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Innovation in Electronic Payment Adoption:
The case of small retailers

June 2016

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The importance of financial inclusion to development is nowadays widely recognized in the international development community and by policy-makers in developed and developing economies. Still, an estimated 2 billion adults globally do not have access to a transaction account that can be used to receive payments and make deposits. Yet, research shows that low-income and financially excluded populations have active financial lives and need a range of financial services to take advantage of economic opportunities and manage and mitigate risks. Similarly, an estimated 200 million enterprises in developing economies are still constrained in terms of financing, even though small and medium enterprises generate the greatest number of new jobs, employ the largest number of people in aggregate and, hence, are important for job creation and economic growth. Moreover, improving access to financial services plays an important role in reducing the world's poverty levels and increasing shared prosperity.

Recognizing the transformational potential of financial inclusion for economic development, the World Bank Group President, Jim Yong Kim, and partners put forward an ambitious goal of universal financial access by 2020. The goal envisions that all working-age adults have access to a transaction account held with banks or other authorized and/or regulated service providers (including non-banks), which can be used to make and receive payments and safely deposit funds.

While many foundations and drivers exist for achieving financial access and inclusion, the potential impact of extending digital financial services through a more widespread acceptance of electronic payments among small retailers (merchants) is substantial. Traditional retailers in developing economies, the majority of which are micro, small and medium enterprises, generally do not use electronic payments and are excluded from the regulated financial sector. The regularity and frequency of consumer purchases can help everyday retailers expand consumers' use of electronic payments. These retailers not only can play an important role in increasing consumer acceptance of such payments, but also can contribute to improved supply chain efficiency by paying their suppliers electronically and, ultimately, can encourage financial inclusion.

Over the past year, the World Bank Group and the World Economic Forum have collaborated on this effort to better understand the adoption of electronic payments by small and medium merchants, and wish to thank the contributors for their efforts in creating this report. We hope that the insights herein encourage service providers and policy-makers to develop innovative pathways to accelerate the adoption of electronic payments by merchants in their markets.

Executive Summary

This report aims to deepen the understanding of barriers to and incentives for the acceptance and use of electronic payments, from the perspective of micro, small and medium retailers (merchants). Developing and accelerating acceptance of electronic payments by these merchants is essential to expanding financial access. A basic transaction account for payments and deposits is considered an entry point to the formal financial system, and can act as a gateway for individuals to adopt other relevant financial services they need to smooth their consumption and manage income shocks. However, equipping individuals with only basic transaction accounts is not sufficient. The use case for payment services becomes increasingly effective as individuals gradually move to a cashless economy, where electronic payments are widely accepted for regular and frequent purchases. The report highlights the following important dimensions to consider in the efforts to expand electronic payments for merchants:

1. **Multiple factors hinder the adoption of electronic payments by merchants. Six obstacles are identified as significant impediments to deepening these payments, especially in developing countries:** (i) an inadequate value proposition for merchants, including product design that does not adequately encourage them to migrate from cash to electronic payments; (ii) weak product and stakeholder economics in traditional card models; (iii) insufficient aggregate customer demand, needed to reach the "tipping point" that drives demand and supply towards an electronic payments ecosystem; (iv) inconsistent technological infrastructure and regulatory environment in developing markets to support electronic payments; (v) ineffective distribution models to serve hard-to-reach merchants in areas with limited economic capillarity (i.e. low density of micro, small and medium enterprises MSMEs and customer populations); and (vi) difficulty in formalizing enterprises and reluctance of merchants to pay full taxes on sales.

2. **The global market opportunity for expanding the adoption of electronic payments by merchants is large, estimated at $19 trillion of payments made and accepted in cash and checks by micro, small and medium retailers (MSMRs) in 2015.** The global market sizing study, a companion and complementary piece to this report, estimates the global value and volume of person-to-business (P2B), business-to-business (B2B) and business-to-person (B2P) payments by MSMRs.[1] Overall, the findings estimate that in 2015, MSMRs made and accepted around $34 trillion in supplier payments, wages and salaries, and customer payments, of which $15 trillion were made electronically and the remaining $19 trillion in cash and checks. Electronic payments are more widely used by non-grocery retailers compared to grocery retailers, regardless of whether they are P2B, B2B or B2P transactions.

3. **New business models that aim to expand acceptance and usage of electronic payments by small retailers, though still in early stages of development, are making progress and beginning to demonstrate their potential.** While many products and offerings are relatively nascent, they nonetheless pave the way to five compelling insights that, collectively, could be the key to overcoming the obstacles identified. One of the best-known payment innovations in the United States is Square, which has recently focused on providing a comprehensive business solution to meet the needs of its micro and small merchants, in addition to facilitating payments for them. In developing markets, where traditional card adoption is still not widespread, more disruptive models are emerging, as demonstrated by two cases in Kenya: Safaricom, a mobile operator; and Kopo Kopo, a start-up that "acquires" small merchants using Safaricom's money transfer platform. Recognizing the admittedly thin margins from retail payments, and responding to the financing needs of its merchant customers, Kopo Kopo

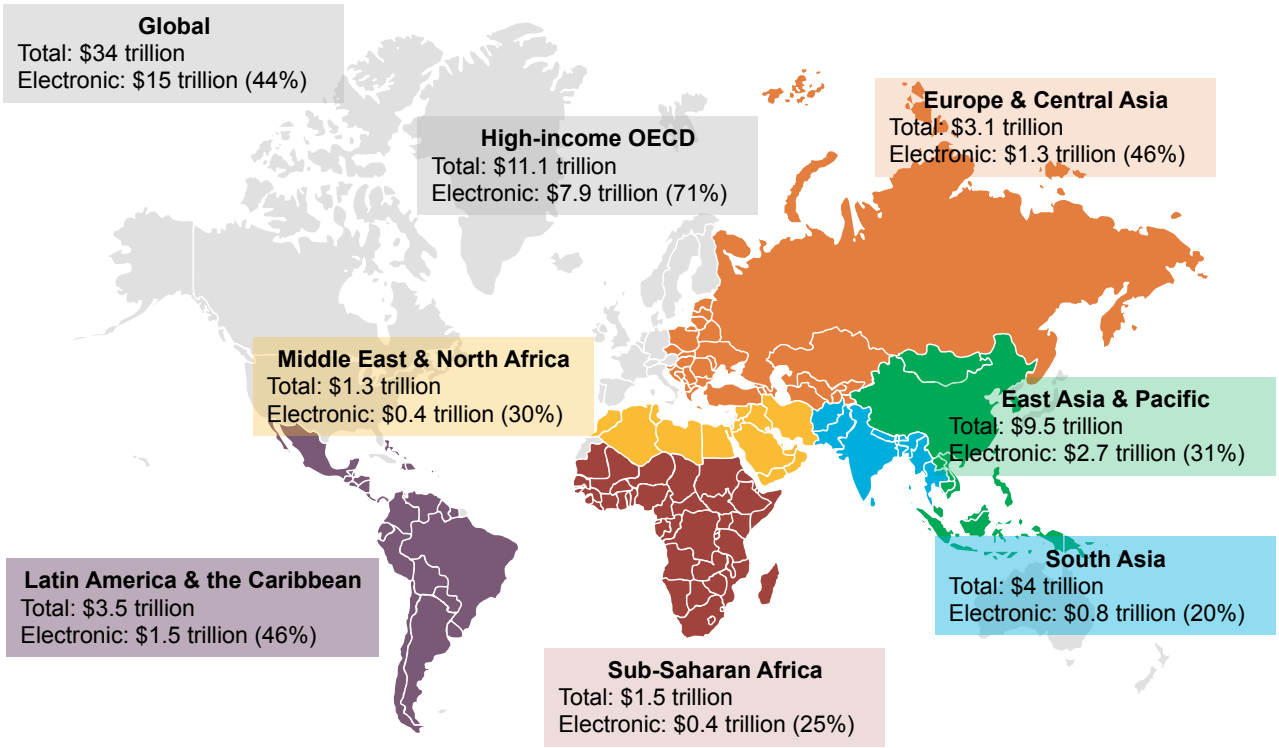
in particular has begun using big data analytics, gleaned from its payment transactional data, to offer a range of value-added services (in particular unsecured, short-term loans). Another start-up, Tienda Pago in Latin America, also uses data analytics, but is focusing on facilitating transactions between retailers and suppliers. Suppliers receive large volumes of cash on a frequent basis from retailers (an inconvenience on their part) and are interested in business solutions that can reduce this pain point and decrease operational costs. These same suppliers leverage their strong merchant relationships and existing distribution models to coordinate bringing payment solutions to retailers, partnering with traditional payment service providers (PSPs). A joint-venture led by Grupo Bimbo, a bakery company based in Mexico, is one example of a non-traditional payment actor partnering with a large bank and a payments processing firm (Blue Label Technologies) to install card-accepting machines, reaching tens of thousands of small convenience stores across the country.

4. **In light of the identified obstacles, the case studies and five innovation insights, the report proposes action areas as suggestions to drive solutions for merchants to accept electronic payments**. The industry (established PSPs, Fintech start-ups and challengers, and non-traditional stakeholders such as fast-moving consumer goods companies), the public sector and, of course, public-private partnerships, develop and promote solutions. Proposed industry actions include: creating tailored solutions for retailers based on demand-side analysis, focusing on traditional and non-traditional data and leveraging different features of technology, recreating business models by offering niche services, and forging partnerships with stakeholders to address gaps in the payments value chain. Policy-makers have key roles to play in encouraging an enabling electronic payments environment: they can facilitate the opening of a transaction account (while protecting customer data privacy, given innovations that may require handling sensitive personal data), stimulate the formalization of merchants and forge public-private partnerships.

The report's structure is as follows:

- Part 1 describes the specific market challenge and its importance for financial inclusion; quantifies the market opportunity with global sizing estimates for cash versus electronic transactions for the total value of B2P, B2B and B2P payments; and frames the six main obstacles that hinder merchants' adoption of electronic payments.
- Part 2 presents five innovation insights observed from the case collection exercise and provides in-depth descriptions of selected relevant cases.
- Part 3 suggests actions and focus areas for industry practitioners and policy-makers to consider as levers for driving acceptance and uptake of electronic payments by merchants, their suppliers and customers.

Figure 0: Global Payments by MSMRs, Estimated values (2015)



B2B payments include only those from the retailers to immediate suppliers

Source: World Bank Group (2016a)

Part 1: Constraints and Opportunities

Introduction: The importance of the merchant segment for financial access and inclusion

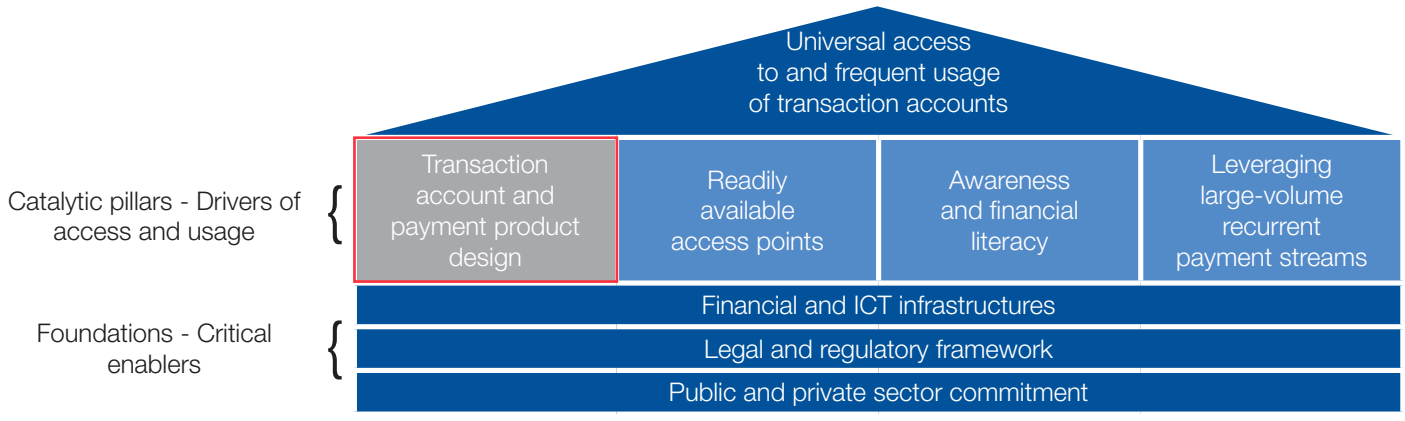
Retailers sit at the crossroads of the cash economy and can help expand the use of electronic payments by consumers. The regularity and frequency of purchases made from everyday retailers define the value of retail payment solutions to consumers, and generate an anchor for them within the formal financial sector.[2]

Merchants in developing economies, however, exhibit limited acceptance and use of electronic payments, despite progress in elevating financial access and inclusion at both the global and country level, and the important role merchants play in the economy. According to the global market sizing study, developing countries have a higher percentage of paper-based payment transactions (cash and checks). The trend is also more prominent with micro retailers, where many self-employed firms or mom-and-pop stores tend to shy away from electronic transactions, such as using debit or credit cards, because of extra costs (including transaction and bank fees), lack of awareness, difficulty in accessing financial services and other challenges. For B2B transactions, estimates indicate that only 31% of the total volume of payments by retailers in Sub-Saharan Africa are made electronically, with a level of 45% among retailers in Latin America and a low of 26% in South Asia. These are significantly below the 81% level in high-income countries of the Organisation for Economic Co-operation and Development (OECD).

Most merchants accept and effect payments mainly in cash, primarily because of their belief in its being "safe", according to interviews conducted in seven countries selected for in-depth primary research of this global sizing study - Colombia, France, Kenya, Lithuania, Morocco, Pakistan and Turkey.[3] Many retailers also have limited access to formal credit for inventory and working capital, and are poorly integrated into electronic supply chains operated by supplier and consumer goods companies. In developing countries, electronic payments have not yet achieved sufficient scale and widespread adoption to change user payment behaviour. As long as merchants, their suppliers and customers hold on to cash, scale will remain elusive. Many participating stakeholders – banks and non-bank payment service providers (PSPs), and suppliers – would like to expand acceptance and usage of electronic payments in order to grow their reach and improve supply chain and cash management operations.

Retailers must be able to readily pay out through one hand what they have received in the other. In many markets, both of these transactions are taking place in cash. In other markets, payment instruments (e.g. card, check, cash) and accounts differ from those for business transactions; for example, suppliers may accept an electronic funds transfer from the retailer to their bank account, while customers only pay the same retailer in cash. This can hinder the fluid reuse and management of funds and decrease the competitive edge of electronic payments vis-à-vis cash. Solutions that allow small retailers to digitize both sides, i.e. to receive electronic payments from consumers and pay their immediate suppliers electronically, will thus more likely be adopted. For this reason, this report covers both angles: merchants as receivers (from consumers) and initiators (to their immediate business suppliers) of electronic payments.

Figure 1: Interrelations of foundations and catalytic pillars to achieve universal access to and frequent usage of transaction accounts



Note: ICT = information and communications technology
Source: CPMI and World Bank Group (2016); emphasis on the transaction account and payment product design pillar has been added

Developing and accelerating electronic merchant payments at the broader level can help countries advance financial access and financial inclusion. Figure 1 outlines the guiding framework and highlights the importance of these drivers of access and usage.[4] Transaction accounts and payment product design represent one of the catalytic pillars for driving access and usage. Expanding access to a basic transaction account that allows for payments and store of value is considered a first step to broader financial inclusion. Using basic payment or savings accounts can gradually lead to access to and usage of other financial services, such as credit, insurance or pensions. The three foundational enablers are also highly relevant levers for helping to improve the usage and adoption of electronic payments by merchants.

Transaction account and payment product design is especially relevant for electronic payments for retailers. This includes user experience characteristics such as simplicity, reliability and customer support, and product features such as low- or no-cost payment services. Additional, non-payment features that help retailers broadly manage their business and serve their customers better are also included.

As underscored in global sizing estimates, cash-based payments still dominate around the world, and particularly at the retail (microbusiness) level in developing markets.[5] Cost-efficiency has been one of the key arguments for moving from paper-based to electronic payment instruments. Studies have shown that transitioning from cash and paper-based to electronic payment instruments can lead to significant savings. Yet, payment transactions are some of the most common daily interactions and make for behaviour that is difficult to change.

Early efforts on two fronts appear to offer learnings for consumer and retailer adoption and use of electronic payments. The first is that providing retailers with a comprehensive solution for managing their business, such as better inventory and sales management (which can be enabled by electronic payments), offers them additional value in the form of improved profits. Second, of all actors in the payments value chain, suppliers have the most to gain from retailers paying them electronically; managing all the cash they collect from retailers *is* a veritable pain point, and has a measurable and significant financial cost. Also, providing merchants with credit is easier via electronic means than through cash. Therefore, the general familiarity with and use of electronic payments can also help merchants be more comfortable in accessing other innovative financial services. Such services (e.g. alternative lending platforms) can help grow their business.

Cash continues to be used widely for a host of reasons: it is familiar, easy to count and exchange, divisible, anonymous and, perhaps most importantly, universally accepted.[6] While service providers have tangible costs in running and managing electronic payments,[7] and merchants (in traditional cases) have costs for accepting them, key stakeholders can reap multiple benefits by adopting electronic payments.

Benefits of electronic payments

- For retail merchants: (i) security: cash is more liable to theft, loss and fraud; (ii) better and faster ability to assess the health of their business operations (e.g. cash flows, profit and loss) through synergies with e-payments; (iii) ability to generate revenue from new channels and digital financial services (if they keep balances with banks and other PSPs); and (iv) value-added services that come bundled with payments, or for making or receiving payments (e.g. loyalty, credit, marketing support)
- For customers: (i) simpler payment method for cases where customers already manage and receive their finances through a deposit transaction account; (ii) savings through access to loyalty schemes and promotions; (iii) extension of purchasing power via access to a revolving line of credit (for products such as credit cards), often interest-free if paid in full at the end of the statement cycle; (iv) enhanced ability to assess spending patterns and manage budgets; and (v) build-up of a transaction history and other relevant electronic data trails that may give customers easier or faster processed access to credit
- For suppliers: (i) lower operational costs and risks from cash collections; (ii) better ability to provide short-term liquidity to retailers and managers, or enable a bank to better manage credit to retailers; (iii) enhanced infrastructure to manage marketing promotions, loyalty schemes and sales incentives; and (iv) less frequent need for retailers to place large orders
- For PSPs and collaborators:[8] (i) fee income from either payment or adjacent services (financial and non-financial); (ii) opportunity for cross-selling; (iii) enhanced ability to monitor performance with retailers; and (iv) opportunity for collaborators to earn part of the overall revenue or sell adjacent services
- For governments: (i) better tools to monitor trends in consumer spending and the retail sector; (ii) expansion of financial access and inclusion; (iii) expansion of the tax base through formalizing MSMEs and possible reduction of leakage; and (iv) growing evidence that shifting spending behaviour to electronic payments can increase overall economic output and enhance social welfare[9]

Expanding merchant payments: a $19 trillion business opportunity

Global market sizing: defining the landscape

The World Bank Group, as part of this effort, conducted a global market sizing analysis[10] for three types of payments: person-to-business (P2B), business-to-person (B2P), and the first leg of business-to-business (B2B) or payments from a retailer to its immediate supplier, all within the micro, small and medium retailer (MSMR) segment. Highlights from the findings on the value of payments include:

- Total value of P2B retail payments worldwide by MSMRs is estimated to be $18.8 trillion, 37% of which are made electronically.
- Total value of B2B retail-supplier payments worldwide by MSMRs is estimated to be $13.4 trillion, 53% of which are made electronically.
- Total value of B2P retail payments worldwide by MSMRs is estimated to be $2 trillion, with 50% of payments made electronically.
- These imply a global market size of $34 trillion for payments by MSMRs, with $15 trillion worth of payments made electronically and $19 trillion made in cash and checks.
- Electronic payments are more widely used by non-grocery retailers compared to grocery retailers, regardless of whether they are B2B, P2B or B2P transactions.

Different types of payments exist under each payer or payee, as depicted in the payments grid (Figure 2), with the highlight indicating the primary focus of this report. While B2B payments technically cover all those conducted along a supply chain (for example, from supplier to distributor), this report focuses mainly on micro, small and medium retailers as "payees" (from their customers) and "payers" (to their immediate suppliers). Moreover, although both physical and online stores constitute a "business", the case collection insights and selected cases in this report focus primarily on the former – in other words, on in-store payments.

Global sizing research was informed by detailed country analyses in seven countries, as data gaps in the retail payments landscape had to be filled to facilitate the estimation. In-depth country analyses were conducted during mid 2015 in Colombia, France, Kenya, Lithuania, Morocco, Pakistan and Turkey via face-to-face interviews with retailers, suppliers, trade associations, financial institutions and other key players. The countries were grouped in clusters and global estimates were made. The data collected not only allowed to estimate the global size of cash and electronic transactions in the B2B, B2P and P2B payment spaces for MSMRs, but also provided interesting and deeper insights for the seven countries.

Person-to-Business Payments

The findings show that within each region, small and medium retailers use electronic payments more commonly than micro retailers. During interviews, small and medium retailers cited convenience and safety as reasons for accepting electronic payments. Non-grocery retailers use electronic payments more than grocery retailers because they sell higher-value goods. Using cash for P2B payments in micro retailers is less common in developed economies. Use of electronic payments increases with the size of the retailer.

In developing regions, especially in South Asia and Sub-Saharan Africa, the value share of electronic P2B payments is very low among micro retailers (Figure 3). Micro retailers still prefer cash payments because their main customers are mostly lower-income consumers who make more frequent and smaller-value purchases, and do not always have access to formal financial services. The costs associated with owning or leasing a point-of-sale (POS) terminal are still considered a deterrent to accepting electronic payments.

Business-to-Business Payments

The study's findings[11] indicate a greater use of electronic payment instruments for MSMR B2B payments compared to P2B payments. B2B payments are also larger in value per transaction, and retailers are constrained by supplier requirements in payment terms and conditions. The value share of electronic B2B payments increases with retailer size. Additionally, across the regions, non-grocery retailers use electronic payments more than grocery retailers, on average.

Business-to-Person Payments

Most of the MSMRs in less developed economies use cash to make B2P payments (i.e. salaries). Cash is more commonly used by grocery retailers as opposed to non-grocery retailers. Anecdotal evidence collected during the research suggests that cash is preferred by both retailers and employees, and that many employees do not have transaction accounts. In more developed countries, however, MSMRs pay salaries electronically into accounts. This may reflect the preference of employers or employees, and is sometimes mandated by law.

According to the World Bank Group study on global market sizing, formal MSMRs around the world accept $18.8 trillion of payments from customers every year, of which only 37% are conducted electronically. Much of the remaining $11.9 trillion is accepted in cash in addition to checks, especially in markets with underdeveloped payment networks.

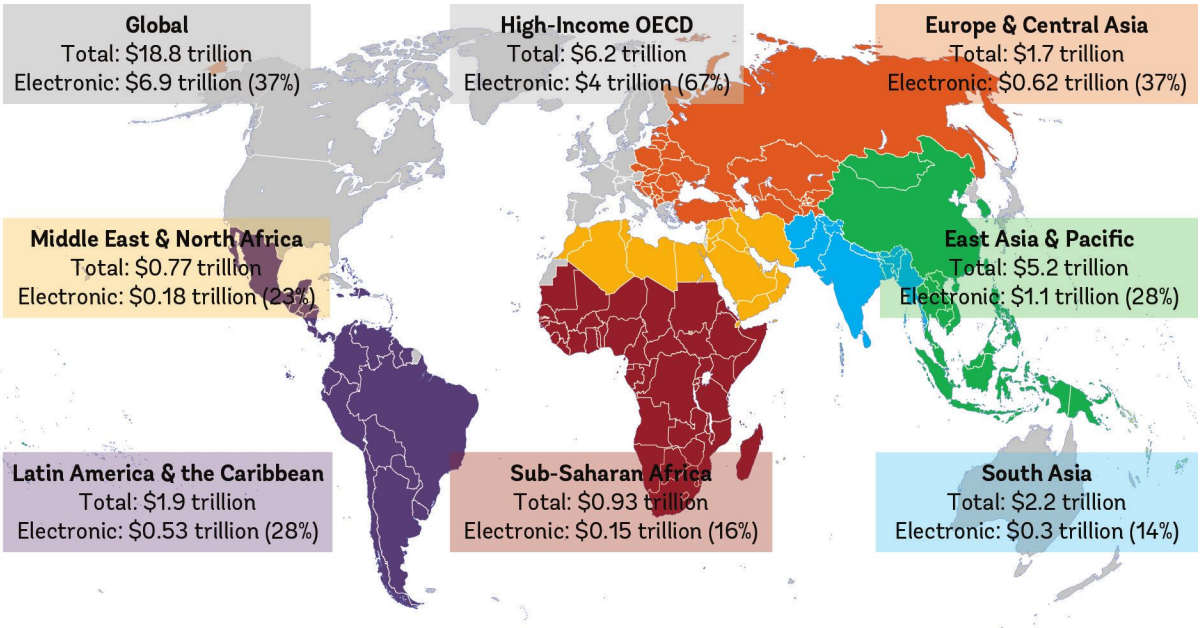
Figure 2: Types of payments

Payer \ Payee	Consumer	Business	Government Agency
Consumer	P2P	P2B	P2G
Business	B2P	B2B	B2G
Government Agency	G2P	G2B	G2G

P = Person, B = Business, G = Government

Sources: World Bank (2015a); CPMI and World Bank Group (2016)

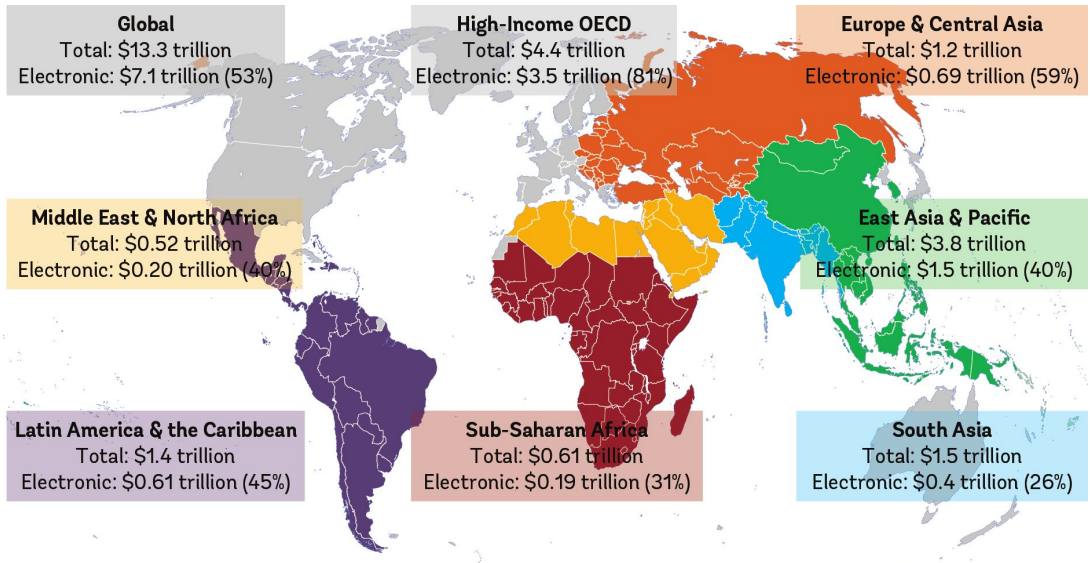
Figure 3: Person-to-business payments by MSMRs, estimated values (2015)



Source: World Bank Group (2016a)

The global market sizing analysis further estimates that besides $7.1 trillion in electronic payments, about $6.3 trillion in paper transactions are conducted from retailers to suppliers (see Figure 4 for the geographic breakdown). In addition, of the estimated $2 trillion in salaries paid by MSMRs, $1 trillion is in cash and checks. Hence, a total of over $19 trillion is handled in cash and checks at the retail point of sale.

Figure 4: Business-to-business payments by MSMRs, estimated values (2015)



* B2B payments include only those payments by retailers to their immediate suppliers, and does not include other B2B payments up the distribution channel.
Source: WorldBank Group (2016a).

Source: World Bank Group (2016a)

Constraints on merchant use of electronic payment services

Despite this large market opportunity as evidenced in the previous section, why have traditional retailers adopted electronic payments only on a limited basis, and why is this advancing slowly? Is the market moving as fast as it could?

In the short term, consumers and business face disincentives in migrating to electronic payments. If they receive income in cash, for example, they may need go to a bank or agent to deposit it into their account before having the ability to use a bank card or a mobile phone. Conversely, to pay someone who only accepts cash, they may not have easy access to withdraw funds at a nearby branch or automated teller machine (ATM) when they most need it. To those not familiar with it, a card or mobile phone may appear complicated to use at first for conducting electronic payments, or be seen as open to fraud if lost. Adopting new ways to make payments, such as electronically, must be accompanied by a high degree of trust. While trust is the essential element of economic transactions, trust in financial institutions is particularly low among low-income populations,[12] who may face fees or other costs to withdraw funds or make payments to suppliers. Thus, while paying by cash may indeed be costlier for users,[13] they may perceive it to be more convenient compared to paying electronically. Furthermore, while strides have been made in unbanked consumers shifting from cash to electronic payments for services such as person-to-person transfers, less progress has been made with cash-in, face-to-face transactions.

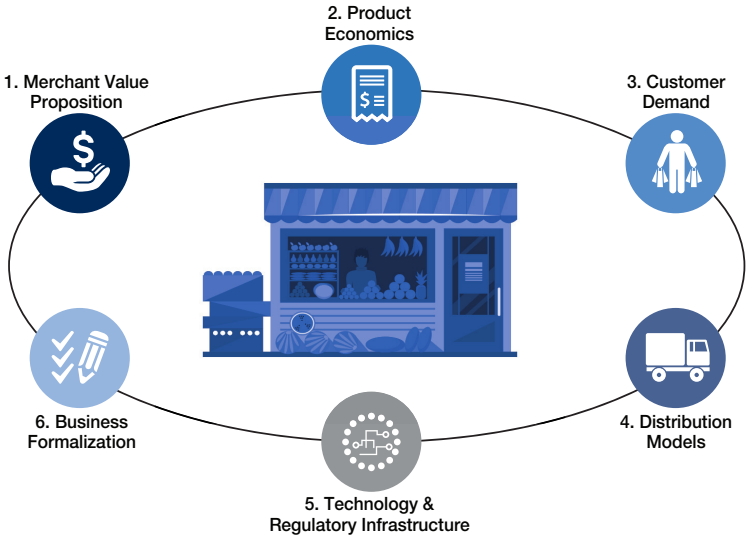
Many reasons exist for preferring cash, but the main one is that cash is entrenched in people's daily interactions. Despite the apparent benefits – most notably speed and security – for consumers and merchants alike to migrate to electronic payments, user behaviour is notoriously hard to change. In addition to the "sticky" habits of financial behaviour, the overall perception in multiple markets of sub-optimal transaction account and payment service product design (e.g. interoperability, reliability, user focus, access) may also be slowing the widespread adoption of electronic payments. Particularly in the developing world, limited uptake by consumers to pay electronically, combined with the high fees retailers must pay to accept electronic payments, hamper adoption.

Six obstacles hinder micro and small retailers from adopting electronic payments at a faster rate (Figure 5). Although they do not apply to all markets, these factors are most prominent in those where retail payments are conducted primarily in cash.

1. **An inadequate value proposition for merchants:** Particularly in the developing world, small retailers do not often report that accepting cash is necessarily a major obstacle or "pain point". This does not mean that they would shun a more convenient mechanism of being paid: they are aware that, while accumulating cash increases the risk of theft and robbery, cash is convenient for quickly conducting a transaction, especially for small amounts, and for paying suppliers who often do not mind being paid in cash. For example, focus groups with selected merchants, conducted in Tanzania by the World Bank Group in 2015, revealed that the incentive for accepting electronic payments is to keep up with sales, rather than to change the payment instrument itself.

2. **Weak product and stakeholder economics in traditional card models:** Traditional card payment models require a commission (the merchant discount fee or merchant service charge) that is usually a fixed fee and/or a percentage of the payment amount (anywhere from 1% to 6%); merchants often pay for set-up fees as well. The acquiring banks that set these fees pay, in

Figure 5: Key obstacles to expanding adoption of electronic payments to small retailers



Source: World Bank Group analysis

turn, an interchange fee to an issuing bank that manages the relationship with the customer. Additional costs for acquiring banks can stem from covering settlement and fraud risk. The acquiring banks' operating margin is used to pay the costs of marketing, a sales force and, in many cases, a card-accepting POS terminal.

Retailers in particular are more price sensitive to these commissions, as their operating margins tend to be thin. On the acquirer side, the projected low volumes of electronic payments from small retailers hinder the economies of scale and increase the cost of distribution.

Retail is typically a high-volume, low-margin business, so small merchants rarely have enough profit margin to give to commissions (unless, as described previously, they stand to lose the sale). On the acquirer side, itself a low-margin business, small merchants have low overall sales compared to their larger peers; thus, it makes business sense to acquire them only in the rarest of cases. This "lose-lose" proposition means that both parties have little economic incentive to work together.

3. **Insufficient aggregate customer demand:** The electronic payments model is a traditional "two-sided" market, where the demand of one side influences that of the other. Markets with fewer active cardholders further drive down interest on the merchant side (obstacle no. 1), as merchants are less likely to accept electronic payments if they see that their customers are content paying in cash or by check. In some cases, such as in Indonesia,[14] service providers offer incentives to stimulate usage, such as card-accepting terminals at no charge, but traction has been slow to date. As a network service, payments must be used regularly by a wide range of consumers and businesses in order to generate value for users. In traditional card models, customers have been primarily encouraged through a host of benefits beyond the payment mechanism itself, such as a revolving credit line (in the case of credit cards) to extend their purchasing power, and loyalty schemes, such as rewards (points, miles, cash back). With the resulting increase in scale, more regular use of electronic payments can also help to reduce marginal costs, leading to positive effects from payments for the broader economy.

4. **Ineffective distribution models for serving hard-to-reach merchants:** Merchants benefit from being located in high-traffic areas, not only for their core business but also in driving up aggregate demand for payments (obstacle no. 3). Providers that want to serve small retailers located further away from densely populated areas require strong distribution models for sales, training and customer service. This is especially the case in markets where first-time merchants are unaccustomed to handling electronic payments and/or have low financial literacy.

5. **Inconsistent technological infrastructure and enabling regulatory environment to support electronic payments in developing markets:** In addition to requiring effective distribution models to access semi-rural and rural merchants (obstacle no. 4), acquirers must also contend with poor or unreliable connectivity and electricity, especially in the developing world. Point-of-sale terminals need electricity and basic connectivity to process transactions, and while some innovations described later in this report use basic phones and smartphones as acceptance devices, even these require network connectivity to initiate, approve and/or confirm transactions.

   Restrictive policies hinder access to financial services for those that do not have them. For example, documentation requirements for opening an account may exclude workers in the rural or informal sector who are less likely to have wage slips or formal proof of residence.[15] Thus, a supportive regulatory environment that permits innovations to thrive is a key element underpinning all electronic payments. Such an environment enables easy opening of electronic and bank accounts (e.g. required documentation, such as customer identification and proof of residence), the issuing of electronic money, extending services through banking agents (who are often retailers themselves) and permitting non-bank actors to participate in core elements of the payments value chain. Indeed, many regulators around the world have made great strides in providing an enabling environment for electronic payments, and continued effort is under way in other markets to do so. Relevant guidance for striking the appropriate balance between a protective and an innovation-ready environment is reflected in the *Payment Aspects for Financial Inclusion* (PAFI) report, in guiding principle 2 on the legal and regulatory framework. It states: "*The legal and regulatory framework underpins financial inclusion by effectively addressing all relevant risks and by protecting consumers, while at the same time fostering innovation and competition.*"[16]

6. **Difficulty in formalizing enterprises/reluctance to pay full taxes on sales:** Traditional franchise rules for card networks insist that all accepting merchants be formal businesses registered with the local government. Small retailers, especially in developing countries where informal businesses are more prevalent, are resistant to formalize and pay full taxes on their sales. Moreover, even formal merchants often under-report sales volumes to decrease their tax liability; accepting electronic payments implies that a digital trail exists, which tax authorities could insist on verifying during an audit.

Related user research focusing on the traditional retail (merchant) sector in India and Indonesia illustrates the dominance of cash payments and some of the obstacles described in the six obstacles. See Box 1 and Box 2 for highlights of merchant payment behaviour from the two research studies.

Box 1: Payment behaviour of merchants in India[17]

A study was recently commissioned to understand the current behaviours towards and perceptions of digital payments among consumers and merchants in low-income communities in India. Key insights indicate that the adoption and use of electronic payments has yet to make strides.

Cash transactions are a matter of habit: 97% of retail transactions in India are conducted in cash or by check
Few consumers use electronic payments: Only 11% used debit cards for payments in the past 12 months
Few merchants accept electronic payments: Only 6% of Indian merchants accept electronic payments

1. Merchants who accept and consumers who use electronic payments are highly satisfied with the experience.

89% of debit card-accepting merchants and 97% of mobile money acceptors stated that they would recommend accepting electronic payments to other merchants. They highlighted a number of benefits of acceptance, most prominently safety, faster transaction speeds, ease of use and a reduced hassle of finding change. For consumers, 84% of users of mobile money and 91% of bank transfer users said they would recommend these instruments to others.

2. Awareness and interest is low among merchants who do not accept and consumers who do not use electronic payments.

In the sample, only about 40% of merchants not accepting payments via debit cards were aware that they could do so. Of those, only about 40% were interested in accepting cards in the future. For mobile money and bank transfers, the numbers are even lower. Approximately 20% of merchants not accepting these instruments were aware that they can accept payments through these channels, and just 30% of them were interested in accepting these instruments in the future. Only 28% of respondents who did not hold debit cards were aware of them.

3. Merchants and consumers are trapped in a cash ecosystem, which inhibits their interest in electronic payments.

The need to make cash payments to suppliers was the top-ranked reason for merchant disinterest in adopting debit cards. Lack of awareness was the second reason, and low consumer demand ranked third.

Box 2: Payment behaviour of Indonesia's traditional retail market[18]

The Indonesian market has an estimated 2.5 million retailers, of which the majority is in the traditional and informal space. Most of these retailers pay their immediate suppliers in cash. Estimates of sales through traditional retail range from about $46 billion to about $80 billion, depending on the scope of goods covered and the classification of traditional retail versus modern retail. Selected highlights on profiles of traditional retailers in Indonesia demonstrate the following:

- **Formal business management functions, such as accounting and tax management, are simply not performed by traditional retailers.** Most of these retailers do not keep track of their stock or profits. If money remains in the cash box at the end of the day, it signals a profit.
- **Most traditional retailers are not registered business entities and do not pay tax.** The impetus for a traditional retailer to register its business is to receive a loan; this is a prerequisite for a bank.
- **Most traditional retailers do not use a bank account for their business.** They mix their personal and business finances. Generally, traditional retailers only use a bank account for savings or a bank loan. They often stop using the account once the loan has been repaid.

Merchant vignette 1:
Wholesaler, seven years in business, family owned, no bank account, 10 suppliers

"We pay all our distributors in cash, even for big orders worth millions."

Payment Process: All payments are made in cash, even for the largest orders of rice. The owner does not have a bank account, but deposits savings each week in the son's bank account. Savings are used for large orders, and will be used as well to start a second store for the son.

Merchant vignette 2:
Small retailer, eight years in business, no bank account, 10 suppliers

"I had a bad experience paying with a debit card, so now I will never use it again."

Payment Process: The owner pays suppliers in cash. After a bad experience using a debit card, she was charged twice, and refuses to use or offer electronic payments in her store. The owner does not have a bank account, and manages all her business in cash, including her savings. She does not offer credit to customers, does not have a bank loan or use supplier credit. While she wants to expand, she does not want a loan.

Part 2: Innovation Trends and Cases

Overview

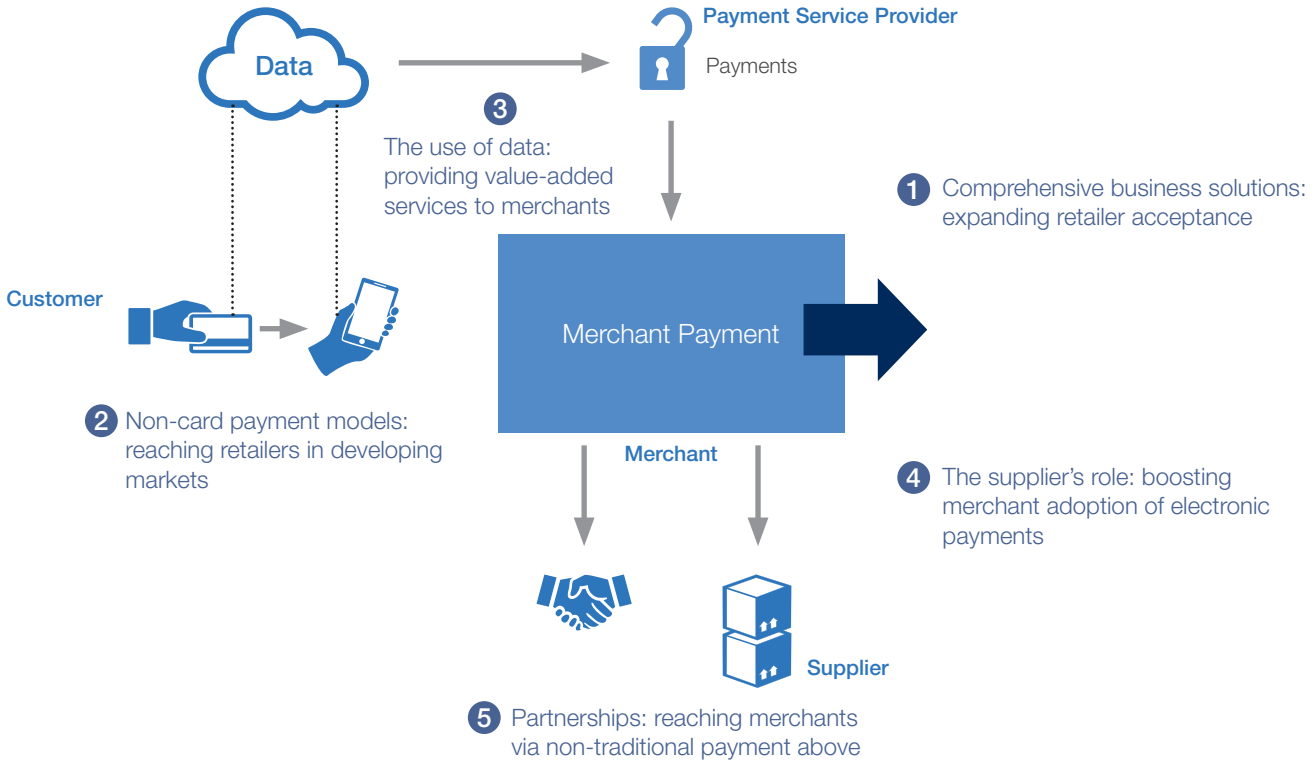
A brief note on methodology

Stakeholder survey: The World Bank Group and the World Economic Forum, in collaboration with the Better Than Cash Alliance, conducted a joint survey exercise in mid 2015, reaching out to over 180 stakeholders on electronic payments and technology-driven innovations to advance financial inclusion. It covered input from a diverse set of actors, including payment networks, banks, mobile operators, start-ups, investors, technology vendors and development organizations. The survey aim was to collect and feature innovative cases and business models that illustrate how digital payment systems, instruments and technology-enabled innovations advance financial inclusion. The particular focus of the stocktaking exercise was the merchant (MSME) target segment in the retail sector (B2B and P2B), as well as government and government-led initiatives (such as government-to-person [G2P] payments).[19] For the purpose of this report, a scope filter was applied to the case collection results to focus on those cases directly serving merchants to enable or facilitate their electronic payment needs.

Case collection scope and results: The Case Annex lists the 90 cases collected through the stocktaking exercise.[20] These cases represent those collected from the primary outreach to stakeholders, as well as additional cases supplemented through secondary research based on relevant reports that emerged during the time period concerned (2015-2016). Cases that focus directly on merchant payment innovations were analysed and clustered around major themes. Subsequent interviews were conducted with executives from organizations in relevant cases to provide greater detail.

Key insights: Electronic payment innovations targeting small retail merchants have only recently expanded, and their emergence is coinciding with the growth of innovative non-bank financial services. Most cases have occurred over the last five years. New models for expanding merchant payments to underserved segments are still in the "proof-of-concept" stage. In effect, substantial experimentation is still under way to discover sustainable business models – from market segmentation, technology selection, pricing tactics and product mix to sales and distribution force, strategic partnerships and customer service. Moreover, the "right" model will change, based not only on market structure, regulatory dynamics and the enabling environment for trends in innovation and technology, but also on the business objectives and capabilities of the service provider in question. The stocktaking exercise identified five innovation trends relevant to merchants adopting electronic payment (Figure 6). The individual cases used to illustrate the trends are intended to be descriptive rather than prescriptive models.

Figure 6: Key innovation trends for merchant payment solutions



Source: World Bank Group team analysis

Comprehensive business solutions: expanding retailer acceptance

Insight 1: Small retailers are more likely to adopt combined solutions that help manage and grow their business, in addition to the ability to pay electronically.

Every market contains a segment of retailers that does not accept electronic payments, but may be willing to do so if a solution is designed appropriately to meet the merchants' needs. This could be because they are not aware of precisely what works, have not been targeted by PSPs, or find the current electronic payment solutions expensive or cumbersome. The core value proposition of accepting electronic payments – a secure, efficient way of being paid – needs to resonate with the merchants' business needs.

A number of innovations received in the survey did indeed address this segment by adjustments to business and technical models. Square is the most frequently cited example of this: in 2010, it began its mPOS (mobile point of sale) service, so called because it converts the retailers' existing smartphone into a card-accepting device by adding a small piece of hardware, called a "dongle", in the headphone jack (Case Box 1). The company also made the set-up process paperless and efficient: merchants register online and receive the dongle within days, along with simple, clear pricing.

By enhancing the merchant experience from registration to set-up and pricing, such changes have allowed a new class of micro- and small-business owners in the United States to start accepting electronic payments, primarily as card payments. These retailers, including coffee shops, convenience stores and independent contractors, understood the benefits of electronic payments but disliked the existing options from banks. iZettle (Sweden), Clip (Mexico) and Absa (South Africa and Australia) are some examples from the case database that aim to replicate Square's business model in their respective markets. Initially, mPOS solutions assume a sufficient cardholder base and are therefore focused on building out only one side of the payments market (the retailer side). Nevertheless, early indications from these cases appear to show that they are successfully capturing part of the retailer segment that previously accepted only cash.

Yet in other cases, easing the onboarding payment experience is not sufficient to generate consistent adoption by merchants, particularly among retailers that are less savvy financially and doubtful of the benefits. Instead, services that allow retailers to earn additional income, such as enabling customers to pay bills, or helping them to manage their business (e.g. inventory management or monthly budgeting tools), truly respond more to their core needs than a service that facilitates payments. This creates "stickiness" of the solution that will more likely lead to ongoing use of payments and long-term financial inclusion.

One large mobile operator in Africa, for example, offers retailers an easy way to accept payments from a customer's mobile money "wallet", or electronic money account. The user experience is nearly identical to one already well known to consumers: a P2P transfer, where payers initiate a transaction from their phones and receive a confirmation when it is completed. It does not charge merchants and customers a fee, and offers an airtime bonus if merchants accept it. Despite this seemingly well-designed product which, it was hoped, would boost financial inclusion, the two-year-old service is looking for further solutions to reach wider traction with the merchant segment. Indeed, free services with simple user experiences and wide customer bases of several million active users need accelerators. These challenges indicate that the strongest value proposition for these products – currently, payments plus value-added services – has yet to be determined (i.e. the type and number of services offered can vary widely from market to market). It is difficult to achieve a balance between a product's value proposition – one that is compelling to both merchants and customers, provides incentives and succeeds in positively affecting the user's behaviour (as in migrating from cash to electronic payments) – and its commercial viability for the provider.

In focus groups with the previously mentioned mobile operator's merchants, however, most respondents showed only partial interest in the merchant payment products. However, they responded positively to prototypes of adjacent services that could support their business, such as financial management tools, inventory control and unsecured small-business loans. Retailers responded positively to other ideas, including revenue-generating activities such as bill payment or mobile top-up reselling capabilities. The payment itself is only one aspect – and sometimes not the most important feature – for attracting merchants, as described in the case boxes of two merchant payment initiatives in Kenya (Safaricom's Lipa Na M-PESA [insight 2], and Kopo Kopo [insight 3]).

Comprehensive and combined business solutions can be the "hook" for small businesses to accept electronic payments. In turn, they can lead to access to other products, as well as to elevated level of "business savviness" for the merchant. A transaction account, in addition to being a financial service in itself, can also serve as a gateway to other financial services.[21] It can particularly facilitate credit underwriting (which is supported by electronic transaction data and the linkage to settlement flows for payments[22]) and non-financial services, such as supply chain automation, inventory management, customer loyalty programmes, data analytics and other business support services.[23] But retailers who currently do not accept electronic payments may not see the benefits of doing so and/or perceive too many obstacles; thus, offering non-payment services that respond to their core business needs, coupled with a payment functionality, can be one strategy to boost financial inclusion. This would not only increase adoption and use of transaction accounts, but also enable access to other financial services.

Innovations that go beyond facilitating electronic payments to provide value-added services for the small retailer promise high success, particularly for lower-income merchants.

Case in point: Square

When it was launched, Square had the initial goal of enabling electronic payments for the 27 million US small merchants who, at that time, transacted mainly in cash. These merchants often lose out on potential sales because they are unable to take payments by card. To enable card payments prior to Square, merchants had to register for a merchant account directly with a card acquirer, a costly and time-consuming process that did not guarantee the merchants' acceptance.

To solve this pain point, Square innovated with a technological product and business model. For the product, Square devised a card reader, a small piece of hardware that plugs into the headset jack of any mobile phone or tablet to transform it into a card-accepting terminal. It later came to be known as an mPOS device. Unlike other card readers at the time, Square's product was small, convenient and required no installation.

The second, and perhaps more significant, innovation was its business model: Square eliminated the costs, complexity and uncertainty that a small merchant faced when registering for a merchant account. The company negotiated with card networks, such as Visa and MasterCard, to allow Square to serve as a "mobile processing aggregator" and effectively act as a mini-acquirer for physical merchants, something that only a few firms were permitted to do online at the time. This designation meant that Square could take on the responsibility (and risk) of allowing merchants to use cards and route transactions to their main acquirer processor, Chase Paymentech (owned by JPMorgan Chase, one of the country's largest banks). Opening an account was paperless and fast, and did not require a credit check or long-term commitment. With adjustments made to the card payment rules, Square could offer free, easy and seamless registration to small merchants through its website. Additionally, and upon registration, merchants were also immediately sent a Square card reader.

When launched, Square was cheaper, offered a faster registration process, and was more transparent than the existing alternatives available to merchants. Its fee structure was simple and clear: a "fee per swipe" of 2.75% (as opposed to about 4% for traditional acquirers). Merchants conducting less than $250,000 in annual card payments could pay a flat monthly fee of $275. Over the course of 2015, Square processed $35.6 billion through its over 2 million active merchants.

As expected, other start-ups and acquirers noted Square's success and began offering similar services and price points. Faced with imitators in its core business, Square began providing its users business analytics insights generated from the electronic payments. Small merchants could now view sales trends and product popularity through the Square application. By helping to improve their business decisions and, potentially, their profits, Square was delivering additional value to these merchants that they could not find elsewhere.

In attempting to stay ahead of competitors, Square has continued its strategy of building out value-added services. It now offers a range of applications to manage and grow a retailer's business, including:

- Inventory management: reordering, stock alerts
- Employee management: timecards, permission levels
- Payroll services: direct deposit set-up, tax withholding
- Powerful applications for customer relationship management: marketing, promotions, loyalty
- Instant, unsecured credit lines through Square Capital (from mid 2014; a product which Kopo Kopo also began offering in Kenya at roughly the same time [see insight 3])

Case box 1: Square

Square

Business profile

Name: Square

Type of organization: Technology start-up

Year operations launched: 2009

Active countries: United States, Canada, Japan, Australia

Payment Channels, Technology And Innovation Features

P2B: Person-to-business (P2B) payments, value-added services

Acquirer: Chase Paymentech

Payment instrument: Debit card, credit card

Payment instrument form factor: Payment card

Front-end technology: Provides hardware card reader ("dongle") or tablet

Innovation: As a payment aggregator, Square offers fast, easy account sign-up and card acceptance for micro merchants using hardware that connects to their existing smartphone

Merchants

Target segment: Micro, small and medium retailers; independent contractors

Number of merchants reached: More than 2 million, as disclosed in Square's S-1/A filing (November 2015)

Other cases relevant for this insight: Clip (Mexico); izettle (Sweden), Absa (South Africa)

Non-card payment models: reaching retailers in developing markets

Insight 2: Innovators are eschewing non-card infrastructure in many developing markets to create new payment models for reaching low-income retailers.

Since their rise in the United States in the 1950s, debit and credit cards have become the most common mechanism for consumers around the world to conduct electronic payments. Two main, so-called "schemes" have emerged: a four-party model and a three-party model.

In the **four-party model**, cardholders have a relationship with their financial institution (called the "issuing bank", or simply "issuer"), while entities accepting the card, usually merchants, have a similar relationship with their financial institution (called the "acquiring bank", or simply "acquirer"). Transactions are routed between the two financial institutions through a shared platform, managed by a "governance authority". In contrast, the governance authority in a **three-party model** manages both the customer and the merchant relationship (Figure 7).

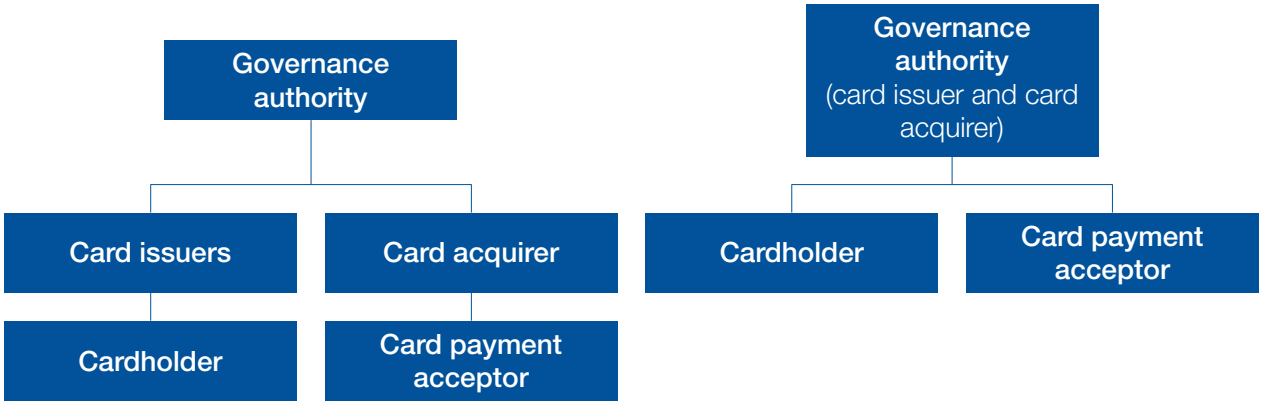
MasterCard and Visa are the most recognizable international schemes managing four-party models, whereas American Express is most commonly associated with three-party models.[24] The likes of Visa and MasterCard play a key role in establishing a series of "franchise rules" for their member financial institutions, such as for card design, brand identity, data formatting, and clearing and settlement conditions. Critically, however, they do not set the fees charged to merchants for accepting electronic payments (the merchant service charge), which is often a percentage of the payment amount. Visa and MasterCard have grown to include over 10,000 participating member financial institutions each, and from nearly every country. In some markets, domestic networks, often owned by local banks, provide many of the same functions as international networks, such as easing the processing of in-country electronic payment transactions.[25]

Broadly speaking, electronic payment solutions for micro and small retailers collected during the stocktaking exercise include two types of innovations: sustaining and disruptive. The so-called sustaining innovations include those cases that modify part of the existing card-payment infrastructure, as seen previously with Square. The second type are more disruptive, comprised of non-bank organizations that create a new set of operating rules, such as Safaricom's mobile money merchant payment product, Lipa Na M-PESA (Case Box 2). This is a critical point in reaching retailers (and thus deepening financial inclusion): the innovator is no longer constrained by some of the obstacles mentioned in the Introduction that necessarily may be part of the traditional business model, such as high merchant fees or lack of customer demand.

By extension, **some of the most groundbreaking innovations are therefore occurring where traditional card payment infrastructure is limited**, such as in Sub-Saharan Africa and certain developing Asian countries. Conversely, in developed markets, where the card infrastructure is well entrenched, organizations looking to target small retailers are more likely to opt for "tweaking" the existing card model than creating a completely new one.

Two variables affect this decision and also reflect how entrenched the existing card payment schemes have become: market fragmentation of issuers and acquirers, and the number of cardholders and payment-accepting merchants. In the most pronounced case (in the United States), for example, millions of cardholders transact with hundreds of thousands of local merchants, who in turn belong to hundreds of acquiring and issuing domestic banks. This bank fragmentation increases the payment networks' value exponentially. In addition, the aggregate customer demand would make it difficult to persuade merchants to accept a payment solution that does not already take advantage of a payment instrument used by their customers. In fact, most of the recent merchant payment innovations in the United States – by companies such as Apple, Samsung, Google and Square – all work with MasterCard and Visa schemes rather than, for example, a proprietary payment mechanism developed in-house.

Figure 7: Four-party model (L) and three-party model (R)



Source: ECB (2014)

Leveraging existing payment infrastructure to deepen merchant acceptance is not necessarily undesirable, and, in certain cases, comes with advantages, such as reliable technology and established operating rules. But in markets with very few cardholders (despite the presence of traditional card payment infrastructure), innovative firms that chart their own course are more likely to be found.

More flexibility in decreasing price points associated with acceptance of electronic payments. Retailer margins are usually thin, compared to other businesses such as those in the service sector. Thus, traditional card-based merchant service charges (MSCs) are often prohibitively high, despite recognition of the value in accepting electronic payments. In many cases, non-card innovators have greater flexibility in determining MSCs than traditional acquiring banks (who often use interchange rates for calculating the retailers' MSCs) because they manage their own "schemes", and often in a three-party model. This flexibility allows innovators to set MSCs that are more amenable to merchants, encouraging the ongoing acceptance of electronic payments.

Developed markets may only require adjustments to existing domestic and international card models to reach small retailers with electronic payments. However, innovators in developing markets, primarily non-bank organizations, will need to create tailor-made business models to address the merchant segment's obstacles and needs.

Case in point: Lipa Na M-Pesa[26]

Safaricom, Kenya's largest mobile-network company, launched M-PESA, a mobile money transfer service, in 2007. Since then, M-PESA has become the world's most widely known mobile money solution. It allows people to transfer money using their mobile phones, even without a bank account. Today, M-PESA is used by 22 million Kenyans (70% of the population), with monthly M-PESA transactions totalling $150 million. Despite M-PESA's success, 94% of transactions by volume in Kenya were still done in cash.[27] Furthermore, general estimates indicate that the ratio of merchant transactions to P2P transactions in a well-developed market approach 16 to 1. In other words, capturing merchant payment transactions through Safaricom's mobile money payment network represents an immense opportunity.

In 2012, Safaricom launched Lipa Na M-PESA, a mobile payment service specifically aimed at merchants (as suggested by the name, which means "buy goods" in Swahili). Customers pay merchants for goods and services by accessing M-PESA on their phones and entering a merchant's identification number to direct the payment. The merchant and customer then receive confirmation messages from M-PESA that the transaction has been completed. Across Kenya, 36,000 merchants accept Lipa Na M-PESA; 70% of them have been active over the previous 30-day period. Safaricom has signed up a range of participating businesses and organizations, including supermarkets, public transportation providers, gas stations, airlines, hotels, schools and banks. For November 2015, transactions through Lipa Na M-PESA totalled KES 15 billion (Kenyan shilling), or approximately $145 million.

Lipa Na M-PESA merchants enjoy a number of concrete benefits. As mentioned previously, electronic payments are generally an improvement on cash payments because they eliminate the handling costs and risks associated with the latter. Furthermore, Lipa Na M-PESA charges merchants a transaction processing fee of not more than 1%, compared with fees that generally range between 3-5% for accepting card payments. And, given the prominence of M-PESA among Kenyans, merchants have good reason to believe their customers will be interested in paying via Lipa Na M-PESA. According to Paul Kavavu, Head of Emerging Business-Financial Services at Safaricom, Lipa Na M-PESA intends to better target merchants who have low margins (from small retailers to gas stations, whose profit margins are regulated by the government), and who prefer accepting cash over Lipa Na M-PESA. Kavavu estimates that most of the current merchant base did not have bank accounts previously, and that the ongoing use of Lipa Na M-PESA, as well as the current M-PESA money transfer service, is helping to close this important financial inclusion gap.

Safaricom has also begun offering promotions to boost customer awareness and interest. It launched a campaign offering prizes – from home appliances to three-bedroom homes – to randomly selected consumers who use Lipa Na M-PESA. For a short time, Safaricom also marketed the service as free for consumers. (This was not exactly the case: merchants could choose to pass on part of the processing fee to their customers, which was not very transparent.) Since then, Kenyan regulators have required Safaricom to disclose Lipa Na M-PESA's fee structure. Safaricom has also taken steps to educate customers about when the service is not free of charge.

Case box 2: Lipa Na M-PESA

LIPA NA M-PESA

Business profile

Name: Safaricom Lipa Na M-PESA

Type of organization: Mobile network operator

Year operations launched: 2012 (2007 for M-PESA service)

Active countries: Kenya

Payment Channels, Technology And Innovation Features

Services: P2B payments, B2B payments, value-added services

Acquirer: Safaricom

Payment instrument: Mobile money

Payment instrument form factor: Consumer's mobile phone (feature phone or smartphone)

Front-end technology: Merchant's mobile phone (feature phone or smartphone)

Innovation: Following M-PESA's success with its P2P money transfer service by phone, Safaricom signs up small merchants to enable its customers to pay with mobile money.

Merchants

Target segment: Micro and small retailers

Number of merchants reached: 36,000

Other cases relevant for this insight: Kopo Kopo (Kenya), Tigo (Paraguay), Telenor (Pakistan)

The use of data: providing value-added services to merchants

Insight 3: As more retailers adopt digital consumer technologies for personal and business use, innovative providers are using the resulting data trails to supply greater value-added services back to those retailers.

Individuals worldwide are adopting consumer technologies, such as smartphones and social media, at a rapid pace (Figure 8). Unique smartphone subscribers will rise from 4.0 billion in 2016 to 4.6 billion by 2020, representing 59% of the world's population. The Asia-Pacific and Sub-Saharan Africa regions are driving much of the growth.

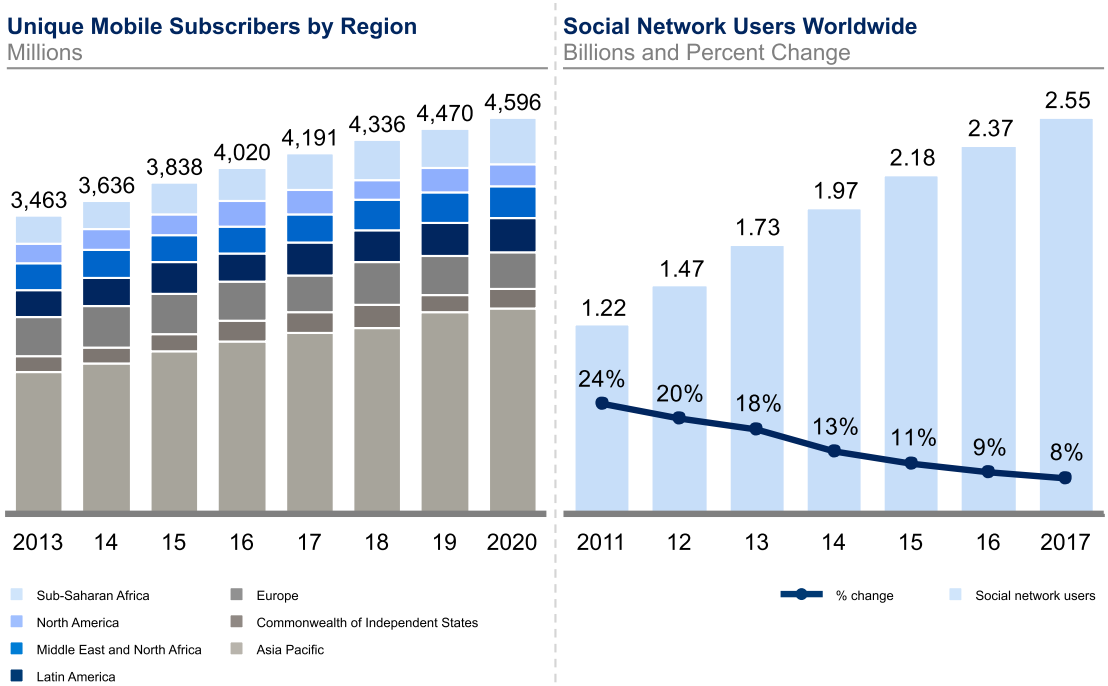
Moreover, smartphone penetration is projected to increase from 50% to 65% of the population by 2020[28] because of two key reasons: a falling "total cost of ownership" for smartphones, which includes the cost of handset, taxes and mobile data; and a shift from 3G to faster 4G networks forecast to be accessible to half the population by 2020. Mobile access to the internet is also fuelling the growth in social media users. Roughly 2 billion consumers access social networks (Figure 8), and this figure is predicted to increase to 2.5 billion by 2018. However, the upward trend is uneven, demonstrated by recent research pointing to a wide gender gap: over 1.7 billion women do not own a mobile phone in low- and middle-income countries. Moreover, women are 14% less likely to own a mobile phone than men, translating into 200 million fewer women owning mobiles phones than men. Addressing this gap could unlock an estimated $170 billion market opportunity for the mobile industry in the next five years.[29]

Moreover, the gap can represent an opportunity for innovators in the electronic payments space, in particular to tailor products and innovations to female entrepreneurs and female-owned merchant businesses.

Consumer adoption of mobile and internet technologies has had two major impacts on electronic payments. First, and most obvious, it has provided the platform for offering ever more innovative payment alternatives to users: Safaricom M-PESA's launch in 2007 was contingent on an active mobile phone user base of nearly 12 million Kenyans at the time; and WeChat, a social media service of Chinese internet giant, Tencent, with over 650 million monthly active users, has aggressively pursued "social commerce" to allow customers to buy goods and services using electronic payments through the social network itself. So far, WeChat users have stored 200 million bank cards on the platform.[30]

Because many small merchants are individuals, the second impact of consumers' adoption of technology, although less visible, has arguably just as much potential. Financial service providers can analyse data generated by an individual's technological activity – text, voice, data, location and social media – and offer compelling services back to the merchant that increase efficiency and value generated for both the merchant and the service provider. For example, MicroEnsure, a microinsurance firm serving nearly 18 million mainly unbanked customers in Africa and Asia, has partnered with Telenor Pakistan, the country's largest mobile operator, to offer free life insurance to users, based on a minimum purchase of prepaid airtime per month.[31]
In addition, the algorithm could serve merchant insurance

Figure 8: Global growth of smartphone penetration and social network users, 2013-2018 (billions)



Sources: GSMA (2015a); eMarketer, in Taylor (2016)

needs. Similarly, banks use a small business's social media activity to reduce internal costs through stronger fraud prevention[32] and optimized call-centre operations.

Using electronic payment data, in particular, has gained the most traction for offering value-added services to micro, small and medium businesses. Such data not only informs overall sales volumes, but also reveals key patterns for gauging a firm's financial health, such as transactions from unique customers, frequency of supplier payments, best-selling products, stock-keeping units (SKUs), variance over time (day, week or month) or seasonality. Square analyses payments and customer data processed through its platform to offer powerful insights to merchants for retaining customers and boosting sales. Safaricom offers a free "M-Ledger" smartphone app to help small-business owners better understand their sales and expenses by matching two data sources: M-PESA SMS confirmation messages stored on users' handsets, and users' six-month M-PESA transaction history located on the company's servers. While banks have historically used electronic payment data to offer financial products and analytical services to their small-business clients, the Safaricom example shows the value of combining payment and non-payment data to deliver value back to the merchant.

Analysing electronic payments to offer merchant loan products is an innovation gaining worldwide acceptance. With a hassle-free application process and rapid turnaround time, this meets two needs. First, small businesses are often strapped for short-term capital and do not have the time (or a strong enough credit score) to undertake a lengthy credit-approval process. Second, providers can use data to gauge risk and improve underwriting, allowing them in most cases to offer unsecured loans at high margins.

Big, Small and Alternative Data: New Opportunities, New Challenges

Much has been made of "big data", particularly in fintech and with the rise of alternative lending and underwriting. While combining multiple, sophisticated data sets can yield powerful results, some basic analysis on even a handful of variables can improve segmentation, boost customer loyalty and reduce loan losses. Harnessing digital data for innovations in merchants' adoption of electronic payments has great potential and is taking many forms, as well as for other types of financial services. This trend also requires special attention to assessing and developing adequate practices for protecting consumer data, ensuring data security and privacy, and, at the same time, providing an enabling environment for innovation.

For more information on this trend, see Costa et al. (2015), CGAP (2015d) and World Bank (2016).

Kabbage, a US-based company founded in 2009, asks small-business owners to enter personal, financial and sales information, as well as social media activity; funds can then be disbursed in as little as a few minutes. AMP Credit Technologies requests access to daily cash-flow data through credit or debit cards, and offers unsecured loans in two days to businesses in Hong Kong, the Philippines and Singapore. Telmex, a Mexican telecom company, offers loans of up to $40,000 to its small-business customers, based in part on data analysis of their phone records.[33]

Addressing information asymmetries in financial markets provides opportunities for individual and firm merchants to gain access to financial and non-financial products and services that previously were hard to obtain. Using alternative data, as already discussed and as covered in the case examples, addresses the information asymmetry gap, a key obstacle to expanding financial inclusion to individuals and firms. Harnessing digital and alternative data trails can make for new ways of assessing creditworthiness of previously unserved segments – those that are financially constrained and potentially good borrowers, but are not able to serve under traditional underwriting models.[34]

"Big" and "small" data, both payment- and non-payment-related, will increasingly be used to offer value-added services, particularly microloans, to small businesses. Merchant acceptance of electronic payments will expand as more business owners adopt a variety of consumer technologies, from today's smartphones and social media to the future's wearables and virtual reality.

Case in point: Kopo Kopo[35]

In the first few years following Safaricom's M-PESA launch in 2007, mobile money services included mainly P2P transfers, deposits and withdrawals (also known as "cash in" and "cash out") at retail agents, as well as airtime and utility payments. In 2011, the start-up Kopo Kopo (Case Box 3) recognized an untapped opportunity to offer acceptance of electronic payments to merchants using the M-PESA platform; Kenya had many small retailers, very few of whom accepted bank cards. At the time, only 16,600 of the several hundred thousand retailers in Kenya had POS terminals, according to the Central Bank of Kenya. Those retailers who had been approached were reluctant to pay the merchant fees of roughly 3-5% of sales. The World Bank Group's report, *Cash vs. Electronic Transactions by Small Retailers: Estimating the Global Size*, approximates the total sales of micro, small and medium retailers in 2015 at over $35 billion. In addition, only 12% of the over 1 million cardholders held credit cards; the bulk were debit cards used primarily to withdraw cash rather than make payments. Conversely, M-PESA had nearly 17 million registered users, or roughly 70% of Kenya's adult population, out of the 19 million total mobile money users at the end of 2011. Thus, the two-sided market had already been "cracked": customers were actively using electronic money to make transfers to other individuals, but did not have a means to do so at retail merchants.

Kopo Kopo launched its merchant processing platform in February 2012, and started acquiring small retailers by offering a 1.5% commission on all sales conducted through M-PESA. Customers would enter a merchant "till" number to identify the merchant, and Safaricom would clear and settle the transaction. Kopo Kopo quickly gained hundreds of merchants, enough for Safaricom to begin offering its own merchant payment product, Lipa Na M-PESA (described earlier), directly to merchants in mid 2013. Eventually it slashed the commission fee to just 1%.

Kopo Kopo recognized that competing directly on mobile merchant payment processing against a much larger challenger represented a challenge, especially given Safaricom's brand, distribution and lower price. It thus responded with a two-pronged strategy: first, it built value-added services that directly addressed merchant needs and pain points, such as business intelligence and targeted SMS marketing. Second, it used predictive analytics on both the payment processing and customer relationship data to offer Grow, an instant cash-advance product, to its 10,000-strong merchant base in 2014 (most of whom are active). Repayment was cleverly deducted from future sales made through Kopo Kopo's merchant payment platform. About 40% of active users are eligible for a loan; although effective monthly interest rates are 3-6%, the loan is priced as a flat-fee model. Decisions are almost immediate and disbursement occurs within 24 hours because credit decisions are being revised daily, based on historical electronic payment cash flows before the request.

Grow has approximately 1,000 merchants so far and has disbursed $3 million, with a loss rate of just 2% on an average loan of $4,000 over four months. It has been successful enough for the company to declare recently that filling the "SME finance gap" will be its primary aim in the future, with merchant payment acting as the necessary "hook" to attract merchants. The company has not only survived, but also thrived: it raised $2.1 million in a Series D round of financing at the end of 2015, and is now providing merchant acquisition and customer support, as well as managing settlement for Safaricom's Lipa Na M-PESA service.

Case box 3: Kopo Kopo

KOPO KOPO

Business profile

Name: Kopo Kopo (company); Grow (product)

Type of organization: Technology start-up

Year operations launched: 2014 (2011 for standard merchant payments service)

Active countries: Kenya

Payment Channels, Technology And Innovation Features

Services: P2B payments, value-added services

Acquirer: Kopo Kopo

Payment instrument: Mobile money

Payment instrument form factor: Consumer's mobile phone

Innovation: Kopo Kopo provides unsecured, instant credit lines to its acquired merchants based on historical payment data.

Merchants

Target segment: Micro and small retailers

Number of merchants reached: 1,000 for the Grow product (10,000 as overall base)

Other cases relevant for this insight: Alibaba (China), including partnerships with Lending Club (USA) and iwoca (Spain, UK); Kabbage (USA); Square Capital (USA); AMP Credit Technologies (Philippines, Singapore, Hong Kong); Telmex (Mexico)

The suppliers' role: boosting merchant adoption of electronic payments

Insight 4: Suppliers have financial incentives and operational capabilities to encourage retailers to pay them electronically.

Of the payments between retailers and suppliers, the first-leg B2B supply chain payments are substantial, at over $13 trillion.[36] Moreover in most emerging markets in Asia, Latin America, the Middle East and Africa, only one-third of the value is transacted electronically, representing an enormous, untapped opportunity. The Table lists the estimated annual value of electronic payments by type of retailer and region (emerging regions are highlighted).

Several factors make the shift from cash to electronic payments more plausible for B2B transactions. First, suppliers often have corporate bank accounts to manage their business finances; they tend to be more sophisticated entities, and to conduct more payment transactions and manage more payment volume than small retailers. Thus, merchants can more easily transfer payments into an existing account. This differs from the P2B model, where both parties in many cases do not have active accounts to begin with (as mentioned in the Introduction). Second, merchants tend to pay their suppliers frequently and in a consistent way, usually every week or two, and more often for products that turn over quickly, such as beverages. This, in turn, makes it easier for merchants to become accustomed to and comfortable with conducting transactions electronically.

Third, and most compelling, is the strong business case on the supplier side. Unlike P2B transactions, where the business may not necessarily be "hurt" by being paid in cash, suppliers almost always manage substantially large volumes of cash. Doing so, however, is a veritable pain point: **the cost of handling cash, paying for insurance and suffering an occasional robbery or theft amounts to almost 1.7% of total volumes**, according to one payment network interviewed that works with a large regional beverage distributor. Moreover, one multinational fast-moving consumer goods (FMCG) company believes that the morale of their delivery-team employees would improve because they would feel more secure driving without cash. As the company handled over $1 billion in cash payments yearly to over 300,000 small retailers in Latin America, its regional unit was keen to explore different ways of building up the electronic payments value chain, such as buying portable POS terminals for drivers and paying card merchant fees. Moreover, suppliers often have bank accounts which, from a technical perspective, make it easier for merchants to "push" payments into an existing account. This is in contrast to some P2B cases, where service providers need to "crack" a two-sided market in which neither the consumer nor the merchant has an account.

In developing countries, an obstacle to merchant-supplier payments is that even if suppliers have bank or electronic accounts, few retailers have funds available to pay suppliers.

Table: B2B electronic payment value, retail to suppliers ($ millions), by type of retailer and region

Retailer Type/ Region	Grocery Micro	Grocery Small	Grocery Medium	Non-Grocery Micro	Non-Grocery Small	Non-Grocery Medium	Total MSMRs
High Income: OECD	390,546	524,173	830,169	466,788	662,825	673,874	**3,528,375**
Europe & Central Asia	64,888	103,375	137,455	53,662	164,329	164,870	**688,579**
East Asia & Pacific	156,562	101,988	441,633	114,700	315,163	357,823	**1,487,870**
Latin America & Caribbean	68,598	76,729	119,073	43,192	142,321	155,190	**605,103**
Middle East & North Africa	12,833	21,732	60,781	13,789	33,547	62,204	**204,885**
South Asia	14,150	41,495	121,808	16,018	62,709	145,766	**401,946**
Sub-Saharan Africa	5,239	21,328	82,027	8,803	28,833	44,576	**190,807**

Source: World Bank Group (2016a)

Consumers rarely pay retailers electronically, and retailers seldom deposit cash payments from consumers in a bank account on a frequent basis. Thus, merchants simply prefer to pay suppliers in cash. Suppliers can help limit the frequency of making such bank deposits by offering credit in the form of deferred payments.

Another obstacle is that very few suppliers have enough leverage to persuade individual retailers to pay electronically. Even the largest supplier may represent only 30% of the cost of goods sold by a typical small retailer, and most suppliers represent a small fraction of that. However, a stronger case for a business owner to adopt electronic payments would be if several suppliers both used such a payment solution and represented the majority of a retailer's costs. (Tienda Pago has signed up multiple large suppliers, as described the subsequent case).

Paying suppliers with money received electronically from consumers can help build positive network effects. Retailers prefer to receive payments from customers and pay suppliers and employees from the same account because it is convenient. For example, if consumers are content to pay retailers electronically, but retailers in turn cannot pay suppliers in a similar way (or if the suppliers demand cash instead), the retailers are more likely to insist that consumers pay them in cash. But the opposite is also true: suppliers who accept electronic payments are more likely to have retailers who welcome such payments from consumers, creating a virtuous cycle that increases the use of payments and the underlying transaction account (deposit transaction account or e-money).

Suppliers can take an active role in promoting electronic payments for retailers, to the mutual benefit of both parties.

Case in point: Tienda Pago[37]

The Latin-American start-up Tienda Pago (Case Box 4) sees an opportunity to enable B2B electronic payments. Tienda Pago leadership, who previously ran Movilway, an airtime reseller with 85,000 distribution points across Latin America, recognized that Movilway was effectively competing with other distributors (primarily FMCG companies selling beverages, snacks and toiletries) for the same limited cash that retailers had on hand when they passed by. Furthermore, while mobile wallet initiatives had existed for some time, they required retailers to preload funds before initiating a payment transaction to a supplier, which inconvenienced retailers who did not want to make frequent trips to the bank.

Tienda Pago's innovation was to first offer a credit line to the retailer, based chiefly on historical transactions made to the suppliers Tienda Pago had signed up. Technically, no disbursement was made to the store's account; when the retailer needed to pay a supplier, it initiated a transaction that instructed Tienda Pago to pay the supplier directly. The retailer would then repay Tienda Pago for the credit line, along with interest of about 1-2% per week, by depositing cash at a bank branch.

Since its start in the fourth quarter of 2014, Tienda Pago has signed up over 4,000 retailers and some large suppliers, such as The Coca-Cola Company, SABMiller and Movistar in Venezuela and Peru, and plans to expand to Mexico. It has focused on the outskirts of urban centres, as well as on rural areas where the banking sector traditionally has not served retailers well.

Suppliers have welcomed the product, being keenly aware of the high cost of collecting cash. Because retailers can now pay electronically, one supplier has reduced the number of its weekly visits from three to two; and, thanks to the credit line provided to the retailer, the supplier's sales volume has increased. The retailer benefits as well – from increased sales to its consumers and a safer, more efficient mechanism to pay its supplier.

Case box 4: Tienda Pago

Business profile

Name: Tienda Pago
Type of organization: Technology start-up
Year operations launched: 2014
Active countries: Venezuela, Peru

Payment Channels, Technology And Innovation Features

Services: B2B payments, value-added services

Acquirer: Tienda Pago

Payment instrument: Credit transfer (directly from Tienda Pago to merchant supplier)

Payment instrument form factor: Retailer's own phone

Innovation: Tienda Pago provides short-term (1-2 weeks) working capital credit to small retailers to pay suppliers, whom the company signs up to its platform.

Merchants

Target segment: Micro and small retailers

Number of merchants reached: 4,000 (2,000 merchants in each Venezuela and Peru)

Other cases relevant for this insight: N/A

Partnerships: reaching merchants via non-traditional payment actors

Insight 5: Partnering with non-traditional payment actors is essential to reach small retailers at the "last mile".

Despite the gains and innovations in merchant payments made possible by advances in technology, most user experiences and innovations that can potentially become large-scale in the foreseeable future will not be purely digital, and will require a hybrid solution. Particularly developing markets will continue to need well-equipped sales forces, training and onboarding, installation and troubleshooting of corresponding hardware and software, regular follow-up visits, and dependable customer service. This is especially the case for retailers using electronic payments for the first time – those who are more likely to be less comfortable with payment technology.

The traditional acquiring value chain, primarily comprised of activities with merchant interaction (acquisition, onboarding and relationship management) and technology (fulfilment and processing), is shown in Figure 9 along with its principal actors. While various operational models exist, a financial institution or technology company often take the lead with functions related to merchant interactions; sometimes a combination of the two are involved (e.g. a joint venture). Not only is it relevant for non-traditional payment actors to play a part in the value chain, but it is also needed; in particular, they can have a competitive or complementary advantage for the value chain's merchant onboarding and relationship management elements.

Addressing the so-called "last mile" to expand merchant payments – in other words, providing the critical sales and service support to retailers not currently using electronic payments – remains a stubborn challenge; mainly a strong sales function, usually comprised of front-line personnel and not technology, will still be required to overcome it.

Traditional acquiring banks are well aware of these challenges. In fact, the heavy staff costs required to reach new merchants is one of the main reasons why merchant payments have not expanded in harder-to-reach areas, particularly if sales volumes from electronic payments, and thus revenues, are projected to be relatively low. Moreover, countries with large rural populations, such as those in South Asia and Sub-Saharan Africa where nearly two-thirds of the population[38] live in rural areas, remain underserved from a financial inclusion perspective, in large part because current distribution models for banking and payments have not worked.

For this reason, a lead role exists for stakeholders who are not part of the traditional acquiring value chain to own key elements of it. This includes both non-bank actors,[39] such as technology companies, and groups that traditionally have not played explicit roles in the value chain already described. Microfinance institutions (MFIs), mobile airtime resellers and FMCG suppliers, in particular, are well suited to play this role. They already interact with micro, small and medium businesses on a regular basis, and often know their financing needs intimately (especially in the case of MFIs, as the credit underwriting process is contingent on assessing financial capacity to repay). Moreover, they have established strong trust with the businesses, which is critical to help persuade them to adopt payments technology.

At the onset, mobile operators used their airtime resellers to build out the mobile money business, by nature of their existing relationship. Rather than develop their own sales forces, many mobile operators, acting as both "issuing" and "acquiring" institutions, leveraged the existing capabilities and relationships established by their airtime distributors with local retailers to expand the mobile money agent network. As with any channel outsourcing, the service provider takes on additional risk and pays commission, which is arguably the only sustainable way of rapidly acquiring the agent infrastructure.

Figure 9: Merchant acceptance of the electronic payments value chain

Merchant Acquisition	Merchant Onboarding	Fulfillment and Activation	Processing & Settlement	Merchant Relationship Mgmt
Identify targets market, sell and acquire merchants.	Validate merchants, underwrite their potential risk and onboard merchants	Install, maintain and associated support activities to enable merchant acceptance at P01 of multiple payment types	Processing transactions and settle funds across schemes	Management of merchant relationship & address customer issues

Source: MasterCard (2016) as referenced in ITU (2016).

Retailers in rural areas will particularly benefit from partnership models. Transaction costs for financial services, including payments, tend to be higher in rural areas because of poor infrastructure for roads, electricity and telecommunications connectivity relative to urban areas. Rural populations also tend to have smaller transaction sizes (e.g. loans, saving balances and average payments), and are less literate and financially savvy. As a result, few authorized financial institutions target rural areas, and many financial services that do exist for them are informal or semi-formal (e.g. loans from agricultural suppliers). Partnering with actors that have an existing, ongoing relationship with rural retailers can help financial institutions create a viable business model to offer payment and other financial services. This can assist non-banks as well, who have begun offering mobile money accounts to the broader public.

Because of their existing interactions with small retailers, non-traditional payment actors are well positioned to help acquire and retain retailers for electronic payments in developing countries.

Case in point: Grupo Bimbo - Blue Label[40]

Grupo Bimbo, a multinational company producing bakery products and based in Mexico City, saw an opportunity to partner with payment companies to service small convenience stores (*changarros*) in Mexico. It faced strong competition from larger, more modern retailers and large convenience chains, such as 7-Eleven and Oxxo, who offered cardholder solutions such as card payments and airtime top-up. This led to lost revenue among many small retailers, forcing some to close down. In 2011, the company created a joint venture with Blue Label Technologies, a payments processing firm in South Africa, to create Blue Label Mexico (Case Box 5) and offer payment solutions to Grupo Bimbo's existing retail customers.

In the same year, it started installing electronic airtime and bill payment POS solutions at retailers so that they could sell these services to consumers. Not intended as card-reading terminals initially, they nonetheless allowed retailers to earn additional commission by purchasing airtime and paying bills electronically on behalf of the end user. Based on the initial pilot's success, Blue Label Mexico started offering traditional card-accepting terminals in 2013 through a partnership with Banamex, one of the country's largest private banks, and Visa.

This network, called Red Quibo, also became a brand around the platform. Banamex acts as a traditional acquirer (processing transactions and opening the retailer account), while Blue Label Mexico serves as a "payment aggregator" to acquire small retailers and aggregate the transactions on behalf of Banamex. Currently, Blue Label Mexico's platform has 75,000 retailers, of which roughly 30% are traditional card-acquirers. Blue Label Mexico charges a 3.5% fee per sale to the retailer, and pays a portion of that to Banamex.

Blue Label Mexico trains a dedicated sales force, branded with the Grupo Bimbo logo, which visits most retailers to sell the service, technically install and integrate the POS terminals, and conduct customer service visits up to three times daily. Because store owners often do not have time to leave the premises to buy airtime, the sales force staff frequently go to the bank and do it on the owner's behalf. Blue Label is the main point of contact for the retailer, staffing a dedicated call centre to address retailer needs.

So far, retailers are responding well; most are active, and statistics show that their average sales volume per transaction increases once they start accepting card payments. Blue Label Mexico speculates that this comes from sales that would have normally gone to a larger grocer or supermarket. The project, Blue Label Mexico admits, is still in the "proof-of-concept" stage, although it has constructed the business to be financially viable despite focusing on a segment that is notoriously difficult to target. It contends that Grupo Bimbo's recognized brand, along with the relationship its sales force already has with retailers, provided the trust needed for retailers to try the service and pay commissions, despite their tight margins. In the future, it envisions offering additional value-added services to the retailers' end users, and enabling retailers to pay suppliers, with the aim of creating more opportunities for the retailers and the company to increase revenues.

Case box 5: Grupo Bimbo - Blue Label Mexico

Business profile

Name: Blue Label Mexico

Type of organization: Joint venture (Grupo Bimbo [Mexico] and Blue Label Technologies [South Africa])

Year operations launched: 2013 (2011 for non card-accepting terminals)

Active countries: Mexico

Payment Channels, Technology And Innovation Features

Services: P2B payments, value-added services

Acquirer: Banamex

Payment instrument: Debit cards and credit cards

Payment instrument form factor: Payment card

Innovation: Blue Label Mexico leverages the existing Grupo Bimbo sales force to sign up small retailers and provide them with card-acquiring POS terminals.

Merchants

Target segment: Micro and small retailers

Number of merchants reached: 22,000 (of the 75,000 merchant base)

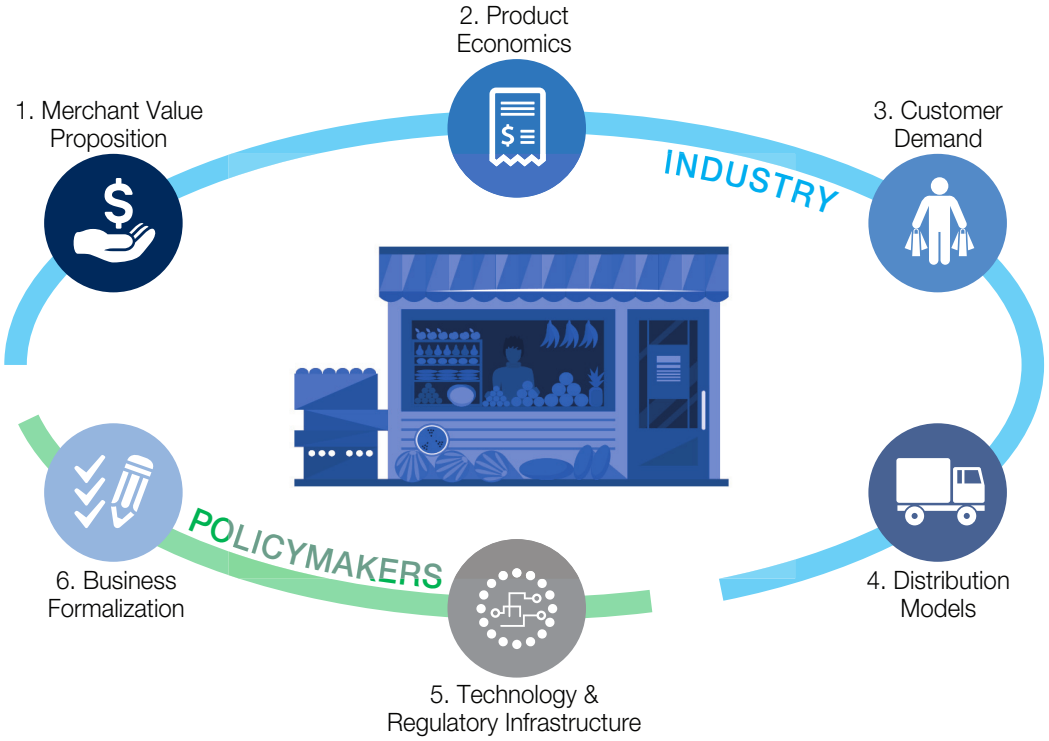
Other cases relevant for this insight: N/A


180
245
225
365
2,60€

Part 3: Catalytic actions for consideration

In light of the core insights, the considerations for action centre on reducing or eliminating the six main obstacles to expanding adoption of electronic payments to retailers, as described in Part 1. Specifically, and as depicted in Figure 10, the private sector may consider action to address obstacles 1-4 (highlighted in blue), and policy-makers would primarily target obstacles 5 and 6 (highlighted in green).

Figure 10: The roles of industry and policy-makers in addressing the key obstacles



Source: World Bank Group analysis

Actions for Industry

In revisiting the framework in Part 1 (Figure 1) and the guiding principles from the PAFI report, guiding principle 4 is particularly relevant to inform actions of both industry and public-sector stakeholders, and is reproduced here as follows:[41]

PAFI guiding principle 4: Transaction account and payment product design
The transaction account and payment product offerings effectively meet a broad range of transaction needs of the target population, at little or no cost.

Key actions for consideration:
- *Where reasonable and appropriate, PSPs provide a basic transaction account at little or no cost to all individuals and businesses that do not hold such an account and that wish to open such an account.*
- *PSPs offer transaction accounts with functionalities that, at a minimum, make it possible to electronically send and receive payments at little or no cost, and to store value safely.*
- *PSPs leverage efficient and creative approaches and effective management practices in their efforts to offer transaction accounts and functionalities in a commercially viable and sustainable way.*
- *The payment services industry, operators of large-volume payment programmes and other stakeholders recognize that the payment habits and needs of currently unserved and underserved customers are likely to differ, and therefore engage in market research and/or other similar efforts to identify and address those payment habits and needs.*
- *PSPs work to ensure that the payment needs of the private and public sector entities with whom holders of transaction accounts regularly conduct payments are met as well.*
- *PSPs work to ensure that the products that target unserved or underserved population segments are easy to use.*
- *PSP efforts to continuously improve their transaction account offering include both traditional and innovative payment products and instruments.*

For the following considerations, industry participants are grouped into three categories: established PSPs; start-ups and other challengers; and non-bank actors, such as microfinance institutions and FMCG companies, that specifically know and interact with MSMRs.

Established PSPs

PSPs are directly involved with providing payment services to underserved retailers. Traditionally, they have been banks and authorized non-banks (e.g. specialized acquirers and merchant aggregators), but not card schemes, as those do not interact with users. More recently, they have been mobile network operators, as in the case of mobile money in emerging markets.[42] Actions for consideration are:

- **Understand the demand-side dimensions of the products and services that MSMRs need:** This should cover both payment and non-payment perspectives. As mentioned in the Introduction, product design is a guiding principle for enabling financial inclusion through payment products. This can be achieved by doing primary market research with retailers and customers (surveys, focus groups, design thinking) and having managerial staff observe and/or speak directly with prospective merchants. The ideal shift is in addressing actual pain points and wants (user-focused) – and, ideally, multiple pain points through a single, simple solution – versus going to market with institutionally focused services that may have been developed without validation by users.

- **Establish a comprehensive understanding of data sources:** These can be merchant and non-merchant, and payment and non-payment sources. Moreover, it should be determined how they can be used specifically to deliver value, either back to the merchant or to the service provider itself.

- **Explore opportunities to stimulate customer demand and break the catch-22 payment problem:** For example, offering an adjacent electronic product as a "hook", such as a mobile person-to-person transfer product or a utility payment, can help customers feel comfortable with electronic transfers, as can using mobile wallets for merchant payments. Once enough customers are registered and actively using mobile wallets, merchants are more likely to accept electronic money as a payment instrument.

- **Consider strategic partnerships with start-ups, technology providers and/or non-bank actors (particularly for distribution):** The following section addresses this. This approach can help reduce upfront and/or fixed costs, and shift to a variable cost structure that would reduce overall financial risk. It also allows service providers to own or lead with elements they do best, such as focusing on their competitive advantage, and to outsource the rest.

Start-Ups and Other Challengers

As illustrated in the highlighted cases, a host of Fintech start-ups have offered payment services over the past few years. At the same time, deep-pocketed challengers outside the traditional payment sector, such as mobile network operators in developing countries and technology firms in developed ones, have also made significant inroads that challenge incumbent banks and payment providers. They can deepen acceptance among small retailers in three main actions for consideration:

- **Redefine business and operating models, rather than extend an existing one**: Traditional models of offering payments encumber current PSPs, such as banks, processors and card schemes, but do not hinder start-ups and challengers. In fact, if the legal and regulatory environment allows for it, start-ups and challengers can define their own "business rules" in some cases. They can simplify certain know-your-customer processes to make opening accounts easier for businesses (e.g. paperless account opening), temporarily or permanently waive or reduce merchant discount rates, or offer quicker settlement than traditional providers. In addition, they often build on existing payment service offerings.

- **Offer niche services and/or cater to niche segments**: Start-ups can hone in on and design a service for a specific part of the payments value-chain that has yet to be addressed – for example, loyalty programmes for low-income merchants. Additionally, specific merchant sectors (healthcare, grocery, energy) can be profitable entry-points for disruptors, despite their relatively small numbers or sales volumes that also make them a low priority for large incumbents.

- **Iterate with speed and agility towards creating winning products**: The ability to move fast when developing solutions is the greatest advantage of any start-up over an incumbent. Being capable of adjusting quickly as many times as needed is another advantage, conditional on the country's regulation of payment systems and its oversight rules. This applies particularly to the retail financial services sector, where banking and payment providers – especially large, established ones that have a substantial user base – can be slower, more deliberate and less nimble in innovating than players in other sectors.

Non-Bank Actors

Non-banks, as defined by the Committee on Payments and Market Infrastructure (CPMI) are those entities that are "involved in the provision of retail payment services whose main business is not related to taking deposits from the public and using these deposits to make loans". Non-banks include firms that specifically have existing sales relationships with MSMRs (the so-called "last mile" that physically reaches them); they tend to have a major, though frequently underestimated role to play in offering electronic payments, often as so-called "front-end providers".[43] As already mentioned and as seen in the Blue Label Mexico case, this role often takes shape through strong partnerships with technology companies and/or payment providers. Two other actions may be worth pursuing:

– **Assess the savings generated by shifting from cash to electronic payments**: While many consumer goods companies generally feel that handling cash is expensive, few have precisely analysed the cost of cash acceptance, and the potential corresponding savings from migrating to electronic payments. Constructing a business case, even with estimates, constitutes the first step to understanding the size of the opportunity. The World Bank developed a comprehensive methodology for estimating retail payment costs for the demand side, supply side and total economy, while also calculating the savings in moving from cash and paper-based to electronic payment instruments.[44]

– **Understand which capabilities would be of greatest use in expanding payment acceptance:** Consumer goods companies have the obvious benefits of a dedicated sales force and a deep knowledge of and trust in retailers. Other, more intangible "assets", however, could be put to greater use: a strong, recognizable brand; historical payment data; or, in the case of some organizations such as beverage companies and microfinance institutions, past assessments conducted for their core businesses to help underwrite new loan and insurance products offered by financial service providers.

Actions for Policy-makers

Policy-makers have an opportunity to set up a conducive environment that safeguards customers and merchants, while enabling an open, unambiguous regulatory environment for innovation by industry actors.[45]

The PAFI report's guiding principle 2 on the legal and regulatory framework is applicable here and is reproduced as follows:[46]

PAFI guiding principle 2: Legal and regulatory environment

The legal and regulatory framework underpins financial inclusion by effectively addressing all relevant risks and by protecting consumers, while at the same time fostering innovation and competition.

Key actions for consideration:

– A robust framework is established to foster sound risk management practices in the payments industry, including through the supervision/oversight of PSPs and PSOs [payment service operators] by regulatory authorities.
– The framework requires PSPs and PSOs to develop and implement risk management measures that correspond to the nature of their activities and their risk profile.
– The framework aims to promote the use of transaction accounts in which customer funds are adequately protected through appropriate design and risk management measures, such as deposit insurance or functionally equivalent mechanisms, as well as through preventive measures (e.g. supervision, placement of customer funds held by non-deposit taking PSPs in high-quality and liquid assets, and depending on the legal regime, specially protected accounts at banks and possibly trust accounts).
– The framework requires PSPs to clearly disclose, using comparable methodologies, all of the various fees they charge as part of their service, along with the applicable terms and conditions, including liability and use of customer data.
– The framework requires PSPs to implement a transparent, user-friendly and effective recourse and dispute resolution mechanism to address consumer claims and complaints.
– The framework preserves the integrity of the financial system, while not unnecessarily inhibiting access of eligible individuals and businesses to well-regulated financial services.
– The framework promotes competition in the marketplace by providing clarity on the criteria that must be met to offer specific types of service, and by setting functional requirements that are applied consistently to all PSPs.
– The framework promotes innovation and competition by not hindering the entry of new types of PSP, new instruments and products, new business models or channels – as long as these are sufficiently safe and robust.

The following actions for consideration for policy-makers are grouped into three categories: E-payments infrastructure, formalization of enterprises, and partnerships and alliances:

E-Payments Infrastructure

– **Simplify the opening of accounts:** The bedrock of electronic payments is an electronic account (repository) for customer and businesses alike; funds can be deposited into, received in or paid from such accounts. Certain countries have regulatory environments that allow for simplified accounts – usually with limited functionality, such as a maximum balance threshold to reduce risks – that require less paperwork and identification,[47] and have fewer know-your-customer requirements. This would allow service providers to establish a basic transaction account at little or no cost.[48] Many such basic accounts, however, either have a minimum balance, or come with a small fee. Ideally, both conditions would be waived to allow first-time, low-income users to open such an account and use it on an ongoing basis with minimum friction.

– **Allow the issuing of e-money:** Many innovations in developed markets, particularly mobile money, involve issuing electronic money against receipt of actual funds via a prepaid model. This is particularly important for non-bank actors in their taking a lead role in directly serving customers and merchants, as they would not be permitted to offer actual bank accounts. Regulators who permit the issuing of e-money greatly expand the competitive landscape of innovations in payments, such as those in Russia, Turkey, India, the European Union and Uruguay.[49] For example, Russia's National Payments Law, which permits the issuing of e-money, has allowed for the creation of over 350 million active prepaid accounts through 2014, clearly indicating that e-money accounts can serve a useful purpose in boosting payments.

– **Ensure consent and consumer data protection:** With the rise of myriad types of consumer data described in insight 3, regulators would need to define protocols that stipulate the conditions under which providers can use data, as well as protocols for safeguarding data and ensuring data privacy and protection. As bank and non-bank service providers explore ways of using digital customer data, they need to ensure they follow their country's corresponding regulations on customer consent and data privacy. This particularly concerns providers who do not directly "own" the customer or their data, and enter into partnership with those who do. (The issue of who controls the data is important and needs to be addressed; as in many cases with current international and national regulations, it is often not clear who is the responsible "data controller", especially in a borderless world of technology and with various uses and types of data.)[50]

– **Help establish effective interoperability**: Interoperability, as applied to payment systems, contributes to "promoting competition, reducing fixed costs, enabling economies of scale that help in ensuring the financial viability of the service, and at the same time enhancing convenience for users of payment services".[51] B2B payments, where a single retailer pays several suppliers, are particularly concerned (rather than P2B payments, where several customers pay a retailer). A retailer must be able to hold a single transaction account that can then pay into different merchant corporate accounts. But interoperability, defined as the "seamless interaction of two or more proprietary acceptance and processing platforms, and possibly even of different payment products",[52] may be limited in markets where traditional card payment infrastructure is not yet entrenched (as discussed in insight 2) – for example, as in the case of card and mobile money schemes. The role of policy-makers is not necessarily to mandate interoperability, but to engage stakeholders in defining the key technological, operational and financial standards that underpin the core architecture for processing transactions.

Formalization of Enterprises

– **Create incentives for firms to formalize:** Alleviating obstacles to formalizing firms, especially MSMEs in developing markets, is an area of focus for regulatory and business incentives. The evidence on the benefits of formalization is mixed, and depends on which segment a firm is part of on the informality spectrum, and on the firm's characteristics.[53] It is recommended that policy-makers focus on informal firms that have interest and the potential for growth. Access to finance is also an important dimension to assess on this spectrum of firms targeted for formalization. Financial constraints may only be applicable to the firms situated towards the end of the continuum (i.e. mostly registered). While access to finance is a crucial potential benefit of formalization, "a series of studies show that formalization does not automatically lead to greater access to finance given other factors such as the productivity of the firm, state of development of the financial system within a country, behaviour of banks and ownership structure".[54] As some payment schemes only allow formal businesses to accept electronic payments, policies that facilitate formalization will help remove a key obstacle to expanding the acceptance network.

– **Simplify tax codes to encourage informal merchants to formalize**. Simplification of taxes or tax procedures has been demonstrated to have a positive effect on firm creation and formalization; however, the results differ by type of firm.[55] Studies indicate that some unofficial small firms may respond positively to tax reforms, since they give firms the opportunity to expand their customer base through more advertising and issuing tax receipts. Some larger firms operating formally may actually be under-representing sales and are thereby not encouraged to fully comply, even with streamlined tax processes. Evidence suggests firms' response to tax reforms varies by sector; for example, some sectors with low entry costs (e.g. retail) have greater compliance after reforms.[56] Simplifying tax procedures may help otherwise reluctant micro and small retailers to formalize and pay taxes to migrate from cash to electronic payments.

Partnerships and Alliances

– **Build an ecosystem of private- and public-sector stakeholders to work towards a common solution:** With individuals having small transaction volumes, expanding electronic payments for small merchants requires a significant amount of scale to be viable. As a "neutral" party, government can take a lead role in bringing together some of the industry actors already mentioned – financial institutions, mobile operators, technology companies and fast-moving consumer goods companies – and ensure that they work together to target as many consumers, merchants and transaction cases as possible. The Government of Peru, in coordination with the Bankers' Association of Peru, the International Finance Corporation and the Better Than Cash Alliance, created a public-private partnership with a new legal entity, Modelu Peru, to launch a wholly bank-mobile-other interoperable white label retail payments product managed through an open wholesale payments platform to enable multi-FSP interoperability for digital financial services across the country. Modelu Peru brings together 34 financial institutions to connect to a payments platform designed by technology vendor Ericsson, and functions over all three of the country's telecom networks with a common brand, registration process and product features.

Innovations that promote electronic payments for small and medium merchants are still emerging. They represent, however, an enormous potential to accelerate commerce among underserved populations and deepen financial inclusion for merchants and consumers alike. While more pilots and implementation are required, and more research and data points need to be gathered, the five identified insights, featured cases, global sizing and related analysis are intended to serve as inspiration for exploring and conceiving similar product concepts. Moreover, this report reflects the optimism that the concrete considerations discussed herein can help policy-makers to set an enabling regulatory environment, and industry to accelerate the creation of winning solutions.

Acronyms

ATM	Automated teller machine
BIS	Bank for International Settlements
B2B	Business-to-business
B2P	Business-to-person
C2B	Consumer-to-business
FMCG	Fast-moving consumer goods
G2B	Government-to-business
G2G	Government-to-government
G2P	Government-to-person
GPFI	Global Partnership for Financial Inclusion
ICT	Information and communications technology
IFC	International Finance Corporation
MFI	Microfinance institution
mPOS	Mobile point of sale
MSC	Merchant service charge
MSME	Micro, small and medium enterprises
MSMR	Micro, small and medium retailers
OECD	Organisation for Economic Co-operation and Development
PAFI	Payment Aspects of Financial Inclusion
P2B	Person-to-business
P2G	Person-to-government
P2P	Person-to-person
POS	Point of sale
PSO	Payment service operator
PSP	Payment service provider
SKU	Stock-keeping unit
SME	Small and medium enterprise
WBG	World Bank Group

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Paul Kavavu of Safaricom, 3 February 2016
Quang Nguyen of Kopo Kopo, 18 February 2016

Annex 1: Glossary

Term	Definition	Source
Overall note on key terms	Merchants: For the purposes of this report, unless otherwise noted, the terms "merchants", "retailers" and "small businesses" are often used interchangeably, as well as formal "micro, small and medium retailers" (MSMRs), which is the term used for the global sizing study. Electronic payments: The term "electronic payments" denotes all payment transactions comprising direct debit (direct debit and wire transfer), card (debit, credit, prepaid, gift) and mobile (conducted by a mobile device, such as a phone or tablet). For the purposes of this report, "electronic payments" is the most frequently used term. If the term "digital payments" is referenced, it denotes electronic payments.	
Acceptance	1. For transfer systems: the inclusion of a transfer order for funds or securities in a system's operations for further processing, potentially following various checks (e.g. regarding technical standards or the availability of funds), as specified in the system's rules. 2. For cards and mobile money: the process by which a terminal, merchant or other entity accepts a particular brand of card or mobile money.	World Bank (2012a)
Acquirer	An entity (or more than one entity) providing merchants with services that accept electronic payments related to the clearing and settlement of transactions.	World Bank (2012a)
Business-to-business (B2B) transactions	Includes all payment transactions occurring between two or more businesses, such as retailer payments to suppliers and wholesalers. For this report, this initial leg is the only form of B2B payment considered.	Euromonitor International
Card payment	These include credit card payments, charge card payments and debit card payments, and typically involve use of a physical plastic card by a payer to discharge the payment obligation to the payee. Payment cards can be used for in-person purchases, as well as for remote payments, such as e-commerce. Increasingly, card-based payments are accepted in all standard banking channels, such as ATMs, internet banking and mobile banking, and at kiosks.	World Bank (2015a)
Cash	Banknotes and coins, issued by a central bank or government, that are recognized as legal tender in the respective country, or accepted next to local currency for retail payments.	World Bank (2015a)
Clearing/ Clearance	The process of transmitting, reconciling and, in some cases, confirming payment orders or security transfer instructions prior to settlement. It may include the netting of instructions and the establishment of final positions for settlement. At times, the term is used, though imprecisely, to include settlement	World Bank (2012a)
Electronic payments	Payment instructions that enter a payments system via the internet or other telecommunications network. The device used to initiate the payment could be a computer, mobile phone or POS device, among others. The payment instrument used could be an e-money product, payment card product, credit/debit transfer or other innovative payment product.	World Bank (2012a)
E-money	A record of funds or value available to a consumer, stored on a payment device, such as a chip, prepaid card, mobile phone or computer system, as a non-traditional account with a banking or non-banking entity. E-money products are further differentiated into prepaid cards, online money and mobile money.	World Bank (2012a), World Bank (2015a)

Financial inclusion	The availability of appropriate financial services and products – including savings, payments, credit and insurance – to adults of all income groups, at a cost affordable to the customer and sustainable for the provider, and provided in a responsible manner.	Alliance for Financial Inclusion, Consultative Group to Assist the Poor (CGAP), Global Partnership for Financial Inclusion (GPFI), United Nations Secretary-General's Special Advocate for Inclusive Finance for Development (UNSGSA), World Bank
Interoperability	A situation in which payment instruments belonging to a given scheme may be used in other countries and in systems installed by other schemes. Interoperability requires technical compatibility between systems, but can only take effect if the schemes concerned have concluded commercial agreements.	World Bank (2012a)
Issuer	An institution that issues the payment instrument. The term typically refers to the institution issuing a payment card or e-money instrument.	World Bank (2012a)
Merchant payment	A payment involving a merchant as payer or payee. See "retail payment".	World Bank (2012a)
Mobile financial services	Financial services that are accessed via a mobile phone, which is also used to execute financial transactions. Such services include mobile money, mobile insurance, mobile credit and mobile savings.	GSMA (2014a)
Mobile money	An e-money product where the record of funds is stored on a mobile phone or central computer system, and can be drawn down through specific payment instructions issued from a bearer's mobile phone.	World Bank (2012a)
Mobile network operator	A company with a government-issued licence to provide telecommunications services through mobile devices.	GSMA (2014a)
Non-banks	Any entities involved in providing retail payment services, and whose main business is not related to taking deposits from the public and using those deposits to make loans.	CPMI (2014)
Payment	A transfer of funds that discharges an obligation on the part of a payer vis-à-vis a payee.	European Central Bank, Glossary of terms related to payment, clearing and settlement systems, 2009

Payment service provider	An entity that provides payment services (remittances and/or other payments) directly to end users, such as consumers and businesses. This includes both entities that take deposits and allow transfers of funds to be made from those deposits (i.e. most banks and many non-bank deposit-takers), and non-deposit takers that transfer funds (e.g. money transfer operators).	Committee on Payment and Settlement Systems (CPSS)-World Bank, General principles for international remittance services, 2007
Payment system	A set of instruments, banking procedures and, typically, interbank-fund transfer systems that ensure the circulation of money.	CPSS-BIS, A glossary of terms used in payments and settlement systems, 2003
Person-to-business (P2B) transactions	All payments made by consumers ("persons") to businesses in return for products or services.	Euromonitor International
Retail payment	A payment that meets at least one of the following characteristics: (i) the payment is not directly related to a financial market transaction; (ii) the settlement is not time-critical; (iii) the payer, the payee or both, are individuals or non-financial organizations; and (iv) either the payer, the payee or both, are not direct participants in the payments system that processes the payment. This definition includes payments that are person to person, person to business, business to person, business to business, person/business to government, and government to person/business.	World Bank (2012a)
Retailing	Retailing refers to the sale of new and used goods to the general public for personal or household consumption. The term excludes specialist retailers of motor vehicles, motorcycles, vehicle parts and fuel. It also excludes food service, rental and hire, and wholesale industries (cash and carry). Retailing refers to the aggregation of store-based and non-store retailing.	Euromonitor International
Micro retailers	Those retailers selling goods to consumers and employing one to five people.	Euromonitor International
Small retailers	Those retailers selling goods to consumers and employing 6 to 25 people.	Euromonitor International
Medium retailers	Those retailers selling goods to consumers and employing 26 to 100 people.	Euromonitor International
Traditional grocery retailers	Traditional grocery retailing is the aggregation of channels that are invariably non-chained and, therefore, owned by families and/or run on an individual basis. Traditional grocery retailing is the aggregation of three channels: independent small grocers, food/drink/tobacco specialists, and other grocery retailers. While there can be modern (e.g. chained) food/drink/tobacco specialists or other grocery retailers, due to the store's presence in the channel, these stores are still considered as traditional.	Euromonitor International
Modern grocery retailing	Modern grocery retailing is the aggregation of those grocery channels that have emerged due to the growth of chained retail. Modern grocery retailing is the aggregation of five channels: hypermarkets, supermarkets, discounters, forecourt retailers and convenience stores.	Euromonitor International

Non-grocery retailers	Retail outlets selling predominantly non-grocery consumer goods. They exclude retailers selling predominantly food, beverages and tobacco, as well as fuel, automotive and other parts. The term "non-grocery retailers" represents the aggregation of the following: – Apparel and footwear specialists – Electronics and appliance specialists – Health and beauty specialists – Home and garden specialists – Leisure and personal goods specialists – Other non-grocery retailers	Euromonitor International
Service retailers	The aggregation of food service retailers (restaurants, cafes, bars and others) and other miscellaneous service retailers (automotive repair, electrical, plumbing, insurance, legal and other service-oriented enterprises).	Euromonitor International (Note: The global-sizing component of the project only covers goods [formal] retailers.)
Settlement	An act that discharges obligations in respect of the transfer of funds or securities between two or more parties.	World Bank (2012a)

Annex 2: Guiding principles of payment aspects of financial inclusion[57]

Guiding Principle	Description
1. Commitment	Commitment from public- and private-sector organizations to broaden financial inclusion is explicit, strong and sustained over time.
2. Legal and regulatory framework	The legal and regulatory framework underpins financial inclusion by effectively addressing all relevant risks and by protecting consumers, while at the same time fostering innovation and competition.
3. Financial and ICT infrastructures	Robust, safe, efficient and widely reachable financial and ICT infrastructures are effective for the provision of transaction accounts services, and also support for the provision of broader financial services.
4. Transaction account and payment product design	The transaction account and payment product offerings effectively meet a broad range of transaction needs of the target population, at little or no cost.
5. Readily available access points	The usefulness of transaction accounts is augmented with a broad network of access points that also achieves wide geographical coverage, and by offering a variety of interoperable access channels.
6. Financial literacy	Individuals gain knowledge, through awareness and financial literacy efforts, of the benefits of adopting transaction accounts, how to use those accounts effectively for payment and store-of-value purposes, and how to access other financial services.
7. Large-volume, recurrent payment streams	Large-volume and recurrent payment streams, including remittances, are leveraged to advance financial inclusion objectives, namely by increasing the number of transaction accounts and stimulating the frequent usage of these accounts.

Case Annex

For the full listing of cases collected for the purpose of this report, please refer to the Case Annex here.

Endnotes

1. World Bank Group (2016a).
2. For the purposes of this report, unless otherwise noted, the terms “merchants”, “retailers” and “small businesses” are often used interchangeably, as well as formal micro, small and medium retailers (MSMRs), which is the term used for the global sizing study. For additional details and other terms relevant to this study, please refer to the Glossary.
3. According to interviews conducted in seven countries (Colombia, France, Kenya, Lithuania, Morocco, Pakistan and Turkey) selected for in-depth primary research of the global sizing study. Market sizing estimates and list of countries as per World Bank Group (2016a).
4. CPMI and World Bank Group (2016). The Payment Aspects of Financial Inclusion (PAFI) report examines demand and supply-side factors affecting financial inclusion in the context of payment systems and services, and suggests measures to address these issues. The report has been prepared by a task force of the Committee on Payments and Market Infrastructures (CPMI) and World Bank Group (as chair), consisting of representatives from CPMI central banks, non-CPMI central banks active in the area of financial inclusion, and international financial institutions.
5. World Bank Group (2016a), Visa (2016).
6. Mas (2009).
7. For more detailed analysis, see World Bank (2015a).
8. In some cases, PSPs are extensions of existing companies that facilitate payment for a firm’s core business (e.g. a mobile operator selling airtime, a technology company enabling payment of goods on its marketplace).
9. Visa (2016).
10. World Bank Group (2016a). For more information and to view methodology and more statistics, download the full sizing report at http://pubdocs.worldbank.org/pubdocs/publicdoc/2016/6/219031465585757849/WBG-Electronic-Payments-Small-Retailing.pdf
11. For the purposes of the study, B2B payments were restricted to the payments by the retailers to their immediate suppliers, and other supplier payments along the supply chain were excluded. A reliable estimate of all B2B payments along the supply chain was not feasible on a global scale.
12. See Bachas, Gertler, Higgins and Seira (2016) for a study on trust in Mexico, as it relates to the use of debit cards for savings.
13. Costs incurred by the user include “resource costs”, such as those due to time, logistics, infrastructure and production, and “transfer costs”, which are fees paid to the service provider, such as transaction fees. Users bear higher transfer costs for electronic payments compared to cash, but significantly lower resource costs. Other costs are borne by the service provider. For a full methodology, see World Bank (2015a).
14. Edwards et al. (2014).
15. GPFI (2015).
16. CPMI and World Bank Group (2016).
17. USAID (2015). The highlights of the study have been noted verbatim.
18. World Bank Group (2016b). Indonesia market research was undertaken by the IFC Indonesia Digital Financial Inclusion project, funded by the State Secretariat for Economic Affairs (SECO).
19. The joint stakeholder reach-out exercise was conducted in alignment with the learning agenda of the Markets and Payment Systems Group of the Global Partnership for Financial Inclusion. Information from several cases was used to inform a recent report by the Global Partnership, entitled Innovative Digital Payment Mechanisms Supporting Financial Inclusion Stocktaking Report (2015).
20. The Case Annex is available separately as an addendum to this report.
21. CPMI and World Bank Group (2016).
22. ITU (2016).
23. CGAP (2015c), ITU (2016).
24. Since 2006, American Express has also offered its branded network and transaction processing services to select issuing and acquiring banks, which more closely resembles a four-party model.
25. Chaplin (2014).
26. Interview by phone with Paul Kavavu of Safaricom, February 2016.
27. Kendall et al. (2014).
28. Smartphone penetration figures from GSMA (2015a).
29. GSMA (2015b).

30. Tencent (2015).
31. Microcapital (2013).
32. Krishnamurthy (2013).
33. World Economic Forum (2015b).
34. McEvoy (2014), World Economic Forum (2015b).
35. Interview by phone with Quang Nguyen of Kopo Kopo, February 2016.
36. World Bank Group (2016a).
37. Interview by phone with Dan Cohen of Tienda Pago, February 2016.
38. World Bank (2014).
39. CPMI (2014).
40. Interview by phone with Hortencia Contreras of Blue Label Mexico, February 2016.
41. CPMI and World Bank Group (2016).
42. Some companies previously considered as "challengers", particularly mobile network operators, could arguably have been seen as more established PSPs in some markets (e.g. Safaricom in Kenya). The considerations herein are oriented towards incumbents and challengers versus associating them to any particular sector.
43. CPMI (2014).
44. World Bank (2015a).
45. The considerations that follow are specifically oriented to policy-makers, although the broader government does have a role to play. Most significantly, recurring, often small-value G2P payments, such as pension or unemployment benefits, child care support and government employee salaries, can and should be provided electronically rather than through checks or cash. Stipulating that G2P payments should be disbursed electronically may not necessarily be an explicit policy per se (and, thus, fall outside policy-makers' remit); it is, nonetheless, an action that their counterparts in government agencies can take.
46. CPMI and World Bank Group (2016).
47. In parallel, governments can design national identification schemes for identifying all individuals. While not exclusively for facilitating payments, the two purposes have substantial benefits between them. In India, for example, the government has registered nearly 900 million individuals through Aadhaar, a 12-digit unique identification number, and has recently rolled out a product for making welfare payments to a corresponding bank account enabled by Aadhaar. See https://uidai.gov.in/authentication-2/payments.html.
48. CPMI and World Bank Group (2016). The report particularly urges PSPs to "provide a basic transaction account at little or no cost to all individuals and businesses that do not hold such an account and that wish to open such an account".
49. Ibid.
50. For an assessment of international and regional standards regarding data protection issues, see Big Data, Financial Services and Data Protection: Do International Standards Cover the Issues?, a forthcoming 2016 World Bank publication.
51. CPMI and World Bank Group (2016).
52. Ibid.
53. IFC (2013b).
54. Ibid.
55. Ibid.
56. Ibid.
57. CPMI and World Bank Group (2016).

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