

The business case for payments banks in India

DECEMBER 2016



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Note on scope of the analysis

The illustrative business case and financial model is not representative of any one payments bank player. We endeavour to depict one potential approach to create a viable payments bank given GSMA learning from global mobile money deployments applied to the context of the Indian market and the new regulatory framework. It was developed with input from prospective payments banks and industry experts.

It is assumed that:

- The payments bank is run as a standalone business as per the regulatory requirements.
- Indirect benefits of the payments bank to the promoter companies are not reflected in the P&L.

The illustrative business case and financial model has been built based on ten year projections, because of the long-term horizon needed to see this business through to maturity. However, this long timeframe does not account for all the potential market disruptions that may occur in that timeframe, both on the supply and demand side or conditions in the macro-economic environment.

As there are no established standards or empirical parameters to validate financials and profitability metrics, business case has been developed on the basis of existing benchmarks for similar services. Key assumptions and estimates can be found in Annex I.

All conversions from INR to USD were estimated at USD 1 = INR 67 (as on 11 Nov 2016) and rounded off.

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Executive Summary

A new model for mobile financial services is emerging in India. Payments banks will soon offer basic banking and payments services, leveraging mobile and other technologies to digitise payments and support widespread access to basic banking services.

The Indian regulatory framework is unique: Payments banks are specialised banks designed with a lower risk profile; they cannot lend on their own balance sheets and face strict limitations on investing deposits. Account limits are smaller, and initial and ongoing capital requirements are high. However, on the positive side, the payments bank license represents an opportunity to develop a comprehensive suite of savings and payments services, of which a mobile money wallet will likely be just one product offering. While some mobile network operators (MNOs) will be able to leverage their experience growing mobile money services in India, the new license represents a broader business opportunity.

The payments banks demonstrate a new market-driven approach to achieving the policy goal of financial inclusion. Most transactions in India are still conducted in cash, and mobile technology could lead a shift to digital transactions. However, payments banks will be entering a very competitive and increasingly commoditised market for savings and payments products, joining new banks, government schemes, and specialised payments providers all vying for clients and transaction volumes. Therefore, the success of the payments bank model hinges on its ability to be relevant to consumers and commercially sustainable. This is no easy feat—three of the 11 in-principle payments bank licensees have withdrawn their applications, highlighting the investment and commercial challenges of the business model.

In this context, we analysed the business case for an MNO-led payments bank in order to understand both

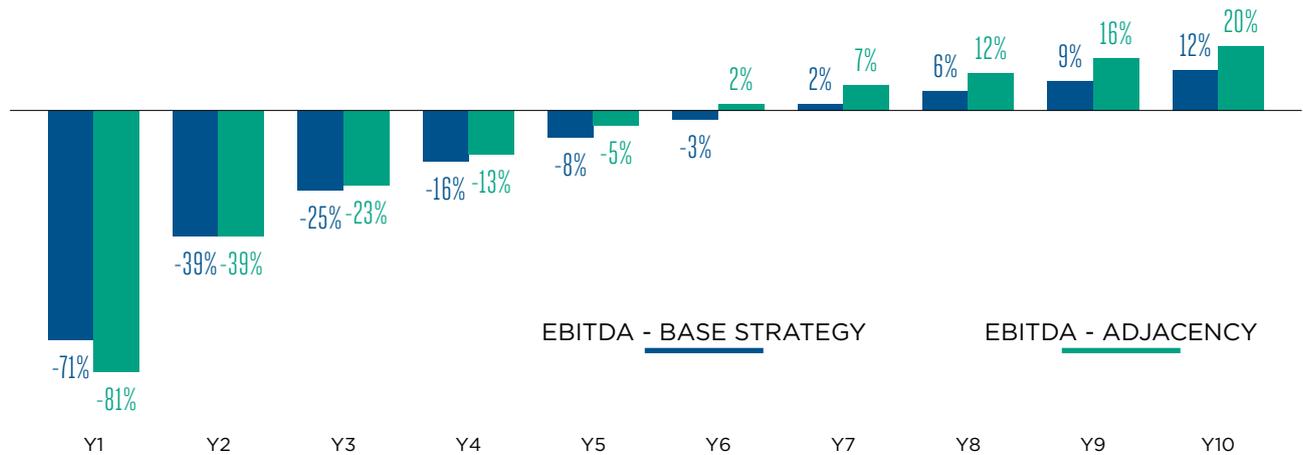
the viability and opportunity of this new regulatory model for offering mobile financial services, using an illustrative financial model. By comparing two strategies, it became clear that the payments banks will need to pursue ecosystem opportunities and adjacent revenue streams (digital credit, insurance, and merchant payments) in addition to basic payments and savings services (the base strategy), to advance profitability and ensure viability in the long term.

The introduction of adjacent revenue streams presents a shorter path to profitability and accelerates growth in EBITDA margins for payments banks: The payments bank pursuing adjacent revenue streams reaches operational profitability in year six and an EBITDA margin of 20% in year ten (up from 12%). Adjacent revenue streams introduce slightly higher up front capital requirements, but overall, the capital infusion needed from investors decreases (to INR 850 Cr or USD 126 M over a nine year period). Adjacent products are expected to generate additional benefits, such as increase in digital transactions to pay loan instalments or premiums that translate into a more active customer base and higher circulating balances.

In addition, payments banks are expected to benefit from the accelerating provision and use of interoperable digital payments economy-wide. The positive network effect is expected to support increased scale and digital transaction activity for the payments banks and is estimated to advance profitability to as early as year five.

The payments banks face high costs of compliance associated with the banking regulatory framework: The banks will need significant capital infusion to meet high ongoing capital requirements. Furthermore, they will face high overheads (e.g., technology and personnel) and direct costs (e.g., free ATM withdrawals).

EBITDA Margins



The way forward

Creating neither a full bank nor a simple mobile money provider, the payments bank framework is innovative but untested. It presents a business case that is challenging both because of the commercial and regulatory contexts. The success of the payments bank model hinges on dedicated, innovative, commercial players and a regulator willing to keep an open dialogue with the industry to ensure proportionality as the payments banks go to market.

To become profitable, payments banks will need to scale up accounts and drive digital transactions. However, unlike traditional mobile money players, it is unlikely that payments bank will be able to live off transaction revenues alone – and without diversified revenues, the road to profitability will be difficult.

Therefore, payment banks require sustained investment to expand distribution and the payments ecosystem to reach a high volume of digital transactions across customer segments. In turn, this will allow the payments banks to grow small balances and treasury income, and allow them to pursue partnerships that leverage the payments banks’ assets to offer adjacent financial services. MNOs bring substantial experience with business models characterised by regular investment and long payback periods.

However, more proportionate regulations on ongoing capital requirements and continued policy support, to bring down both the high direct costs of account acquisition and maintenance, will allow the payments banks to reach their full potential to join India’s digital payments ecosystem and reach unbanked and underbanked customers for the first time.

SECTION 1

A new model for financial inclusion & digital payments in India

A new model is emerging in India. Payments banks, which will soon be offering basic banking and payments services for the country's unbanked and underserved, will leverage technology to digitise payments and promote widespread access to banking. Payments banks are unique because they take a market-driven approach to deliver on financial inclusion goals.

The Payments Bank regulatory regime is unprecedented and presents a renewed opportunity for non-bank mobile money providers in India. However, early analysis indicates that payments banks will require high levels of investment and a long growth trajectory to become a profitable and viable business.

Regulatory and government initiatives on financial inclusion

Despite gains in financial access in India, there is a significant opportunity for providers and policymakers to do more: 65% of Indian adults are considered financially included, but only 45% of account holders report using their accounts in the last 90 days.¹ Traditionally a cash-based economy, India has physical currency in circulation estimated at over 12%² of GDP.

Policymakers and regulators are focusing heavily on creating ubiquitous access to basic banking and payments services, facilitating economic growth by creating access to lending, bolstering financial security through various government schemes and initiatives,

and more recently, introducing a market-led approach. These include mandating the creation of no frills-bank accounts, promoting the expansion of bank branches in rural areas, establishing a licensing category for prepaid payments issuers, and introducing the business correspondent model, among many others. Finally, the Pradhan Mantri Jan Dhan Yojana (PMJDY) initiative opened an impressive 240 million bank accounts for unbanked households, largely driven by public sector banks.

The government also has a stated policy objective to digitise payments transactions across the economy, with the Ministry of Finance publishing the “Memorandum on the Promotion of Payments through Cards and Digital Means” in 2016.³

Harnessing the potential of mobile to digitise payments

India boasts 616 million unique mobile services subscribers—almost half of the population—and another 330 million new unique subscribers expected by 2020, bringing the penetration rate up to 68%. 3G coverage is set to reach 90% of the population by 2020 and 4G coverage expected to reach 70% of the population in the same timeframe.⁴ Mobile technology is seen as a critical channel for delivering low-cost digital financial services, and the government has made a recent push to leverage the so-called ‘JAM’ trinity of Jan Dhan, Aadhaar, and mobile, to achieve its financial inclusion goals.⁵

1. Defined as having an account at a financial institution that offers at least one of the following services: savings, insurance, investment, or money transfer. Intermedia, June–October 2015, “Financial Inclusion Insights: India – Wave Report FII Tracker Survey”, <http://finclusion.org/uploads/file/reports/InterMedia FII Wave 3 2015 India.pdf>
2. <http://timesofindia.indiatimes.com/business/india-business/Indias-love-for-cash-costs-3-5bn-a-year/articleshow/45934597.cms>
3. http://finmin.nic.in/the_ministry/dept_eco_affairs/currency_coinage/Promo_PaymentsMeans_Card_Digital.pdf
4. GSMA The Mobile Economy India 2016 <https://www.gsmainelligence.com/research/?file=134a1688cdf49cfc73432e2f52b2dbe&download>
5. <http://www.livemint.com/Politics/PRmaclHkzL6fGJEUIVLo3H/India-has-started-linking-Jan-Dhan-scheme-Aadhaar-and-mobil.html>

After several years of trying to find its footing in a challenging regulatory environment, mobile money as we know it is still in its infancy in India.⁶ However, the new payments bank model presents an opportunity for licensed providers to leverage mobile technology to offer more than just a traditional mobile money product.

Differentiated banking licenses in India

In 2013, the Reserve Bank of India (RBI) Committee on Comprehensive Financial Services for Small Businesses and Low Income Households⁷ recognised it would be necessary to leverage the strengths of new market players to achieve financial inclusion goals. In a shift of policy, the RBI established a differentiated banking regime in India that creates banking infrastructure for specific types of banks. In November 2014, the RBI issued the Guidelines for Licensing of Small Finance Banks and Payments Banks. Forty-one applications for payments bank licenses were submitted to the RBI, which has granted in-principle approval to 11 payments banks. These new banks are expected to accelerate financial inclusion in India, particularly by offering financial services in unbanked and underbanked regions of the country.

Payments banks will provide payment and domestic remittance services and demand deposit products,⁸ but they are not permitted to lend. It is expected that payments banks will adopt a low-cost operational model, use technology to provide connected services at all access points, and contribute toward the Indian government's goal of universal access to banking. Of the 11 in-principle payments bank licensees, three withdrew their applications in 2016, shining a spotlight on the investment challenges and perceived viability of the business model.⁹

Four of the eight remaining licensees have an MNO as one of the founding shareholders.¹⁰ MNO-led payments banks are expected to leverage their ecosystem, distribution network, and infrastructure to offer low-cost banking services. Combined, the four MNOs have over two million physical distribution points that can add a financial services offering for mobile customers.

The business case for payments banks

To become profitable and contribute fully to financial inclusion, payments banks face a unique set of strategic and financial decisions. In this study, we use an illustrative financial model to analyse the business case for a payments bank in the Indian market, and to reveal the strategic and financial considerations involved in launching a viable MNO-led payments bank business.

In **Section 2**, we introduce payments banks and look at how certain features of the market landscape are shaping the strategy and business case.

In **Section 3**, we propose a base strategy for the business case—wallets and accounts to drive digital transaction revenue—and analyse the potential costs and benefits for payments banks.

In **Section 4**, we discuss the potential for payments banks to develop adjacent revenue streams and expand the digital transaction ecosystem by offering digital credit, insurance, and merchant payments with industry partners.

Finally, in **Section 5**, we identify the key lessons for industry and regulators in India and beyond.

6. The GSMA defines mobile money as the use of information and communication technologies (ICTs) and non-bank retail channels to extend the delivery of financial services to clients who would not be reached profitably with traditional branch-based financial services. For example, e-wallets to make P2P transfers or payments, or to receive salary or transfers from the government. Mobile money customers can: (1) sign up for the service without an existing bank account; (2) get money in and out of the service by going to a network of transactional agents outside of bank branches; and (3) initiate transactions using an interface that is available on basic mobile handsets.

7. <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/CFSO70114RFL.pdf>

8. In India, 'Demand deposits' can be withdrawn on demand, in contrast to 'term deposits' which are received by a bank for a fixed period of time and can only be withdrawn after the fixed period has ended.

9. Please see: <http://www.livemint.com/Companies/JQO9xhKcVemckDUU6MET3I/Tech-Mahindra-drops-plan-to-launch-payments-banks.html> and http://www.moneycontrol.com/news/current-affairs/cholamandalam-investment-drops-its-plan-to-set-payments-bank-6015921.html?utm_source=ref_article and http://www.business-standard.com/article/finance/after-cholamandalam-dilip-shanghvi-also-drops-payments-bank-plans-116052001224_1.html

10. Known as the promoter group in the according the Security and Exchange Board of India (SEBI)

SECTION 2

Payments banks: Assessing the landscape

Until now, non-banks in India, including mobile network operators (MNOs), have only been permitted to roll out mobile money services through either semi-closed Prepaid Payment Instruments (PPI) issuer licenses or by leveraging their large network of agents to offer banking and payment services as business correspondent of a bank. Both of these models have had limitations. Over the counter (OTC) services as a business correspondent of a bank have not reached scale and the PPI model places cash-out restrictions on mobile wallets, hindering adoption and usage.

Under the new regulatory framework, it is expected that payments banks will have full control over the core business. Full cash-out functionality will now be permitted, as well as the ability to offer interest on deposits. Payments banks will also be able to offer higher margin products in partnership with other market players and to access the national payments system infrastructure.

The payments bank license represents an opportunity to develop a comprehensive suite of savings and payments services, of which a mobile money wallet will likely be just one product offering. Some MNOs will be able to leverage their experience rolling out mobile money services in India, but the new license represents a broader business.

Building a critical mass of customers quickly will be important in the early years of operation. MNO-led payments banks will be able to migrate their existing mobile money customer base and attract their telecom customer base, too. Payments banks are expected to create a widespread network of access points, particularly in remote areas. For MNO-led payments banks, physical touchpoints will be built on a network of existing agents. By leveraging this existing distribution infrastructure and expertise in managing agents, this new generation of banks will be able to scale up faster.¹¹

India's Payments Ecosystem

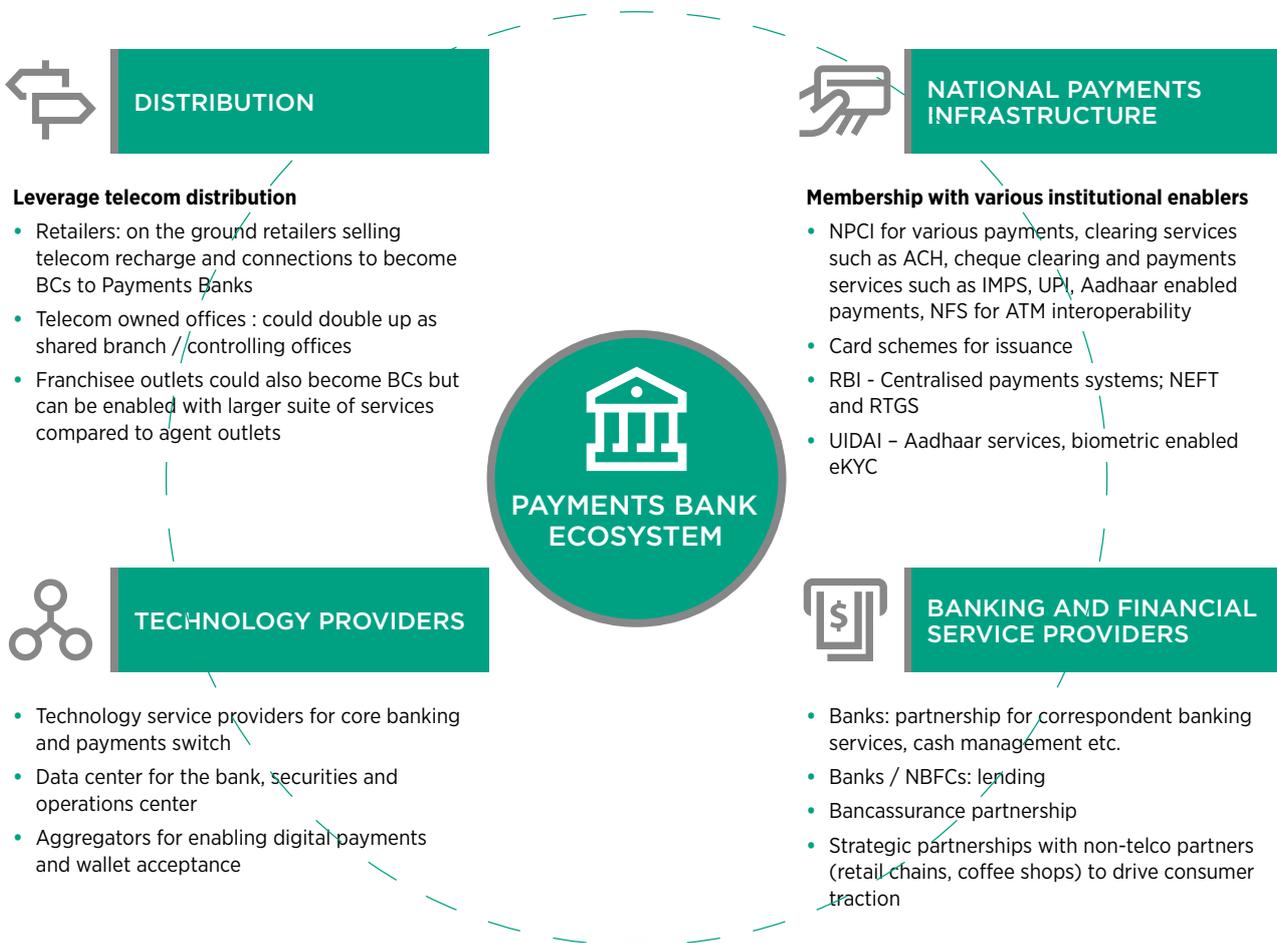
To build a comprehensive suite of basic low-cost banking and payment services for a large customer base, India's payments banks will need to collaborate with an ecosystem of partners across distribution networks, the national payments infrastructure, technology

providers, and banking and payments providers. As part of this ecosystem (Figure 1), payments banks will rely on various interoperable payments systems through services enabled by the National Payments Corporation of India (NPCI) or the RBI.

11. The relationship with the parent promoter company will be at arm's length, as per payments bank guidelines.

FIGURE 1

The Payments Bank Ecosystem



National Payments Infrastructure – The national payments infrastructure (managed by the NPCI) shapes India’s payments landscape. Immediate Payments Service (IMPS), RuPay (India’s domestic card scheme), Aadhaar Payments Bridge, and recent additions, Unified Payments Interface and Bharat Bill Pay System, will all shape the ecosystem opportunities available to payments banks.

Immediate Payments Service (IMPS) – IMPS allows for instant 24/7 interbank electronic fund transfer payments up to INR 200,000 (USD 2985) and facilitates account-to-account interoperability across banking players.

Unified Payments Interface (UPI) – Riding on the NPCI switch infrastructure, the UPI allows banks

to instantly transact with each other using virtual addresses, eliminating the need for customers to share their banking details. Although still in its early days, innovative use cases are being developed on the UPI and, if widely adopted, the UPI could become one mechanism for merchant payments.

Bharat Bill Payments System (BBPS) – India’s interoperable bill payments system aggregates a large number of billers and enables customers across the country to pay their bills through an integrated platform. Recently, banks and some non-bank players have been given licenses to operate as Bharat Bill Payments Operating Units (BBPOUs).¹² Payments banks will either have to partner with one of the BBPOUs or apply for a BBPOU license to offer bill payment services.

12. <http://economictimes.indiatimes.com/news/economy/policy/33-financial-entities-get-nod-to-join-integrated-bill-payment-system/articleshow/52303849.cms>

Aadhaar, India's national identification system, will enable customer on-boarding and facilitate electronic direct benefit transfers (DBT) for customers of payments banks.¹³ As payments banks target the

underbanked, particularly those in rural/semi-urban areas, facilitating DBTs would be an important use case. The government is placing a major focus on paying welfare benefits directly into bank accounts, which will allow participating payments banks to benefit from higher bank account balances and lower cash-in costs. With over 1.06 billion¹⁴ Aadhaar cards issued in India and over 320 million¹⁵ linked to bank accounts, DBT volumes processed through the Aadhaar Payments Bridge System (APBS) have grown significantly over the last few quarters, reaching INR 17,688 Cr (USD 2.6 B) and 713 million transactions in FY 2016.

Aadhaar eKYC is a paperless Know Your Customer (KYC) process that verifies an individual's identity and address using electronic biometric authentication through the Aadhaar system.

The cost of eKYC is marginal compared to traditional paper-based KYC processes, and payments banks are expected to use eKYC extensively for customer on-boarding. Payments banks will have to invest in the technology and network infrastructure to connect to Aadhaar and facilitate the procurement of biometric devices for agents.

The Competitive Landscape

Payments banks will be entering a mature and highly competitive savings and payments market. Scheduled commercial banks, regional rural banks, and co-operative banks all have substantial on-the-ground presence in India with a growing interest in raising deposits. Non-bank prepaid payment issuers (PPIs) that provide OTC services through agents are also a significant source of competition in the payments space. Distribution alone, therefore, may not sufficiently differentiate payments banks in this competitive landscape.

While payments banks will be acquiring customers for savings accounts, it should be noted that over the last two years, under India's National Mission for Financial Inclusion, Pradhan Mantri Jan Dhan Yojana (PMJDY), over 240 million¹⁶ new accounts have been opened and over 99% of households¹⁷ are now banked. Payments

banks may therefore find it difficult to acquire customers who already have a PMJDY account.

Payments banks will become part of the interbank payments systems governed by NPCI and its scheme pricing. While membership creates greater opportunities, payments banks must consider the financial impact of interoperability from day one. Absorbing the cost of cash-outs at ATMs is challenging and, like all banks, payments banks will have little flexibility in pricing their services. Currently, service charges on wire transfers through various payment systems, such as NEFT, RTGS and IMPS, are regulated or capped.

Domestic remittances are a largely commoditised product. Although fragmented, India's remittance market is large and competitive. Estimated at over

13. Government subsidies paid through the APBS system are credited to the bank account that is linked to the beneficiary's Aadhaar number.

14. UIDAI: <https://uidai.gov.in/>

15. NPCI: npci.org.in

16. <http://www.pmjdy.gov.in/>

17. <http://timesofindia.indiatimes.com/business/india-business/Jan-Dhan-covers-99-7-households/articleshow/45960195.cms>

INR 100,000 Cr (USD 15 B), nearly 60%¹⁸ are processed through informal channels. Many players are providing basic remittance and over-the-counter (OTC) services through their networks of outlets, including business correspondents that provide services on behalf of banks and prepaid issuers.¹⁹ However, domestic remittance services are already competitively priced and largely driven by agent commissions and local promotions. With the new payments banks coming in, there may be downward pressure on the margins for these services.

Bill payments are another opportunity for the payments banks to drive transaction volumes, at low margins. The total bill payments market in India is estimated at over INR 6,000 billion (USD 89 B)²⁰

and little of it is digitised. Payments banks will either participate in the BBPS system directly or by partnering with other BBPOUs to enable bill payments services to their customers.

India's competitive banking landscape and payments infrastructure has led to a commoditization of these key payments and savings products, such as person-to-person transfers, small stores of value, and bill payments. Large-scale customer acquisition and uptake will therefore be critical for payments banks to succeed and to benefit from economies of scale. To take banking to nearly every doorstep, it will be important for MNO-led payments banks to consider differentiating their services.

Regulatory Assessment

The introduction of the payments bank framework signals openness on the part of the regulator to allow non-banks in India to extend digital financial services to the unbanked and underbanked.²¹ Payments banks are expected to focus on accepting demand deposits (current deposits and savings bank deposits), issuing PPIs, and offering payments and domestic remittance services. Payments banks are also able to enter into "non-risk sharing simple financial services activities not requiring any commitment of their own funds (e.g., mutual funds, insurance)".²²

To ensure payments banks contribute to financial inclusion goals, regulators have made special efforts to minimise systemic risks. Unlike full service banks, payments banks are not permitted to lend, and there will be an INR 100,000 (USD 1492) limit on bank balances.

In addition to restrictions on lending activities and account size, payments banks are only permitted to invest deposit balances in government securities/ treasury bills with a maturity of up to one year (75%), time and fixed deposits at a scheduled commercial

bank (25%), and to maintain a cash reserve ratio of 4% at the RBI.

Paid-up capital requirements for the payments banks are INR 100 Cr (about USD 15M). While this is only one-fifth the capital requirement for a universal bank in India, this is significantly higher than the paid-up capital requirements seen globally for mobile money businesses under an electronic money regime.

Payments banks are required to maintain a minimum net worth of INR 100 Cr (USD 15M) at all times and maintain a leverage ratio of not less than 3%, i.e., its outside liabilities should not exceed 33.33 times its net worth (paid-up capital and reserves).²³ It is important to note that significant, periodic infusion of incremental capital from the bank's promoters may be necessary to meet this requirement. Since payments banks are not permitted to lend, systemic risk is very limited. Regulations should therefore be further simplified for payments banks, at least in early years of operation, to keep compliance costs low and allow them to focus on their core activities.

18. Market estimates, <http://www.finopaytech.com/mobile/pdf/FC-page-no-3-10th-June-2014-Mumbai-Delhi-Bangalore-Chennai-Hyderabad.pdf>

19. Many of the expected payments banks are former business correspondents and PPIs with experience in this market.

20. <http://indianexpress.com/article/india/india-others/e-bill-payment-surgings-market-share/>

21. Further reading: "Need for differentiated regulation for differentiated banks", http://www.moneycontrol.com/news/economy/heed-for-differentiated-regulation-for-differentiated-banks_2512501.html

22. Guidelines on Payments Banks 2014

23. The RBI recently released Operating Guidelines for Payments Banks (6 October 2016) which are supplementary to the Licensing Guidelines for Payments Banks. Available at: <https://rbi.org.in/Scripts/NotificationUser.aspx?id=10635&Mode=0>

TEXT BOX 1

Comparing Traditional Mobile Money and the Payments Banks

Mobile money has achieved commercial success in many markets in Africa, under an electronic money approach. A GSMA study demonstrates that with high OPEX to support scale and driving digital transactions over a long-term horizon investment a mature ecosystem based MM deployment could reach positive EBITDA margins in Y3, and healthy margins of 20% by year 5.²⁴ However, lean cost structures are critical for the viability and sustainability of the business, including a light touch risk-based approach to regulation.

India's new regulatory framework for the payments banks introduces a different animal. The bank based regime ushers in a new operating model for mobile financial services, where a mobile money wallet is only one product under the payments bank umbrella.

In the table below we demonstrate that there are key differences between the business and operating models for mobile money in Africa and the upcoming payments banks. As such, a direct comparison of the financial implications should recognize that we are comparing the outcomes of two radically different approaches. Furthermore, different country contexts (particularly the difference in scale of these markets and the parent companies) impact the financials.

	Mobile Money in East Africa			Payments Banks in India		
Regulatory framework	Regulated as a payment service provider: Electronic money issuer			Regulated as a bank provider: New differentiated bank		
Store of value	Electronic money wallet			Savings and current accounts, and electronic money wallets		
Interoperability	Many deployments are closed-loop to begin			Account to account interoperability from day 1 via NPCI Infrastructure		
Distribution: Number of registered agents per 1k adults	3.3			0.49 <i>At maturity, study estimates 1 payment bank will reach 450k agents in Y10.</i>		
Revenue	Y5+ -15% of GSM Business.			Y10 -7-9% of GSM Business		
Primary revenue driver	Transaction fees			Transaction fees and treasury income.		
Initial technology investment	~ US\$ 1-3M			~ US\$17M		
Capital requirements: Initial and ongoing	Low paid-up capital requirements (~USD 200,000) and no or minimal ongoing capital requirements (~2-3% of outstanding liabilities) ²⁵			High paid-up capital US\$ 15m and total infusion estimated at ~ US\$ 138M to meet ongoing capital requirements		
Direct costs (as % of revenues)	Y 1-2	Y4-5	Y5+	Y1	Y5	Y10
	719%	74%	60%	103%	85%	72%
Indirect costs	Y 1-2	Y4-5	Y5+	Y1	Y5	Y10
	107%	24%	20%	128%	24%	16%
EBITDA Margin	Y 1-2	Y4-5	Y5+	Y1	Y5	Y10
	-726%	2%	17%	-71%	-8%	12%
EBITDA positive	Y4-5			Y7		

24. For the full analysis please see: Almazan, Mireya and Nicolas Vonthron. (2014) 'Mobile money profitability: A digital ecosystem to drive healthy margins.' GSMA Mobile Money.

25. For a fuller picture of existing capital requirements for electronic money issuers, see http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/01/2016_GSMA_Safe-guarding-Mobile-Money_How-providers-and-regulators-can-ensure-that-customer-funds-are-protected.pdf

SECTION 3

The business case for Payments Banks

In this study, we consider two viable business cases for a new payments bank:

1. A **base strategy** with accounts and wallets as core products and a focus on basic payments and savings services; and
2. A **mature strategy** with an emphasis on developing adjacent revenue streams.

Both models represent a viable go-to-market approach that targets a mass market segment with basic financial services and relies on cash-in/cash-out networks to reach the unbanked. The mature strategy builds incrementally on the base strategy, as developing adjacent revenue streams first requires building an active customer base. MNO-led payments banks will evolve from a single product, single channel strategy to become mainstream players with a multi-product, multi-channel strategy.

Base strategy

The strategy for this model is to build a large base of wallet and bank account customers by heavily leveraging the MNO distribution network and to provide business correspondent (BC)²⁶ services for payments banks. The payments bank will grow as the BC network rapidly scales up and acquires customers in the first five years.

The evolution of payments banks can be understood as three stages of growth, defined largely by profit margins.

1. In the start-up phase (Y1–Y3), the bank will focus on rolling out basic banking services, building the agent network, and ensuring the necessary regulatory infrastructure is in place.²⁷
2. In the growth phase (Y4–Y7), the bank will focus on growing of its customer base, increasing agent activity levels, and promoting account and wallet-

based transactions through digital channels. (50% - 70% of transactions to be digitized).

3. The long-term objective (Y8+) the long-term objective (Y8+) is to achieve a predominantly digital ecosystem (with 70%-80%+ of digital transactions) and to reach a high number of active SA and wallet customers (60m+).

As the customer base grows, transaction options also expand, driving the volume of digital transactions up and the number of cash-out operations down. In turn, the bank's total account balances increase.

A focused account and wallet strategy can develop lasting customer relationships, progressively increase the value of these relationships as the bank matures, and make it possible to grow the ecosystem and offer additional services to customers.

26. Business correspondents are individuals / entities that provide extension of banking services as representatives of banks. Payments banks will build a large network of business correspondents

27. This includes the rollout of controlling offices to oversee BC operations and the implementation of a bank-grade core banking system, risk and control procedures, and the set-up of AML/ADF systems.

TABLE 1

The stages of growth

	Start-up phase (Y1-Y3)	Growth phase (Y4-Y7)	Maturity phase (Y8+)
OUTPUT FINANCIALS	<ul style="list-style-type: none"> • Low combined product gross margins (-1% to 10%) • High overhead costs driven by capital expenditure (overhead costs to revenues (128% to >30%)) • Significantly negative EBITDA margins 	<ul style="list-style-type: none"> • Combined gross margins (10% to 25%) • Overhead cost to revenues (between 30% and 20%) • EBITDA margins to become positive at end of Y7 	<ul style="list-style-type: none"> • Combined gross product margins (25%+) • Overhead cost to revenues (less than 20%) • Positive EBITDA margins
DRIVERS	<ul style="list-style-type: none"> • Establishment of basic products (savings and current accounts) and migration of wallets from existing PPI business • Implementation of core banking system (capex) • Rollout distribution infrastructure (agents, controlling offices, branches) –30 branches; 180,000 BCs; 180 controlling offices by Y3 • 20m+ active accounts • Total deposit base (INR Cr) 2,000+ • Annual throughput²⁸ transacted (INR Cr): 60,000+ 	<ul style="list-style-type: none"> • An increasing customer base and digital ecosystem (50% - 70% digital transactions) • A large agent network for cash-ins/outs along the remittance corridor; reach 300,000 BCs • Active accounts between 20m and 60m • Total deposit base (INR Cr) between INR 2,000 and INR 8,000 Cr • Annual throughput transacted (INR Cr): 60,000 to 190,000 	<ul style="list-style-type: none"> • Predominantly digitised model with (70%-80%+ digital transactions) • 60m+ Total active accounts • Total deposit base (INR Cr) 8,000+ • Annual throughput transacted (INR Cr): 190,000+

Customer segments

Payments banks will focus on three key customer segments with different value propositions: the unbanked and underbanked, small business, and the

upwardly mobile (Table 2). While in the early years the primary channel will be agents, even for the underbanked and small business segment, payments banks will encourage customers to shift to self-serve digital channels.

28. Refer to Annex 1 for details of throughput calculation assumptions.

TABLE 2

Customer segments and their value propositions

Customer segment	Unbanked and underbanked population	Small business	Upwardly mobile
Value proposition	Low-income individuals (e.g., domestic workers, drivers, contractual workers), and migrant workers living in urban centres and employment hubs. In rural areas, the unbanked segment includes small farmers, factory workers and others dependent on agriculture.	Business correspondents and MNO agents, small merchants, kirana stores, traders, agri-related small businesses, cottage and small-scale industry operators	Youth, students mostly in urban areas who use mobile wallets and are well acquainted with digital banking and transactions
Primary product	Savings account and wallets	Current account	Wallets
Transaction types	Domestic money remittance, cash-in and cash-out, recharge and utility payments	Cash-in and cash-out, recharge and utility payments, assisted account operations and transfers	Spends through wallets or online transactions
Primary channel	Agents are the primary touch point. Eventually moves to digital self-serve channels.	Agents	Mobile

Products and services

Payments banks will offer multiple products to cater to different customer segments and customer needs. This will require building a transacting pool of customers, strengthening customer relationships, and designing products that not only meet regulatory requirements and compete with existing market products, but also remain viable over time.

Payments banks will offer four main products and services to its customers: 1) savings accounts, 2) current accounts, 3) wallets, and 4) OTC services. (Figure 2). Since each product brings its own costs and benefits

to customers and the financials of the payments banks, a mix of products is best suited to payments banks. For example, savings accounts bring more costs to the bank than wallets and current accounts (free ATM transactions, interest payment etc.) but offer interest and are familiar to customers.

Similarly, wallets are envisioned as the primary channel for digital transactions and online spends, and payments banks will focus primarily on driving uptake of wallets and accounts. Existing PPIs will be migrated to the bank, and since wallets can be paired with bank accounts, self-serve digital users can graduate to account customers.

FIGURE 2

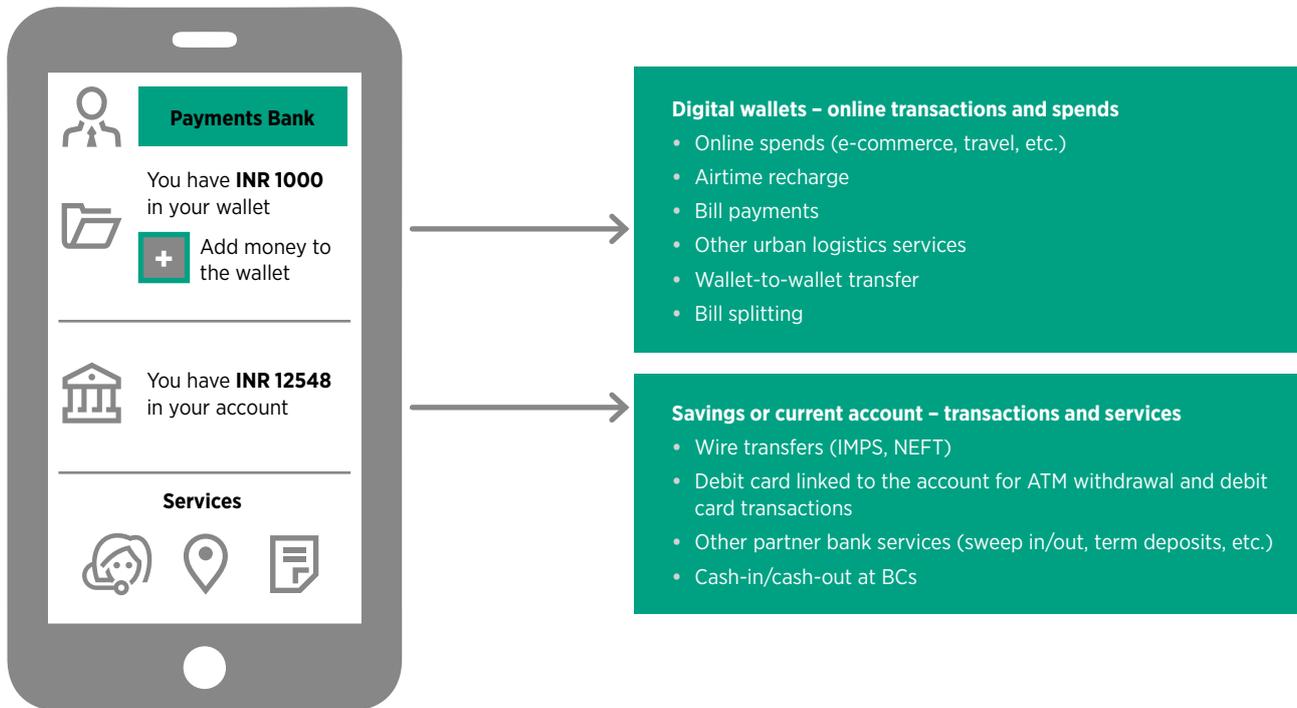
The main products and services offered by payments banks

 <p>STORE OF VALUE, INTEREST EARNINGS</p>	Savings account	Anchor product for the retail customers of Payments Bank with the focus on building a stable liability balances
<ul style="list-style-type: none"> • Regulatory restrictions: INR 100,000 limit on payments bank accounts, requirement to provide free transactions for ATM withdrawals • 4% interest rate in line with market practice • Debit card will be opt-in and a chargeable service for customers 		
 <p>STORE OF VALUE, BUSINESS TRANSACTIONS</p>	Current account	Deposit account for business customers, with a focus on BCs, MNO agents, and small business owners
<ul style="list-style-type: none"> • Regulatory restrictions: INR 100,000 limit on payments bank accounts, interest cannot be paid on current accounts • No interest is payable on current accounts • Debit card will be opt-in and a chargeable service for customers • ATM transactions will be charged to customers based on actual usage 		
 <p>ONLINE SPENDS, DIGITAL TRANSACTIONS</p>	Wallets	Primary channel for digital transactions and spends, can also be opened with minimum KYC details
<ul style="list-style-type: none"> • Prepaid wallets from the MNO's existing PPI business will migrate to payments banks • Minimum KYC wallets have a monthly limit of INR 10,000 (cash-in and usage). <i>NB: this amount has been temporarily increased to INR 20,000</i> • Cash-out is not permitted from min-KYC wallets • Bank will also offer wallets bundled with savings accounts for new customers 		
 <p>ASSISTED SERVICES</p>	OTC services	Services offered through the payments bank's BC network for non-bank or walk-in customers
<ul style="list-style-type: none"> • Domestic remittances (taking cash from customers to be transferred to a beneficiary bank account, as per limits) • Other services, such as utility bill payments and airtime recharge 		

Below is an illustration of the bundled wallet and savings account proposition, with wallets as the primary driver of digital spends and accounts used for savings and storing value.

FIGURE 3

Bundled wallet and savings account proposition



TEXT BOX 2

The role of over-the-counter (OTC) services

Payments banks that focus exclusively on OTC services, such as assisted domestic money remittance (DMR), airtime recharge and bill payment, will find it challenging to build an economically viable model in the long run. Apart from pricing and agent commissions, there are few ways to differentiate OTC services. Combined with less customer affinity for particular service providers, services becoming commoditized by new market players, and customer preferences shifting to digital self-serve channels, opportunities for the OTC model may be limited.

While OTC services may address the immediate needs of customers, in the medium term they do not encourage more transactions, develop customer profiles, or provide additional banking services. Since OTC services are transactional, they will not drive customer stickiness for payments banks either.

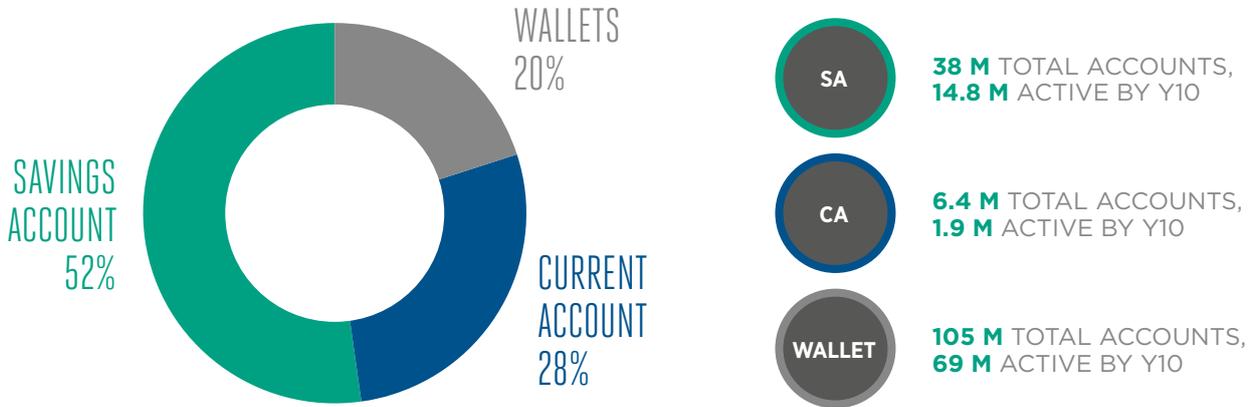
Focusing solely on OTC services may appear profitable in the short run, but it may not build a stable customer base over the long term.²⁹ This limited revenue potential does not match the high level of investment necessary to obtain a payments bank license.

29. <http://www.gsma.com/mobilefordevelopment/programme/mobile-money/otc-smartphones-and-the-future-of-mobile-money>

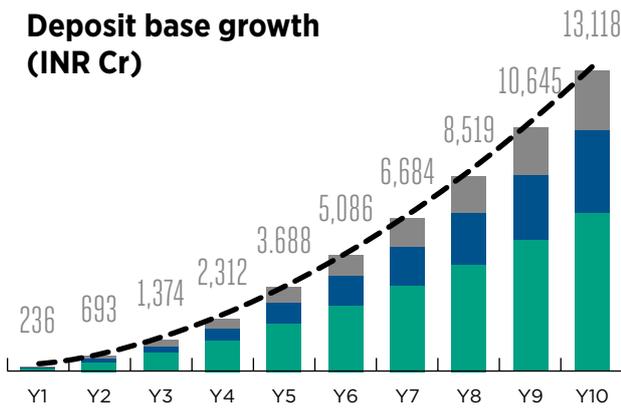
FIGURE 4

Key growth statistics – wallets and accounts

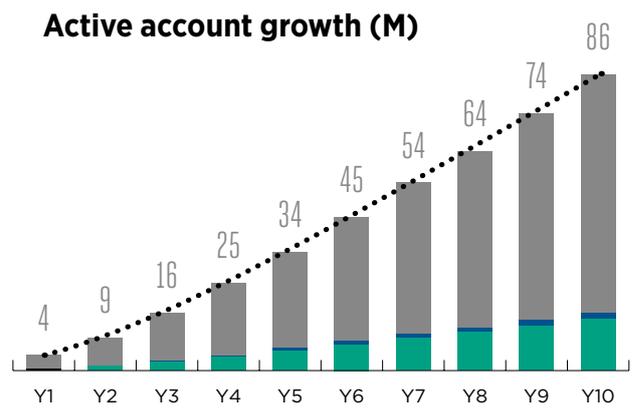
Y10 deposit base, **INR 13,000 cr**



Deposit base growth (INR Cr)



Active account growth (M)



SAVINGS ACCOUNT

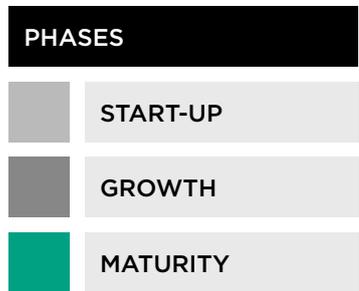
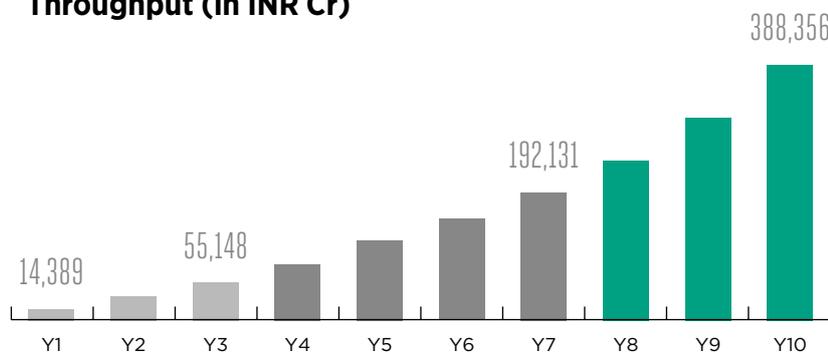
CURRENT ACCOUNT

WALLETS

TOTAL DEPOSIT BASE

TOTAL

Throughput (in INR Cr)



SA SAVINGS ACCOUNT CA CURRENT ACCOUNT Cr CRORE, EQUAL TO 10 MILLION

Note: For the throughput calculations, accounts, wallets, and OTC transaction volumes have been considered.

Distribution

Payments banks will aim to build a low-cost physical distribution channel, which is a combination of branches and BCs. Controlling offices are also required to provide oversight.

Bank branches typically have high costs associated with them, so there will be a limited focus on branch rollout. Ten branches will be added every year for the first five years, then stabilise at fifty. Branches will be responsible for the overall management of the BCs and controlling offices in the area and provide a face-to-face opportunity for customers. Branches may also double as local operations centers, distributing forms, scanning and archiving customer documentation, facilitating cash management for BCs in its coverage area, and other tasks. Unlike scheduled commercial banks, branches are not the primary sales and customer service points but will be more focused on consumer protection and grievance management.

BCs will be the primary channel for customer service and acquisition, and it is expected that payments banks will add 60,000 new BCs to the network every year,

reaching 300,000 by the fifth year. The rate of growth of the BC network is expected to slow down in the maturity phase and stabilise at 450,000³⁰ BCs by year ten.³¹

Payments banks will set up a special rural network of BCs in key destinations in India's domestic remittance corridors. Thirty percent of the BCs will be in rural areas. This will also help payments banks meet their regulatory requirement of maintaining 25% of its access points (branches, BCs) in rural areas.³²

Aadhaar-enabled eKYC will be the preferred mode of customer on-boarding to reduce costs and introduce efficiencies. While the bank will facilitate the procurement of biometric devices, the costs will be borne by the BCs.

Setting up controlling offices is a regulatory requirement for payments banks to supervise and control their BC networks effectively.³³ In line with current market practices, it is assumed there will be one controlling office (with three officers in charge of oversight) for every 300 active BCs. Controlling offices are required to be managed by on-roll employees of the bank.

30. Total number, not active number

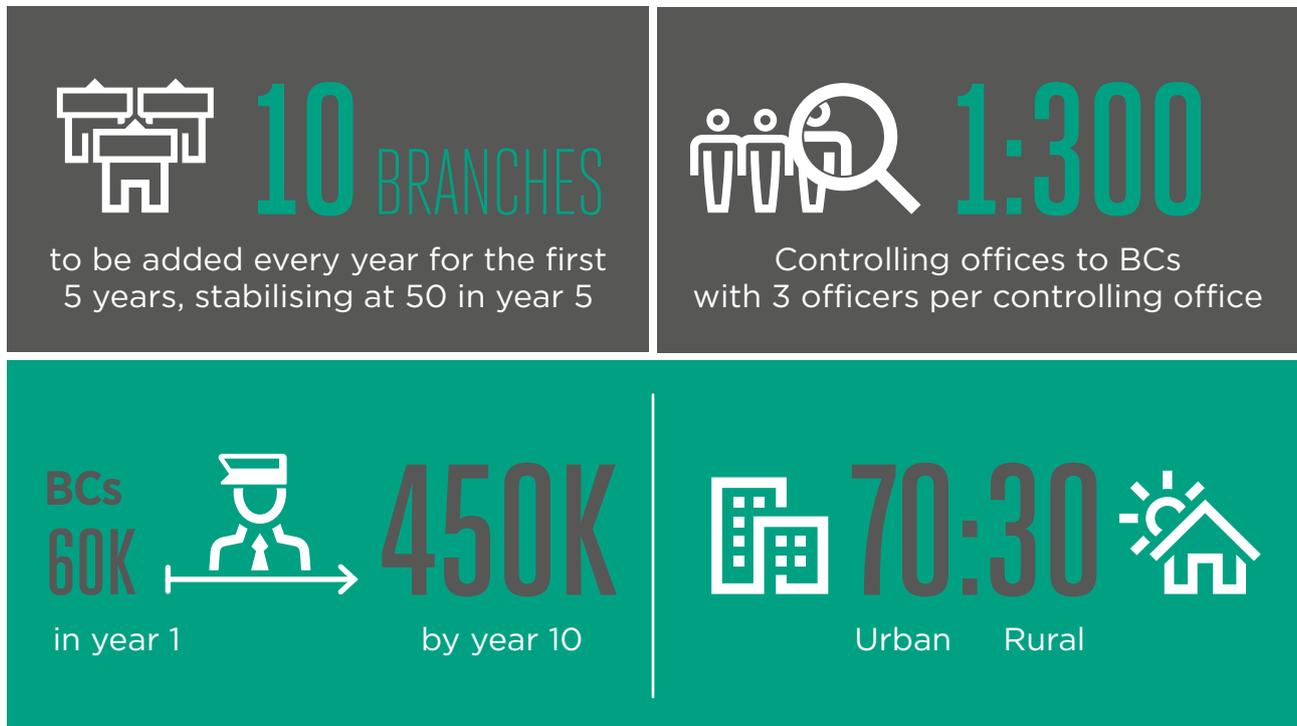
31. See Annex 1 for details on customer acquisition through BCs.

32. Section 13i, Other conditions, RBI Guidelines for Licensing of Payments Banks, 27 November 2014

33. Section 13i, Other conditions, RBI Guidelines for Licensing of Payments Banks, 27 November 2014

FIGURE 5

Distribution model of payments banks



Profitability of the base strategy

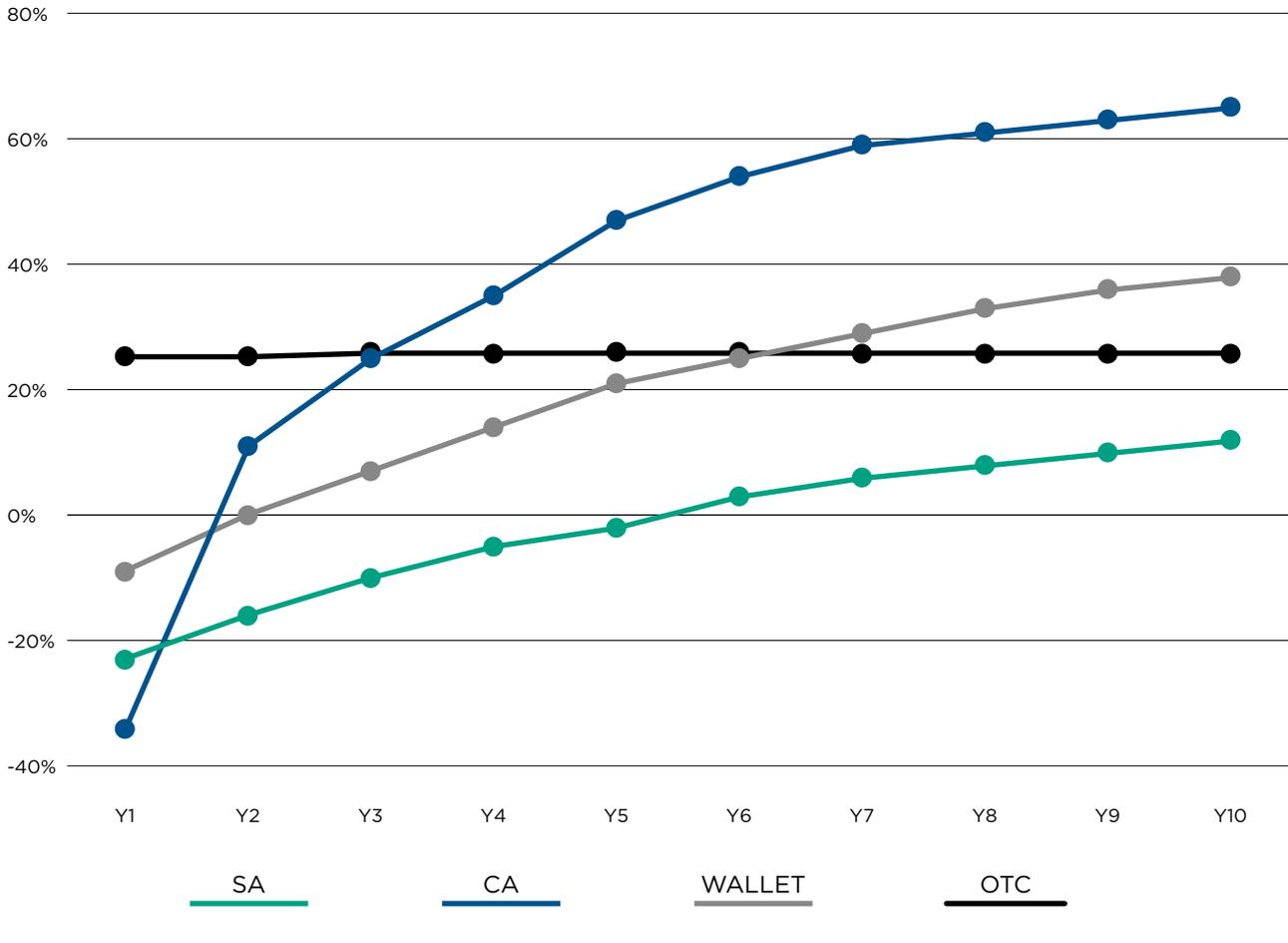
Our analysis of the base strategy (accounts and wallets as core products and basic payments and banking services) suggest that payments banks will become profitable from year seven onwards (table 1, page 15). We also expect the payback period³⁴ to begin around year ten of operations. Broadly, we can identify three

dynamics driving this profitability scenario: (1) Difference in the gross margins by product type; (2) considerable costs associated with setting up the banks; (3) Scale of customer base and efficiency required to bring down direct costs as a percentage of revenue;

34. Time it will take for payments banks to recover losses incurred in earlier years.

FIGURE 6

Gross margin percentage (product wise)



The product level profitability provides insight into profitability drivers for the bank.³⁵ (See figure 6).

As mentioned earlier, payments banks will have four product lines, each with a different cost and revenue structure and varying gross margins.

Savings accounts are an anchor product for payments banks and will support the growth of the deposit base over time. However, the high costs associated with savings accounts and the market practice of paying interest delays positive gross margins for savings accounts until the sixth year of operation. In contrast, current account and wallets begin contributing positively to the gross margin earlier due to zero interest rate on funds held in these accounts.

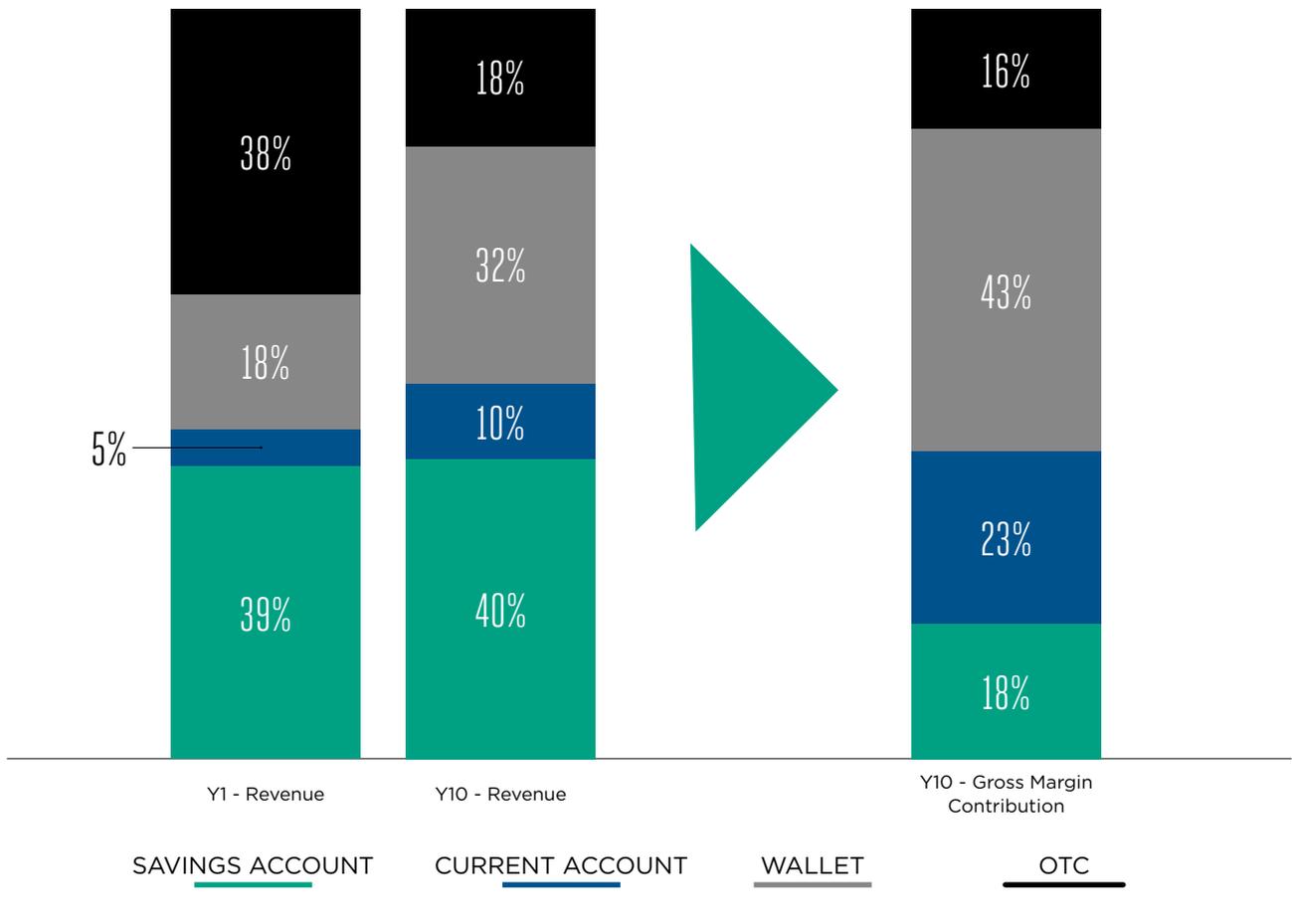
As a result, current accounts and wallets become profitable much sooner—by year two. It is important to note that while margins on wallets and accounts increase over time, expected margins on OTC services (domestic remittances and other assisted services) remain flat year on year and may also decline slightly over time as the market becomes more saturated.

While current accounts contribute only 10% of revenue by year ten, they represent 23% of gross margin contribution of the bank. Similarly, wallets represent 32% of revenue and contribute 43% to gross margins of the bank. In contrast, savings accounts are a significant revenue contributor, but do not proportionately add to the gross margin.

35. Gross margins have been calculated on the basis of revenues and costs directly attributed to respective products. Calculation: (Product revenues - product costs) / Product revenues.

FIGURE 7

Revenue versus gross margin contribution trends across product categories

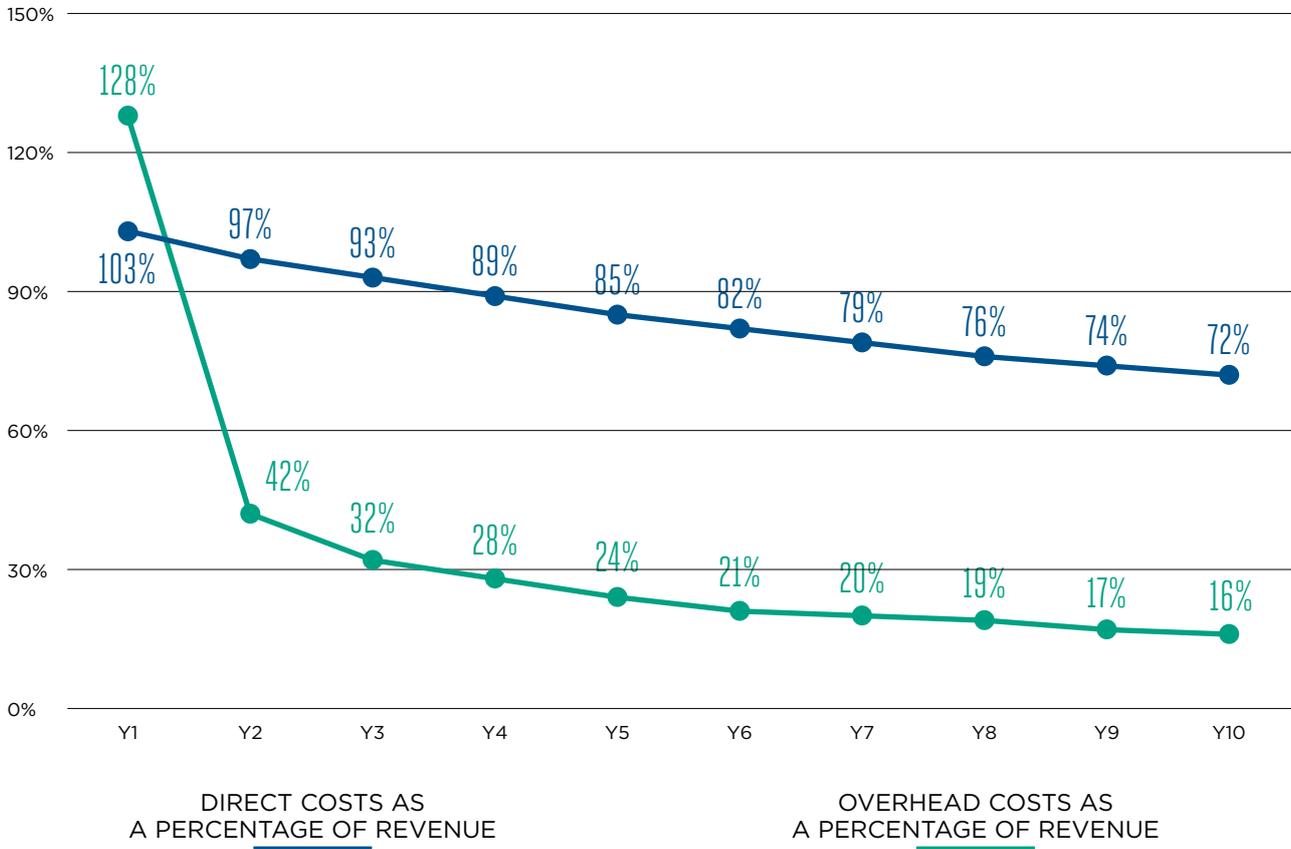


The bank faces considerable costs associated with set up in the first year. While the analysis of the gross margin in different product categories only considers direct costs. Other overhead costs, such as the

technology platform, personnel, and marketing and BC management, the bank will decrease as a proportion of revenue drop over time (Figure 8), though the first few years bring significant costs.

FIGURE 8

Costs to revenue



Direct margins increase as outreach scales up and digital transactions increase. Payments banks are largely a transactions-oriented business characterised by low margins and high volume, which is why direct costs as a proportion of total revenue remain considerably high. However, as scale of distribution and frequency of digital transactions increase, the proportion of direct costs decreases.

The financial projections above are strongly correlated to assumptions about scaling up distribution. It is assumed there will be a phased scale-up from an active base of 18,000 BCs in Y1 to 135,000 in Y10. Alternatively, some MNOs may consider a faster rollout of the distribution network, better on-ground

engagement to keep more agents active and aggressive customer acquisition in the early years, which could help payments banks become profitable sooner.

Higher number of active BCs can lead to the payments bank turning profitable earlier. With an increase in active BCs from 30% to 40%, (30% assumed for the base strategy) the payments bank can become profitable in year 6, a year earlier and an EBIDTA difference of near INR 70 Cr (USD 10M) in year 7. This would also lead to the pay-back period of 9 years instead of 10 years in the base strategy. Operationally, this translates into a network of 24,000 active BCs in year 1 scaling up to 180,000 by year 10.

Illustrative financials

Using a base strategy, we expect payments banks will incur losses in the early years and will have to infuse a significant amount of capital to meet the net worth requirement and maintain the leverage ratio.³⁶ The total equity infusion is expected to be INR 920 Cr (USD 137M) over the first six years, higher at first, then dropping and becoming more incremental.

An assessment of the profit and loss statement for the base strategy offers insights into the challenges and opportunities for payments banks in terms of both revenues and expenses.

Revenue from products and services

An account and wallet-led strategy contributes both revenue from transaction fees and treasury income from products, which grows from 62% in the first year to 83% by the tenth year. The revenue from all types of transactions for account and wallet customers (including wire transfers, spends, interchange income from card transactions, cash-out charges, etc.) along with the treasury income is considered below.

A focus on driving digital transactions and spends through wallets will increase this revenue contribution from 18% in the first year to 32% in the tenth year.

Growth in treasury income will come from the build-up of customer balances over time.³⁷ By the tenth year, treasury income will account for 25% of a bank's overall revenue. To achieve these gains, a payments bank must build a large transacting ecosystem for customers, creating greater stickiness, encouraging higher balances over time, and greater revenue from digital transactions.

The shift to digital transactions

Revenue from cash-out as a percentage of total revenue will also drop steadily, from 28% in year one to 22% in year 10, reflecting a steady customer shift to digital channels for spends and domestic remittances, and fewer customers withdrawing cash.

Over-the-counter services

Despite a strategic focus on accounts and wallets, OTC services will remain an important source of revenue in the early years as unbanked customers will not yet be comfortable transacting digitally. In the base case, promoting the use of digital and self-serve transactions will gradually reduce revenue contribution from OTC services from 38% in the first year to 17% by the tenth year.³⁸

36. Section 6, Capital Requirements, RBI Guidelines for Licensing of Payments Banks, 27 November 2014, "Payments bank should have a leverage ratio of not less than 3 per cent, i.e., its outside liabilities should not exceed 33.33 times its net worth (paid-up capital and reserves)."

37. It has been observed that the higher the number of transactions customers make, the higher their account balance becomes. Hence, the overall focus of payments banks should be to create as many transaction avenues for customers as possible, and higher balances will become an incidental benefit.

38. Revenue contribution from OTC services decreases from 38% in Y1, to 28% in Y5 and to 17% in Y10.

TABLE 3

Key revenue and cost drivers for payments bank products

	Revenue drivers	Cost drivers
Savings accounts	<ul style="list-style-type: none"> • Treasury income from balances • Revenue from cash-out at agents 	<ul style="list-style-type: none"> • Interest payout • Channel commission for facilitating cash-in and cash-out • Cost of ATM withdrawals
Current accounts	<ul style="list-style-type: none"> • Treasury income from balances • Revenue from cash-out at agents 	<ul style="list-style-type: none"> • Channel commission for facilitating cash-in and cash-out
Wallets	<ul style="list-style-type: none"> • Online spends through wallets for e-commerce, travel, urban logistics services etc. • Commission on recharges, bill payments services • Treasury income from wallet balances 	<ul style="list-style-type: none"> • Cost of cash-in or adding money to the wallet (from credit card, debit card, and net banking) • Promotional expenses and incentives for customers
OTC services	<ul style="list-style-type: none"> • Fees/charges levied to customers for domestic remittance transactions • Commission earned from service providers (telcos, DTG operators, utility companies) for assisted transactions 	<ul style="list-style-type: none"> • Channel commission to be paid for facilitating OTC services

Note: A detailed assessment of the products, along with limits and restrictions, appears in Annex I. Product-specific assumptions for the financial model are listed in Annex II.

Costs: Direct and overhead

Our assessment of what drives costs in a base strategy revealed that costs can be divided into those that

are tied to specific products (direct costs) and those incurred by a bank for enabling services (overhead costs). We have categorised and analysed the impact of both types of costs in Table 4 below.

TABLE 4

The impact of direct costs and overhead costs

DIRECT COSTS	Savings accounts	Account opening, KYC, channel commission for customer acquisition, debit card issuance, ATM usage, account servicing, channel commission for cash-in and cash-out, interest payment
	Current accounts	Account opening, KYC, channel commission for customer acquisition, debit card issuance, account servicing, channel commission for cash-in and cash-out
	Wallets	Cost of customer acquisition, cost of cash-in to wallets, promotions and incentives
	OTC services	Channel commission
OVERHEADS	Technology	Capital expenses (software licenses, hardware deployment, network infrastructure), operating expenses (annual maintenance, technology support, managed services, implementation, etc.)
	Marketing	Brand management, above-the-line (ATL) and below-the-line (BTL) activities
	Infrastructure	Infrastructure for branch, central office, operations centre, controlling office, other administrative expenses
	Personnel	Salary and other variable payments, training, employee engagement, bonuses and other benefits
	BC management	BC acquisition, KYC and documentation, on-site management and training support

Direct costs

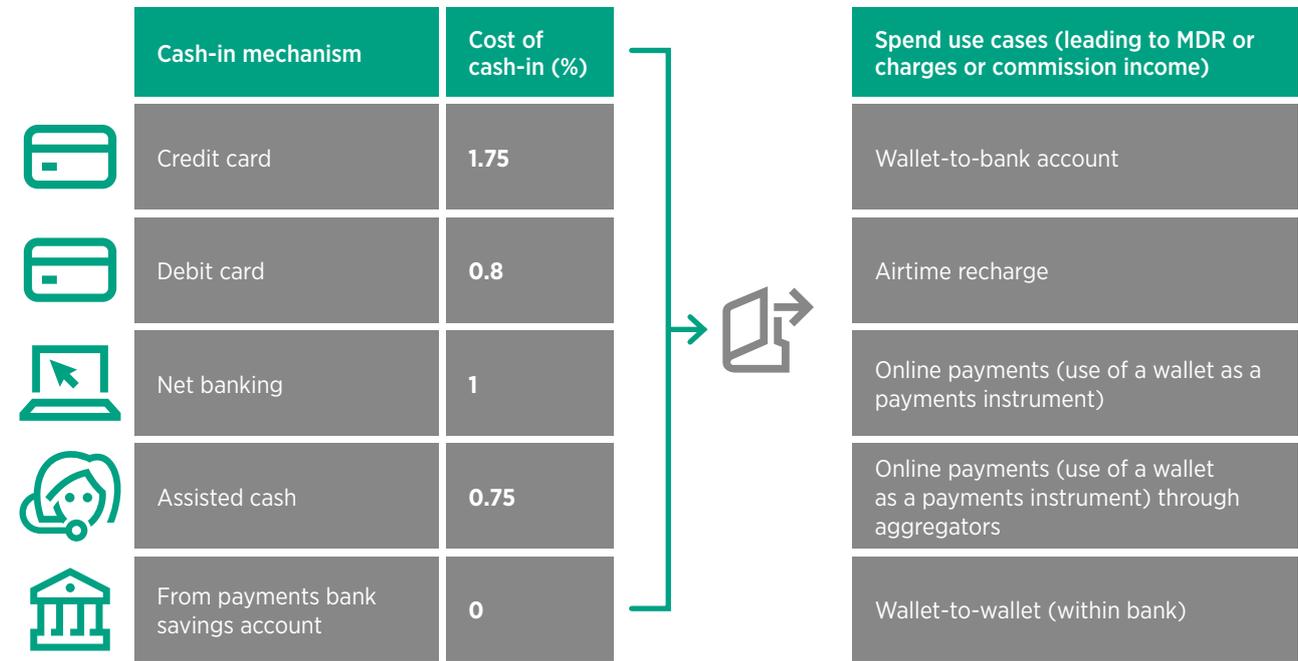
Cash-in to wallets

Cash-in to wallets is a critical cost, given the market convention for wallet providers to absorb this cost. With the growth in transaction volume through wallets, the cost of cash-in to wallets (as a percentage of wallet revenue) also increases from about 51%

in Y1 to 57% in Y10. Figure 9 illustrates the options and costs associated with loading money into a wallet. A payments bank will benefit from migrating customers to lower cost cash-in methods over time, such as bundling savings accounts and wallets. This will facilitate electronic inflows, such as direct benefit transfers and salary disbursements, and lower the cost of cash-in at the portfolio level.

FIGURE 9

The options and costs associated with loading money into a wallet



Cost of cash-in and cash-out to accounts

Cost of cash-in to the savings and current accounts is a significant cost driver for the bank. The bank must pay commission to the BCs for facilitating both cash-in and cash-out. However, to incentivize the use of accounts, cash-in is subsidized by the bank and offered as a free service for customers. Cash-out at BCs is chargeable.

Cost of cash-in (or commission paid to the BC) is estimated at a commission rate of 0.5% for savings accounts and 0.75% for wallets. This reflects a commission structure, where the commission paid to the BCs depends on the ticket size of the transaction (a slightly higher percentage commission is paid for low-value transactions). It is assumed that the average ticket size of savings accounts cash-in at agents will be higher than for wallets, and therefore we assume a lower cash-in commission for savings accounts as a percentage of the transaction value. Current accounts are generally transactional in nature and have a higher

frequency of transactions per customer, hence a lower commission is assumed for current account cash-in.

The cost of cash-in to savings accounts must be managed. If the cost of cash-in to savings account is considered at a 0.75% commission to the agent (instead of 0.5%), profitability reduces significantly. The bank takes a year longer to become profitable and the gross margin of savings accounts as a product only reaches 5% in year 10.

Customer acquisition and KYC

When it comes to KYC norms, payments banks must follow the regulator. Efficient KYC is critical for onboarding clients at the scale payments banks require. The new biometric authentication or Aadhaar-based eKYC provides a cost-effective solution. There is even potential to defray the costs of procuring and deploying biometric authentication devices through collaboration across payments banks or with parent MNOs.

Typically, eKYC will be one-eighth the cost of traditional KYC processes. However, low adoption of eKYC by BCs can nullify these cost savings. It is expected that a significantly higher proportion of customers will be on-boarded through eKYC (estimated as 80% in Y1 and stabilise at 95% from Y7 onwards).

KYC costs may further increase due to centralised KYC compliance requirements and associated documentation and paperwork.³⁹

However, there are new opportunities for streamlined electronic KYC procedures: TRAI has recently permitted the use of eKYC via Aadhaar for SIM registration,⁴⁰ and the recent Operating Guidelines for Payments banks indicate that KYC of a telecom company that is a promoter of the payments bank can be leveraged for KYC of the banking company, with appropriate customer consent.⁴¹

Estimated cost of customer acquisition	Cost estimate (INR)
Cost of eKYC	5
Cost of physical KYC	40
Cost of debit card issuance (inclusive of dispatch cost)	65
Account opening cost (per savings account)	40
Channel commission per savings account opened	50
Total cost range (dependent on KYC type)	INR 160–195

High-cost product features

Certain product features and services incur additional direct costs, which can have a significant impact on the business case. Product features and services, such as interest payment on savings account balances, the transaction costs of free ATM withdrawals, and other service requirements, such as printing, personalization and delivering debit cards and pin-mailers are significant for a low-cost delivery model.

ATM usage can have a particular impact on a bank's costs. The RBI mandates banks to offer a certain number of free ATM transactions per month to savings account customers, the entire cost of which must be borne by the bank. The average cost of ATM withdrawals is estimated at INR 15 per transaction.⁴² We have assumed that 50% of savings account customers will opt for debit cards (an opt-in chargeable service), and of those, 40% will use an ATM once a month. The financial model is sensitive to this assumption and it is a conservative estimate.

Interest payments are also a sensitive cost and subject to changes in interest rates. With the base strategy, a 4% interest rate is assumed, which is in line with most

ATM usage assumptions	
% of savings account customers opting for a debit card	50%
% of debit card customers using ATMs	40%
Transactions per customer per year	12
Cost per transaction (INR)	15
Total ATM expenses Y1	INR 5 Cr
Total ATM expenses Y10	INR 85 Cr

banks. As the deposit base grows, interest payment expenses also grow to represent nearly 25% of savings account costs by year 10 of operations. This presents a risk, as market interest rate fluctuations or competition on interest rates can have a significant impact. Collectively, ATM and interest expenses represent over 30% of savings account costs in the mature stage.

39. Central KYC Registry Operating Guidelines 2016: <https://www.ckycindia.in/ckyc/guidelines.html>

40. TRAI has recently permitted the use of eKYC via Aadhaar for SIM registration, with operators entering into collaborative arrangements to roll it out: <http://gadgets.ndtv.com/telecom/news/aadhaar-ekyc-can-make-new-mobile-connection-cost-zero-823727>

41. Operating Guidelines for Payments Banks available at: <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=10635&Mode=0>

42. <http://profit.ndtv.com/news/corporates/article-now-pay-rs-20-for-more-than-3-transactions-at-sbi-hdfc-bank-axis-bank-atms-690761>

Overhead costs

Technology

Technology is one of the most significant costs in the early phase of a payments bank. Assuming a licensing arrangement for the core banking solution,⁴³ technology is estimated to account for about 49% of first year revenue (overall, the upfront technology cost is estimated to be about INR 118 Cr, or USD 17 M, in the first year). This requires the bank to inject significant capital upfront to meet the minimum net worth requirement (INR 240 Cr and INR 150 Cr, USD 35 M and USD 22 M) in the first two years.

Key technology cost components

Capital expenses

- Software licenses
- Hardware
- Network and technology infrastructure

Operating expenses

- Implementation costs
- Annual maintenance

Most payments banks will consider adopting the tried and tested core banking solutions of established banking players, which can contribute to an efficient regulatory approval and integration process with the national payments infrastructure. While there are definite merits to adopting these solution stacks, including platform stability, getting regulatory updates, and built-in modules for standard products, it comes at a significant cost.

Personnel

In the first year, a payments bank will have an estimated 385 employees, rising to 2,036 by Y10. Employee expenses will account for 18% of revenue in Y1 and 8% of revenue by Y10. Payments banks will need some statutory and critical positions for core functions, such as risk, compliance and finance, as required by India's banking standards. There will also be other core business and product functions supported by the bank's head office and back office, requiring an estimated 175 employees in Y1 and nearly 536 by Y10.

Apart from these, the branches and controlling offices will be managed by on-roll employees. It must be noted that a significant proportion of employees will be engaged in BC channel management (47% in Y1 and stabilizing at about 66% in Y5 onwards). It is therefore critical for banks to adopt technology-enabled control and monitoring mechanisms for the BC channel to increase the span of control of the controlling officers without compromise their ability to implement controls and manage risks.

Marketing

Over 15 new banks will become operational at the same time as the payments banks. A new differentiated banking service must be marketed to create awareness on the ground, even MNO-led payments banks that may be able to leverage strong brand recall. In the base strategy, it is estimated that the payments bank will conduct various ATL and BTL activities and invest in a new brand. INR 14 Cr (USD 2 M, 9% of revenue) in marketing expenses is estimated for the first year, but this will drop significantly as the bank scales up.



OTHER CONSIDERATIONS: NET WORTH AND LEVERAGE RATIO REQUIREMENTS

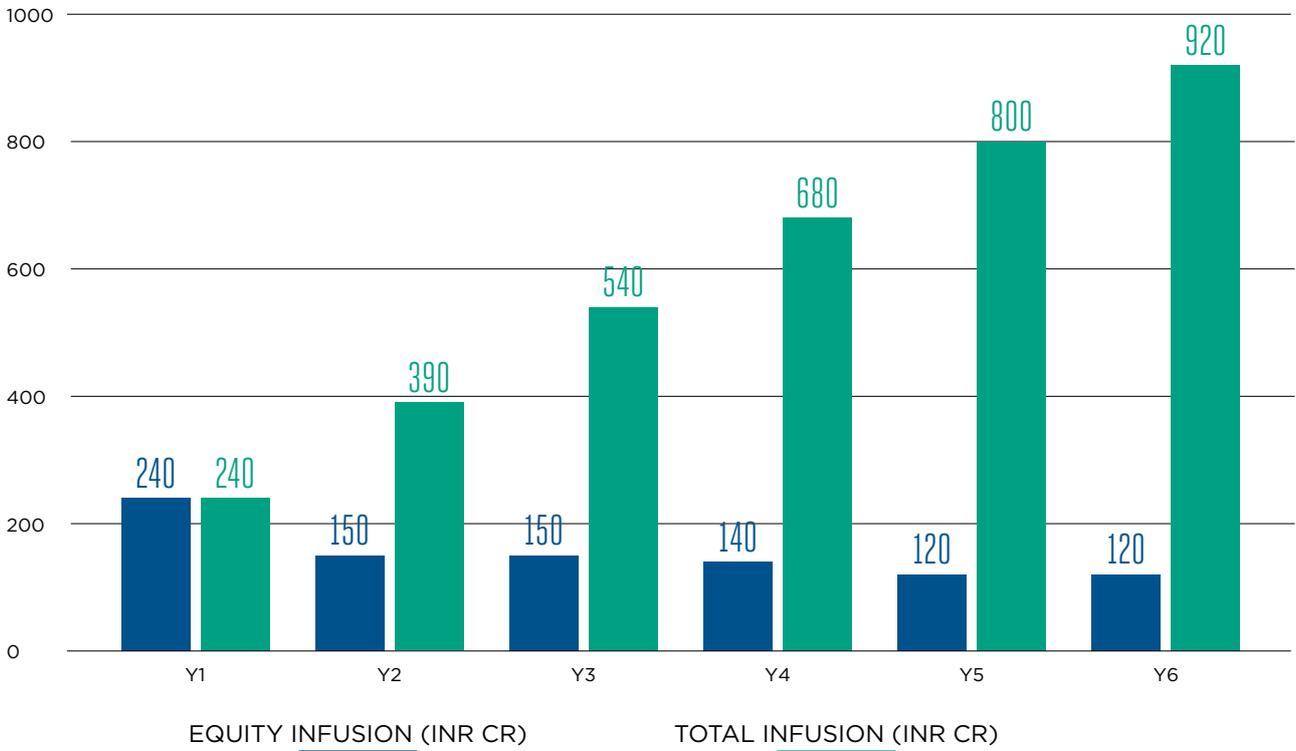
It is a regulatory requirement that payments banks have a minimum net worth of INR 100 Cr (USD 14 M) and maintain a leverage ratio of 3% (i.e. the total deposit base cannot exceed 33.33 times the net worth of the bank) at all times.

Due to losses in early years and the subsequent rapid scale up of deposits, payments banks will have to periodically infuse fresh capital to meet these criteria. For the base strategy, a total capital infusion of INR 920 Cr (USD 137 M) will be required.

43. There are two possible technology solutions: licensed and hosted arrangements. The licensing arrangement comes with higher upfront costs, whereas hosted arrangements spread out the costs and are pay-per-use, based on an agreed level of transactions and volume projections. Market players that view payments banks as a long-term opportunity and are likely to build scale are better suited to the licensing arrangement. Given the ambitions of payments banks, the licensing arrangement has been modelled in the base strategy.

FIGURE 10

Capital Infusion (INR Cr)



SUMMARY:

REVENUE

- Account-based revenue will be the key driver of P&L and will continue to increase over time.
 - As the deposit base increases for both the account and wallet portfolio over time, treasury income will become a larger component of total revenue.
 - As digital spends through wallets increase, revenue from wallet transactions will come to contribute significantly to the bank's total revenue.
- Assisted transactions through the BC network will remain a significant source of revenue, despite reducing in proportion to other revenue streams.

COST

- Significant upfront investment in technology and infrastructure will delay the break-even and payback periods.
- With extensive reliance on the BC network as the primary service point for cash-in/out, the channel commission will continue to be a significant cost.
- The costs of BC network growth will increase in proportion to the costs of setting up controlling offices.
- Overhead costs are significant, driven by regulatory requirements and operational intensity, but these decrease as a proportion of revenue with scale.

SECTION 4

Developing adjacent revenue streams

In the basic banking and payments model, both revenue potential and risk are significant, requiring substantial capital infusion (INR 920 Cr, USD 137 M) and extending the payback period to more than 10 years.

Developing a stable and competitive business model in the long term will require a payments bank to go

beyond providing basic banking services and focus on adjacent revenue streams.⁴⁴ This will diversify the revenue base, increase gross margins, create greater stickiness with customers, and will lessen the need for periodic equity infusion.

Adjacent revenue streams: Three scenarios

In the mature strategy for payments banks, there are opportunities beyond basic banking and payments services. We expect that banks will invest in building a holistic set of customer value propositions that address a broader set of financial needs.

A payments bank will need to build, and then leverage, three critical assets to create adjacent revenue opportunities: data, a large base of wallet customers, and a large distribution network. Credit, merchant payments, and insurance products are three potential value propositions (Table 6).

44. Further reading: EY, "Alternate revenue models for Payments Banks in India", [http://www.ey.com/Publication/vwLUAssets/ey-alternate-revenue-models-for-payments-banks/\\$FILE/ey-alternate-revenue-models-for-payments-banks.pdf](http://www.ey.com/Publication/vwLUAssets/ey-alternate-revenue-models-for-payments-banks/$FILE/ey-alternate-revenue-models-for-payments-banks.pdf)

TABLE 6

Adjacent revenue opportunities

Adjacent revenue	Product	Operating model	Key revenue and cost drivers
<p>Credit</p> <ul style="list-style-type: none"> Self-serve credit for middle-income salaried customers that use wallets for payments Assisted credit at BCs for bank customers who are not digitally engaged 	<p>Enabling unsecured credit underwritten on the basis of transaction data for wallet and bank account users</p>	<p>Serve customers through digital channels or BCs</p> <p>Flexible tenure and repayment terms</p> <p>Actual lending to be done by the bank or partner NBFCs (as permitted by the RBI)</p>	<p>Revenue</p> <ul style="list-style-type: none"> Upfront processing fee from customers Share of interest income earned by the lender <p>Costs</p> <ul style="list-style-type: none"> Marketing BC commissions Incremental technology costs associated with developing the proposition
<p>Insurance distribution for bank customers</p>	<p>Low premium, simplified insurance products</p> <p>Participate in the government-sponsored schemes intended to create financial security</p>	<p>Freemium services to gain traction</p> <p>BC-led sourcing to target low- to middle-income customers</p> <p>Digital channels for wallet and digitally engaged upwardly mobile customers</p>	<p>Revenue</p> <ul style="list-style-type: none"> Commission income from sale of insurance <p>Costs</p> <ul style="list-style-type: none"> BC commission
<p>Merchant payments for small and medium merchants in urban and semi-urban markets through a low-cost solution (compared to traditional POS)</p>	<p>Asset-light solutions (such as basic handsets) to capture low-value, high-frequency transactions</p> <p>Some instruments/ channels that could be considered for merchant payments: USSD/ STK, QR code, UPI</p>	<p>Target small merchants through distributors and sales team</p>	<p>Revenue</p> <ul style="list-style-type: none"> Transaction fees Potential share of interest payments on working capital loans extended to merchants on the basis of transaction data <p>Costs</p> <ul style="list-style-type: none"> Marketing and sales Merchant acquisition and servicing Incremental technology

Credit, insurance, and merchant payments all have cost and revenue implications, as well as some incidental benefits for payments banks. For instance, freemium insurance services linked to a customer's average account balance may help to boost deposits, merchant payments may reduce the number of cash-outs, and credit may spur uptake of bank accounts by customers who have not had access to formal sources of lending

before. These additional benefits have not been quantified in the financial model and will be over and above the revenue and cost implication.

Note: To keep our analysis consistent with the base strategy, underlying assumptions about scale and growth, ramping up distribution, core costs, and revenue drivers have remained the same.

Credit

In India, a majority of the population does not have access to formal credit, driving them to use the high-cost channels of informal money lenders.⁴⁵ Lack of banking access, combined with lack of data, has limited access to finance and hindered the financial growth of India's households, and small and micro businesses. Without access to timely credit, individuals are unable to meet shortfalls in cash flow or weather emergencies. However, with widespread low-cost networks, payments banks can provide simple and easy-to-use credit products through partner lending institutions. They can also leverage customer and payment transaction data to assess the credit worthiness of those with little formal credit history, and create alternative credit scores that either complement credit bureau scores or serve as the primary score where no data is available.

Small ticket credit with a partner bank, delivered through digital channels

Payments banks can leverage transaction data from mobile recharges, bill payments, and other spending activity to generate highly unique credit profiles of their customers. On the basis of this, they can then offer credit products specially designed to meet customer needs, typically short-term loans of one to three months. The loans can be deposited directly into the customer's savings account or wallet, with payments automatically deducted from the balance. While credit products could be developed jointly with lending institutions, payments banks will not assume any credit risk.

We expect payments banks to accumulate a sufficiently rich store of data for customers who have been with the bank for at least one year, at which point the bank can begin building and monetising credit profiles for these customers. However, for the first year, the bank should consider selectively rolling out credit offerings for migrated PPI customers who have already been actively transacting.

TEXT BOX 3

A credit scoring model can be built using a combination of factors, such as:

- Wallet usage patterns
- Type of card used to cash in the wallets
- SMS scrubbing to assess transaction flows
- Airtime usage and usage type (prepaid or postpaid)
- Geo-tagging assessment of customer addresses (negative list of areas / PIN codes can be avoided)
- Frequency of change of handset, handset model, etc.
- Account data analysis (average balance, salary inflows, spends)

Typically in lending partnerships, the institution underwriting the credit is also responsible for developing the credit scoring model. The model would then be used by the payments bank to assess the creditworthiness of its customers using data that stays with the bank.

Globally, companies such as Cignifi and First Access are leveraging alternative data like mobile usage and recharge frequency to build risk scores to address the credit demand of an emerging class of borrowers that previously could not access formal credit because of limited credit history.

45. Narayan Chandra Pradhan, Reserve Bank of India, "Persistence of Informal Credit in Rural India: Evidence from 'All-India Debt and Investment Survey' and Beyond", <https://www.rbi.org.in/scripts/publicationsview.aspx?id=14986>

Credit will be targeted to mass market, low- to middle-income customers with a regular income. In addition to salaried individuals, it will also be available to self-employed individuals with regular income. The focus will be on bridging shortfalls in cash flow for short periods or providing point-of-sale financing.

Customers will be able to request a loan through the payments bank's mobile app or at BCs. The request would then be screened based on basic

criteria and availability of KYC and data before it is processed and passed on to the lender along with the credit score generated by the payments bank. Credit disbursement would be close to real time for pre-approved limits and decision-based for other cases, although it may vary depending on the lending partner's policies. Loans that are approved could then be instantly disbursed to the customer bank account or wallet, and the loan amount could then be spent digitally or cashed out at BCs.

TEXT BOX 4

The state of mobile credit: Highlights from GSMA's 2015 State of the Industry Report

As of December 2015, there were 45 live mobile credit services across 16 countries. The vast majority of these services are in Sub-Saharan Africa (82%), with 9% of services in East Asia & Pacific. Nine out of 10 of these services allow customers to apply for a loan directly from their mobile devices and 22% of these services leverage mobile money agents for applications.

Where data on partnerships structure is available, the majority of services (85%) are partnerships between a mobile operator and a financial institution, with the remainder led by banks or financial institutions that use the mobile channel to extend their reach.

The industry is also beginning to see an uptake in agent credit, with about 13% of respondents to GSMA's Global Adoption Survey extending lines of credit to their agents.

www.gsma.com/mobilemoney

Product assumptions

1. MNO-led payments banks will be able to generate scores for active wallet customers being migrated to the payments bank.
2. Developing directional credit scores typically requires at least 12 months of data. Customer data will be shared only with consent wherever required.
3. Investment to set up the infrastructure to generate the credit score will be covered in the upfront set-up cost of the bank. Depending on the nature of the partnership, the costs can be shared with the lenders.
4. Payments banks will receive commission not just on the first loan, but also on subsequent loans originated through its channels.
5. Fees associated with repayment behaviour, such as late fees or loan default fees, will not be shared with the payments bank.

Key elements of the business case

The business case for credit via the payments banks is driven by the following elements:

- Share of interest earnings – Payments banks will receive 10% of the interest charged on the loan as compensation for determining the credit score and sourcing the lead. We have assumed an annual interest rate of 18% on loans. This rate of interest is competitive compared to both informal channels and microfinance interest rates. This will make credit more affordable to a vast segment of the population who have not had access to formal sources of financing in the past.
- Processing fee – Payments banks will charge the customer an upfront processing fee, estimated at INR 25 per loan for the first year.
- Target customer base – Digital credit will be targeted to the base of actively transacting savings account and wallet customers.
- Loan tenure and frequency – Loans will be of short duration, 45 days on average, and customers will take loans twice a year on average.

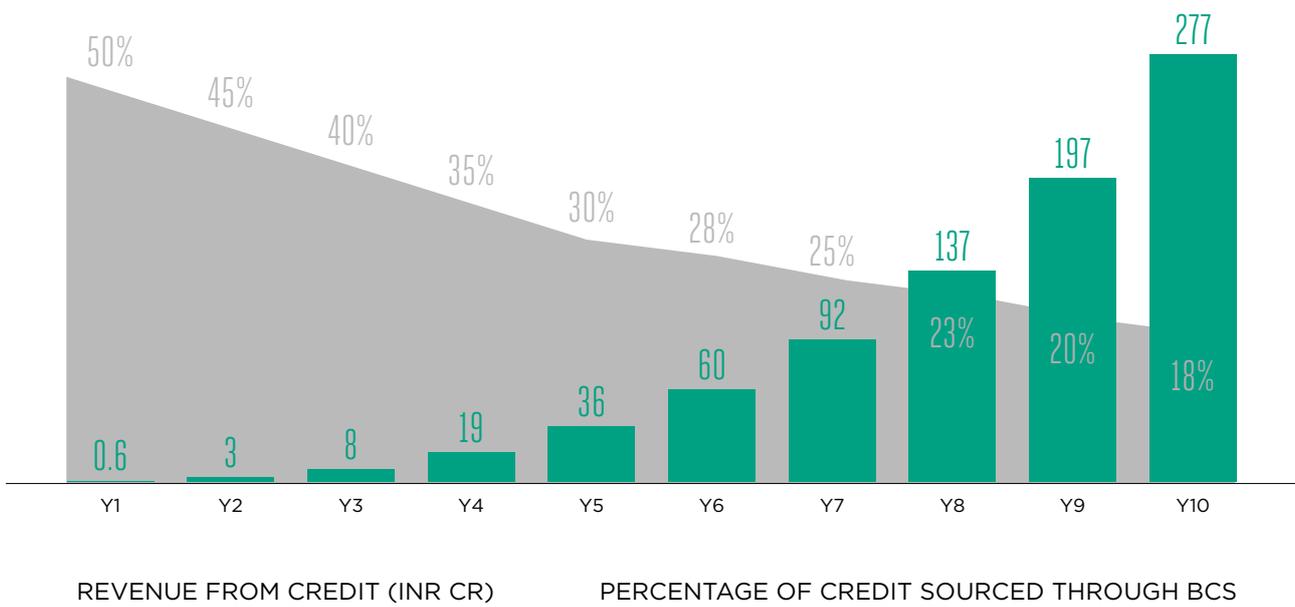
Profitability analysis: Credit

Credit provided through digital channels scales up gradually. In the first year of operation, only PPI customers with a transaction history of more than one year (i.e. those migrated to the bank) are considered for credit. By the second year, this history and customer profile data will be more detailed and lending will begin to contribute incrementally to revenue. In the initial years, as the product is being rolled out, customer awareness and digital maturity are likely to be low. Therefore, it is expected that a proportion of loans will be sourced by BCs. As the digital maturity of the customer base increases, the proportion of lending originating at BCs is expected to decline significantly.

In the first year of operations, revenue from credit services will grow from INR 0.6 Cr (USD 89 K) to close to INR 277 Cr (USD 41 M) by year 10. Processing fees and share of interest income are the key revenue drivers for this model. Total credit revenues will contribute approximately 7% of total bank revenues by the tenth year. **By itself, credit as a revenue stream will start to contribute positively to gross margins in year three as the bank scales and the incremental costs per credit case go down.**

FIGURE 11

Credit revenue and roll-out



Key considerations for digital lending

While payments banks will have access to rich and detailed transactional data, what will likely determine the success of this model is the bank's ability to process data and provide targeted loans with accurate credit scores. Therefore, customer analytics and product design will be key to choosing the right lending partner. In addition to this, payments banks should consider:

1. Early investment in digital lending to collect data, learn from customer behaviour, and build customer awareness,
2. Traditional processes and underwriting norms are unlikely to work for this customer segment. Lending partners will need to modify their loan parameters and processes to serve low-income customers.
3. The credit model will need to be refreshed with additional data periodically and adapted to meet the needs of different customer segments. In the medium to long term, this will likely lead to lower interest rates and higher approval rates, driving up overall profitability.

Insurance

Insurance penetration in India is very low compared to the global average. Measured as a percentage of GDP, penetration actually declined from 3.9% in FY14 to 3.3% in FY15.⁴⁶ Micro-insurance is therefore a critical need in India as it provides significant financial support to lower income segments of the population, not just personal insurance (life, health, accident), but insurance products for small businesses as well (crop, farm income, property, casualty). With only 15% of the population covered by government health insurance and 2.2% by private health insurance, Micro-insurance is an untapped market.⁴⁷

Banks in India can distribute insurance by becoming: [1] insurance broker (allowed to sell insurance for all life, general and health insurance companies), [2] corporate agent (or bancassurance allowed to distribute products from 3 life, 3 general and 3 health insurance) and [3] a web aggregator, an online platform for comparison and lead generation.

By following a bancassurance model and partnering with life and general insurance companies, payments banks can leverage both digital channels and BC networks to distribute simplified insurance products to large numbers of underinsured customers.

When selecting an insurance partner, it is important to identify companies that will tailor their products to simplified terms and claims settlement processes. Initially, insurance can be selectively rolled out in the distribution network and BCs may require additional training assistance and certification depending on the existing insurance regulations. Since mobile would be the preferred mode of driving insurance sales, it could develop low-value insurance products with periodic payment terms for premiums, which could be paid directly through a wallet or bank account.

Product assumptions

1. Payments banks will distribute simplified insurance products from partner insurers.
2. For individuals, low- to mid-range insurance coverage products would be sold for health, life, and personal accident insurance.
3. Payments banks will also participate in government-sponsored insurance schemes.
4. Crop insurance or farm income insurance services will be provided in rural and semi-urban centres.

46. M. Saraswathy, 25 June 2015, Business Standard, "Insurance penetration at 10-year low", http://www.business-standard.com/article/finance/insurance-penetration-at-a-near-10-year-low-115062401243_1.html

47. [http://www.ev.com/Publication/vwLUAssets/ev-2015-global-insurance-outlook/\\$FILE/ev-2015-global-insurance-outlook.pdf](http://www.ev.com/Publication/vwLUAssets/ev-2015-global-insurance-outlook/$FILE/ev-2015-global-insurance-outlook.pdf)

TEXT BOX 5

Mobile insurance: Highlights from GSMA's 2015 State of the Industry Report

In recent years, mobile has emerged as an important channel for microinsurance, with over 31 million policies issued through mobile insurance by June 2015. Mobile insurance is now available in 33 emerging markets, predominantly in Sub-Saharan Africa (58%), South Asia (19%) and East Asia & Pacific (18%).

Generally, there are three types of commercial models for mobile insurance: loyalty, freemium and premium.⁴⁸ More than half of survey respondents in 2015 reported employing a premium commercial model for mobile insurance, driven by new services based on this model. Loyalty-based services remain the second most common model, with over 30% of respondents reporting the use of such a model.

In 2015, survey respondents reported that 84% of customers can subscribe to mobile insurance services directly from their mobile phone. While the predominant method for paying insurance premiums is airtime deduction (63%), 48% of customers can pay their premiums via mobile money.

While life insurance was still the most common mobile insurance offering in 2015, the industry is beginning to diversify its product portfolio. When we look at the overall product mix, we see life insurance (offered by 55% of respondents) is followed by health insurance (22%), accident insurance (13%), and agriculture insurance (7%).

Key business drivers

A payments bank can earn commission income from selling insurance. Rates are regulated by the Insurance Regulatory and Development Authority (IRDA), and the model assumes a 15% commission on the total premium. Payments banks will also need to focus extensively on low-cost digital channels to generate leads, upgrade freemium services, and drive sales.

Profitability analysis: Insurance

We have identified three distribution models for insurance: 1) freemium services leading to an upgrade, 2) insurance sold through BCs, and 3) digital sales.

Freemium services. The cost of free services will be borne by the payments bank, but it can earn commission income from incremental sales of upgrades to paid services.

Insurance product mix - Urban		Digital sales (online channel)	
Two-wheeler	450	Two-wheeler	800
Motor	2,000	Motor	4,500
Health	2,000	Health	4,000
Life	4,000	Travel	800

Assumptions: Average ticket size, INR for the first year

48. Loyalty-based models encourage customers to spend a certain amount of airtime or keep a certain balance in their mobile money account to qualify for insurance (usually calculated on a monthly basis). Premium models resemble more traditional insurance, with customers paying a premium for coverage. With mobile insurance, this is typically monthly, weekly, or daily payments. Freemium models are a combination of the two: customers can subscribe to loyalty-based insurance and can increase their cover by paying a fee.

Based on our very conservative estimates for upgrades from freemium to paid, the commission from freemium upgrade services may not be enough to generate positive margins. However, as freemium services are typically linked to average account balances, they can encourage customer activity leading to stronger relationships.

It is assumed that in the first year, 30% of savings account customers will qualify for freemium services. Of these, 5% (1.5% of all savings account customers) would opt-in for higher coverage and pay an additional premium. This conversion will increase over time, and by the tenth year, 10% of freemium services customers would upgrade.

Freemium approach

A freemium approach offers both free and premium services. For insurance, basic coverage will be provided for free or linked to a minimum account balance, while enhanced insurance coverage is promoted as paid service. Since customer demand for insurance is low in India, a freemium approach could be a useful model for payments banks to pursue.

As mentioned, the cost of basic insurance coverage made available for free to eligible customers is borne by the payments bank. As a percentage of revenue, these costs will drop from 42% in the first year to 21% in the tenth year. This could vary depending on the bank's eligibility criteria for free basic coverage, which may be tied to account activity or minimum balances.

For digitally-engaged customers, the bank will place a strong focus on selling insurance through mobile or online channels. Typically these would be low-premium, simplified insurance products that are easy to sell and operationally hassle-free. The revenue contribution from digital sales in the first year is estimated to be nearly INR 1.4 Cr (USD 208 K), increasing to over INR 112 Cr (USD 16 M) by the tenth year.

Payments banks will steadily grow insurance distribution through BCs. By year five, it is expected

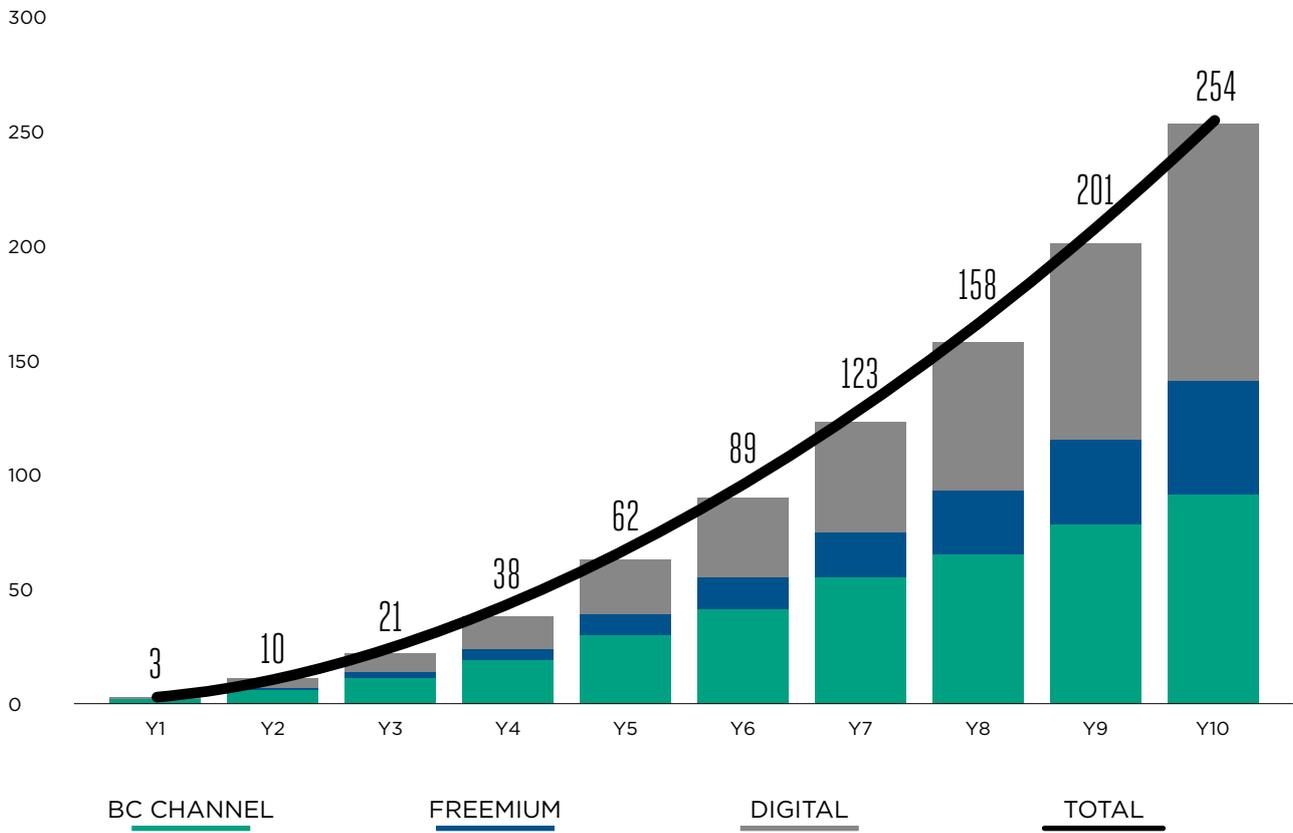
that 20% of active urban BCs and 15% of active rural BCs will sell insurance products and services going up to 25% and 20% by year 10 respectively.

As a proportion of insurance revenue, the contribution of insurance sales through BCs would be nearly 36% by year 10, whereas revenue from direct channels (digital sales and upgrade of free services) would contribute 64% of revenue.

By reaching approximately 2% of the customer base, payments banks could reach INR 1,691 Cr (USD 252 M) in insurance product sales by year 10, generating just over INR 253 Cr (USD 38 M) in commission revenues. While this contributes 6% of total revenues, focusing on insurance revenue from direct channels (digital and freemium upgrade) improves margins. As a standalone adjacent source of revenue, insurance begins to contribute positively to gross margins after year three.

FIGURE 12

Insurance revenue mix (INR Cr)



Key considerations for insurance sales

- While digital is the preferred channel for insurance sales, it will be crucial to generate sufficient customer demand. To do this, payments banks should focus on designing innovative products focussed on the needs of the customers it will be targeting.
- For sales that originate with BCs, the bank is required to compensate the BCs for the lead and closing the sale. While this could be done on a fee basis or through an income-sharing agreement,

50% of commission earned by the bank is expected to be shared with BCs

- While it has been assumed that the costs of training, customer on-boarding, sales and service support costs will be borne by the bank, leveraging the insurance partner for this could lead to significant cost savings.
- Payments banks will need to invest incrementally in building lead management and customer relationship management tools.

Merchant payments

India's retail industry is extremely fragmented, with a large number of small- and medium-sized merchants in both the formal and informal sector. There is a huge opportunity to enable digital payments at a network of merchants that meet customers' daily needs, but scaling this network requires significant investment and time.

POS penetration in India is very low and concentrated among medium- to large-sized merchants in urban areas. India has an estimated 15 million retailers,⁴⁹ but only 1.4 million⁵⁰ POS terminals. The high cost of merchant acquisition and transaction processing has limited the growth of card outgoing digital transactions in India. There is an opportunity for payments banks to focus on building a low-cost, hardware-agnostic merchant payments model that leverages the merchant's own handset.

Operating model

Retailers operating in India's formal economy already have POS devices and often pay low fees because of their large volumes. There is an opportunity for payments banks to focus on individual retailers in urban and rural areas with low-ticket, high-frequency transactions and which are either not currently accepting card payments or paying high merchant discount rates (MDR). In this model, the bank will focus on small and mid-sized retailers that process low transaction volumes.

Transaction data from merchant payments can be used to assess the credit worthiness of merchants and offer working capital finance. Loans can be extended based on the expected inflow of merchant payments.

A bank's traditional pricing system involves a merchant transaction fee, a monthly rental and a fixed fee, should monthly transaction volumes fall below a certain threshold. In certain cases, merchants have to pay for the device upfront, which creates a barrier to usage and adoption. For a payments bank, pricing will be a critical differentiator and an important consideration.

To keep the costs of merchant acquisition and activation low and to avoid incurring large expenses for acceptance hardware for merchants, payments banks will need to develop an asset-light merchant payment offering that utilises inexpensive hardware (such as basic handsets or mPOS devices instead of full-fledged POS machines) and leverages channels such as USSD/STK, NFC, QR codes, or UPI.

49. <http://www.ibef.org/industry/retail-india.aspx>

50. RBI Data: <https://www.rbi.org.in/scripts/ATMView.aspx?atmid=65>

TEXT BOX 6

Usage and scale of merchant payments: Highlights from GSMA's 2015 State of the Industry Report

In December 2015, merchant payments represented 1.9% of total mobile money transaction volumes and 4.1% of total mobile money transaction values, with approximately 12 million transactions and more than USD 325 million transacted per month.

While merchant payments have continued to grow over the past few years, they represent significant value for only a small proportion of mobile money providers. Four mobile money providers account for approximately 80% of the reported volume of merchant payments and these four providers dominate the overall market share in their GSM and mobile money markets.

2015 data also shows little relation between the absolute number of merchant payments and merchant payments per active customer, indicating that even those deployments that have managed to drive relatively high volumes of merchant payments have not been able to reach their entire customer base.

When developing a merchant payment proposition, mobile money providers need to consider and plan for four main activities:

1. Issuing: How the customer is educated and enabled to use the service
2. Acquiring: How merchants are targeted and acquired
3. Pricing: How transactions are priced and who pays for them
4. Scheme: What scheme is used for the service and how are transactions settled

To scale merchant payments, operators must be open to collaborating with each other and developing smooth and standardised offerings for end users. This could involve joint acquisition of merchants, a joint scheme, standardised transaction flows across services, an intuitive app for merchant payments, streamlined settlement for merchants, and tapping adjacent sources of revenue to cover transaction costs.

Our model's target pricing for merchant acceptance is 1%, which is largely driven by the cash-in cost of the accounts and wallets that customers are using to transact at these small merchants. To reduce merchant discount rates over time, it will be critical to reduce cash-in costs or generate an additional stream of revenue from credit and/or business intelligence/inventory management services for small merchants.

In the early years of operation, payments banks should focus on specific categories and use cases to build a critical mass of merchants. If a payments bank maintains a focused approach, by the tenth year we assume it would have a network of 400,000 merchants, spread equally across urban and semi-urban/rural areas.

Cost considerations

The cost of rolling out a merchant payments offering tends to be spread across three areas: issuing the offering (instrument cost, customer education cost), acquiring merchants (merchant outreach cost, device cost), and the scheme itself (scheme cost, settlement intermediary cost).

Not all costs apply to every merchant payment deployment. For payments banks in India, we assume there will be no instrument cost since we are proposing an asset-light approach. However, some costs will be incurred for customer education and uptake, as electronic payments are less common in India and customers will need to be encouraged to try out the service for the first time.

Acquiring merchants and building a merchant network requires significant upfront investment and could produce high negative margins in the early years because of merchant on-boarding and training costs. For this reason, it is important to have a segmented and focused approach that allows the bank to learn and adapt. We have assumed that merchant acquisition will be largely outsourced by payments banks to third parties, which would be paid once specific objectives were met.

Creating incentives for merchants to accept and promote digital transactions will also be critical, and banks may need to invest in local promotions to engage merchants and create consumer awareness. Finally, payments banks will need to be prepared to invest in the scheme and the technology associated with switching and transaction processing systems.

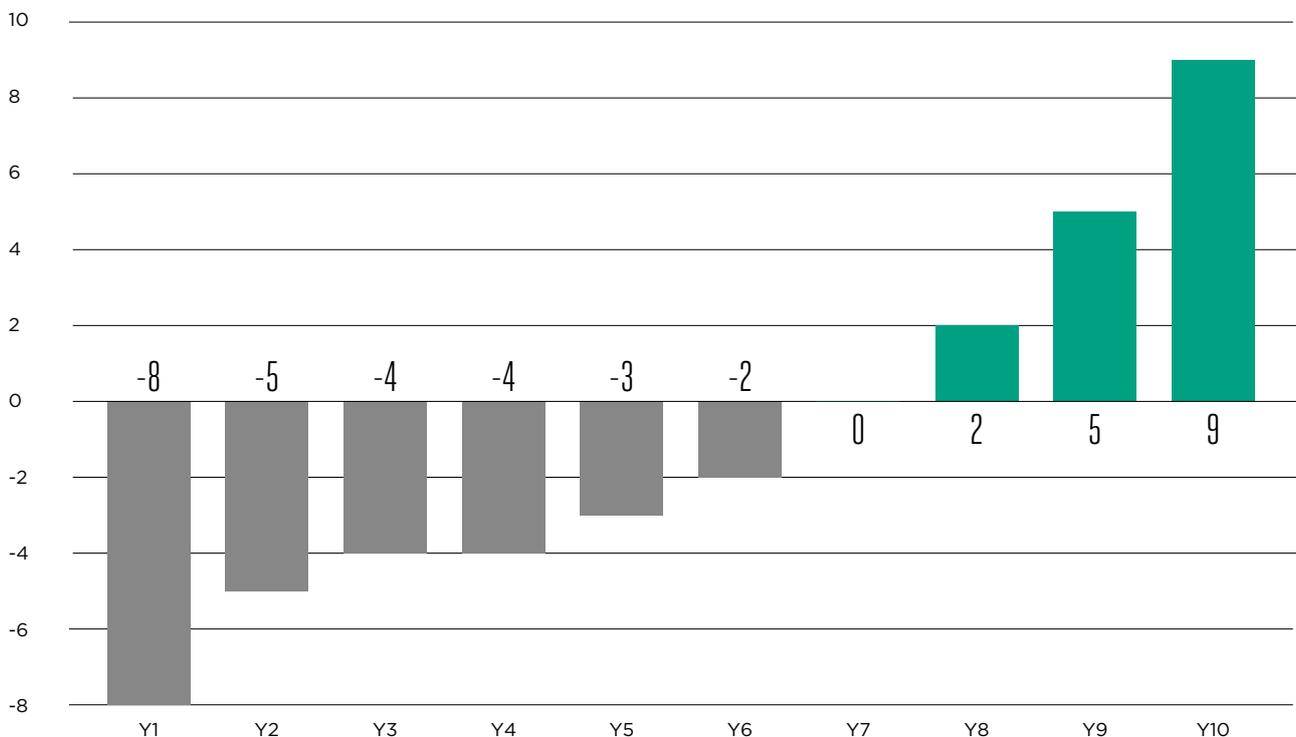
Analysis: Merchant payments

We have considered a simplified merchant payments business model for payments banks. Since banks will not be investing in traditional POS terminals, all transactions will be processed through wallets and alternative transaction formats, such as QR codes, USSD, or UPI. This will produce significant cost savings over traditional merchant acquisition.

Cash-in costs for wallets is an important determinant of transaction charges to merchants. Given the types of merchants that payments banks serve, it is very likely their customers will use BCs to cash-in to wallets or bank accounts, rather than high-cost modes of payment, such as credit cards. Therefore, to arrive at unit economics, cash-in costs for the bank are estimated at 0.75% and transactions will earn an MDR of 1%.

FIGURE 13

Gross margins for merchant payments (INR Cr)



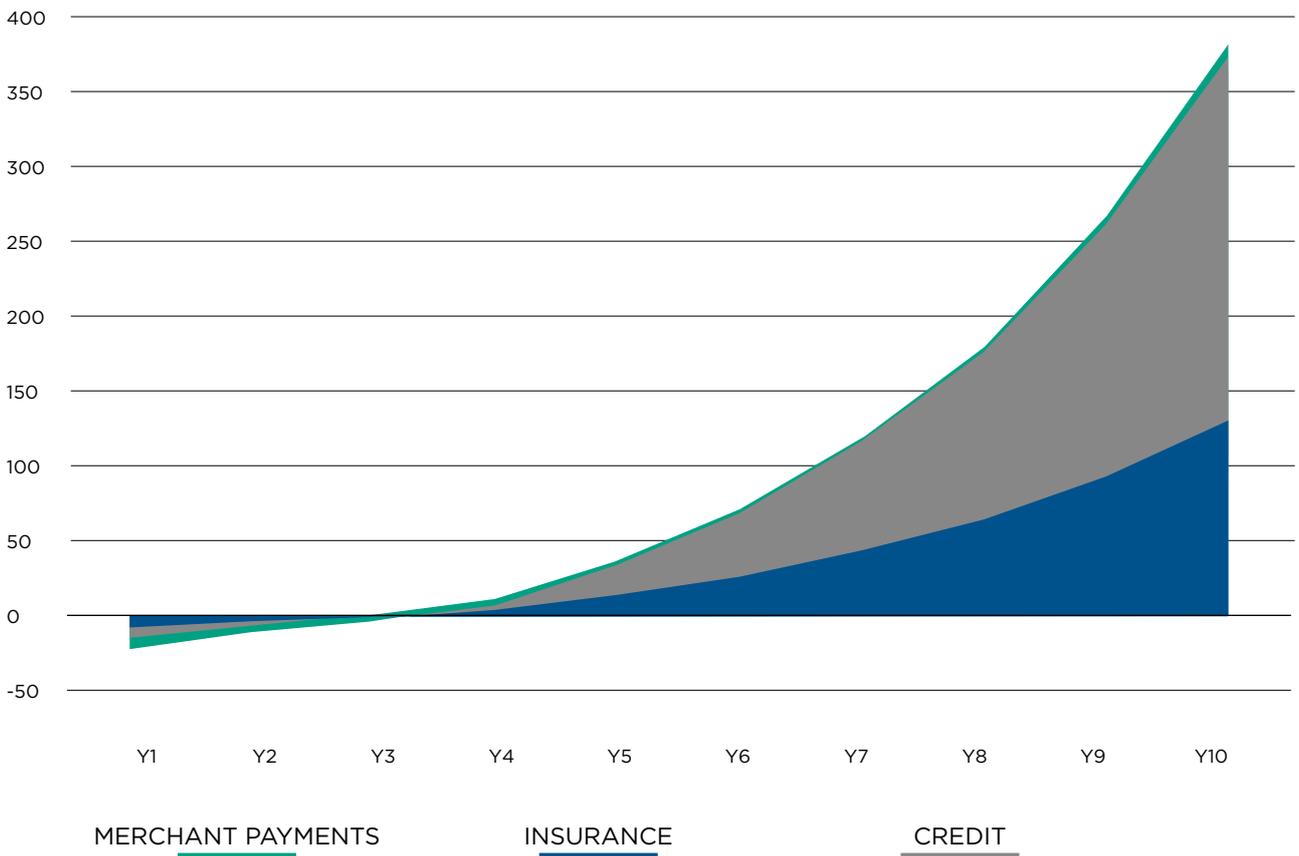
Promoting electronic transactions at merchants will help customers save on transaction charges for cash-out, yet the economics for the bank remain the same. More importantly, this leads to higher circulating value within the payments bank ecosystem.

Merchant payments contribute very little to a bank’s gross margins, especially compared to credit and insurance (Figure 13). The profitability of this

business is limited given the strategic focus on small merchants who cannot afford high MDRs. At these merchant locations, MDR rates will need to be low to drive transaction volume. As a result, gross margins from merchant payments stand at about 9% by the tenth year of operations. By themselves, merchant payments start contributing to positive gross margins from year seven onwards.

FIGURE 14

Gross margin contributions of insurance, credit, and merchant payments (INR cr)



Given the limited scale and low margins of merchant payments, the overall impact on revenue is also low. By year 10, a payments bank is expected to generate INR 140 Cr (USD 21M) in revenues through merchant payments.

TEXT BOX 7

The opportunity of a zero MDR model for a transacting ecosystem

Since merchant payments make a limited contribution to revenues and margins, operators should consider lowering the MDR to build a highly transactional ecosystem. Lowering the MDR or making it zero would eliminate the incentive for agents to push cash-outs. This would have a positive network effect, increasing customer demand for electronic payments, putting more digital value into circulation, and lowering the cost of cash-in over time.

High transaction velocity at merchants will then give payments banks the opportunity to extend lines of credit (through partner lending institutions) to merchants based on the cash flow data. Key factors that will drive merchant payments are simple user experience and the extent to which the merchant value chain is digitised.

Building a large payments network will increase the scale of digital transactions, putting more money into circulation, raising account balances, and improving customer engagement.

A collaborative model for building a merchant network

Given the size and scale of India's merchant base, it may not be feasible for payments banks to build a large-scale merchant acceptance network. Data indicates that in order to scale a merchant payment business, a mobile money operator would need to have 80% market share. Given the competitive and fragmented nature of the market, it is unlikely that any one operator would be able to scale to this level of market leadership. To scale merchant payments, payment banks have an opportunity to collaborate with each other and developing smooth and standardised offerings for end users.

On acquiring, payments banks could look at collaborating to build a joint merchant network by agreeing on operational and settlement standards between participants. This approach could lower cost and accelerate scale of merchant payments rapidly and benefit the entire ecosystem. Beyond merchant payments, such an approach would also increase the value in circulation exponentially which will reduce the cost of cash-in and improve the profitability of the business model. Further, a large scale collaborative approach from payments banks can help in digitising the upstream transactions value chain (retailer-supplier transactions).

Alternatively, payments banks can consider the opportunities presented by joining other mobile enabled merchant payment standards or schemes on the horizon (for e.g., RuPay or UPI) to benefit from the scale and network effect that they can bring to customers of the payments bank.

Summary

Because of the additional investment adjacent revenue opportunities require in terms of technology, marketing, personnel, and on-the-ground execution, there is a slightly higher upfront capital requirement than in the base strategy. However, as these new revenue streams scale up and mature, EBITDA margins increase at a progressively faster rate.

This further reduces the need for capital infusion from investors INR 850 Cr (USD 126 M,) versus INR 920 Cr (USD 137 M) in the base strategy). There is also a set of incidental benefits that have not been quantified in the model, including high circulating value leading to higher balances, freemium insurance services leading to more active customers, and the possibility of

underwriting loans for merchants (through partners) based on transaction data.

Overall, the mature payments bank model assumes adjacent revenue and ecosystem opportunities will be able to build a holistic set of services, improve customer stickiness, and scale up the business in a more profitable manner.

The mature payments bank model with adjacent revenue streams has a lower capital requirement (INR 850 Cr, USD 126 M) and should become operationally profitable at year seven with a payback period of nine years.

TEXT BOX 8

Accelerating towards a digital financial ecosystem

Dynamic forces are driving growth in India's payments market and are changing the landscape of opportunity for the payments banks. According to one estimate, by 2020 the total value of digital payments transactions economy-wide will be around USD 500 billion, which is *10 times* 2016 levels.⁵¹

Furthermore, India's interoperable financial sector infrastructure and the government's recent initiatives to promote cashless transactions could create a positive network effect that would strongly benefit payment banks. These factors make it difficult to capture the entire, evolving, potential of a payments bank in a financial model. Our analysis thus far has assumed conservative growth based on existing values and trends, but there is a tide is turning on digital transactions.

We expect that as payment banks connect to a growing ecosystem and themselves grow the number of avenues to transact digitally, both digital spending on wallets and digital inflows into accounts via DBT and salaries will experience higher frequency and values that will also drive balances. The impact of this increase in scale has the potential to create a beneficial network effect that payments banks with existing or adjacent payments businesses are best placed to capture. Such players are uniquely positioned as they can leverage their existing wallet businesses, business correspondent networks, branch distribution, ecommerce customer base, or communications and technology.

When factoring in the benefits of a network effect for a payments bank pursuing an adjacency strategy (mature model) and leveraging existing distribution, we can see that the path to profitability and healthy margins becomes easier to achieve. Profitability would be reached by year-five with a seven-year pay-back time. The network effect projected by higher activity and wallet-spend would generate over INR 900 cr in profits after tax over ten years compared to the modelled figures in the mature strategy.

51. <http://www.livemint.com/Industry/M6SPyd4vUcC7QIQRniBqaO/Digital-payments-in-India-seen-touching-500-billion-by-2020.html>

Conclusion

Building the business case for payments banks in India offers unique insights into the key strategic and operational decisions to become and remain profitable, and offers insights on how policymakers and regulators can help to ensure the costs associated with the new regulatory framework are proportionate to the risks involved and do not undermine their policy goals. Several lessons have emerged for payments banks as well as to the policymakers and regulators that guide them:

Scaling up distribution and digital transactions is critical for success. Similar to the traditional mobile money business case, the profitability of a payments bank depends on scaling the number of accounts and driving digital transactions. There is an opportunity for MNOs to do what they have proven to do best: provide the digital and physical channels for customers to transact seamlessly with their accounts via a widespread agent network to cash-in and cash-out and a mobile channel that supports self-serve transactions. Payments banks must invest heavily in the costly rollout and activity of a large scale agent network to support account opening and servicing. Simultaneously, digital ecosystem transactions must scale up: the range of digital use cases must expand (e.g., for merchant payments and salary disbursements) to improve the client value proposition and decrease the costs associated with cash-in and cash-out. Payments banks able to building on existing relevant businesses (wallet businesses, business correspondent networks, branch distribution, ecommerce customer base, technology solution etc.) that support rapid scale up will see financial returns sooner.

The value of digital transactions is greater than their individual ability to drive revenues. Leveraging technology to complete small transactions and earn transaction revenue on the value or volume of transactions is the core of the business case. However, digital transactions also bring value to the payments bank: as the foundation for driving treasury income and adjacent revenue streams. Despite the limited investment opportunities, residual account balances

encouraged by customers' opportunity to transact on the account drive treasury income. Treasury income (net interest spread) supplements the payments bank's transaction revenue and makes an important contribution to profitability in a competitive market with commoditised transaction fees. Furthermore, a large base of transacting account and wallet customers provides the necessary foundation to capitalise on adjacent revenue streams such as credit and insurance, which are facilitated by an understanding of customers' and their transactions. In this context, enabling merchant payments is a compelling opportunity to build a critical mass of merchant acceptance points through an asset-light strategy and low MDRs to incentivise transactions. Collaborating with other payments banks or joining a scheme can defray costs and support scale.

Pursuing adjacent revenue streams through partnerships is essential to breaking even. The payments bank pursuing adjacent revenue streams reaches operational profitability in year six and an EBITDA margin of 20% in year ten (up from 12%). Credit and insurance contribute most to the bottom line when a payments bank employs a purely digital model that does not require agents/BCs to sell products. This will require a significant evolution of the customer base, which must become comfortable transacting digitally. Payments banks will need to seek out progressive partners with the interest and appetite to leverage the digital channel and take on a new customer base, particularly to offer credit.

Payments banks must overcome high overhead costs and high direct costs associated with a regulatory framework for banks and existing banking products. As part of the banking regime, payments banks face large upfront investments in bank-grade technology stacks, including core banking systems that support integration with the entire national payments system infrastructure (Year 1 requirements of approximately 148 Cr or USD 22M). Personnel costs for physical distribution are also high because of the controlling offices that are required by regulation. Payments banks also face high direct costs on customer accounts

and wallets, such as the cost of KYC and subsidised cash-in/cash-out that pose challenges to the business case. Leveraging eKYC is key to lowering the cost of customer acquisition and has now been permitted under the new 'Operating Guidelines Payments Banks', and should allow for instant account opening with minimum additional information or paper-based processes which hinder scale.

A proportional regulatory framework is essential.

Given that payments banks are not allowed to lend, the systemic risk is very low. Payments banks are required to maintain a minimum net worth of INR 100 Cr (USD 15 M) at all times and must maintain a leverage ratio of not less than 3%. The net worth and leverage ratio requirements of the payments banks impose a significant financial burden and require capital infusion over and above the paid-up capital of INR 100 Cr (USD 15 M). These may not be reflective of the true risk of the bank. When early losses erode the capital base, and as

the deposit base (liabilities) grows as accounts scale up, fresh capital from promoters is required to maintain the leverage ratio and net worth requirement (about INR 920 Cr (USD 137 M) under the base strategy).

Payments banks have a long road to profitability and high investment needs.

Under the base strategy, payments banks do not become profitable until year seven, and when adjacent revenue streams are introduced, year six. Over time, payments banks must invest between INR 850 Cr (USD 126 M) and 920 Cr (USD 137 M) to see EBITDA margins of 12–20% in year ten. Modest margins of 6% do not appear until year seven or eight. However, the positive network effect expected from accelerating digital payments across the economy will be beneficial for the payments bank –improving prospects for scale and thus profitability by year five. MNOs bring substantial experience with business models characterised by regular investment and long payback periods to contend with these needs.

Annex I - Table of key assumptions for base model

Funding	<ul style="list-style-type: none"> Treasury income on deposits: 7.5% (weighted average of interest on government securities, term deposits and Cash Reserve Ratio) declining to 6.3% by Year 10 in line with expectations of declining interest rates in India Interest paid on savings accounts: 4% based on market practice
Savings accounts	<ul style="list-style-type: none"> Scale up assumption of 80 accounts acquired per BC added in Year 1, declining to 15 per BC by Year 10 to reflect market saturation 30% funded accounts in Year 1 growing to ~40% by Year 10 Average Year 1 balance of INR 3,000 per active account, increasing 5% annually (inflation, growth and increasing competition from new banks) Cash-in cost to bank: 0.5% of transaction amount. No customer charges for cash-in. Cash-out margin to bank: 0.25% of transaction amount
Current accounts	<ul style="list-style-type: none"> Scale up assumption of 10 accounts per BC acquired in Year 1, declining to 5 per BC to reflect market saturation Estimated 20% funded accounts in Year 1 growing to 30% by Year 10 Average Year 1 balance of INR 8,000 per active account, increasing 10% annually (inflation and growth rate adjustment)
Wallets	<ul style="list-style-type: none"> 5 million accounts transferred from previous PPI business, 10 million per year added thereafter, based on the estimate of existing PPI customers that will be migrated to payments bank 25% funded wallets in Year 1 growing to ~65% by Year 10, growth assumed given the fact wallet is proposed as the primary transactions form factor Average annual spend per active wallet INR 3,000 (estimated based on RBI data and industry estimates for active wallet users) for Year 1 growing to INR 8450 by Year 10, reflecting increasing degree of digital initiation in market Average cost to bank of cash-in to the wallet is expected to be 1.16% (weighted average of cost and proportion of different modes of cash-in) in Year 1, gradually going down to ~1% by Year 10. % fees earned on wallet spends: 1.9% weighted average of the following products: utility payments, online spends, airtime recharge, wallet to bank account transfer (fees on single products are based on market benchmarks)
OTC	<ul style="list-style-type: none"> Domestic Money Transfer: Average ticket size: INR 2,000 in rural areas, INR 3,500 in urban areas <ul style="list-style-type: none"> Revenue: 1.10% (estimate based on current market practice)⁵² Channel commission: 0.75%
Manpower	<ul style="list-style-type: none"> Total number employees scale from 385 Year 1 to 2036 Year 10.

52. Please see publicly available tariffs and charges online for several PPIs and BCs (for eg. Oxigen Wallet, Vodafone M-Pesa.)

Technology	<ul style="list-style-type: none"> • Software costs: INR 50 Cr (only in Year 1) • Hardware investment: INR 20 Cr in Year 1 with infusion of another INR 10 Cr in Year 5 • Annual technology support expense: INR 10 Cr from Year 2 onwards • Average maintenance costs: INR 2 Cr from Year 3 onward • Technology systems and infrastructure investment: INR 10 Cr in Year 1 with 10% annual growth • Technology implementation and maintenance: INR 10 Cr on implementation in Year 1, then INR 5 Cr maintenance cost from Year 2 growing at 10% per year
Marketing	<ul style="list-style-type: none"> • Total marketing spend increases from INR 13 Cr in Year 1 to INR 65 Cr by Year 10.

Annex II - table of supplementary assumptions for mature model

Insurance (Revenue)	<ul style="list-style-type: none"> • Y1 Average ticket size (digital) – Two-wheeler (INR 800), auto (INR 4500), Health (INR 4500), Travel (INR 800), Crop / agricultural (INR 800) growing at 10% annually • Total commission earned: 15% (simplified assumption across all insurance types for the financial model). Promotional or training related spends (if any) borne by the insurers will be over and above this.
Credit (Revenue)	<ul style="list-style-type: none"> • Qualified customers (as % of active wallets): 2%-20% from Years 1 to 10 • Average loan amount: INR8,000 growing 10% annually
Merchant payments (Revenue)	<ul style="list-style-type: none"> • Merchant Discount Rate (MDR): 1% • Number of retailers 40,000 in Year 1 going up to 400,000 by Year 10

Please note that these assumptions (in Annexes I and II) may vary depending on the commercial contracts and scale-up of the business. The above assumptions are illustrative only and used for financial modelling purposes.

Annex III - Summary Financials

Financial indicators for base strategy

	START-UP PHASE			GROWTH PHASE				Maturity		
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Total revenue (INR Cr)	146	329	554	830	1,163	1,470	1,821	2,236	2,732	3,334
Revenue mix										
Savings Account	39%	41%	42%	42%	43%	42%	42%	41%	41%	40%
Current Account	5%	6%	7%	7%	9%	9%	10%	10%	10%	10%
Wallets	18%	17%	19%	20%	21%	23%	25%	28%	30%	32%
OTC	38%	35%	33%	30%	28%	25%	23%	21%	19%	17%
Total costs (INR Cr)	338	459	695	970	1,272	1,511	1,787	2,120	2,489	2,928
Cost / revenue										
Direct	103%	97%	93%	89%	85%	82%	79%	76%	74%	72%
Indirect	128%	42%	32%	28%	24%	21%	20%	19%	17%	16%
EBIDTA (INR Cr)	-104	-128	-138	-131	-95	-38	37	127	246	410
EBIDTA margin	-71%	-39%	-25%	-16%	-8%	-3%	2%	6%	9%	12%

Financial indicators for base and mature strategies

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Total revenue (INR cr)	157	356	606	919	1,306	1,677	2,110	2,625	3,246	4,007
Total costs (INR cr)	371	497	750	1,052	1,382	1,649	1,959	2,331	2,738	3,220
EBIDTA (INR cr)	-127	-139	-142	-124	-62	31	154	304	511	791
Comparison										
PAT - base strategy	-133	-148	-152	-144	-108	-47	30	118	239	386
PAT - adjacencies strategy	-156	-159	-156	-136	-74	21	147	296	418	550
EBITDA % - base strategy	-71%	-39%	-25%	-16%	-8%	-3%	2%	6%	9%	12%
EBITDA % - adjacencies	-81%	-39%	-23%	-13%	-5%	2%	7%	12%	16%	20%
Adjacencies - Revenue (INR Cr)										
Insurance	4	10	21	38	62	89	123	158	201	254
Credit	1	3	8	19	36	60	92	137	197	277
Merchant payments	6	13	22	32	44	58	74	94	116	141
Adjacencies - Gross margin										
Insurance	-7	-3	-1	3	14	27	44	64	93	129
Credit	-7	-3	1	8	23	44	72	111	267	242
Merchant payments	-8	-5	-4	-4	-3	-2	0	2	5	9

Annex IV - Glossary & Acronyms

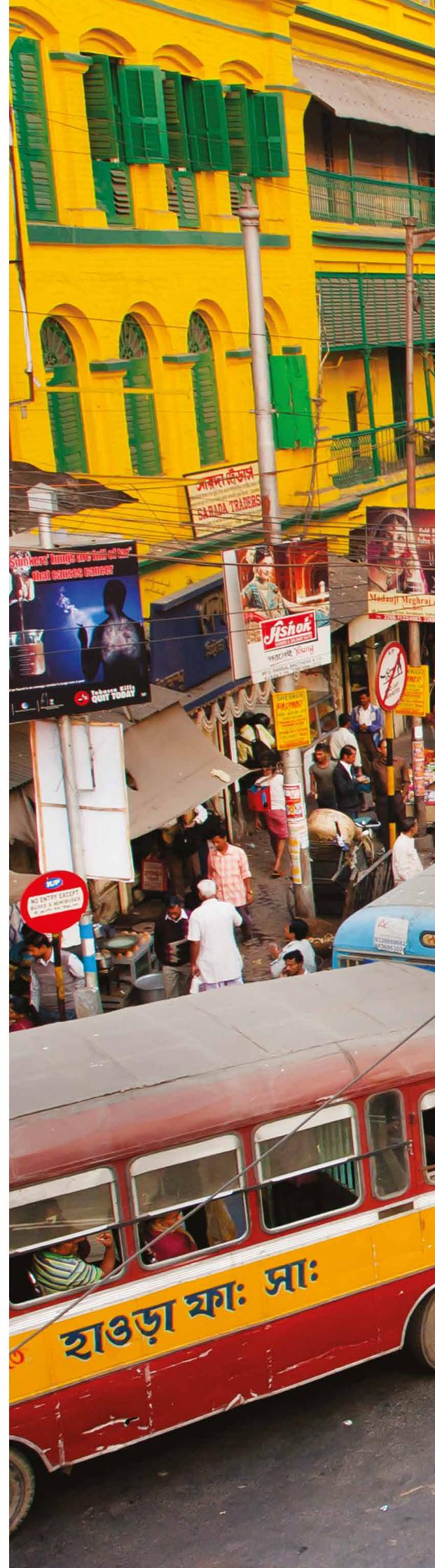
Aadhaar	India's national identification system enabling customer on-boarding and facilitating direct benefit transfers for customers of payment banks.
BTL	Below-The-line Marketing
BBPS	Bharat Bill Payments System India's interoperable bill payments system which aggregates a large number of billers and enables customers across the country to pay bills through an integrated platform.
BC	Business Correspondent: A representative authorised to offer services such as cash transactions to those without a formal bank account.
CA	Current Account
CAPEX	Capital Expenditure. Funds used by a company to acquire or upgrade physical assets such as property, industrial buildings or equipment.
Cash-In	The process by which a customer credits their account with cash. This is usually via an agent who takes the cash and credits the customer's mobile money account with the same amount of e-money.
Cash-Out	The process by which a customer deducts cash from their mobile money account. This is usually via an agent who gives the customer cash in exchange for a transfer of e-money from the customer's mobile money account.
Controlling office	Offices which will be in charge of supervising and controlling the BC networks effectively. Controlling offices are required to be managed by on-roll employees of the bank.
DBT	Direct Benefit Transfer. Transfer of subsidies and welfare benefits by the government directly to the bank accounts of the beneficiaries.
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization. This indicator can be used to analyse and compare profitability between companies and industries because it eliminates the effects of financing and accounting decisions.
GDP	Gross Domestic Product
Interoperability	The ability for customers to undertake money transfers between two accounts at different mobile money schemes, or to transfer money between accounts at mobile money schemes and accounts at banks.

IMPS	Immediate Payments Service. IMPS allows for instant 24/7 interbank electronic fund transfer payments up to INR 200,000 (USD 2,985) and facilitates account-to-account interoperability across banking players.
IRDA	Insurance Regulatory and Development Authority
KYC	Know-Your-Customer
MDR	Merchant Discount Rate
MNO	Mobile Network Operator
mPOS	Mobile Point of Sale Device
NEFT	National Electronic Funds Transfer
NPCI	National Payments Corporation of India. An umbrella organisation for all retail payments in India.
NBFC	Non-Banking Financial Company. A company registered under the Companies Act in India that is able to provide financial services without holding a banking license.
PPI	Prepaid Payment Instrument
OPEX	Operating Expense. An expense that a business incurs as a result of performing its normal business operations. Also known as operating expenditure.
OTC	Over-the-counter. Transaction in which a mobile money agent performs the transactions on behalf of the customer, who does not need to have a mobile money account to use the service.
PAT	Profit After Tax
P2P	Person-to-Person Transfer
POS	Point of Sale
PMJDY	Pradhan Mantri Jan Dhan Yojana Initiative: A financial inclusion initiative announced in India by Prime Minister, Narendra Modi in 2014 to help ensure access to financial services.
QR Code	Quick Response Code. Matrix barcode containing information about the item to which it's attached

RBI	Reserve Bank of India. India's central banking institution.
RTGS	Real time gross settlement
RuPay	India's domestic card scheme
SA	Saving Account
STK	Sim Application Toolkit
TRAI	Telecom Regulatory Authority of India. An independent regulatory body established to oversee the telecommunications industry in India.
UPI	Unified Payments Interface. Riding on the NPCI switch infrastructure, the UPI allows banks to instantly transact with each other using virtual addresses, eliminating the need for customers to share their banking details.
USSD	Unstructured Supplementary Service Data. Protocol used by cellular phones to communicate with service provider's computers



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