Sub-Saharan Africa offers tantalizing potential for mobile financial services, but as yet there have been few success stories. One hurdle has been the lack of clear numbers on the size of the opportunity.

Mobile financial services—often called mobile money—are a high priority for many mobile operators, financial institutions, technology firms, and governments. In regions where financial inclusion is limited, such as sub-Saharan Africa, mobile money promises a lower-cost, more scalable alternative to traditional banking. Yet despite high interest levels in the markets of sub-Saharan Africa, there have been few success stories to date. This is partly the result of uncertainty about whether Kenya—where M-Pesa has become one of the few mobile-money success stories—is unique or the potential for mobile payments in other markets is similarly robust. To cast light on the opportunity, this article attempts to quantify some of the many high-potential payment flows in this rapidly evolving region and to estimate the associated revenue pools.

Primed for mobile payments

In most of sub-Saharan Africa, only a small percentage of upper-income households enjoy the convenience of card-based, online, and mobile banking and payments, while most consumers still pay with cash. One study shows that more than 90 percent of retail transactions in parts of Kenya remain cash based, and Gallup’s survey of 11 countries in sub-Saharan Africa found that more than 80 percent of adults there have made bill payments or remittances with cash. Given the lack of digital-payment penetration, consumers, banks, and governments in sub-Saharan Africa are still bearing the high cost of cash payments—costs associated with manual acceptance, record keeping, counting, storage, security, and transportation.

A lack of mobile technology is not the major obstacle to increasing mobile-money penetration in the region: two-thirds of adults in sub-Saharan Africa currently use mobile phones. And in Kenya, mobile-payment penetration is at 86 percent of households. However, the payment-digitization gaps between Kenya and other nations in sub-Saharan Africa still vary widely (exhibit).
Nonetheless, regulators in many markets are paving the way for e-money and the entry of nonbank operators. And business models and systems for electronic remittances—both domestic and international—have already been well tested in other markets around the globe. Together, these factors should make it easier for digital payments to leapfrog the costly development of formal banking by introducing advanced mobile systems. Why then have many payment players hesitated to venture into these seemingly high-potential markets?

As with most new business ventures, limited information is available about the nature and size of markets, the investment required, the risks involved, and, most important, the nature of customer needs and preferences. New research and market analyses can help in reducing that knowledge gap. The findings presented here are the result of a new study that looks at 44 nations in sub-Saharan Africa and incorporates data recently collected by Gallup (with support from the Bill & Melinda Gates Foundation). The analysis examines remote domestic consumer payments in individual markets in sub-Saharan Africa to identify significant cash-payment volumes made through informal channels. These transaction flows represent a large untapped market for mobile providers. And they are especially relevant because it is easier and less costly to make those payments electronically than with cash.

Exhibit

The gap between current levels of digitization and what levels in other African countries would look like if they were at Kenya’s current one vary widely.

Revenue pools for today’s levels of digitization vs revenue pools if each country had the same level of digitization as Kenya, $ million

<table>
<thead>
<tr>
<th>Country</th>
<th>Today</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>1,881</td>
<td>1,664</td>
</tr>
<tr>
<td>Kenya</td>
<td>1,466</td>
<td>1,881</td>
</tr>
<tr>
<td>Nigeria</td>
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<td>876</td>
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<tr>
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<td>409</td>
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<tr>
<td>Cote d’Ivoire</td>
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<td>463</td>
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<tr>
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<td>295</td>
</tr>
<tr>
<td>Angola</td>
<td>467</td>
<td>282</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>415</td>
<td>229</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>584</td>
<td>207</td>
</tr>
<tr>
<td>Rest of sub-Saharan Africa</td>
<td>3,025</td>
<td></td>
</tr>
</tbody>
</table>

+28% 0 +129% +47% +47% +47% +58% +47% +155% +47% +82%

1Simplifying assumption that revenues are 2% of volume.
Source: The Bill & Melinda Gates Foundation; McKinsey analysis
**Market potential**

To better understand the region's market status and opportunities in digital payments, the research team closely examined new data for several major payment categories, including person-to-person (P2P) payments, government-to-public payments, bill and formal-obligation payments, wages, and payments for goods and services. These represent early-use cases in which the benefits of digital payments considerably outweigh those of cash, thus making it likely that digital payments will rapidly win consumer acceptance. Unsurprisingly, P2P payments are the largest category, given the many migrant workers and informal networks of families and friends, who are often the primary source of family financing.

A key feature of the Gallup survey was that it did not just focus on formal payment options (such as banks, money transfers, or mobile devices) but also asked about payments made in cash through informal channels. This allows us to estimate latent market demand for digital services.

To estimate the market potential on a national basis, the researchers first examined the trends underlying Kenya's rapid transition to mobile payments. These were then applied to each country's raw data to create baseline reference points that were subsequently used to develop individual market projections. Those projections were made assuming the following scenarios:

1. P2P payments are digitized across other sub-Saharan African countries, matching Kenya's current penetration rate for long-distance digital payments (70 percent).

2. Other types of long-distance payments (eg, wages, government-to-public) are digitized to Kenya's current level (70 percent).

3. P2P payments maintain the 70 percent rate of digitization (as in 1, above) and the total transaction volume grows at the same rate as seen in Kenya between 2006 and 2009, during the early expansion of M-Pesa.

We consider these scenarios conservative relative to overall market potential. Scenarios 1 and 2 assume no growth in P2P payments (despite better options probably becoming available). Moreover, all of the scenarios ignore incremental revenue from other types of payment flows, such as retail and revenue generated through new business models that a more ubiquitous and robust digital-payment system would enable.

The Gallup data show that, currently, an average of 54 percent of adults in sub-Saharan Africa make one or more long-distance payments in a given month, totaling approximately five billion transactions annually. The total volume of these flows is approximately $760 billion, and 50 to 60 percent of the transactions are in cash. With a conservative estimate of revenues at 2 percent of volume, this results in annual revenues of about $6.6 billion from electronic payments.
Scenario 1 assumes that overall payment demand remains static, but consumers shift their P2P transactions from cash to digital payments to the same degree as in Kenya, where 70 percent of all transactions are currently electronic. Similar growth in all countries in sub-Saharan Africa would increase regionwide P2P payment revenue by 60 to 70 percent, from $1.6 billion to $2.7 billion. Corresponding digital-payment revenues would rise from $6.6 billion to $7.7 billion. Importantly, this represents only an initial step toward the digitization of payments and focuses only on a single use case.

Looking beyond P2P payments, Scenario 2 extends the Kenyan profile to other types of payments—primarily wages and payments for goods and services made by business and government entities. In this case, total revenue for electronic payments in the region would grow by 50 to 60 percent, to between $10 billion and $11 billion annually. This implies, for example, that combined payment revenue in Nigeria would grow from $0.6 billion to $1.3 billion and in South Africa from $1.5 billion to $1.9 billion.

Scenario 3 goes a step further by assuming that the number of P2P payments will also grow as a result of economic growth, lower transaction costs, and the added convenience of digital payments. In Kenya, survey data show that the number of P2P remittance senders grew by 215 percent between 2006 and 2009, probably the result of M-Pesa’s rapid deployment. If the region’s P2P electronic payments were to grow similarly, its electronic-payment revenue would exceed its baseline by about 50 percent, reaching $15 billion to $16 billion. In Nigeria, for example, the analysis estimates that revenues would climb to approximately $1.8 billion a year.

**Digitization can spur growth in related sectors**

Broad acceptance of digital-payment platforms also benefits stakeholders beyond the payment industry. In Kenya, for example, many start-ups are attempting to incorporate M-Pesa as part of their entrepreneurial business models. One small business uses it to help parents make more timely school-fee payments, while another uses it to establish informal savings groups. Even nonpayment organizations are finding ways to use the new payment infrastructure. For instance, Bridge International Academies, a low-cost, for-profit educational franchiser, found that M-Pesa could help it obtain real-time financial data, which enabled it to become more trusting of franchisees and reduce record keeping.

Governments also gain when adopting digital payments, which not only reduce their payment costs but also increase transparency. And the public ultimately benefits, too, when tax revenues grow concurrently with the increased documentation, transparency, and overall economic growth that accompany digital payments.
When digital payments take hold, as they did in Kenya, consumers eventually profit from the related savings. The cost of making remittances via M-Pesa is about half that of other formal domestic-remittance services. Moreover, customers can instantly send payments from their mobile phones instead of traveling an hour or more to distant bank branches. Many customers in sub-Saharan Africa need bank services but simply live and work too far from a branch office.

Equally important is that electronic payments bring financial services to vast numbers of unbanked and underbanked families. They dramatically reduce transaction costs, greatly increase customer convenience, and minimize the need for expensive physical infrastructure, including branch networks.

**Implications for payment providers**

Sub-Saharan Africa presents a number of opportunities for bank and nonbank financial-service providers, mobile operators, and others seeking new markets. An important first step in considering these markets is understanding the common financial flows in a typical household in sub-Saharan Africa—flows that differ significantly from those seen in more developed markets. Here, fund sources tend to be as diverse as wages, crop income, remittance payments from family members, government payments, and even public donations. Typical expenses include food, utilities, school fees, health needs, basic retail purchases, and purchases associated with various life-stage ceremonies, such as weddings, funerals, and holidays. Understanding where these flows are concentrated will enable the development of more effective market-entry strategies. For instance, a bank’s relationships with employers, government agencies, and agricultural entities might best position it to digitize private and government wages, or farm payments. And mobile operators with far-reaching airtime networks might do best in the P2P-payment arena.

The region’s small and medium-sized enterprises also send and receive a wide variety of payments. They receive payments from customers, middlemen, and government agencies, while making payments to wholesalers, employees, landlords, and service providers. Notably, most of these are still paid with cash. Small and medium-sized enterprises are recognized as an important market segment given their higher payment volumes. And being at the center of customer and supplier networks, such enterprises can stimulate adoption both up and down the value chain.

There are also indirect benefits of mobile payments to consider. Mobile operators, for example, have noted that churn rates for mobile-money users are significantly lower. And by incorporating data from payment flows and other nontraditional sources into credit models, institutions can significantly reduce loan losses. Mobile operators could do likewise for postpaid
customers. Similarly, the flows discussed in our estimates exclude retail and several other types of transactions that could also be captured by early movers as markets continue to develop and could generate multiples of the revenue represented by the use cases discussed here.

Launching mobile payments in new markets is seldom easy. In developing economies, one of the greatest challenges is providing convenient options for cash deposits and withdrawals. ATMs, point-of-service devices, and agent networks must be conveniently located throughout a community. The up-front investments this requires can be substantial, but they are necessary to provide a solid foundation for future growth.

Clearly, there is significant latent demand for digital payments in many markets of sub-Saharan Africa, and widespread consumer acceptance of mobile-communications technology is highly encouraging. For players that are able and willing to move in the near future, there are also opportunities to win important first-mover advantages.

Jake Kendall leads the Research and Innovation initiative within the Financial Services for the Poor team at the Bill & Melinda Gates Foundation. Robert Schiff is a principal in McKinsey’s San Francisco office, and Emmanuel Smadja is a consultant in the Washington, DC, office.