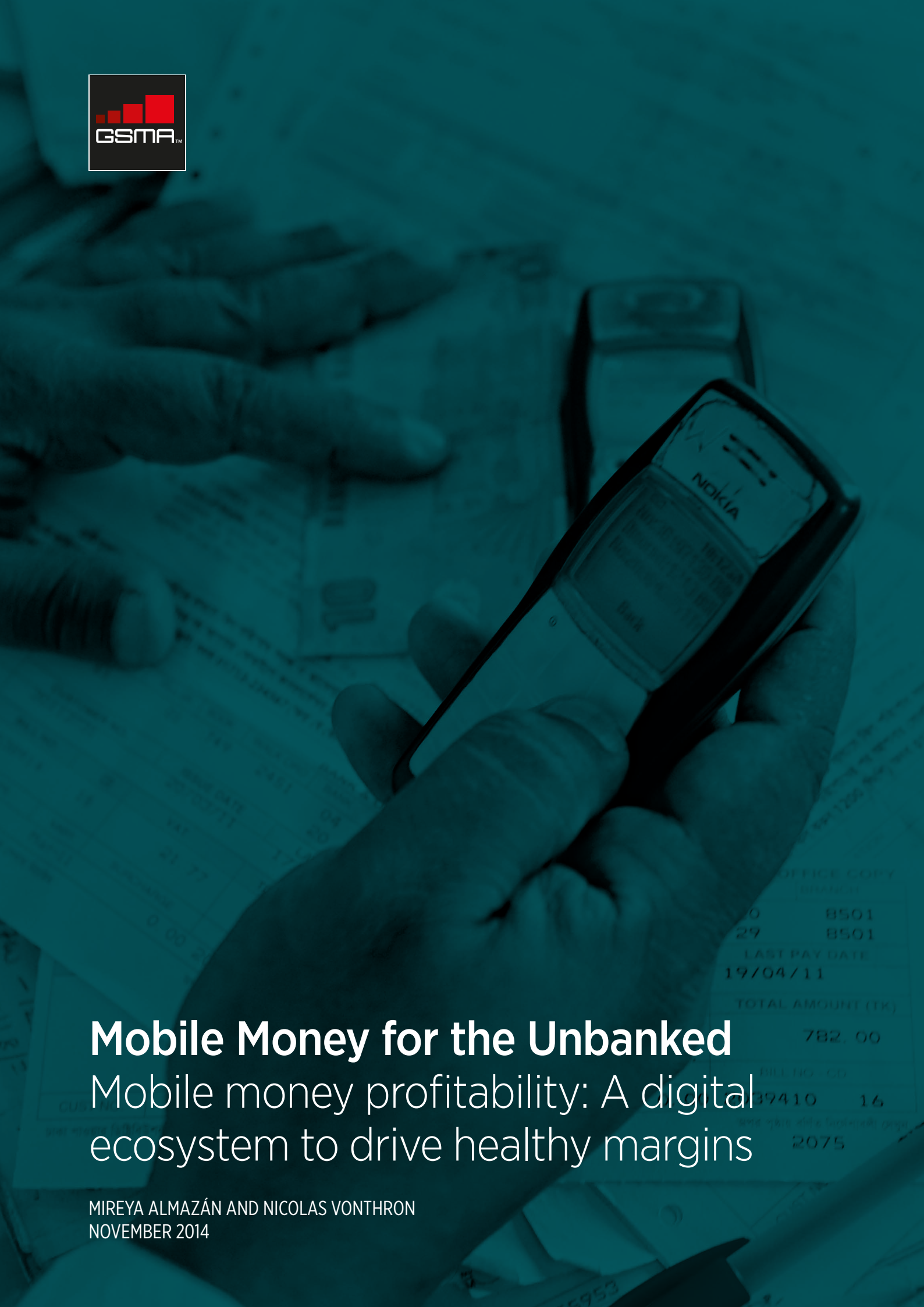

Mobile Money for the Unbanked

Mobile money profitability: A digital ecosystem to drive healthy margins

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Mobile Money for the Unbanked

The GSMA's Mobile Money for the Unbanked (MMU) programme works to accelerate the growth of commercially viable mobile money services to achieve greater financial inclusion.

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Executive Summary

Mobile operators that have expanded into mobile money are already aware of the indirect benefits it can generate, such as customer loyalty and savings on airtime distribution. *But is mobile money profitable?* It can be, but getting there requires heavy on-going investments in operational expenditures (OPEX) and a shift away from cash-based transactions to a mature digital ecosystem. This paper evaluates the profitability of mobile money by estimating profit margins for three different scenarios, and highlights the internal challenges mobile operators may encounter along the way.

Measuring the profitability of mobile money is not the same as measuring the profitability of core GSM activity, like voice and data. Mobile money is first and foremost an OPEX business, driven by agent commissions, marketing, and personnel expenditures. It cannot compete with EBITDA margins of ~35% now seen in GSM, but the capital expenditure (CAPEX) required to launch and run a mobile money business is significantly lower. Operators and financial officers should therefore compare mobile money and GSM businesses based on free cash flow generation, that is, approximately EBITDA minus CAPEX.

In the start-up phase, mobile network operators (MNOs) should expect to invest six to eight times the revenue units generated by mobile money. EBITDA margins will take a hit during this period, but senior management should resist the temptation to reduce mobile money OPEX when core GSM business comes under pressure. Mobile money deployments need time and resources to deploy a robust agent network and to acquire and educate customers. Profitability should not be a focus at this stage, although operators may choose to quantify the indirect benefits of mobile money to bolster the overall business case.

As mobile money enters a **high-growth stage** (when an MNO acquires at least 15% of its GSM base as active mobile money customers), both OPEX and the revenue generated from rising transaction volumes increase. Modest, positive margins of two to five percent are expected at this stage. The challenge then becomes transitioning from a system based on a costly cash-in/cash-out network to a mature digital financial ecosystem. In addition to creating a compelling value proposition for consumers, operators must also integrate their platforms with a range of institutions to stimulate digital transactions. For deployments with high numbers of over-the-counter (OTC) transactions, the transition to digital is more complex, and heavy investments in customer acquisition are needed to drive the adoption of mobile wallets.

In a mature, ecosystem-based deployment, the ratio of digital to cash-based transactions widens. In this stage, deployments can expect healthy profit margins of more than 20% and cash flow margins to exceed 15%, making mobile money more attractive relative to its core GSM business. These estimates do not include the potential financial gains from adjacent revenue pools, such as credit scoring services and other data analytics for mobile money usage, or the new products a mature ecosystem can enable.

The GSMA encourages the transition to a digital financial ecosystem, which will not only make mobile money a more profitable venture for MNOs, but potentially unlock broad economic and social benefits as well.

Introduction

Roughly three-quarters of the more than 240 live mobile money services in the world, and a large majority of the fastest growing ones, are either operated by or closely affiliated with a mobile network operator (MNO). Like all firms, MNOs allocate finite investment capital across multiple business lines, which means mobile money must compete for investment with core GSM (voice and SMS), data, and value-added services (VAS). For mobile operators to invest aggressively in mobile money, it needs to demonstrate strong future growth prospects relative to other potential investment opportunities.[1]

The "missing middle". Today, mobile money occupies the "missing middle" of telecom investment: it does not yet yield short-term return on investment like many value-added services, nor is it tied to a long cycle of massive capital expenditures for network investments.[2] As a result, the vast majority of deployments launched to date suffer from underinvestment and struggle to become profitable.

There is also a gap between the key performance indicators (KPI) of a mobile money unit and the telco as a whole. Keeping its agent network happy with healthy commission structures is essential to scaling up the mobile money business, but agent commissions for cash-in and cash-out consume 40–80% of mobile money revenues and ultimately reduce the telco's EBITDA margins. In fact, Safaricom has reported that commissions to M-PESA agents are now its single greatest direct cost.

Pressure from other parts of the MNO portfolio also makes mobile money vulnerable to budget cuts. Revenue and EBITDA pressure on core GSM business (from price competition, regulations on mobile termination rates, rising energy costs, and inflation), combined with the continual need for capital expenditure for GSM, is forcing operators to defend margins by accelerating efficiency programs or cutting into operational expenditures. However, mobile money relies on heavy OPEX investment to grow and reach scale.

Proven successes. Despite internal conflicts over KPIs and the substantial investment required, mobile money is generating sizeable revenue for several MNOs. Millicom reported 3.9 million active subscribers and USD 40 million in mobile money revenue in FY 2013, and the group predicts "MFS could be a $1 billion revenue opportunity" for its African and Latin American markets, or approximately 15% of its total revenue.[3] Analysts project that Econet's EcoCash in Zimbabwe represents a $200 million revenue opportunity on an annualised basis, or 20–25% of total Econet mobile revenue.[4] Most famously, M-PESA contributed 18% of Safaricom's total revenue and 14% of Vodacom Tanzania's in FY 2013.

The path to profitability. Beyond these bright lights in the industry, MNOs still have limited visibility into the investment required for mobile money to succeed, what profit margins to expect, and how margins will change as their service matures. This paper aims to provide guidance for operators seeking to evaluate the profitability of mobile money in the context of their core business. While tailored to MNOs, many of our insights apply more broadly to other types of providers as well.

Drawing on an analysis by GSMA's Mobile Money for the Unbanked (MMU) programme, we defend the on-going OPEX required to make a mobile money deployment profitable, and the importance of transitioning to a digital financial ecosystem. In short, our analysis takes a relatively conservative view of mobile money as a payments platform that can become profitable with scale. The rest is icing on the cake.

1. Technically, an investment decision should hinge on the current net value of earnings from that investment, i.e. the discounted sum of all future cash flows. In this paper, we have used 'margin' as a loose proxy for future cash flow. This assumes that mobile money revenue, and therefore profit, are appreciable and that cash flows are not too back-weighted.
2. Mung-Ki Woo, as cited by Ignacio Mas (June 19, 2013), "Why is the Progress of Mobile Money so Gradual and Patchy?" CGAP Blog, http://www.cgap.org/blog/why-progress-mobile-money-so-gradual-and-patchy
3. Millicom (March 2013), "Demand More: Millicom Annual Report 2012", http://www.millicom.com/media/3308/millicom_ar12.pdf
4. Renaissance Capital (September 2013), "Econet Wireless Zimbabwe: Non-voice a key differentiator".

How did we do it?

GSMA analysed the financials of over a dozen mobile money deployments and conducted interviews with managers and group-level executives across different regions. To evaluate the overall profitability of mobile money deployments, we segmented mobile money deployments and defined three scenarios to be analysed: the start-up phase, the high-growth, remittance-based phase, and the mature ecosystem-based phase.

We then estimated transaction revenue and costs, which reveal transaction margins and non-transaction costs, and calculated EBIDTA margins for each of the three scenarios. We have used a transaction model based on funds flowing into, within, and out of the mobile money platform. The relative values of each transaction type (e.g., cash-in versus P2P) impact the overall profitability of the service, and each transaction type is associated with different costs and revenues for operators. For non-transaction costs, we leveraged best practices in the industry to approximate key cost categories for OPEX and CAPEX, which produced illustrative profit and loss (P&L) statements.

We have deliberately excluded potential revenue from credit-related activities (e.g., credit scoring), insurance, data analytics, or interest on pooled trust accounts.

Scope of the analysis

Given that the mobile money industry is still relatively young, there is no standard approach to evaluating profitability. Internal financial reporting can vary within and across markets, and public financial reports rarely disclose mobile money profitability metrics beyond revenue contributions. To produce a pro-forma P&L illustrative of a deployment at different stages of maturity, we tightly defined the parameters and limited the scope of the analysis.

We assume the following:

Mobile money is managed through a dedicated business unit within an MNO or, in some cases, as a separate entity altogether. This assumption is drawn from GSMA research on organisational design to succeed in mobile money, as well as interviews with fast-growing services around the globe. In some markets, mobile money regulation requires the payment service provider to conduct its payment services within a separate and distinct business unit, including maintaining a separate management structure and keeping separate books of account for its payment services division.[5]

Indirect benefits of mobile money, such as churn reduction, can be significant, but are not directly reflected in the P&L. This analysis takes a conservative approach to mobile money profitability, focusing on direct costs and revenues. While we aim to prove that mobile money can stand on its own, we acknowledge that indirect benefits can be attractive. In fact, some operators may justify their investments in mobile money based solely on churn reduction benefits (see Box 1).

Revenue generated from the float does not contribute to the profitability of the mobile money business. That is, interest from the pooled trust account is not considered revenue in this analysis. Diverse regulatory requirements for interest underpin this decision to exclude interest income. In many markets, operators are restricted in terms of how they can use interest earned on the float. Additionally, operators sometimes opt to forgo the interest to compensate partner financial institutions. Thus, we do not include float income in the illustrative P&L.

Mobile money is first and foremost a transactions-driven platform, with costs and revenues tied to the movement of value. This analysis excludes potential revenue from other financial services products, such as credit, savings, or insurance. Revenue generated on value transferred from a bank to a mobile wallet for loan disbursements, for example, falls within the scope of the analysis, while revenue generated from the loan product itself does not. Monetisation of customer data is also excluded from this analysis.

5. Regulation issued by the Central Bank of Kenya and Bank of Tanzania require mobile money to be managed separately from an operator's GSM business.

BOX 1

ACCOUNTING FOR THE INDIRECT BENEFITS OF MOBILE MONEY

Indirect benefits, such as churn reduction, ARPU increases, and savings on airtime distribution, may justify investment in mobile money in many cases, or at least contribute to the overall business case. GSMA's publication, "Is There Really Any Money in Mobile Money?" analysed MTN Uganda's CAPEX, OPEX, direct revenues, as well as the indirect benefits of mobile money.[6] While this research showed over half of its gross profit came from transaction fees, accounting for indirect benefits allowed MTN Mobile Money to break even after only 18 months in operation.[7]

CHURN REDUCTION AND ARPU INCREASES

Churn reduction and ARPU increases can be attractive for operators. MTN Uganda reports the churn rate for mobile money customers has been no more than 0.2% per month compared to 4.5% per month on average for non-mobile money customers.[8] For Safaricom, M-PESA users are stickier than non-users by 10–30%, contributing to an annual savings of $1.60–$5.60 for every M-PESA user.[9]

In a mature and interoperable payments ecosystem, mobile money may retain some churn reduction benefits. The more valuable a mobile wallet becomes to a customer, with more linkages to a range of financial services providers and businesses, the stickier it can become.

Other than operator estimates and the potential of these benefits to persist over time, the industry lacks a consistent and robust method to calculate the impact of mobile money on churn and ARPU. It is difficult for deployments to attribute these benefits to mobile money specifically, as opposed to VAS or other variables.

AIRTIME DISTRIBUTION

Telesom's ZAAD in Somaliland reports that savings on airtime distribution have been significant, with almost 70% of Telesom airtime sold over ZAAD since April 2013. These savings amounted to roughly $2m in 2012. In fact, Telesom offers its mobile money service for free, relying entirely on indirect revenues to recoup its initial investment.[10]

Savings from airtime distribution present three main challenges for mobile money accounting:

- Operators tend to heavily promote airtime as an early transaction driver for mobile money, along with P2P. This means that operators are usually willing to provide significant airtime bonuses to encourage mobile money activity.
- Direct airtime sales are frequently unaccounted for in mobile money costs and revenues under telco-led models, as it is usually sold by the core GSM operation.
- Operators see mobile money as a way to drive the efficiency of their airtime sales; mobile money is a less costly channel for airtime distribution relative to traditional distribution channels. As mobile money is a new revenue stream for airtime agents, in some markets this reduces pressure for MNOs to increase airtime.

As mobile money deployments mature, and especially when they are hosted through dedicated business units or legal entities, they could be considered a dedicated channel for airtime sales. Mobile operators can set up a distribution contract with commissioning rates for mobile money providers. To reflect the cost savings for the operator, rates for airtime distribution over mobile money should be lower than those for traditional distributors. In this way, mobile money businesses can generate direct revenue for airtime sales and account for it in their P&L statement. Airtime sales could therefore not only drive indirect benefits and savings for the GSM business, but also contribute to the overall profitability of the mobile money scheme.

6. Paul Leishman (2010), "Is There Really Any Money in Mobile Money?", GSMA Mobile Money for the Unbanked (MMU), http://www.gsma.com/mobilefordevelopment/is-there-really-any-money-in-mobile-money-2
7. However, indirect benefits should not be incorporated in a mobile money P&L even if it takes longer to break even. Operators should pursue efforts to quantify indirect benefits to complement their core financial reporting, especially at the stage when key profitability metrics for mobile money are discouraging. For mature deployments, the airtime distribution function can be formalised, with costs and revenues fully accounted for in their P&L.
8. Paul Leishman (2010), "Is There Really Any Money in Mobile Money?", GSMA Mobile Money for the Unbanked (MMU), http://www.gsma.com/mobilefordevelopment/is-there-really-any-money-in-mobile-money-2
9. The Bill & Melinda Gates Foundation (2013), "Fighting poverty, profitably: Transforming the economics of payments to build sustainable, inclusive financial systems," Special Report Annex: Country-specific data on payments systems and financial inclusion, https://docs.gatesfoundation.org/Documents/Fighting Poverty Profitably Full Report.pdf
10. Claire Pénicaud and Fionán McGrath (2013), "Innovative Inclusion: How Telesom ZAAD Brought Mobile Money to Somaliland", GSMA Mobile Money for the Unbanked (MMU), http://www.gsma.com/mobilefordevelopment/innovative-inclusion-how-telesom-zaad-brought-mobile-money-to-somaliland

Three mobile money scenarios

We analysed three scenarios, each representing different stages of mobile money: (1) start-up, early-stage deployments, (2) high-growth, remittance-based deployments, and (3) mature, ecosystem-based deployments. These scenarios, described below in Figure 1, ground the analysis within specific performance indicators and profitability metrics. While these scenarios are not representative of every deployment, they are informed by live deployments across various stages of maturity. Moreover, these scenarios do not imply that all start-ups will enter the high-growth stage, or that all high-growth deployments will become mature ecosystems. Finally, the time frames proposed below are indicative.

FIGURE 1
THREE MOBILE MONEY SCENARIOS

	1 START-UP / EARLY STAGE (1-2 YEARS)	2 HIGH-GROWTH, REMITTANCE-BASED (4-5 YEARS)	3 MATURE, ECOSYSTEM-BASED (>5 YEARS)
DESCRIPTION	• Customer acquisition phase • Provider focused on generating market awareness • Priority is basic foundations of mobile money	• At least 15% of GSM base active mobile money users (30-day) • Network effects kicking-in • One predominant use-case (e.g., P2P, bill pay)	• At least 30% of GSM base active mobile money users (30-day) • High growth of bill payment and bulk payment transactions
PROFITABILITY METRICS	• Highest cost categories agent commissions for registration, agent on-boarding, and marketing • Very little revenue at this point (>0.5% of total MNO revenue) • Negative net margins	• Highest cost category agent commissions • Revenue coming primarily from P2P and cash-out • Mobile money revenue approx 5% of total MNO revenue • Modest, positive net margins	• Agent commissions compressed • Revenue sources more diversified, less from cash-out • Mobile money revenue >15% of total MNO revenue • Healthy net margins

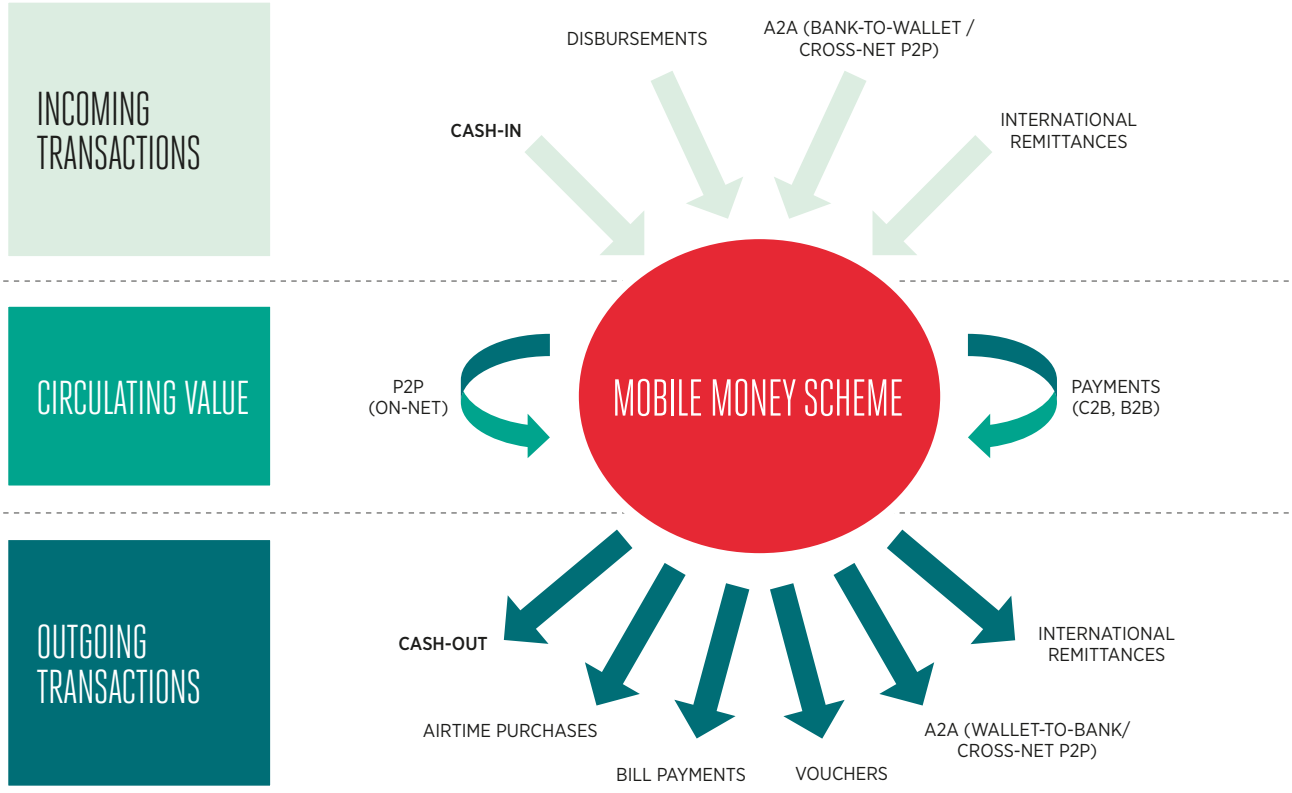
Evaluating the profitability of mobile money

Evaluating mobile money profitability on an illustrative basis can be complex. Transaction-based costs and revenues vary significantly across deployments, as do the non-transaction costs associated with running a mobile money business. Costs and revenues for the three scenarios were modelled using inputs that reflect plausible deployments operational today, though they are by no means recommendations.

Tracking transactions and values

Mobile money transactions involve converting cash to electronic value, moving value between the accounts of individuals, businesses and governments, and converting electronic value back to cash. In general, mobile operators want to get money into the system as cheaply as possible and have it rotate as many times as possible before exiting the system. Figure 2 maps the types of transactions in a mobile money system according to how value moves in, out, and within the system.

FIGURE 2
TRANSACTION FLOWS IN A MOBILE MONEY SYSTEM



Incoming transactions

Incoming flows of value come from cash-in, bulk payment disbursements (e.g., salary payments into mobile money accounts or government-to-person payments), incoming international remittances, and transfers from the banking system or alternative mobile platform to a mobile wallet.[11]

Operators are usually willing to subsidise incoming transactions to stimulate customer usage. Value most frequently enters the system as a cash-in through a mobile money agent, and although this transaction is usually free of charge for the customer, the provider pays the agent a commission based on the value of the transaction. While agent commission structures vary significantly across markets, we estimate the average cost for a cash-in is approximately 0.7% of the transaction value. Bulk payments are a cheaper source of funds and, not surprisingly, the fastest growing transaction type for mobile money deployments globally.[12] Direct transfers from the banking system are another attractive source of funds, assuming a subset of customers is banked.

Circulating value

Value circulating on a mobile money platform is primarily the result of on-net peer-to-peer transfers and payments (e.g., merchant payments, supply chain payments between businesses). These transactions do not result in net changes to the total value on the mobile money platform.

All mobile money deployments strive to encourage value to circulate on their platforms. Value moving between different accounts hosted on the same platform does not create transaction costs for the provider and, depending on the operator's pricing strategy, can generate pure margins (all revenue and no cost). Of course, operators may choose to incur transaction costs for particular payment types to encourage customers to use them. For example, customer or merchant loyalty benefits may be required to create a compelling value proposition for merchant payments.

Outgoing transactions

Outflows of value from the mobile money system include off-net P2P transfers, bill payments, airtime purchases, mobile wallet-to-bank transfers, cross-net transfers, and cash-out. These transactions cause value to exit the system, either when it is converted to cash, used to make a purchase, or transferred to a different system (e.g., the banking system or an alternative mobile money platform).

However, value leaving the system is not necessarily bad for profitability. A bill payment, for example, can generate positive margins for the mobile money provider and even a cash-out can yield positive margins. As the costliest transaction for operators, cash-outs are usually priced to cover agent commissions for both cash-in and out. Airtime purchases are unique transactions, however, which neither incur costs nor generate revenue under the set of assumptions used in this analysis (see Box 2).

Transaction margins for three mobile money scenarios

As a general principle, operators price mobile money to ensure every line of service either breaks even or yields a profit. For example, a round trip P2P is usually priced so that a cash-in, on-net P2P, and cash-out will cover the full cost of agent commissions for cash-in and out. Transaction margins in a payments business, also known as gross margins, are also expected to cover non-transaction costs for a business that seeks to be commercially viable.[13]

As Figure 3 illustrates, transaction margins grow steadily as a deployment evolves from a start-up to a high-growth service, and ultimately to an ecosystem-based deployment. In this trajectory, transaction margins evolve from a remittance-based business to a more diversified ecosystem with higher transaction margins. In fact, transaction margins can more than double as the mobile money scheme scales and reaches maturity.

At the same time, the ratio of total digital transactions to total cash-in also grows steadily. This is one useful metric to track as it is correlated with transaction margins. Operators aim to maximise digital transactions, while minimising cash-based transactions, especially costly cash-in. Cash-out is excluded from this ratio as it is usually priced to compensate for losses on cash-in and, therefore, is not necessarily a type of transaction that is aggressively discouraged in the medium-term.

11. Transfers to and from alternative platforms assume account-to-account interoperability is enabled.
12. According to MMU's 2013 State of the Industry Report, bulk payments were the fastest growing product, with the number of transactions reaching an annualised growth rate of 617%.
13. For these reasons, overall transaction margins should be positive across all scenarios for mobile money to stay in business. While this principle does not apply when specific commercial strategies or promotions are used to drive adoption of some services or accelerate customer acquisition, we believe these are temporary instances, and are therefore not reflected in this model.

FIGURE 3

TRANSACTION MARGINS AND THE RATIO OF DIGITAL TO CASH-IN TRANSACTIONS FOR THREE MOBILE MONEY SCENARIOS

	1 START-UP, EARLY-STAGE (1-2 YEARS OPERATION)	2 HIGH-GROWTH, REMITTANCE-BASED (4-5 YEARS)	3 MATURE, ECOSYSTEM-BASED (>5 YEARS)
RATIO OF TOTAL DIGITAL TRANSACTIONS TO TOTAL CASH-IN	1.0	1.4	6.0
TRANSACTION MARGINS	**31%**	**55%**	**65%**

Assumptions relating to the value allocation of incoming transactions, circulating value, and outgoing transactions for the three mobile money scenarios are illustrated in Annex B.

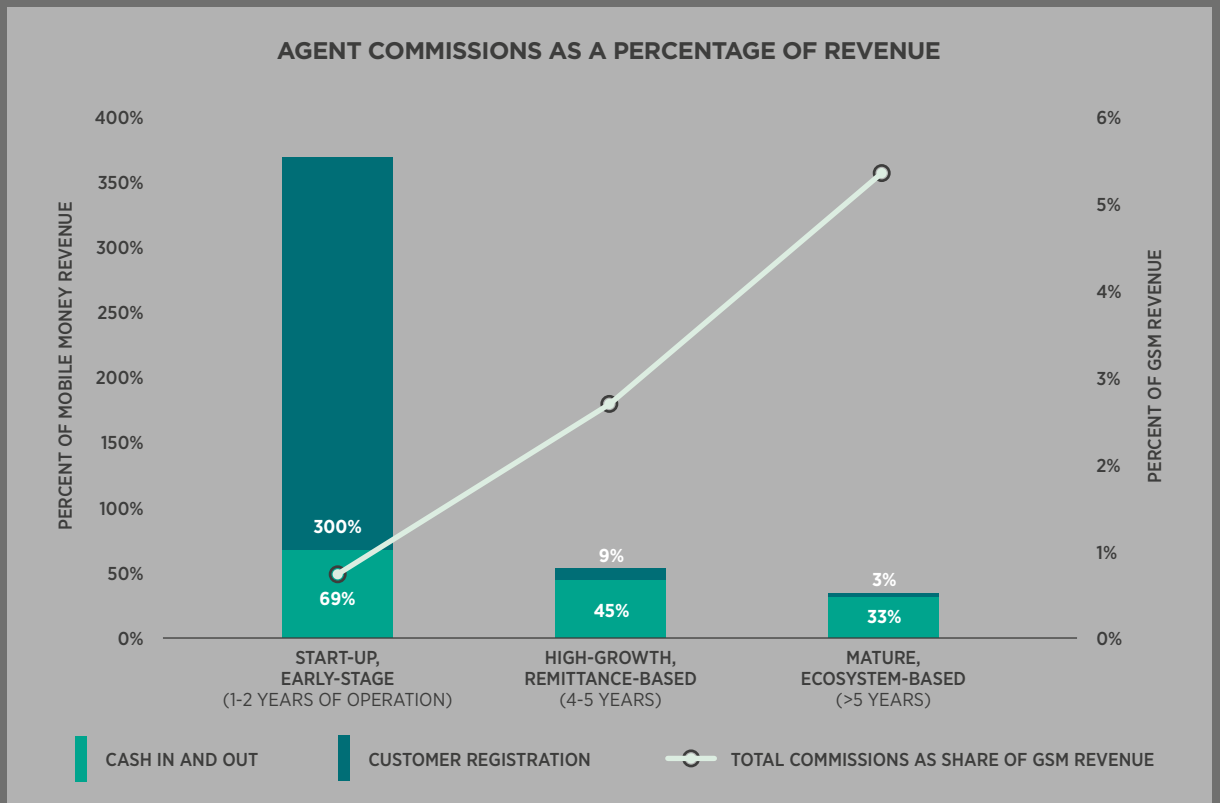
BOX 2

EVOLUTION OF AGENT COMMISSIONS

As a mobile money deployment evolves from a start-up to a mature ecosystem, cash-in and cash-out will decline as a percentage of total value. Customer acquisition costs will also compress as a percentage of total mobile money revenue. A deployment never finishes acquiring customers, but acquisition is most intensive in the early years.

By extension, total agent commissions for cash-in, cash-out, and customer registration will diminish as a percentage of total mobile money revenue. As depicted in the graph below, total agent commissions will fall from >350% of mobile money revenue in the start-up phase, to >55% of revenue in the high-growth phase, to 25% of revenue in a mature ecosystem phase.

As a percentage of total GSM revenue, however, agent commissions will grow as the mobile money pie gets bigger. This means that agent commissions will also grow in absolute terms, thus keeping the business sustainable for agents, even in a mature ecosystem.



Non-transaction costs for mobile money deployments

GSMA has long held the view that mobile money requires meaningful upfront investment and on-going financial support to drive growth. GSMA's 2012 analysis of global mobile money 'sprinters'[14] showed that upfront CAPEX investments to launch mobile money are relatively low, but OPEX was significant and increased over time.

Figure 4 captures, at a very high level, the major costs involved in setting up and operating a mobile money business.

FIGURE 4
KEY NON-TRANSACTION COSTS OF A MOBILE MONEY DEPLOYMENT

OPEX	COMMERCIAL COSTS	Customer acquisition costs (AC)	• Agent commissions, trade, KYC (excl. ATL and BTL)
		Agent and merchant AC	• Internal or external workforce to on-board agents and merchants
		Shop and agent management costs	• Internal or external workforce to manage agents + direct distribution costs (when not commissions)
		Marketing	• ATL and BTL campaigns to promote service
	OPERATING COSTS	Personnel	• Dedicated mobile money staff, excl. field marketing staff
		Technology	• Platform maintenance and operating costs, energy, connectivity, license fees
		Fraud and settlement	• Fraud, settlement, revenue assurance
		General and administrative	• Procurement and supply chain, finance, management, real estate
		Customer care	• Call centre, processing and back office
CAPEX	NETWORK & IT	Platform	• Platform acquisition and evolution, set-up with aggregator
	OTHER	Shops and offices	• Other CAPEX required to set-up or improve the business

Operational expenditures

Operational expenditures can generally be divided into commercial and operating costs. Commercial costs include customer acquisition,[15] agent and merchant acquisition and management, including in-house or outsourced sales teams dedicated to channel build-out, and above-the-line (ATL) and below-the line (BTL) marketing.[16] Operating costs include core personnel, technology platform maintenance and related operating costs, fraud and settlement, general and administrative (G&A) expenses relating to day-to-day operations, and customer care for call centres and back office functions.

Personnel and commercial agent acquisition costs are particularly large and growing cost items in a mobile money P&L. Providers must expand human resources to keep pace with the growth of registered subscribers and agents, as well as nurture a growing ecosystem. GSMA research on organisational design for mobile money provides benchmarks for sizing mobile money teams (summarised in Figure 5).[17] This is particularly relevant for deployments in early and high-growth stages. Deployments in a mature ecosystem may experience slower personnel growth.

14. Claire Pénicaud and Neil Davidson (2012), "State of the Industry: Results from the 2011 Global Mobile Money Adoption Survey", GSMA Mobile Money for the Unbanked (MMU), http://www.gsma.com/mobilefordevelopment/state-of-the-industry-results-from-the-2011-global-mobile-money-adoption-survey
15. Note that customer acquisition costs include agent commissions for customer registration, which aim to compensate agents for customer due diligence and KYC requirements. On the other hand, agent commissions for cash-in and out are transaction-dependent, and are thus captured in the transaction-based model discussed earlier.
16. While the majority of ATL and BTL marketing is focused on customer acquisition, most operators have separate line items for marketing expenditures.
17. Philip Levin (2012), "Organisational design to succeed in mobile money," GSMA Mobile Money for the Unbanked (MMU), http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/10/2012_MMU_Organisational-design-to-succeed-in-mobile-money.pdf

FIGURE 5
BENCHMARKS FOR SIZING MOBILE MONEY TEAMS

ROLE	SCALES WITH...	BENCHMARK RATIO
Channel maintenance	Number of agents	50–150 agents per sales person
Customer service/call centre	Number of registered subscribers	300–400 monthly inbound calls per 1,000 registered subscribers
Back office	Number of points of contact (either agents or master agents)	100–200 points of contact per back office staff

Capital expenditures

Capital expenditures for mobile money are primarily associated with the technology platform operators use. Deployments with an in-house platform, for example, will incur higher initial capital expenditures, but operating expenses are usually less. The opposite is true for a hosted, cloud-based solution, where licensing fees constitute a major part of operating expenditures.[18]

We have assumed operators choose a fully managed service model that keeps CAPEX low. In the early stage, we assume CAPEX will be US$1–3m per year for initial set-up, customisation, database integration, and any necessary hardware. In later stages, CAPEX can fall to three to eight percent of total revenue per year. This does not substitute on-going OPEX required for technology. For example, Safaricom reported OPEX of 11% of mobile money revenue for Vodafone M-PESA platform license fees in FY 2012.[19]

FIGURE 6
ILLUSTRATIVE OPEX AND CAPEX FOR THREE MOBILE MONEY SCENARIOS

	1 START-UP, EARLY-STAGE (1-2 YEARS OPERATION)	2 HIGH-GROWTH, REMITTANCE-BASED (4-5 YEARS)	3 MATURE, ECOSYSTEM-BASED (>5 YEARS)
	COST AS % OF REVENUE	COST AS % OF REVENUE	COST AS % OF REVENUE
NON-TRANSACTION COST COMMERCIAL COSTS OPERATING COSTS **CICO AGENT COMMISSIONS**	650% 107% 69%	29% 24% 45%	25% 20% 33%
TOTAL OPEX	**826%**	**98%**	**80%**
TOTAL CAPEX	**$1-3M USD**	**8%**	**3%**

Not included in this illustrative summary of costs are CAPEX associated with regulatory requirements, which vary significantly across markets. See Box 3 for a discussion of the impact of regulatory requirements for CAPEX.

18. Fionán McGrath and Susie Lonie (July 2013), "Platforms for Successful Mobile Money Services", GSMA Mobile Money for the Unbanked, http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/06/2013_MMU_Platforms-for-Successful-Mobile-Money-Services.pdf
19. Michael Omondi (May 16, 2012), "M-Pesa pact earns Vodafone Sh2bn in licence payments," Business Daily, http://www.businessdailyafrica.com/Corporate+News/MPesa+pact+earns+Vodafone+Sh2bn+in+licence+payments+/-/539550/1407492/-/wgmni2/-/index.html

BOX 3
REGULATORY REQUIREMENTS FOR CAPEX

Mobile money is usually associated with low CAPEX and high OPEX, which makes it inherently different from the capital-intensive GSM business to which operators are accustomed. However, regulatory requirements for CAPEX may, in fact, be significant and materially change the initial investment requirements for operators to offer mobile money.

Minimum capital requirements are determined by national regulation and vary wildly across markets. In Brazil and Peru, the regulator requires a payments company to have less than US$ 1m in minimum capital, while the Philippines and Malaysia require between $1.5m and $2m. In Mexico, however, minimum capital requirements exceed $14m, and draft guidelines of the Reserve Bank of India suggest capital requirements will be over $16m.

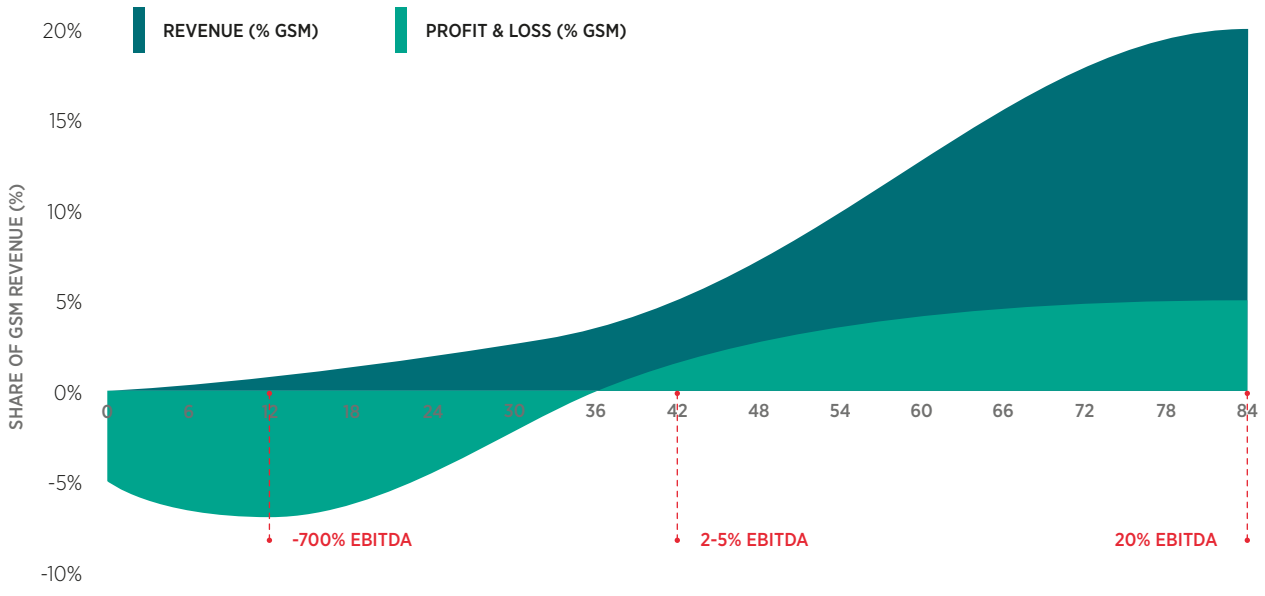
These requirements are just one element of a comprehensive payments regulation, and are necessary for the safety and soundness of the financial system. Nevertheless, high capital requirements can be disproportionate to the risks posed by payments entities that do not intermediate funds.

From a profitability perspective, high minimum capital requirements will delay the time it takes for a deployment to break even, and will also lock up much-needed capital for institutions to invest in building a healthy distribution network and driving customer uptake. Mobile money is already a difficult business, with high negative net margins in the early phase and thin margins in the high-growth phase. Regulators, policymakers, and industry must work together to accelerate a mature digital ecosystem with a sustainable business model.

Net margins for three mobile money scenarios

Mobile money deployments initially encounter high negative EBITDA margins driven by steep commercial and operating costs but, with rising transaction values and volumes, a deployment can break even in 36 months.[20] Since revenue generation exceeds operational costs, mobile money profits can grow steadily. Figure 7 below illustrates what the journey to profitability can look like for the three scenarios over a period of 84 months.

FIGURE 7
MOBILE MONEY PROFITABILITY OVER TIME



20. GSMA has reported that a mobile money deployment could break even in 18 months (Leishman, 2010), but that estimate accounts for indirect benefits (unlike the analysis presented here).

Scenario 1: Start-up, early-stage deployments

Mobile money is most vulnerable to budgetary reductions in the start-up phase. Commercial and operating costs are seven times revenue, with the vast majority of costs coming from customer acquisition and building the agent network (six times revenue). When an operator's total P&L is under pressure from price wars on core business, management will seek to cut costs in low-revenue areas. However, underinvestment in OPEX will keep mobile money from advancing to the high-growth stage.

The focus of early-stage deployments should be on sustaining high levels of OPEX investment and acquiring customers as fast as possible. Profitability should not be a focus in the early years, but it is wise to keep an eye on transaction margins to prevent uncontrolled expansion.

FIGURE 8
SUMMARY KPIS FOR THE THREE MOBILE MONEY SCENARIOS[21]

	1 START-UP, EARLY-STAGE (1-2 YEARS OPERATION)	2 HIGH-GROWTH, REMITTANCE-BASED (4-5 YEARS)	3 MATURE, ECOSYSTEM-BASED (>5 YEARS)
REVENUE			
TOTAL REVENUE (% OF MNO REVENUE)	0.2%	5%	15%
AVERAGE TRANSACTION REVENUE (% OF VALUE)	1.7%	3.4%	3.3%
TRANSACTION MARGINS	**31%**	**55%**	**65%**
DIRECT COSTS*	**719%**	**74%**	**60%**
INCL. AGENT COMMISSIONS (% OF TOTAL MM REVENUE)	*369%*	*54%*	*36%*
INDIRECT COSTS**	**107%**	**24%**	**20%**
EBITDA MARGIN	**-726%**	**2%**	**20%**
CAPEX RATIO (% OF TOTAL MM REVENUE)	**$1-3M USD***	**8%**	**3%**
CASH FLOW MARGIN	**NA**	**-6%**	**17%**

Scenario 2: High-growth, remittance-based deployments

High-growth, remittance-based deployments can expect modest, positive EBITDA margins (~2%) as transaction volumes gain traction. Commercial and operating costs remain high as operators continue to build an agent network and may even begin to acquire merchants. Nevertheless, transaction revenue will carry the deployment to a positive cash flow stage.

The key message for high-growth deployments is to continue to scale up payments volumes and values, with a special focus on expanding customer usage from one or two primary use cases to a more diverse set of transactions. In addition to creating a compelling value proposition for consumers, operators must also integrate their platforms with a range of institutions to stimulate B2C and C2B payments.

21. We define direct costs as the sum of transaction costs and commercial costs, all of which are directly linked to revenue generation. We define indirect costs as operating costs that are not directly linked to revenue generation.

BOX 4

THE IMPACT OF OTC ON MOBILE MONEY PROFITABILITY

Many mobile money deployments are characterised by a large percentage of over-the-counter (OTC) transactions. In an OTC model, agents conduct transactions on behalf of customers who do not have a mobile wallet, or would prefer not to use it. For some operators, OTC is a deliberate strategy to overcome the initial barriers to using a mobile wallet, like registration and customer education. The OTC model also allows operators to expand their addressable customer base beyond their GSM subscribers. However, OTC has important implications for mobile money profitability.

By nature, OTC businesses rely much more heavily on agents, with the majority of revenues going directly to agents. In markets with multiple OTC mobile money schemes, agents can extract greater commissions from deployments, which has a direct impact on profitability. More importantly, OTC businesses have not yet acquired their customer base since customers either do not have or do not actively use a mobile wallet. Value transacted on the platform always exits the system without rotating, limiting opportunities for B2C and C2B payments. Thus, a shift from OTC to a digital ecosystem requires both heavy investments in customer acquisition and significant improvements to the customer offering.

An OTC business can break even and yield modest margins, but it is vulnerable to getting stuck in a high-growth remittance phase, where it is difficult to improve overall profitability. In some cases, profitability may actually decrease with agent commission wars between different providers.

Scenario 3: Mature, ecosystem-based deployments

A digital ecosystem can drive healthy mobile money margins. In a mature, ecosystem-based deployment, operators can expect EBITDA margins of roughly 20% and cash flow margins of over 15%.

Profitability is driven primarily by a higher number of electronic transactions, which make cash-in and cash-out transaction costs a smaller percentage of total costs. Commercial and operating costs, however, will not decline materially as a percentage of revenue.

Deployments in this stage benefit most from more sources of digital inflows, rather than physical cash-in (e.g., bulk payments, account-to-account activity to and from the banking system, or alternative mobile money platforms), and healthy growth in a range of digital payments (e.g., P2P, C2B, and B2B).

Of course, deployments may also capitalise on adjacent revenue pools, such as monetising data for credit scoring, which can make mobile money even more profitable.[22]

22. Adjacent revenue pools are not included in the scope of this analysis.

Conclusion

Mobile money can be a profitable venture for MNOs, but getting there is not painless. Operators will incur heavy losses in the early years to acquire customers and build a distribution network, and will need to invest in the system for roughly three years before breaking even. The investment has paid off for several MNOs, however, and CEOs should resist the temptation to cut into mobile money OPEX, especially during the early stages of a deployment.

Shifting the bulk of mobile money transactions from cash conversion to a digital ecosystem is the catalytic change that will strip enough costs from the system to drive healthy EBITDA margins, and could actually help to generate free cash flow for MNOs.

With potential direct revenue from mobile money accounting for more than 20% of total business and cash flow margins of over 15%, mobile money can be a healthy cash generator for operators already investing heavy CAPEX in last generation data deployments, and can also help to maintain loyalty and efficiency on the distribution channel.

The GSMA encourages the transition to a digital financial ecosystem and the broad economic and social benefits it will generate.

Annex A: Assumptions about transaction costs and revenues

For simplicity's sake, we largely assume that an operator's pricing strategy does not vary over time, although we recognise that is not the case in practice. As one expert puts it, a deployment's "revenue model will evolve over time — it's not a one-size fits all, it's not static".[23]

Moreover, we assume that transaction costs do not vary over time. We do not consider the potential efficiency gains that may be introduced to reduce transaction and non-transaction costs throughout the life of a deployment. Agent sharing, for example, could result in lower commercial OPEX for operators, but these types of efficiency gains are not reflected in our analysis.

TRANSACTION MODEL	TRANSACTION COST	TRANSACTION REVENUE	NOTES AND ASSUMPTIONS
INCOMING TRANSACTIONS			
Cash-in	0.7%	0.0%	• Although agent commissions for cash-in are usually tiered, 0.7% is an estimated average cost. Cash-in is usually offered to customers free of charge.
Bulk payments (disbursements)	0.0%	0.5%	• The cost of offering bulk payments is captured in non-transaction costs (mainly set-up costs). Bulk payments tend to yield revenues from the fees charged to businesses or governments for disbursements.
International remittances	0.5%	0.0%	• Incoming international remittances tend to be free for recipients. The operator, however, incurs a cost from the partner international money transfer entity. 0.5% is an estimated average cost.
A2A (bank-to-wallet)	0.4%	0.0%	• Transferring value from a bank account is often free for customers. The operator, however, incurs a cost from the financial institution hosting the incoming funds.
A2A (P2P cross-net)	0.4%	0.0%	• Transferring value from an alternate mobile account is often free for customers. The operator, however, incurs a cost from the mobile money provider hosting the incoming funds.
CIRCULATING VALUE			
P2P (on-net)	0.0%	1.5%	• On-net P2P does not result in transaction costs for operators. Transaction revenue depends on pricing strategy, but can be in the range of 1–1.5% of the value transferred. Greater competition may cause P2P pricing to fall.
Payments (C2B, B2B)	0.0%	1.5%	• C2B or B2B does not result in transaction costs for operators; the merchant or business usually pays roughly 1.5% of the value transferred.
OUTGOING TRANSACTIONS			
P2P (off-net)	1.0%	3.5%	• Off-net P2P (or vouchers) incur a transaction cost of 1% for operators on average, but usually also yield transaction revenues higher than on-net P2P.
Bill payments	0.0%	0.5%	• Bill payments do no result in transaction costs. Transaction revenues usually come directly from the biller.
Airtime purchases	0.0%	0.0%	• Airtime purchases do not incur transaction costs. Mobile money providers can be considered virtual airtime distributors, but they do not incur revenue from the mobile operator.
International remittances	0.0%	5.0%	• Outgoing international remittances do not result in transaction costs. However, the sender usually pays a relatively high fee to transfer value internationally.
A2A (bank-to-wallet)	0.0%	0.4%	• Transferring value from the mobile wallet to a bank account usually does not result in transaction costs for operators. A fee is sometimes charged to customers.
A2A (P2P cross-net)	0.5%	2.0%	• Transferring value from the mobile wallet to an alternate mobile account may result in transaction costs for operators. A fee is sometimes charged to customers.
Cash-out	1.0%	2.0%	• Although agent commissions for cash-out are usually tiered, 1% is an estimated average cost. Customers are usually required to pay for this service, yielding transaction revenue for the operator.

23. Won-Suck Song, former Vice President of Mobile Financial Services at Millicom, as shared during a Mobile World Congress (2014) panel on mobile money in emerging markets: http://www.mobileworldlive.com/panel-mobile-money-emerging-markets

Annex B: Assumptions about the transaction model

The allocation of value for all transaction types in three mobile money scenarios

	1 START-UP, EARLY-STAGE (1-2 YEARS OPERATION)	2 HIGH-GROWTH, REMITTANCE-BASED (4-5 YEARS)	3 MATURE, ECOSYSTEM-BASED (>5 YEARS)
TRANSACTION MODEL	**VALUE**	**VALUE**	**VALUE**
INCOMING TRANSACTIONS			
Cash-in	95%	90%	40%
Bulk payments (disbursements)	5%	5%	20%
International remittances	0%	0%	5%
A2A (bank-to-wallet)	0%	5%	15%
A2A (P2P cross-net)	0%	0%	20%
CIRCULATING VALUE			
P2P (on-net)	40%	100%	120%
Payments (C2B, B2B)	0%	2%	20%
OUTGOING TRANSACTIONS			
P2P (off-net)	1%	1%	0%
Bill payments	10%	5%	10%
Airtime purchases	39%	4%	4%
International remittances	0%	0%	2%
A2A (bank-to-wallet)	0%	3%	4%
A2A (P2P cross-net)	0%	2%	20%
Cash-out	50%	85%	55%
TRANSACTION MARGINS	**31%**	**55%**	**65%**

Scenario 1: Start-up, early-stage deployments

In a start-up scenario, the majority of incoming value comes from cash-in, although we assume there is a small percentage of incoming value from bulk payments at this stage. Circulating value is largely tied to on-net P2P, and value exits the system through bill payments, airtime purchases, and cash-out. All of the value that enters the system exits the system.

Scenario 2: High-growth, remittance-based deployments

In a high-growth, remittance-based scenario, the majority of incoming value still comes from cashing-in at agents, although more value is starting to come from bulk payments and direct transfers from the banking system. Most of the value entering the system rotates through on-net P2P and a small fraction rotates through C2B payments or B2B payments. Most value exits the system through cash-out since P2P is the predominant use case.

Scenario 3: Mature, ecosystem-based deployments

In a mature ecosystem scenario, transaction types are much more diverse. Value enters the system through a healthy mix of cash-in, bank transfers, bulk payments, and even some international remittances. Value exits the system through a healthy mix of cash-out, transfers to alternative platforms (e.g., banks or different mobile money systems), bill pay, and airtime purchases.

Annex C: Assumptions about non-transaction costs

	1 START-UP, EARLY-STAGE (1-2 YEARS OPERATION)	2 HIGH-GROWTH, REMITTANCE-BASED (4-5 YEARS)	3 MATURE, ECOSYSTEM-BASED (>5 YEARS)
TRANSACTION MARGINS	**31%**	**55%**	**65%**
NON-TRANSACTION COSTS	**COST AS % OF REVENUE**	**COST AS % OF REVENUE**	**COST AS % OF REVENUE**
Commercial costs	**650%**	**29%**	**25%**
Customer registration	300%	9%	3%
Agent accquisition and management costs	300%	8%	7%
Ecosystem acquisition and management costs	0%	2%	10%
Marketing costs	50%	10%	5%
Operating costs	**107%**	**24%**	**20%**
Personnel	50%	10%	8%
F&S	2%	1%	1%
Technology	20%	8%	5%
G&A	25%	3%	3%
Customer care	10%	2%	3%
TOTAL OPEX	**826%**	**98%**	**80%**
EBITDA MARGINS	**-726%**	**2%**	**20%**
TOTAL CAPEX	**$1-3M USD***	**8%**	**3%**
CASH FLOW MARGINS	**NA**	**-6%**	**17%**

Glossary

Account-to-Account (A2A)	Transfer from one account on one platform to a second account on a different mobile money or financial services platform, requiring interoperability between payment schemes. A2A transfers may include bank-to-wallet transfers or cross-net P2P.
ARPU	Average revenue per user, or rather, per SIM card. ARPU is calculated based on connections, by dividing mobile revenue by the average number of SIM connections during the period.
Capital expenditure (CAPEX)	Funds used by a company to acquire or upgrade physical assets such as property, industrial buildings, or equipment. In the case of mobile money, CAPEX is often tied to the acquisition of platforms and data centres.
Cash flow margin	Cash flows from operating activities divided by net sales. In this analysis we use EBITDA minus CAPEX as a proxy for cash flow.
EBITDA	Net income with interest, taxes, depreciation, and amortisation added back to it, and can be used to analyse and compare profitability between companies and industries because it eliminates the effects of financing and accounting decisions.
EBITDA margins	The ratio of net profits to revenues that shows how much of each dollar earned by the business unit is translated into profits. Also known as net margins.
Free cash flow (FCF)	A measure of financial performance calculated as operating cash flow minus capital expenditures. In this analysis we use EBITDA minus CAPEX as a proxy for cash flow.
Operating expenditure (OPEX)	A category of expenditure that a business incurs as a result of performing its normal business operations. Also known as operating expenses.
Over-the-counter (OTC)	Transactions that do not originate from a customer account directly, whereby the agent conducts a bill payment, P2P transfer, bulk payment, or international remittance on behalf of the customer.
P2P cross-net	Domestic transfers from a registered mobile money user into the mobile wallet of a different mobile money provider, where wallet-to-wallet interconnection is available.
P2P off-net	Domestic transfers to unregistered users with vouchers. This can be within the same network, or across two different networks.
P2P on-net	Domestic transfers made between two customer accounts on the same mobile money platform.

Payments (C2B, B2B)	Movements of value from a customer to a merchant at the point of sale using an account, or from a business to another business to pay for goods or services.
Profit and Loss Statement (P&L)	A financial statement that summarises the revenues, costs, and expenses incurred during a specific period of time — usually a fiscal quarter or year.
Transaction margins	The ratio of transaction profits to revenues that shows how much of each dollar earned by total transactions is translated into profits.

Note that many of the financial definitions were adapted and sourced from Investopedia.

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Disclaimer

This report is based on a collection of data sources, most of which are confidential. For example, data collected through MMU's annual Global Adoption Survey of Mobile Financial Services was one input into this research. This report protects the confidentiality of each deployment. We only highlight individual services where the service provider granted approval to disclose key performance information, or where the information is already publicly available. The collection of assumptions, including those on transaction revenues, are by no means recommendations, nor do they represent the data of any one mobile operator in particular.

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