchase behavior results in a digital engagement that is increasingly responsive to individual customer needs. This dynamic interaction gives the customer measurable advantages: faster, smarter purchase decisions; highly competitive pricing (e.g., discounts, loyalty rewards); as well as security and convenience.

## Complexity and agility

The three "d" framework is deceptively simple in concept, but entails complex and difficult changes in technology, processes and human skills and culture.

Starting within the retail bank, the priority should be to establish a holistic view of

customer interactions across current accounts, loans and credit cards. The fastest data exchange and greatest cost efficiency are achieved by integrating retail banking platforms, from back-office production, middle-office functions such as service and compliance, and front-office sales and marketing. Ultimately, the digitization effort should span the entire enterprise, including mortgage lending, investments and insurance, which pays off not only in improved cost efficiency but in the strongest possible understanding of customer needs and behaviors.

With 1,900 companies in 2015 and nearly 4,000 today, the vast field of potential marketing technology partners can make the review and selection of the right provider a daunting project.

Integration with third-party platforms is another important consideration, particularly where partnerships are necessary to fill gaps in data stores, performance measurement capabilities or distribution channels.

With 1,900 companies in 2015 and nearly 4,000 today, the vast field of potential marketing technology partners can make the review and selection of the right provider a daunting project. Some providers specialize in familiar but fast-evolving functions such as CRM, marketing automation and lead management; others deliver more recent innovations, such as mobile marketing, social media marketing, video marketing, loyalty and gamification.

In some cases, an institution may choose to serve as a third-party aggregator for other financial institutions and retailers. Increased reliance on third parties requires careful planning to build automated data exchange with the proper filters and segregation to ensure the security of data stores and the privacy of customer information.

The new technology architecture brings changes in skills and culture as well, as automation frees developers, marketers and sales and service representatives to focus on resolving more complex issues. Digitization also allows for an agile approach to product innovation. For example, a digital wallet prototype could be designed to appeal to key personae such as “mobile moms,” “mobile execs” or “tech-savvy Gen Xers.” Live testing in the niche markets allows for the gradual addition of new functionality as the prototype passes predefined benchmarks for operational reliability. In the case of a digital wallet prototype, added features might include hybrid funding options combining current and credit card accounts, loyalty points and coupons—all based on information from various loyalty programs and financial services providers stored in the wallet—in order to lower the cost of the purchase. Once the prototype reaches scale in the niche market, the app can be rolled out to larger segments, again with the incremental addition of features designed for different types of users.

* * *

Going forward, digital channels will serve as the heart and circulation system of customer relationships, and personalized marketing at scale will be the baseline requirement for keeping these relationships dynamic and

profitable. In order to maximize the profitability of the organization's marketing and relationship management activities, banks and other payments service organizations must optimize their vast data assets around data aggregation, decisioning and distribution. Success depends both on extending automation and digitization to the furthest links of the value chain and on developing human skills and an organizational culture focused on creativity, innovation and continuous improvement. Finally, this digital transformation will push bank and nonbank payments incumbents to a crossroads where they must define the scope of their offering to consumers and merchants.

**Jason Heller** *is a senior expert in the New York office.*

# At the forefront of payments innovation: An interview with **Soner Canko**, CEO of Turkey's BKM

Soner Canko is the Chief Executive Officer of Turkey's Interbank Card Center, or BKM. BKM was launched in 1990 by a group of 13 Turkish banks as a service provider for clearing and settlement. The organization's role has evolved since then, and its primary mission today is to support the future of cashless payments in the country, and to add value through seamless and secure payments solutions.

*McKinsey on Payments* spoke with Canko on a range of topics related to the Turkish cards market and the many ways that BKM is helping to foster innovation.

**McKinsey on Payments:** To start, can you talk a bit about what makes Turkey's payments ecosystem unique, and the particular challenges in the market?

**Soner Canko:** Sure. Turkey is a heavy cash country, having one of the largest shadow economies in Europe. Fifteen years ago, only 9 percent of total household consumption was conducted via cards. Today this ratio has almost reached 40 percent, with a dramatic rise in recent years. However, cash payments still make up a great portion of the economy, with a total cost of more than 4 billion TL (~US$1.3 billion) per year. This cost includes printing and distribution costs to the government, distribution and management costs for institutions, fraud costs, as well as financial costs. Heavy use of cash feeds the shadow economy, which paves the way for fiscal evasion and reduced tax revenues. So card payments are not only practical, but they are a way of fighting against the shadow economy. We're developing a loyal cardholder base that uses cards habitually and forces merchants to accept cards.


**MoP:** Over the last 10 to 15 years, Turkey has become one of the top three credit card markets in Europe in terms of total credit cards, debit cards and point-of-service machines. What has been driving this growth?

**SC:** I would call it the three "I"s: *investment, innovation, inclusion.* To begin, Turkey's banking industry began investing heavily in cards during the years of hyperinflation, as they were the only retail credit instrument. During the 1990s, inflation rates fluctuated between 70 and 100 percent, and this continued until 2003. This led to immense interest rates, especially for long-term retail loans. So retail loans such as mortgages could not grow in that period. However, credit cards are short term and free credit instruments. Banks also offered free installments up to 24 months to cardholders. Considering yearly 100 percent interest rates, the two-year free funding was a great opportunity for consumers and a significant driver of growth in cards.

Next, because it has a very young population open to new products, Turkey is a center of innovation for payments. Retail consumption forms almost 70 percent of Turkey's GDP, which is growing thanks to rising consumption.

**MoP:** What are some of the innovations that stand out?

**SC:** Turkey was the first country to offer totally free installment options for credit cards, the first European country to offer a contactless card, and to accept contactless cards for highway tolls. Turkey was one of the first to finalize EMV migration, and, finally, we have the only digital wallet that covers the whole banking industry. Every large retail bank is a member of BKM Express. We also have very sophisticated loyalty practices.

**MoP:** Can you elaborate a bit more on innovation in loyalty?

**SC:** Loyalty programs are a key factor behind the dramatic growth in the business. Banks started to offer free points to their customers in the 1990s. The more you spend, the more you get. Percentage of free points also increases according to the type of card. For example, if you have a gold card, you earn more than a classic one. If you have a platinum card, you earn even more. There are lots of partnership programs as well. Airlines are the most widely used. You earn miles for your payments and redeem them in order to buy tickets from that airline. There are also partnership programs with railways, bus companies and gas stations.

**MoP:** What about the third "I," inclusion?

**SC:** Yes. Another reason for Turkey's rapid growth in card penetration is that unbanked customers, including students, mostly are introduced to banking via cards. As I mentioned, there is still a considerable part of the population that does not take part in banking business. This is mostly due to their income level, which makes it impossible for many people to meet the minimum deposit level for banks. It is also risky to give loans or offer credit cards to these unbanked consumers. So pre-paid cards become the bridge to inclusion. They are often offered as scholarship payments to students, and are also distributed for poverty payments.

**MoP:** Let's talk about BKM and its role in the evolution of Turkish payments market. How did BKM's role change over time?

**SC:** Certainly. BKM was founded as a service provider for clearing and settlement in 1990, as a subsidiary of banks operating in the payments business. Over the years, other services essential for the cards business were added as core functions, such as a national switch system and a 3D secure system.

**MoP:** Can you briefly explain the 3D secure system for those of our readers not familiar with it?

**SC:** 3D secure means three-dimensional authentication. First is the card number, second is the 3-digit cvv2/cvc2 code at the back of your card, and the last is a one-time password sent to your mobile phone via SMS. This password fully secures the transaction. Even if your card is lost or stolen, it cannot be used in an online transaction.

**MoP:** So how did BKM develop after this point?

**SC:** In 2010s, BKM changed shell and the company evolved from a services provider into a market leader. In the first 20 years our vision was "to be a system-level services provider, aiming at improving the card payment system infrastructure for the benefit of all member banks at minimum possible cost." Then, five years ago, we embarked on a restructuring project with the help of McKinsey, and the mission evolved to "powering the future of cashless payments," meaning that BKM will develop projects to expand card acceptance and increase card usage in payments. This was a significant change and it was not easy to adapt to such a transformation.

The number of employees tripled in a few years' time during this transformation, and this is also when I joined BKM. As we aim to reach our goal of cashless payments in Turkey, and as we develop new products and functions, we are entering new areas and require additional resources. Finding the right talent is always a challenge. We are always looking for people who work with passion and are resilient. Entrepreneurship and accountability are integral parts of these skills as well.

As we progressed we made a number of innovations, some of which I mentioned earlier. We launched the world's first national digital wallet. Public transport payments started to be made with contactless cards. We developed several e-government projects and continue to develop ways to make Turkey a more cashless society.

**MoP:** Which of these projects was most fulfilling or challenging?

**SC:** We built a payments gateway for Turkey's Social Security Institution enabling collection on their website with banking cards. It is one of our most fulfilling projects with government institutions. Cardholders can make payments with their cards, banks can apply surcharges and government institutions can increase their collections with the convenience of card payments. Working with government institutions can be challenging because the terms of the projects are subject to special legislations. This affects everything from contracting to pricing, and government projects are always more costly in terms of time, money, infrastructure and operational costs.

BKM builds single integration and infrastructure for government institutions and banks for card transactions. These projects, such as contactless banking card acceptance in transportation or online or offline public collections, connect all banks that are qualified and willing to participate. And public satisfaction increases as convenience increases.

We're also proud of the Konya transportation project, which enables all contactless card transactions in public transport for both domestic and international cards. Turkish citizens and tourists alike can use their existing contactless cards for transportation without the hassle of acquiring city cards and printing transport tickets. Enabling card payments in transportation also increases cardholders' daily usage and frequency.

**MoP:** And there is BKM Express.

**SC:** Yes, BKM Express is currently the market leader among the digital wallets in Turkey, with more than one million members. There are more than 1,000 merchants, which covers half of the e-

commerce ecosystem. Eighteen banks are members, which means that 99 percent of cards in Turkey can be used for payments via BKM Express.

**MoP:** Why do you think this has been so successful?

**SC:** There are a number of unique features. For example, in terms of security, users never need to enter their whole credit card number for any transaction, even while registering. And every BKM Express transaction is fully secured with OTP authentication. Users also gain loyalty points that they can later redeem for purchases made with BKM Express. They can send money from any bank account or credit card to any other bank account or card at any time, day or night.

We knew that two of the most important problems for e-commerce customers are security and convenience. They buy online because they want to buy quickly and at the same time they don't want their card data stolen. BKM Express provides customers with a seamless and secure payment solution.

BKM Express was built by Turkish banks together with the prominent e-commerce brands. We knew that with this level of cooperation in the ecosystem the venture would be successful. We worked with e-commerce software developers, payment facilitators, mobile application developers, e-commerce product search platforms and e-commerce firms. We explained our goals to the regulatory agencies and got their support. And thus, every feature of our product (which has evolved over time) has been quickly acknowledged by the industry. BKM Express' first feature was e-commerce payment. Then we introduced money transfer, mobile and in-store payments.

**"Especially in emerging markets, national payments schemes are the most effective structure for increasing financial inclusion among unbanked populations."**

**MoP:** How is BKM different from national payments institutions in other countries?

**SC:** BKM's is at the center of all card payment transactions in Turkey. BKM is unique not only in being the national clearing and settlement agency for all domestic transactions but also for being an incubation center on behalf of the cards market. We also facilitate governance of the Turkish payment market through policy-making and rule-setting.

**MoP:** Can you describe the National Payments System that BKM is currently working on?

**SC:** TROY provides a range of products and services developed specifically for the benefit of the Turkish market. The idea was to shorten "go to market" time for innovative products and to enlarge freedom of capabilities. The main drivers of the card scheme were the biggest issuers/acquirers. BKM was the natural place to assess and incubate this idea.

Our aim is to provide all the latest technologies in the TROY scheme. Fast, secure, EMV, mobile, online and physical payments will be supported.

Building a card scheme requires managing a huge ecosystem. You have issuers/acquirers, card manufacturing and personalization companies, POS and ECR companies, software development companies and regulators. Every issuer/acquirer and all regulators are supporting TROY.

We have now completed all technical, functional, governance and regulatory requirements, and have been in the market since April 2016.

**MoP:** How do you see the role of national payments systems developing, particularly in emerging markets?

**SC:** The need for alternative solutions, which will also address local requirements, is growing in emerging markets, and given their reach and size, global schemes do not necessarily respond to local needs in a timely way. National payment schemes can better address local requirements, and deliver products suited to local markets faster and integrate with other players in the ecosystem easily. So I think that, especially in emerging markets, national payment schemes are the most effective structure for increasing financial inclusion among unbanked populations.

**MoP:** Can you describe BKM's relationship with your shareholder banks? Do they ever see your activities as competition?

**SC:** BKM is in a way a collaboration center for banks. Banks both compete and cooperate within the "borders" of BKM. We use the term "coopetition" to describe the current structure. Our members compete for market share gains and to give better service for customers. On the other hand, they cooperate to define market standards, to diminish fraud and to expand card usage.

BKM itself is neither a player in the market nor a competitor for banks and their products. Even in our marketing campaigns we highlight the payment systems, digital commerce or card usage instead of our products because success for us means attaining a cashless society, not increasing usage of BKM products or services.

**MoP:** How do you see the future of payments, particularly in emerging markets?

**SC:** Cards continue to be a form factor in brick-and-mortar commerce because of their convenience and security. However, e-commerce and recently m-commerce are growing, and at a higher pace. I expect we will be seeing more smartphone usage in the near future. At some stage, smartphones will be used in stores instead of cards. NFC projects and HCE developments will make smartphones a contactless payment device.

**MoP:** Do you believe that non-bank players entering the payments market provide strong competition against banks?

**SC:** The banking industry has a very strong image in Turkey. Our banks provide sophisticated products and services that are viewed as best practices abroad. Particularly in online and mobile banking, Turkey is ahead of many other markets. From this perspective I think that banks are likely to keep their position.

However, customers always benefit from competition, and Turkey's unbanked and underbanked populations provide a significant opportunity for non-bank players. If these players can bring successful new business models to market it could change the dynamics of the industry. In this case, banks will need to reassess the value they create for their customers and develop new offerings accordingly.

**MoP:** What are BKM's plans for the future?

**SC:** Well, every project we have is an ongoing one. So every project I mentioned will continue to expand. BKM Express will cover the whole ecosystem and become the payment method not only in digital commerce, such as in-app purchases, but also in store payments via QR code scans, biometric payments, and so on.

We expect that TROY will be the market leader in domestic transactions, and that micro payments will be done with contactless cards and devices.

We will continue to pursue our mission to increase card acceptance and usage. We believe every mobile phone will be smart and have the capability to both make and accept payments and we plan for BKM to pave the way.

# Payments and the rise of API-driven banking

An application programming interface (API) is a set of standards designed to enable computers to communicate across large networks, such as the Internet. APIs have been major contributors to the success of such companies as Amazon, Google, Netflix and Twitter. And now, led by the global trend toward digitization in banking and payments, they are establishing their presence in financial services. For the banking and payments industry, 2015 was clearly a year of API experimentation, and McKinsey believes that 2016 will be a critical time for banks and payments organizations as they devise and solidify their individual API strategies.

Vishal Dalal
Grace Hou
Kausik Rajgopal

## Opportunities and challenges

APIs are essentially software programs that function as contracts between other software applications, enabling and controlling the ways in which those applications can interact (Exhibit 1). Because they are typically designed to interact with various types of computer systems, databases and Internet communications services, they can significantly ease the task of creating the kind of business and consumer-oriented apps that customers increasingly demand. Google Maps, for example, is a free API that makes it easy for software developers to incorporate Google's sophisticated mapping capabilities into a diverse range of websites and smartphone apps. In 2013, the company reported that more than a million active sites were using its Maps API.

APIs have now established a foothold in financial services. Consumers can use apps like Digit for their savings, Wealthfront for investing and Venmo for payments. Each of these apps uses APIs that enable the execution of certain types of financial transactions without compromising the systems integrity of the associated institutions. Despite the recent inroads of APIs, however, most banks remain hesitant to engage with third parties that require direct links with the bank's customers. To transfer funds or apply for credit cards, for example, customers often must still visit their bank's branch office or website.

Businesses and consumers alike, however, have grown accustomed to the convenience and immediacy that apps are bringing to many aspects of their daily lives, from managing inventory and security systems to buying concert tickets and making restaurant reservations. And software developers are taking notice. Yodlee, Xignite and other companies now offer financial services providers one-stop-shopping for APIs and other industry-related solutions. Notably, their targets include potential market entrants as well as established incumbents.

Payments APIs, in particular, are expected to become significant enablers of e-commerce growth. Before their emergence, the only alternative for merchants wanting to accept online payments was costly integration with a payments gateway, or redirecting customers to an online payments provider—a less inconvenient option. With the advent of payment APIs, e-commerce merchants can use industry operating standards to link with PayPal and other payments providers, thereby offering multiple payments options right on their own websites, without the cost of developing systems integration coding.

## The emerging developer channel

One advantage of APIs is their ability to foster a unique ecosystem. This means organizations that have their own banking or payments software platforms can provide APIs that various types of third parties can use to develop new and innovative applications. Prospective user groups include internal IT and technology-savvy business users, and, increasingly, external developers. External developers are becoming especially adept at using core APIs offered by banks and payments organizations. They use them

Exhibit 1

### An overview of APIs

**APIs are programmatic interfaces that expose corporate data assets such as products, prices and availability. Internal or external developers can use the APIs to create websites and apps.**

For example: If an insurance company exposes an API to get quotes, a developer could write a quote comparison app using that API in combination with APIs from other insurers.

**Three types of API business models**

**1. Public/Open API**

APIs are used by external partners and developers to build innovative apps

**2. Partner/Business-to-Business**

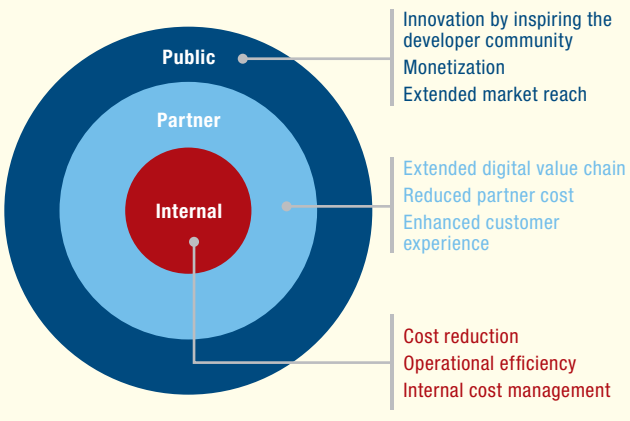
APIs are used by business partners, including suppliers, providers, resellers and others

Tighter partner integration for extended market reach

**3. Internal**

APIs are used by internal developers within an enterprise

May include external contract developers but the targeted projects still remain inside




Source: McKinsey & Company

to design new apps and web pages, some of which can draw data from diverse sources and integrate it to provide new services. Offering APIs to external developers is generally referred to as having an "open API standard."

Banks have been under substantial pressure to maintain and build their revenue streams in an environment that continues to grow more challenging on multiple fronts.

McKinsey expects the emerging software developer channel to continue growing and to become a leading source of innovation in the banking and payments industries. The following forces will likely drive and shape that change:

- **Rapidly changing consumer expectations:** As smartphones, mobile computing and Wi-Fi grow more ubiquitous, consumers are rapidly developing app-oriented mindsets. With thousands of apps literally at their fingertips, they expect to find apps that will help them with almost any task—including payments, banking and other financial services—whether for their own or their employers' needs. And they expect those apps to operate seamlessly, providing a friction-free user experience. To remain competitive, therefore, banks and payments organizations must find ways to deliver the types of experiences that consumers and businesses now expect.
- **High investment costs:** Software development is a highly specialized field that thrives on innovation while itself changing at the same rapid pace as technology. Notably, its very culture runs counter to that of banks, where hierarchy, systems, procedures and controls have been the norm. Although it is essential that banks keep pace with digital technologies, few actually possess the talent, resources or mindset that technological innovation demands.
- **Ongoing revenue pressures:** Banks have been under substantial pressure to maintain and build their revenue streams in an environment that continues to grow more challenging on multiple fronts. Making better use of external developers would not only address the need to handle development needs in-house, but also could provide opportunities to create new revenue streams. One well-known example of this is the Commonwealth Bank of Australia, which offered its payments APIs to external developers. Among the apps subsequently designed by developers is one that enables users to split a bill at a restaurant or other place of business.
- **Strengthening security measures:** Financial institutions are typically compelled to implement higher security standards when relying on external developers than they might if they developed all applications internally.
- **Accelerating API standards:** In Europe and elsewhere, governments and other organizations are accelerating industry-level standards for banking APIs. The best-known example is the Open Bank Project, which aims to create and evangelize API standards across as many banks as possible.

The combination of these forces is likely strong enough to discourage all but the largest banks from attempting to develop

APIs internally. This suggests there should be ample opportunity for an embryonic developer channel to grow substantially in the near future—an opportunity that should prove mutually beneficial to both the developer and banking communities. Recent data bears this out. PayPal earns more than $2 billion a year through API calls. Its transaction volumes are just as staggering. And Twitter sees more than 10 billion API calls daily, while Salesforce generates half of its revenue through APIs.

A bank could choose its API approach based on who it anticipates being its primary partners in innovation, which could be public or private firms, internal developers or some combination.

### Three fundamental approaches to using APIs

As banks experiment with open APIs, their first priority should be selecting the business model that best fits their organization's long-term strategic plan. A bank could choose its API approach based on who it anticipates being its primary partners in innovation, which could be public or private firms, internal developers or some combination. Alternatively, it could choose based on what it sees as its core source of value, be it revenue, crowdsourcing of innovation or an internal forcing mechanism for greater discipline in programming.

Based on these options, McKinsey sees the following types of business models emerging:

- **Public:** Public (also referred to as "open") APIs are those that organizations make widely available to partners and external developers, who then use them to create and market apps. When well implemented, this approach can lead to a significant uptick in innovation due to crowd-sourcing.
- **Private:** These are APIs that organizations make available on a restricted basis to business partners such as suppliers, service providers and resellers. This model includes most of the benefits of public APIs and is easier to control because management only needs to cope with a limited number of known users.
- **Internal:** In this model, APIs are provided for use solely or primarily by the organization's in-house developers. These might include external developers who are contracted to work on an organization's projects. This model has significant benefits for banks because it necessarily brings more discipline to its software development efforts.

After determining which business model best fits the bank's long-term goals, some technical decisions must be made. The most important of these is choosing an API protocol. There are various protocol types, but two account for more than 90 percent of banking and payments APIs. They are known as Representational State Transfer (ReST) and Simple Object Access Protocol (SOAP). These two protocols are currently understood to be the safest standards for organizations seeking to enter the banking and payments spaces.

Offering APIs to partners and external developers also requires certain technical capabilities. Among these are an ability to

correctly meter API usage and bill customers accordingly, an ability to ensure that no individual user is gaining disproportionate access to the platform, and an ability to monitor the well-being of the core platforms. These capabilities are commonly provided by a class of applications known as API engines, and are available in enterprise and cloud versions.

Managing an API-driven software development effort is a sophisticated undertaking whatever the choice of business model and innovation partners.

### Managing risk

Managing an API-driven software development effort is a sophisticated undertaking whatever the choice of business model and innovation partners. It requires substantial investments of both time and money. Investments must be made in several key areas:

- **Technology:** Significant changes in the bank's technology architecture often must be made and implemented. If the institution presently relies on legacy core systems, it will need to invest significantly in facilitating core functionality for APIs. This could be a gradual, medium- to long-term effort. In addition, new software suites might be needed to manage, protect and monetize new APIs. Process discipline is also essential for creating and documenting programming standards and checklists, especially if working with external developers.
- **Security:** Banks must of course take care not to expose sensitive information in the public domain.
- **Operations:** Developers are exacting and discerning by nature, and are becoming an increasingly powerful user group. Holding their interest in a given bank's API opportunities requires providing a reliable infrastructure and some assurance that the bank is on solid ground. In one recently documented case, Linkedin was reported to be finding it difficult to regain developers' interest in its revamped API platform. It is also very important for organizations to take advantage of the "wisdom of the crowd," by holding developer forums, hosting developer events and regularly seeking and acting on developers' feedback (when appropriate).
- **Economics:** Banks must be realistic about the costs of setting up an API platform, especially the public type. The most important costs are those related to technology, operations, people and marketing. It is also important to be realistic about the sources of revenue, which could include fees for API calls, program reviews, troubleshooting and maintenance. A rigorous business case incorporating these and other elements should be prepared and agreed upon.

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Given the time and effort that managing open API platforms demands, banks and other payments players should embark on this path only after careful deliberation. Factors that should receive special consideration include: institution size, existing technology architecture, the ability to stitch APIs to-

gether into meaningful services, and the growth stages of prospective API partners.

An open API platform model should not be viewed as a way to offload software development and its associated problems to external sources, or solely as a revenue source. For institutions that are confident in their ability to manage their core platforms consistently and reliably on an ongoing basis, the open platform model can work well. For others who can successfully implement the required changes, the rewards can be significant in terms of visibility, innovation and revenue.

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# In the next issue

The next issue of *McKinsey on Payments* coincides with the 2016 Sibos conference to be held September 26 to 29 in Geneva. The issue will include articles on the following topics:

### Access to account: Implications for banks

Europe's access to account (XS2A) regulation and the UK's similar Open Banking Standard could have an effect on banking comparable to the advent of iTunes in the music industry. Banks are at risk of losing direct access to customers and being relegated to the role of "content provider." On the bright side, the new regulations could be the spark that motivates banks to truly embrace digitization and get a head start on attackers and bank competitors in delivering new payments value to their customers.

### The future of transaction banking

A look at the trends shaping the transaction banking landscape, from advanced analytics and blockchain technology to new regulations and emerging FinTech players.