

Banking through Networks of Retail Agents

Only about one-quarter of households in developing countries have any form of financial savings with formal banking institutions: 10 percent in Kenya, 20 percent in Macedonia, 25 percent in Mexico, 32 percent in Bangladesh. Yet access to financial services—whether in the form of savings, payments, credit, or insurance—is a fundamental tool for managing a family’s well-being and productive capacity: to smooth expenditure when inflows are erratic (occasional work, seasonality of crops), to be able to build up purchasing power when expenditures are large and sporadic (school fees, buying seeds), or to protect against emergencies (natural disasters, death in the family).

But in the same way that access to clean water is more than being able to buy a bottle of water, access to finance is more than being able to get the occasional loan. Access to finance really involves being connected to a national payments system, much like the national electricity network. Once I have a transactional account in a “payment grid,” I can receive and repay loans, save up and withdraw from a savings account, and use the proceeds to pay for what I need. This transactional account is my gateway to a range of financial services, it gives me a financial history, and it is the basis from which I can manage my financial life. Note a key difference between savings/payment/transfer and credit services: although many people, especially the very poor, cannot absorb debt and benefit from a loan, a great majority can benefit from client-responsive savings, payment, and transfer services.

Why do so few people have accounts with formal, authorized institutions? One key constraint is the sheer cost to banks of building and maintaining branch networks to reach dispersed or low-income populations. To achieve universal access, banks will need to adapt their systems to a low-value, high-volume transactional environment and to build more flexible, scalable retail networks of points at which people can conveniently pay into or cash out from their transactional accounts.

Technology can enable banks and their customers to interact remotely in a trusted way through existing local retail outlets. Customers can be issued bank

cards with appropriate personal identification number (PIN)-based or biometric security features, and the local store—the “banking agent”—can be equipped with a point-of-sale (POS) device controlled by and connected to the bank using a phone line or wireless or satellite technology. Infrastructure requirements can be further reduced by using mobile phones both to hold “virtual cards” for customers and as a POS device at the store.¹

If a customer wishes to make a deposit at a store, swiping a bank-issued card puts the customer in direct communication with the bank. The bank automatically withdraws the equivalent amount from the banking agent’s bank account to fund the deposit and issues a paper receipt to the customer through the POS device. The agent keeps the cash in compensation for the amount taken out of its bank account.

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If a customer wishes to make a cash withdrawal, the opposite happens: the agent provides cash from the till, but is compensated by an equivalent increase in its bank account. Of course, the store manager will at some point need to go to the bank to balance the till. In effect, bank customers have *delegated* to the store manager the bothersome (and, in some cases, risky) job of having to go to the bank to balance the community’s net cash requirements, and for that the store manager gets a commission based on the number of transactions.

An agent network is indeed fundamentally a technology play for a bank. It is similar to the millions of existing Visa, Mastercard, and debit card merchants, except that in this case the card payments at retail stores would be not only for sale of goods but also for handing out and taking in cash on behalf of banks. With appropriate technology, the bank (and, by extension, bank supervisors) can afford to be a little bit more relaxed about how customer transactions are captured—as they are with existing payment merchants. The costs of bank service distribution can be reduced, while still effectively controlling banking risks.

¹ In this paper we consider primarily the more traditional card/POS systems, but the discussion carries over entirely to mobile phone-based systems. Annex 1 includes a detailed list of POS technology options.

This is happening now. Brazil has seen 95,000 banking agents open up, most in the past five years, with the result that all municipalities are now covered by the formal banking system. In the Philippines and Kenya, payment services by mobile operators rely on their broad prepaid card distribution networks to double up as cash-in/cash-out points. This model is being adopted in Bolivia, Colombia, India, Mexico, Pakistan, Peru, and South Africa.² Table 1 shows the current status of agent network deployments across a range of countries.

The term “bank” is used in this paper to refer to any type of licensed deposit-taking institution and hence would generally include some forms of nonbanks, cooperatives, and microfinance institutions. In some countries it might also include other actors authorized to issue stored-value accounts, such as mobile network operators. The term “banking agent” is used in this paper to describe a retail outlet processing banking transactions (i.e., withdrawals, deposits, and account transfers) on behalf of banks.

Developing an agent channel for a bank presents a range of technological and operational challenges that may be new for a bank. However, the main challenge is strategic: understanding specifically how this new channel fits within its customer segmentation, service proposition, and branding objectives. The challenge is particularly important for banks pursuing agents as a way to offer banking services to those previously with no bank account. Banks will need to do the following:

- Tackle basic financial education barriers of these potential customers.
- Develop appropriate products that target their needs and economic means.
- Find efficient ways to reach them with effective marketing messages.
- Put in place a mechanism for checking customer identities (because many of them may not have any formal form of identification).

The agent, by itself, cannot do these things. It needs adequate support from the bank in all of these aspects. Otherwise, the bank may have outposts, but there will be no outreach.

We have analyzed the structure and performance of agent networks in a variety of countries and how they support the goals and objectives of policy makers, banks, mobile network operators, and specialized agent acquirers. This Focus Note explains in detail how the banking agent model works and how specifically it can help banks achieve much broader and deeper reach into underserved communities. We go from the conceptual to the practical:

- What are agents? What is their main economic role?
- In what ways can they support banks’ commercial and channel strategies?
- How do you set up and grow agent networks?
- What is the business case and remuneration model for agents?

A trust infrastructure for banking agents

In its most basic form, a retail outlet serving as an agent for a bank is a transactional channel permitting bank customers to deposit and withdraw cash into or from their account, as well as to perform a range of electronic transactions, including inquiries on account balances or recent movements and money transfers between accounts.

The agent business can be set up so that neither the customer nor the bank needs to incur settlement risk with, or otherwise financially trust, the agent when transacting through it. Trust between the bank and the customer can be created through the following transaction process.

Electronic recording of all transactions. All transactions should be done through a POS terminal deployed and managed—and hence trusted—by the bank. All transactions must be initiated by the customer and are automatically recorded electronically by the bank through the POS terminal—no transactions should be processed “on behalf of” the client or “over the store counter” without using the POS device. The terminal is typically a dedicated device located at the retail establishment, but could also be based on the store operator’s mobile phone.

² This paper draws on selected examples of commercial strategies around the use of banking agents primarily from Brazil, because Brazil is where modern agents were first developed and where the model has seen its most success. For a detailed description of the Brazilian experience with banking agents, see Kumar, Nair, Parsons, and Urdapilleta (2006). For a more comprehensive review of the experience in developing countries to date with agent networks, see Ivatury and Mas (2008).

Table 1. Agent networks in selected countries^a

Country ^b	# of agents (cash in/out)	Banks with largest agent network	Mobile operators with largest agent network ^c	Retailers acting as agents
Brazil	95,000	Bradesco (Banco Postal), Banco Popular, Lemon Bank, Banco Nossa Caixa, Caixa Econômica Federal, ABN Amro, HSBC	—	Correios (post), Lotéricas (lottery), Pague Menos (pharmacy)
Colombia	185 (+3251 for cash out only) ^d	AV Villas, Banagrario, Bancolombia, Banco de Bogota, Banco de Occidente, Banco Popular, BBVA, BCSC, Citibank, HSBC	—	Baloto (lottery)
Ecuador	63	Produbanco, Citibank, Unibanco, Banco Amazonas, Banco Ecuatoriano de la Vivienda, Banco Solidario, MM Jaramillo Arteaga	—	Servipagos (bill payment outlet)
India	460	ICICI, SBI	—	India Post, Zero Mass Foundation, FINO Foundation ^e
Kenya	2,700	Equity Bank	Safaricom	G4S Security Services (courier, security, etc.), Nakumatt (supermarket), post offices
Peru	2,303	Banco de Credito de Peru, BBVA Banco Continental, Interbank, Scotiabank	—	Boticas y Salud (pharmacy), Boticas Felicidad (pharmacy)
Pakistan	30	Tameer Bank		
Philippines	6,500	—	Globe Telecom, Smart (with Banco de Oro and 4 other banks)	VideoCity, SM Department Stores, Jollibee (fast food chain)
South Africa	~5,000	Discovery Life, First National Bank, WIZZIT, South African Bank of Athens	MTN (with Standard Bank), Smartcell/Vodacom	Pick'n'Pay (department store), Shoprite (supermarket)

^aTo find more information on the regulatory environment in Brazil, India, Kenya, Pakistan, and South Africa, visit <http://cgap.org/portal/site/Technology/policy/diagnostics/>. Reports on Colombia, Mexico, Philippines, and Russia are forthcoming.

^bBolivia's regulators enabled the use of agents in 2007, but in February 2008 there were no functioning agent outlets.

^cThis column refers to banking or payments services led by mobile operators rather than banks. Although this paper has been written fundamentally from a bank point of view, similar issues arise for telecoms wanting to offer mobile wallet services.

^dCitibank established its Vía network in 3,251 Baloto lottery outlets, which today process only utility bill payments and cash withdrawals.

^eZero Mass Foundation and FINO Foundation act as business correspondents under Indian regulation, but they engage a network of customer service points (in practice, retail outlets) to offer services to bank customers on their behalf.

Authentication of all parties. There are three parties to a transaction: the customer, the agent's employee who operates the POS device, and the bank. Each should authenticate itself before initiating any transaction, preferably with two factors of security (chosen among the categories of personal attributes of something you own, something you know, and something you are). Hence, the customer and the authorized employee of the agent each have a personal card (which could possibly be embedded into their mobile phones) plus a secret PIN.³ To avoid fraudulent POS terminals, a bank could also announce a unique secret key to each of its clients through which the bank identifies itself to its clients before each transaction.⁴

Customer cash transactions are offset against the agent's bank account. All customer transactions are done against an account the agent has with the bank. This account may be funded with the agent's own money or from a preagreed (finite) credit line or overdraft facility granted by the bank. In the case of a cash deposit by a customer, the bank automatically withdraws the equivalent amount from the store's bank account to fund the deposit, and the store keeps the cash in compensation for the amount taken out of its bank account. In the case of a cash withdrawal, the opposite happens: the store provides cash from the till, but is compensated by an equivalent increase in its bank account. In this way, the customer always bears the bank's—not the agent's—credit risk.

Real-time authorization of transactions. Before authorizing a cash transaction, the bank needs to check that there are enough funds in the agent's account (in the case of a deposit) or the client's account (in the case of a withdrawal). This needs to be done in real time to eliminate credit risks. Card/POS systems can do so in two ways.

Online, there is a direct communication link (via standard phone line or wireless or satellite connectivity) between the POS and the bank, so that the POS terminal can simply request authorization from the bank. The "intelligence" is bank-side, but this process incurs higher communications costs.

Alternatively, in an offline transaction, the POS terminal and the bank card hold the information on bank balances (on the agent's and the client's accounts), so the POS terminal itself has enough information to authorize the transaction locally. This requires the use of smartcards (which can store information dynamically) and more sophisticated POS terminals with suitable memory and processing power. From time to time, the POS terminal will need to communicate with the bank to upload transactions, so that the bank can update the bank balances it holds in its systems. Annex 1 describes the offline solution in more detail.

Automatic receipt generation. A final element of the trust infrastructure is the automatic issuing of a receipt to the client. The receipt preferably would be produced by a printer integrated into the POS terminal, although it could be a storable text message sent to the customer's mobile phone. The receipt should be made in the bank's name, because it represents a claim against a bank transaction.⁵ The receipt is the ultimate protection for the customer: once issued a receipt, the customer should be legally entitled to whatever bank claim is specified in the receipt. It denotes transactional finality and the point at which the customer should be able to leave the store with peace of mind.

Through this mechanism, the banking agent becomes a channel for exchange of cash and bank obligations between the customer and the bank. These transactions pass through the agent's bank account in a way that exactly offsets the cash it has taken in or handed out to the customer.

Trust in transactions flowing through agents is ensured primarily through the deployment of an appropriate technology, backed by a contract between the agent and its bank that specifies how the technology is to be used and their respective roles and responsibilities. But the bank needs to support this process with a few other elements:

- **Basic financial education.** The entire technology-based trust mechanism outlined above breaks down if bank customers cannot be assumed to

³ In many deployments, the agent employee does not have a card and only enters a username and password. This person's access to the POS terminal is taken to be the second authenticating factor (i.e., the POS terminal as the "something you have").

⁴ This feature, a "reverse PIN," has been introduced in some Internet banking applications, but to our knowledge has not been used in POS systems. It might be difficult for users to understand and complex for banks to roll out. This should be mandated only in situations where there is high risk of fraud.

⁵ The receipt should contain all the details of the transaction: type of transaction, amount, and sending and/or beneficiary account numbers. It should fully identify the transaction process itself: date and time, as well as name of agent and unique POS device identifier through which the transaction was made.

bear personal responsibility on two key aspects: the necessity of not sharing their bank card and keeping their PINs secret, and checking the POS-issued receipt before leaving the store to ensure its accuracy. The bank needs to ensure its customers understand these two fundamental points.

- **Transparency and disclosure.** The customer should know about the respective responsibilities of the agent and the bank; the financial services that can and cannot be performed by the agent; the commissions costs per transaction, and whether these are payable in cash to the agent or are directly charged by the bank; and the process for initiating a complaint or claim. The customer also should be aware that cash transactions may not be available at all times (e.g., if the agent has no remaining liquidity or bank balance, the real-time connection with the bank is down, or the printer is out of paper). Banks should ensure their agents disclose such information in customer-friendly language on a clearly visible sign near the POS terminal.
- **A complaints capture and claims redress mechanism.** Customers who believe the process has not worked fairly for them should be able to request clarification, complain, or otherwise seek redress. Customers should not feel they are trapped in a technological limbo. Claims should be made directly to the bank rather than through the agent, and they should be dealt with through a well-defined process that specifies roles, responsibilities, and expected timelines.
- **Adequate internal controls.** The bank should maintain a record of incidents reported at each agent, with a view to identifying suspicious patterns and monitoring service quality from the complaints. It should maintain a blacklist of agents it has terminated, which it could share with other banks and the authorities.

Theft, errors, and fraud will and do occur through agent channels—just like sometimes branches are robbed, banks find rogue employees, and banks are defrauded through the Internet, the key in each case is to understand the nature of the risks, take steps to contain their magnitude to manageable levels, and be legally and contractually clear on who bears residual losses when these risks materialize. Annex 2 lists the main risks that can potentially arise in a customer transaction through an agent. In each case, it specifies which party bears the risk and the types of steps that can be taken to mitigate the risk with appropriate use of technology, bank processes, and customer education.

The economic role of banking agents

The banking agent's role can be summarized as providing three elements of service:

1. The agent offers front-line customer service (including physical space and operation of the POS device).
2. The agent intermediates bank transactions through its balance sheet, transforming cash-in-the-till into money-in-the-bank, and vice-versa. This is actually not so different from the normal business of a store: transforming inventory into cash (or receivables) and back (i.e., a store stocks goods, which ties up its working capital until the goods are sold). In the agent mechanism described, the store also ties up working capital, but in the form of cash-in-the-till and balance-in-its-account rather than in the form of physical inventory.
3. The agent needs to go to the bank from time to time to rebalance its cash in the till versus its money in the bank account. The agent absorbs/provides excess liquidity from/to the community of bank customers and deposits that into/withdraws from the bank on their behalf. In effect, the community delegates the bothersome business of going to the bank to the agent. This delegation introduces economic efficiencies. By netting the community's overall net cash position (offsetting withdrawals against deposits), the total amount of cash that needs to be transported to/from the bank is reduced. And by pooling the cash requirements of all customers, the required number of trips to the bank is reduced. (See Box 1.)

Seen in this light, the fundamental role of the agent is to aggregate the cash requirements of the community. The agent is indeed a cash-storing and transport business; it absorbs the fundamental risk of cash handling. The main business choice the agent needs to make is how often to go to the bank—trading off the working capital cost and physical security of cash held in the store against the cost of more frequent trips to the bank. In making this decision, it will face some limiting factors (mainly the size of its bank balance, including any overdrafts it has received from the bank). The greater security risk to a retail outlet that takes on the agent business is offset by lower security risk to bank customers who no longer need to individually carry cash to the bank. Many communities will actively contribute to the protection

of their agent because they value convenient access to payment, savings, and credit services.

It follows from this discussion that an agent's business differs from a bank branch in several important ways:

- The cash balance in the agent's till is always the agent's and the agent's alone—even if the cash was generated through the agent business. It is no business of the bank's managers how that cash is spent or even guarded. With a branch, on the other hand, the cash in the safe is the bank's, backing up the liabilities the bank has issued to its savings customers.⁶ Therefore, an agent should not be subject to regulation on the security of cash.
- The customers' and the bank's (and, by extension, the bank supervisor's) trust in an agent is fundamentally based on the strength of the bank-provided technology platform, and much less on the individual manning the POS terminal at the retail outlet. In a branch, on the other hand, trust is vested as much on the infrastructure as on the tellers behind the window (who, after all, keep the cash deposit in their own drawers even though the money is not theirs in any way). This is why bank tellers are generally employees of the bank (or

outsourced to a directly contracted company), but the operators of the agent's POS need not be. The agent represents a shifting of trust from the teller to the technology platform. One can think of agents as an "untrusted network"—where the trust that either the customer or the bank needs to place on the individual operating the POS is fairly light.

Both of these aspects open the possibility for banks to open an agent channel subject to lower levels of regulation and at a lower deployment cost than installing their own branches. But, this comes with some limitations a bank would do well to consider carefully:

- The bank has less control over the customer experience at the agent than at its own branch, for two reasons. First, the agent's staff is not subject to the same selection standards and training as branch employees. Second, in a retail store, the agent business is sitting alongside a set of other retail products and propositions beyond the bank's control.
- The agent performs a much more limited set of transactional activities than a typical branch would; this is discussed later in this paper.

Box 1. An analysis of Peru's cajeros corresponsales

Peruvian banks have been establishing networks of banking agents, or cajeros corresponsales, since December 2005. With over 2,400 agents, Peru ranks fourth in number of agents worldwide after Brazil, the Philippines, and South Africa.

Most banks in Peru tend to use banking agents fundamentally to shift low-value transactions away from the more costly branch channel and to extend the reach of their existing branches. Accordingly, many are located within a block or two of a branch of the same bank. Banks do not charge customers to use the agent channel (and do not allow agents themselves to charge customers, either), thus positioning the agent channel as the lowest cost channel. Banco de Crédito del Perú (BCP) is experimenting aggressively with using agents to establish a presence apart from its existing retail network. It is creating a sales support channel for agents, with some 33 business development people assigned to promote and sell credit to customers within a set radius of an agent.

Because most of the agent traffic is generated from the bank branch, nonclient awareness of the channel

is low. Banks provide signage for their agents, with a subbrand to indicate affiliation with the bank (e.g., Agente BCP, Interbank Direct, Agente Express [Banco Continental], and Cajero Express [Scotiabank]). The different generic terms for agents used by each bank limits public awareness of the concept. Indeed, most people do not seem to be aware of the kind of activities they can conduct at the agent.

So where have banks chosen to establish their agents?^a As shown in Table 1-A, agent networks are dominated by four big banks: 53 percent of agents are in the Lima metropolitan area; 31 percent are in the remaining 24 departmental capital cities. BCP has the highest population coverage in Peru with its branch network (48 percent), but it also has achieved the highest level of population coverage by agents (64 percent), representing a 33 percent increase in its population coverage using the agent channel. This is because 54 percent of its agents are in districts where there is no BCP branch. The other three major banks in Peru have a smaller proportion of agents in districts without a branch (35–41 percent).

^a The geographic analysis in this section has been conducted at the district level. There are 1,800 municipalities in Peru, grouped into 195 provinces, and in turn composing 25 departments. The data on bank branches and agents are from the Superintendencia de Banca, Seguros y AFP.

⁶ Any credit line or overdraft the bank may have given to the agent is not specifically secured by the cash in the agent's till and hence represents an entirely separate (general) obligation by the agent to the bank.

Table 1-A. Number of branches and agents, by bank

	BCP	BBVA	Interbank	Scotiabank	TRBJO	Mibanco	Total
Bank Branches							
Total	261	198	156	144	96	82	937
In metropolitan Lima	150	129	105	104	42	41	571
In other departmental capital cities	66	45	39	29	32	28	239
In smaller towns/rural areas	45	24	12	11	22	13	127
Population in districts with branches, as % of total population	48%	44%	39%	36%	38%	39%	
Banking Agents							
Total	1220	268	586	299	39	3	2415
In metropolitan Lima	595	75	423	155	34	1	1283
In other departmental capital cities	382	133	131	98	4	2	750
In smaller towns/rural areas	243	60	32	46	1	0	382
Population in districts with branches, as % of total population	64%	45%	46%	44%	18%	5%	
Summary							
Agents as % of total retail (branch + agent) points of presence	82%	58%	79%	67%	29%	4%	72%
% of agents in districts with no branches	54%	41%	43%	35%	22%	0%	

Note: BCP = Banco de Crédito del Perú; BBVA = BBVA Banco Continental; TRBJO = Banco de Trabajo

Table 1-B shows that, at one extreme, 86 percent of districts, accounting for 34 percent of the population, have no bank presence at all (cell 0,0). At the other extreme, 4 percent of districts, accounting for 42 percent of the population, have a competitive retail banking presence, with at least three branches and at least three agents (cell >3, >3). As can be expected, the districts in the latter category exhibit the lowest average needs index (0.05), whereas the districts in the former category exhibit the highest needs index (0.56).^b

So what has been the contribution of agents in terms of increasing the physical presence of banking services in the country? Roughly 8 percent of the districts, accounting for 16 percent of the population,

now have a banking presence exclusively through agent channels (sum of cells 0,1 through 0,>3). This is a pretty good achievement in just over two years; but keep in mind that expanded physical coverage of banking services does not necessarily translate into take-up of banking services by those previously unbanked. If we divide these figures by the total number of districts with an agent (the sum of all cells except in column 0), we find that 55 percent of districts where there are agents, corresponding to 24 percent of the population, have no bank branches. This suggests that banks have deliberately targeted underserved areas to a significant degree. Even within this subset of districts, we see a larger number of agents going into districts with a lower needs index.

^b The needs index, which ranges between 0 and 1, is based on principal component analysis across a range of socioeconomic variables. For a description of the methodology, see <http://www.foncodes.gob.pe/mapapobreza/>.

Table 1-B: Impact of agents on banking competition

		Districts with banking agents					
		0	1	2	3	>3	
Districts with bank branches	0	86% 34% 0.56	4% 6% 0.27	1% 3% 0.22	1% 3% 0.19	1% 4% 0.08	of districts of population Needs index
	1	0% 0% 0.14	0% 1% 0.21	0% 2% 0.13	0% 0% 0.33	0% 1% 0.13	of districts of population Needs index
	2		0% 0% 0.11	0% 0% 0.20	0% 0% 0.06	0% 2% 0.08	of districts of population Needs index
	3			0% 0% 0.03	0% 1% 0.10	0% 0% 0.06	of districts of population Needs index
	>3				0% 0% 0.15	4% 42% 0.05	of districts of population Needs index

The strategic role of banking agents

Banking agents must fit within the distribution strategies of banks, alongside other channels, such as branches or automatic teller machines (ATMs). Agents can provide multiple benefits: increase client convenience, reduce transaction costs, and reach out to new customers. But it is important that the bank has a clear strategic rationale for each agent it sets up, to drive decision making, ensure appropriate agent setup and channel support, and permit subsequent performance evaluation against the original strategic intent.

There are four types of agent channels, based on their strategic role for a bank:

Decongesting branches. Retail agents can be viewed merely as “human ATMs” whose role is to provide greater customer convenience (more points, fewer queues, more direct interaction with your money) and lower cost to the bank (shifting low revenue-generating transactions outside the costly branch infrastructure). According to this rationale, agents are likely to cater to existing bank customers and to be placed in reasonable proximity to the bank’s existing branch network (which is, after all, where its customers are most likely to be). For the bank, the agent is another channel that requires little or no adaptation to its commercial strategies. By way of illustration, under this category we would include the

3,000 banking agents set up by HSBC in Brazil. This network primarily targets HSBC’s existing clients and people who want to pay their bills in cash only.

Targeting a new customer segment. The lower operational cost the agent channel offers relative to other existing channels might induce banks to use this vehicle to cater to new customer segments that were previously not sufficiently economically attractive, for instance lower income customers in periurban areas. In this case, banks would need to develop their agent strategy within an appropriate, consistent proposition for new customer segments. Having a channel is not enough: the bank is likely to need to develop a particular product set that meets the needs and economic means of the new segment, marketing messages that appeal to them, and effective sales development and debt collection procedures. Depending on how different the new target segment is from the bank’s core business clientele, the bank might go as far as considering setting up a separate organization and even a separate brand to tackle the new opportunity—a kind of a “bank within a bank.” This entity should have its own distribution networks and sales channel with client-responsive products and marketing messages. This is what Banco do Brasil did when it created Banco Popular in 2004. Within only three years, the bank reached more than 1.4 million previously unbanked people through more than 5,000 agents.

Expanding geographic coverage. Retail agents can be conceived as branch substitutes in areas in which transaction numbers and volume might be too low to support a full-fledged branch. By piggybacking on existing retail infrastructure, agent networks can be a viable solution for banks planning to expand their coverage. Rural populations that previously did not have access to financial services or depended on long bus trips to reach the closest branch can now transact in their neighborhood. Because these agents are likely to be in locations where there is little or no banking presence, cash management by agents will pose much bigger operational problems than in the previous cases. They will find that it is costly and time consuming to deposit excess cash at their bank. In Brazil, Banco Bradesco partnered with the national post office to create national coverage using post offices as agents, creating Banco Postal.

Creating a virtual bank without own infrastructure. A bank may seek to completely outsource client contact to retail agents, following a low-value, high-volume strategy. Such a bank is likely to target lower income customers who have little demand for more sophisticated financial products and for whom transacting at a local store without the formality of a branch is more appealing. The bank will need to emphasize marketing and branding. It will need to design very simple products that are easy to understand to minimize reliance on agent staff. Retail agents will have to deposit or withdraw excess funds at other banks' branches, which may result in significant interbank fees for the bank. This is the approach Lemon Bank has followed in Northeast Brazil: it has 5,700 agents and not a single branch.

These scenarios illustrate that the purpose of the retail agent network will affect the value both banks and their customers draw from the agent channel. It also conditions the requirements for the agent and, more important, the adjustments the bank will have to make to its existing operations and product range to take advantage of the new agent channel.

Embedding banking agents within a full channel strategy

A branch is usually a one-stop shop for financial services. Customers can come in to make transactions, buy products, solicit financial advice, or record a complaint. Branches often also house an outbound team for sales or credit recovery. An ATM, on the other hand, is purely a transactional channel. A banking

agent is closer to the ATM setup in that it fulfills a primary role of transaction processing. Yet, in all but the first model of agents, the strategic intent is to roll out agents as part of a broader strategy—to target new customer segments, to serve new geographies, or to avoid having to set up own points of sale and service.

Therefore, banks need to figure out how the broad range of customer requirements can be met in the absence of branches. Just placing agents and hoping they will meet all customer requirements essentially relegates agents to a role of (partial) branch decongestion. This will result in channel substitution, with some reduction in total channel costs, but it is not likely to generate substantial new banking business. Indeed, the experience internationally has been that bank agents have been sustained by capturing bill paying services for both bank and nonbank customers, with little impact on new customer acquisition for core banking services.

Banks need to ensure the role of agents fits clearly within their broader commercial strategy. The best way to approach this issue is to notionally *unbundle* the activities of a bank distribution network and identify which can be performed by agents and which are best delivered through a different (but supporting) mechanism. The answers depend on the strategic intent behind the roll-out of the agents (according to the four models outlined earlier) and the reality on the ground.

The activities of a branch distribution network can be split in the following way.

Transactional channel. This is the main purpose behind an agent network. It liberates the bank from delivering and collecting cash from/to each customer and from permanently deploying its own staff closer to customers. The agent channel may be complemented by a mobile banking channel that allows customers to effect transfers from their bank account directly, but that would still require agents to fulfill cash transactions.

Marketing and referral channel. Third-party retail stores may not be a very useful channel to promote and sell banking products for several reasons. Their degree of understanding of financial products may be limited, which would limit their effectiveness in proposing services to customers. Their expertise is in highly transactional, reactive sales (e.g., product

placement on shelves), so they may not perform as well in what needs to be a more selective, relationship-based, proactive sales process. They may bias the referrals to favor their good commercial clients, rather than seek out people who might be better bank prospects but who do not patronize their store. In addition, some clients might not want their merchant to have full knowledge of their financial needs and banking products.

This does not mean that agents must necessarily fail in generating sales leads: in Colombia there are agents who are strong community leaders and are able to draw people into acquiring banking services. But the international evidence is that employees in retail stores do not make a very strong channel for selling banking services.

Therefore, banks need to complement the agent channel with a parallel sales development effort, whether through (a) teams of professional outbound business development consultants and loan officers who can visit the town regularly to identify sales prospects and help drive business into the local agent; (b) partnerships with strong local community players who can mobilize others, whether through associations of producers, supply chain networks, or community organizations; or (c) a strong advertising campaign with a call-to-action directing customers to a contact center.

Account opening and know your customer (KYC) channel. Account opening poses a special challenge because of the KYC requirements imposed by regulations to combat money laundering and the financing of terrorist activities. Banks are required to verify the identity of their customers, and that often entails personal interviews at which customer identity is checked against some form of identification and other relevant questions are asked. Although banks generally are allowed to delegate this task to third parties, they are responsible for any breach of KYC procedures. Hence, banks must ensure KYC procedures are performed by parties adequately trained for the purpose and whom they can trust to perform the function diligently.

This may be the agent, but it may be that other people can be more readily trusted by the bank to do appropriate KYC procedures—whether the same business development consultants that visit the town from time to time or other prominent authorities or townspeople.

Credit recovery channel. Agents play a big role in receiving loan repayments from customers, but they would not be in a good position to go after customers who are overdue on their loan payments. Chasing payments would be very much outside their normal range of activities, and they may not want to be seen as the local enforcers if that could adversely affect their normal (nonbanking) commercial activities. Hence, if the bank wants to develop a local loan portfolio, it needs to develop a mechanism for credit recovery on overdue loans.

Customer care. Branches have traditionally been a prime touch point for frontline customer care. Banks that engage in branchless banking need to use call centers or online channels to address customer queries.

This discussion highlights that an agent cannot be, by itself, the answer to acquiring and developing banking business when a bank is trying to tackle a new client segment or a new geography. The agent channel needs to be developed in the broader context of a full distribution strategy. The power of the agent channel is essentially about specializing a set of players in performing transactions on the bank's behalf, but that entails disaggregating traditional distribution bank networks. Other (nontransactional) roles still need to be met. A successful branchless banking strategy—whether it is segment or geography driven—is one that recreates all these roles in an effective yet affordable manner.

Setting up banking agents

Banking agents can come in very different shapes and sizes: smaller independent merchants; large retail chains, such as supermarkets or gas stations; post offices; or mobile agents, such as bread or milk delivery trucks. Any retail business with a till can potentially be an agent. In the countries CGAP visited, banks typically chose the local supermarket or pharmacy, outlets that are frequently visited and trusted by most clients. In the case where the service is provided by a mobile network operator (telecom-led), airtime resellers (typically smaller “mom and pop” shops) comprise the majority of the agent network.

Each bank needs to define its own agent selection criteria based on its own commercial strategy and its risk management rules and systems. However, from our observations, the following general categories of criteria seem to be the most widely used.

- **Trusted by clients**—history of the business, personal reputation, and leadership of the store owner within the community; level of the population’s awareness about the store; nature of the business of the store; safety of area where store is located.
- **Convenient for clients**—size, location, and cleanliness of the store; number and friendliness of staff; range of client needs the store can fulfill.
- **Trusted by the bank**—credit history; track record of store’s commercial operations; store owners’ police record; quality of existing cash handling and control mechanisms.
- **Ease of installation for the bank**—store already has bank account; level of staff’s comfort with technology; availability or possibility of telephone line or other communication link; availability of suitable space within the store; openness to the bank’s co-branding preferences.
- **Existence of potential synergies between the store’s existing business and the new agent business**—potential for generating additional foot traffic and triggering additional sales (this helps ensure commitment and might help the business case as well). Many stores in Brazil reported up to 30 percent increase in sales because of their newly offered banking agent service.

As stated earlier, the main instrument that governs the bank–agent relationship is the contract between them and the technology platform through which all transactions occur. The contract typically would cover the following:

- The types of transactions the agent can undertake on behalf of the bank and a list of prohibited activities
- The process to be followed for each type of transaction
- The physical and service infrastructure the agent needs to make available and maintain
- The technical platform the bank needs to provide and maintain
- The processes to be applied by both banks and agents to control risks and maintain confidentiality of customer data
- The supervisory rights of the bank
- The structure of agent commissions

Two aspects that are clearly the agent’s responsibility are (i) the physical safety of its staff and the cash in its till and (ii) the maintenance of sufficient funds in a bank account with which to offset customer

transactions. These are significant barriers for some retail businesses that otherwise might be interested in becoming banking agents.

Hence, banks often support agents in two additional ways. First, they usually provide a pooled insurance to all their agents against theft of cash or personal harm.

Second, banks usually provide their agents with an interest-free overdraft that can be used only to fund banking agent transactions. In this case, the store’s POS authorizes transactions as long as the store’s account balance at the bank does not go below the amount of the overdraft. The store manager can increase the volume of agent business it can handle by depositing its own funds into the same account. The overdraft is a form of credit extension strictly between the bank and the retail outlet. It is the bank’s business to ensure it is repaid; the customer will not know whether its banking transactions are being cleared with the support of an overdraft or not. Thus, in the event of default by the store on an overdraft, there should be no claim back to the customers whose banking transactions were enabled through the use of the overdraft.

The maximum amount of overdraft a bank will be willing to give a store will be determined in the first instance by a normal credit review process and secondarily by projected agent business volumes. The overdraft limit might be set at a lower level if the retail outlet is operating in a physically unsafe environment, thus forcing the agent to go to the branch more often. Although the safety of the store’s cash is the store’s responsibility, banks sometimes feel responsible for the physical well-being of store staff and their customers and do not want to materially increase that risk through their actions.

Scaling up the agent channel

Efficient financial systems are characterized by scale and specialization. They are the yin and the yang of markets: scale calls for concentration of activity into fewer players, specialization calls for fragmentation of roles across multiple players; scale is about doing things cheaply, specialization is about doing them well. Together they ensure that existing players are very good at what they do, and sustainably so.

The introduction of bank agents opens the door to outsourcing some branch operations to frontline retail outlets. The disaggregation of channels can and

generally does go further, creating several possible players who bring further degrees of specialization and scale—and hence potential efficiencies—into banks’ retail channels. Consider the following examples.

Retail chains or franchises. Rather than selecting individual outlets one by one, a bank would do well to seek out established chains or franchises through which it can contract a collection of outlets. These chains will have widespread name recognition (which helps in advertising where the agents can be found), a loyal clientele (which helps deliver immediate foot traffic to the agent), and a host of prime locations in the areas they serve.

Partnering with retail chains or franchises can also deliver significant operational advantages for a bank. These include negotiating a single contract, potentially granting a single consolidated credit line to fund store-level banking transactions, leveraging staff education and training programs, streamlined screening of outlets for eligibility, and support in technology deployment at stores.

In Brazil, the more powerful chains include the joint venture between Banco Bradesco and the postal network (newly established Banco Postal has 5,569 outlets), and Caixa Economica’s deal with the 8,867 lottery outlets. On the other hand, banks in Peru report that it is harder to gain sufficient marketing and branding presence in stores of larger chains, who are more concerned about controlling the “look and feel” at their stores.

Agent network managers. Daily management and development of the agent network includes selecting, setting up, and training individual agents; monitoring the technical platform and each store’s POS devices and providing technical support when a POS terminal breaks down; checking cash levels at each point; and running after agents that have reached their cash limit but have not deposited funds at the branch.

Rather than developing such expertise in-house—not a core activity for a financial institution—most banks choose to outsource agent management to network acquirers. These are service companies who provide everything from just the technology platform, to a full

“plug and play” package, including agent selection and contracting (whether directly or on behalf of the bank), agent installations and training, marketing support for the outlets, and handling legal disputes in case something goes wrong.

In Brazil, network managers also assume part of the risk stemming from agents’ actions and are paid a commission per transaction, plus a bonus for growing transaction volume at their agents. Lemon Bank, which does not own any branch infrastructure, uses about 16 network managers for its 5,580 point network.

Retail distributors. Banks may also consider partnering with others to fulfill much narrower roles in support of agent networks. Distribution companies have fleets of trucks traveling frequently to the kinds of stores that are likely to be bank agents. These distributors can offer knowledge of the stores and can serve as cash delivery mechanisms, solving the vexing problem of how to transport excess cash from isolated agents to the nearest branch.

Ultimately, scale and ubiquity are best achieved by tapping into shared or interoperable networks of agents that serve multiple banks, much like a POS-enabled store today can accept cards from Visa or MasterCard issued by any bank in their respective associations. Mas (2008) describes a system whereby the agent has a contract with at least one bank, but may service customers of other banks with which it does not have a direct contract as long as the agent transactions for these other (issuing) banks are governed by (i) the contract between the agent and its own (acquiring) bank and (ii) a separate agreement (either bilateral or through a common payments network) between the issuing and acquiring banks..

Nevertheless, it is important to stress that the drive for scale and ubiquity needs to be made consistent with the overall commercial strategy of the bank. As discussed in the previous section, agents in their pure form perform only a transactional function, and without appropriate marketing, sales, and credit collection support they are not likely to generate significant additional banking business for the bank. Pure numbers of agents will not make up for lack of coherence in the bank’s distribution strategy.

Box 2. The evolution of transaction and cash volume at an agent outlet

Setting up an agent network—selecting the right agent, marketing its services, acquiring new business in its location—is not easy. We have talked to several banks in the process of launching their first agents, and their experiences are often the same: too much cash flowing into the agent’s till. Initial transaction volume is generally composed of bill payments, because clients still have to develop trust to conduct banking transactions, and the bank will have to acquire more

clients around the agent. Especially at the beginning of each month, the large amounts of cash collected by agents require the store manager to travel several times per day to the nearest branch to deposit excess funds. In the stylized examples below, we illustrate how a bank can estimate transaction and cash volume in a location and how transaction and cash volume can evolve over time.

Table 2A. Estimating transaction and cash volume at agent network—a stylized example

Population size	20,000	
Number of households	5,000	4 per household
Estimated bill payments during first month		
Number of transactions	1,250	1 bill per month per household, 25% of those paid at agent, average US\$10 per bill
Volume	US\$12,500	
Payment days within month	70% day 1–5, 30% day 6–10	
Instant withdrawals		
Formal salaries:		
Number of transactions	30	60% of those older than 18 yrs old are economically active, 5% formally employed with direct deposit, 5% using agent to withdraw 60% of average US\$200 monthly salary
Volume	3,600	
Payment days within month	50% day 6–10, 50% day 16–20	
Other withdrawals:		
Number of transactions	250	5% of households withdraw once per month; average US\$25
Volume	US\$6,250	
Payment days within month	20% day 6–10, 50% day 21–26, 30% day 26–30	

Note: For a simple simulator predicting a banking agent networks transaction volume and cash flow go to www.cgap.org/technology

The bank estimates that one agent can process approximately 120 transactions per day (assuming one POS device, four minutes per transaction, 10 hours open per day). Based on this, the bank needs at least two banking agents to absorb the 200 daily transactions during the first five days. Under this scenario, the agent network

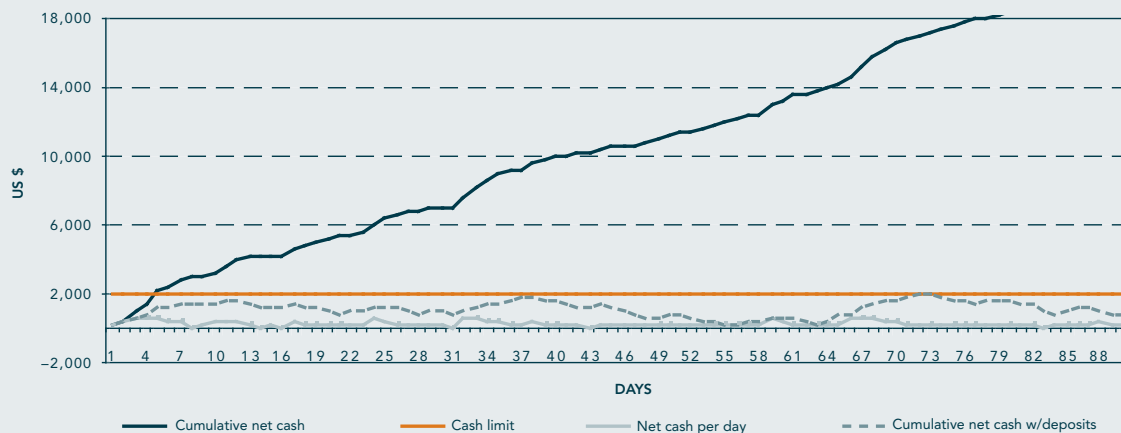
- processes 1,530 transactions per month
- shows a positive net cash position of US\$2,650 (most cash is flowing in during days 1–5)
- receives US\$278 in commissions (US\$0.2 for bill payments, US\$0.1 for withdrawals)^a
- deposits (at least during days 1–10) and withdraws (after day 10) funds from the bank branch

The bank generates US\$500 from “users” (i.e., people who pay their bills in cash) (transaction fee of US\$0.4 per paid bill), as well as US\$84 from its clients for withdrawing funds from their bank accounts (transaction fee of US\$0.3). This is before paying agent commissions.

Measuring transaction and cash volume at an agent outlet

The bank recently launched a banking agent. Figure 2-A shows the cash flow at the outlet during the initial 90 days. The agent’s overdraft is US\$2,000. The nearest branch is 15 minutes away by bus (US\$2.5 per return ticket), and it takes 45 minutes for the agent to stand in line to deposit or withdraw funds.

Figure 2-A. First 90 days: Cash volume at agent outlet^b



Even though daily net cash positions are not extremely high, the cumulative cash position rises quickly, and without any cash deposit at the branch, the agent would hit its cash limit on day 5.

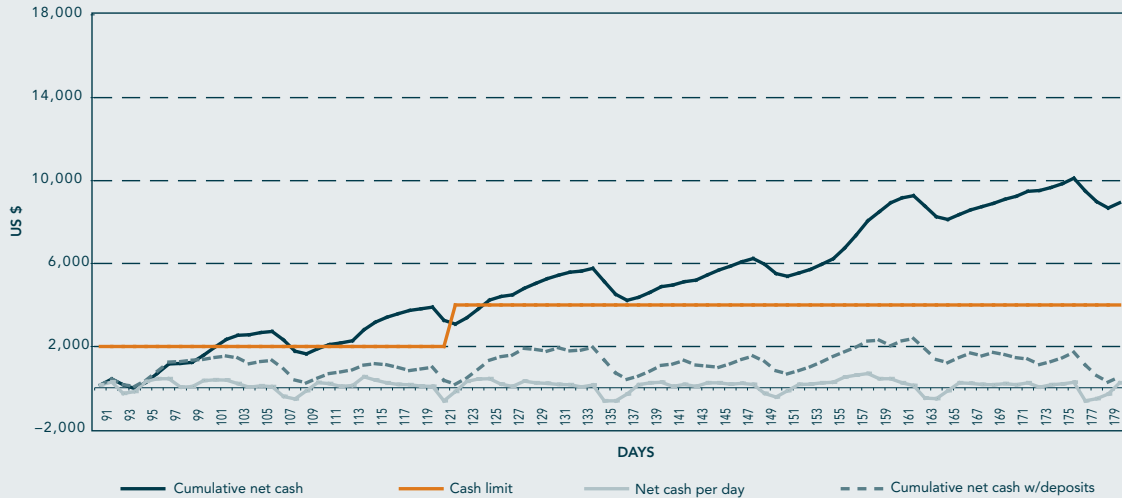
Key information for the bank to note during the 90 days of operation include the following:

- Total number of transactions: 1,407 (21 per working day, 469 per month).
- Volume of transactions processed at agent: US\$25,149 (US\$370 per day) of which 89 percent represent cash inflows. Net cash position after 90 days is US\$19,875.
- Transaction pattern: Larger number of transactions at the beginning of each month, and generally more transactions observed on Mondays.
- Store manager deposits US\$300 each weekday at the branch, transporting a total of US\$19,200 to the branch.
- Agent generates US\$281 in commissions and spends US\$160 on bus tickets and 80 hours (i.e., eight working days) on the bus and in line at the branch.

To improve the agent’s net cash position and provide an incentive to the agent, the bank takes a few measures, including a marketing campaign at the nearest branch informing existing clients about the agent outlet closer to their home. The bank also holds a small promotion event in the store to acquire new clients.

The bank negotiates with the municipality to distribute the biweekly social payments to 100 recipients (each payment is US\$20) in the town. In response to the agent’s complaint that it is too expensive for the agent to travel to the branch, the bank changes the agent’s commission structure. Now, for each cash-in transaction, the agent receives US\$0.3 and for each cash-out transaction the agent receives US\$0.1. (See the next section for a more detailed discussion on agent commission structures.) In addition, the bank installs a fast-track line or a “VIP pass” at the branch at which the agent can deposit and withdraw funds without waiting more than five minutes. This reduces its travel time to the branch from 75 minutes to 35 minutes. The bank is satisfied overall with the agent’s performance and considers increasing the overdraft to US\$4,000.

Figure 2-B. Second 90 days: Cash volume at agent outlet



Key information for the bank to note during these second 90 days of operations include the following:

- Total number of transactions: 2,148 (31 per working day, 716 per month) (i.e., increase of 741 of which 600 are from social payments).
- Volume of transaction processed at agent: US\$40,599 (US\$597 per day) 64 percent of which are deposits. Net cash position after 90 days is US\$8,927.
- The agent still goes to the branch 27 times (with the initial overdraft, the agent would have to travel 37 times), but this time not only to deposit, but also to withdraw funds especially for the social payments. The agent transports a net of US\$8,400 to the branch. The social payments accumulate to disbursements of US\$12,000 during the 90 days.
- The agent generates US\$489 in commissions, spends US\$37.50 on bus tickets, and now only 16 hours (i.e., two working days) on the bus and in the fast-track line at the branch.

Because of the consistent cash outflows, the net cash position at the outlet improves significantly. However, for the agent, it is not the net cash position at the end of the month that is important, but rather the daily

spikes in cash-in and cash-out movements. Luckily the cash disbursements in this example were not too large, but the biweekly withdrawals could have put the agent in a difficult position if the agent did not have sufficient funds at hand. Hence, the bank should not only help the agent balance cash in and cash out over a certain period, but it should also spread cash in and cash out transactions as much as possible. This could be done by negotiating with local service companies that bill payments would not be paid only once a month, but every other week, and maybe timed with disbursements of social payments or withdrawal of formal salaries.

This example illustrates how cash transactions affect an agent outlet and how banks can predict some problems, but not all of them. One of the biggest challenges banks currently tackle in their agent networks is cash management. Cash transport from the agent to the branch can be reduced through some of the measures described. However, cash transport always will be an element of the agent business. The agent will net a community's cash flow and, rather than having 200 people pay their bills at the branch, only the one store manager or an employee will need to do so.

^a This is a large amount if you consider, for example, the minimum salary in Colombia is US\$250 per month.
^b In Figure 2-A, the "cumulative net cash" shows the volume of cash collected or disbursed during the three months: (cash in – cash out) Day 1 + (cash in – cash out) Day 2 + (cash in – cash out) Day 3 + The "cumulative net cash w/deposits" shows the fluctuations in cash held at the agent considering the shop owner's frequent cash deposits: (cash in – cash out – cash deposited at branch + cash withdrawn at branch) Day 1 + (cash in – cash out – cash deposited at branch + cash withdrawn at branch) Day 2 + (cash in – cash out – cash deposited at branch + cash withdrawn at branch) Day 3 +
^c Commission also could be structured with a fixed component per transaction, plus a tiered amount based on the amount of the transaction. For a detailed explanation of the recommended agent commission structure, see "Making the Business Model Work."

Making the business model work

In any distribution channel strategy, the business model needs to work for all parties involved. Otherwise the model is not sustainable and either the contract will need to be renegotiated or one of the parties will not have adequate incentive to continue developing the channel. Indeed, in the early days of agent networks in Brazil, the system suffered from very high agent turnover attributable, at least in part, to the unrealistic expectations many agents had about the profit the agent business would generate. Let us consider first what would be the appropriate remuneration structure for the agent; the general principles are discussed next, and the case study in Box 2 provides an example.

The agent's perspective

Where there is little or no effective competition among agents, agent commission should be paid by the bank (though perhaps chargeable to the customer directly against the customer's account) rather than by the customer in cash directly to the agent. This creates transparency and eliminates opportunities for abuse by agents by misstating fees. Where there is competition, agents may be allowed to compete for local business by being able to determine their own commissions payable by customers. Customers can then assess the fees charged at an agent against the general level of service provided (including reliability on the availability of cash).

The structure and level of fees should be a function of two things: costs the agent incurs and incentives the bank wants to create for the agent and customers. In almost all the banking agent networks we know, banks pay a commission per transaction to the agent, which is often different for specific products.

The costs of the banking agent business for the store owner are mostly variable. They can be itemized as follows:

- Use of store space, which is notionally a fixed-cost per month.
- Staff time in processing transactions through the POS terminal, which is proportional to the absolute number of transactions processed. (With increasing banking agent activity, this could become a fixed

cost if the store manager hires a person who runs only the POS terminal.)

- Maintaining sufficient liquidity in the till, the cost of which will be a combination of interest foregone, additional security risk, and staff time and transport cost incurred in depositing/withdrawing cash at the bank. These costs are driven by the net volume of transactions processed (i.e., cash in less cash out). In practice, most agents take cash in on net, so most often there will be an incremental cost on deposits only.
- Holding sufficient account balances in the bank to offset customer transactions. The cost associated with this will be zero if, as is often the case, the bank balance is provided as an interest-free overdraft. Otherwise, it will be the average bank balance times the difference in risk-adjusted return between the store's normal commercial business and the bank deposit rate.

Beyond cost recovery, the incentives the bank would like to create for the agent are as follows:

- Drive transactional volume—link remuneration to transactions processed.
- Service both small and large transactions—the commission should reflect the more onerous burden that larger cash transactions have on the store in terms of security, use of limited liquidity, and more frequent trips to the bank. If all cash transactions incur the same fee independent of value, agents may be disinclined to accept high-denomination transactions.
- Drive customers to bring money into the system—a deposit is better business than a withdrawal because the bank earns float and by definition will bring in a second transaction fee (associated with a withdrawal, a transfer, or a payment) later on that can be split between the bank and the agent. But if cash-in is predominantly for bill payments and loan repayments rather than deposits, providing an incentive for cash-in may not have the intended result.
- Use the agent's own funds to top up the agent's bank account, rather than relying on the bank's overdraft facility.

We recommend a remuneration structure to the agent based on a commission composed of a fixed part per (electronic) transaction processed and a variable part (expressed either as a percentage or as stepped increases in fixed amounts) on the value of

cash transactions processed. The agent's commission could be higher for deposits than for withdrawals because this reflects the agent's higher cost for such transactions and gives the agent an incentive to go after new business. The commission could also depend on the amount of overdraft granted by the bank (higher overdraft would mean lower commission level) and on the frequency the bank expects the agent to clear the overdraft by depositing excess cash at the branch (more frequent depositing would mean a higher commission level), thereby reflecting the level of credit risk incurred by the bank.

The commission structure should be very simple, at least initially, so that agents can grasp the business opportunity. Banks might initially adopt a simple per-transaction fee, perhaps with a minimum guaranteed fee for the first few months. Over time banks can then adjust the commission structure to offer the right incentives to make the business model more sustainable.

Besides the level of commissions, the other fundamental determinant of the business case for the agent will be the number and volume of transactions it can expect to process. This will be determined primarily by the bank's marketing framework: range and nature of services offered, branding and local sales presence, and agreements with utility companies for bill payments and with local employers for salary payments. The agent has more limited tools to attract new business, though as stated earlier we have seen specific instances of a wide variation in transactional volumes going through different agents operating in similar environments for the same bank. Based on international experience, it seems that agents might drum up business for their banking agent activity, but most will not consider it their job to actively promote it any more than they promote the rice on their shelves.

A final component of the agent's business case is the benefit the agent brings to the agent's core business, either in terms of more people patronizing the store or people picking up more things when they go to the store to cash in or out. This is hard to quantify, as is another benefit that has been reported to us: some store owners see a credibility benefit from having their store associated with a bank logo.

The bank's perspective

The costs to the bank for using an agent channel are typically the following:⁷

- Amortization of initial fixed cost of setting up the agent (including installing POS terminal, conditioning the space, training staff, and launching marketing activities), as well as initial system integration.
- One-time cost of card issuance, per client.
- Transactional commissions paid to the agent.
- Communication cost for the POS. This will be per transaction (if a connection to the bank needs to be established each time) for online transactions, but might be a fixed cost per month if using fixed Internet connectivity.
- Back-office cost of processing transactions, which is proportional to the number of transactions.

Developing an appropriate structure of bank charges to clients using the agent channel is essential to drive adoption. We offer the following principles:

- No account opening or maintenance fees, which customers see as barriers to entry. Fixed costs (installation, cards) should be amortized on usage variables.
- Banking agents, in principle, should be the lowest cost channel for cash transactions, and the charges for using them should reflect that. Customers should be rewarded for using this channel rather than more expensive and more easily congested branches or ATMs.
- Transaction charges should be lower on deposit than on withdrawal, reflecting the additional revenue deposits bring (again, float plus a subsequent reverse transaction). This may seem at odds with the higher commission the bank might pay the agent for a deposit, but this reflects that the bank stands to gain far more from a deposit than from a withdrawal. So the bank should aim to recover more of its costs when the money is on its way in, not out.

⁷ This discussion assumes that the bank is managing its network in-house. If it engages a network manager, the cost structure to the bank may be different, reflecting the nature of the tasks outsourced and the contractual arrangement it has with the network manager. Also, some costs listed here might be shifted to the agent, particularly the communication cost.

Table 2: Banking agent regulation in five different countries

	Brazil	Bolivia	Colombia	India	Peru
Date of regulation	1999 (CMN 2640/99), 2000 (CMN 2707/2000), 2002 (CMN 2953/02), 2003 (CMN 3110/03 and CMN 3156/03)	2007 (Circular 535/2007)	2006 (Decreto 2233)	RBI Circulars DBOD.No.BL.BC. 58/22.01.001/2005–2006, DBOD.No.BL.BC. 72/22.01.009/2005-2006, DBOD.No.BP.40/21.04.158/2006-2007 ^a	2005 (Circular 2147-2005) abrogated. 2008 (Resolución 775-08)
What third parties can work as agents?	Any enterprise	Any legal entity or person, solvent and without negative credit history	Any legal entity or person that serves the general public	NGOs/MFIs set up as a nonprofit trust or society, cooperative societies, Section 25 nonprofit companies, post offices	Any legal entity or person serving the general public and without negative credit history
What kind of approval is needed from the Central Bank before contracting an agent outlet/retail chain?	Approval of agents providing “banking services” (i.e., account opening, deposits, withdrawals, and not just bill payments)	Notify only	Approval of bank's agent contract, none thereafter	None specified in regulation. In practice banks notify Central Bank.	Approval only for first agent contract signed, then notify only for each new agent
Does the bank have to sign a contract with each agent or each network manager?	With each agent or with network manager owning or subcontracting a group of agents	With each individual agent. Regulation does not mention cases of network managers.	With each agent or with network manager owning or subcontracting a group of agents	With each agent or with network manager owning or subcontracting a group of agents	With each agent or with network manager owning or subcontracting a group of agents
Is the agent required to work exclusively for one bank?	No	Yes	No ^b	No	No
If not, can the agent sign one master contract with an acquiring bank through which it channels other banks' transactions?	Not mentioned in regulation	No	No	No	Not mentioned in regulation
Is bank responsible for all transactions conducted at the agent toward its account holders?	Yes	Yes	Yes	Yes	Yes
Does transaction settlement have to happen in real time?	No, within 48 hours	Yes	Yes	No, data have to be sent at the end of day or next working day	Yes
Can agents conduct KYC check to open accounts?	No, agent can only fill out account opening forms and collect copies of identity and other documents.	Yes	No, agent can only fill out account opening forms.	No, agent can only fill out account opening forms and collect copies of identity and other documents.	No

^a “Financial Inclusion by Extension of Banking Services—Use of Business Facilitators and Correspondents,” RBI Circular, 25 January 2006, as amended 22 March 2006. “Guidelines on Managing Risks and Code of Conduct in Outsourcing of Financial Services by Banks,” RBI Circular, 3 November 2006.

^b But the agent has to have a bank account with each bank for which it processes transactions.

These considerations relate specifically to the use of agents as a transactional channel. Depending on the bank's strategy, this channel will need to be supported with a range of other activities the bank will need to factor in its business case. The business case should be based on the entire outreach strategy, not on the agent channel narrowly. It is therefore not possible to generalize on how to construct the business case for a bank.

What can regulators and banks do to unleash the power of agent networks?

The story outlined in the last sections is premised on banks being allowed to outsource certain functions along the financial service delivery chain. From a policy perspective, a certain and conducive regulatory environment is the foundation of all legal banking agent activity.⁸ Agents should benefit from a different, lighter sort of regulation than bank branches, because there are no issues of security of cash balances held by the agent (from the point of view of the bank and its customers). Moreover, there is an obligation to maintain an end-to-end technology platform with stringent security features to ensure the integrity of transactions happening through the agent. In fact, in some countries like Brazil, it was the stringent regulation of branches that increased the relative attractiveness for banks to use banking agents (Kumar, Nair, Parsons, and Urdapilleta 2006). Table 2 shows how regulators in five different countries are approaching the regulation of banking agents.

We have put forth the view that a banking agent network is fundamentally a technology play for a bank. With appropriate technology, the bank can afford to be a little bit more relaxed about how

customer transactions are captured. The costs of the bank's distribution network can be reduced, while still effectively controlling banking risks. But installing the appropriate technology is often the easy part as long as agent outlets have electricity and telecommunications coverage.

The main challenge is strategic: understanding the main purpose of this new channel and how it fits within the bank's other customer segmentation, service proposition, and branding objectives. Especially for banks looking to target new client segments or new geographies, there are three issues that need to be addressed:

1. A bank will have to learn how to establish and run a banking agent network, overcoming the technological and operational challenges described.
2. A bank will have to adapt sales and marketing activity, as well as product design and customer service, to its new clients.
3. A bank might have to tackle basic financial literacy barriers and develop ways to effectively identify clients who do not possess a formal form of identification.

Many banks focus primarily on the first issue, setting up the infrastructure, and leave the other challenges for agents to resolve on their own. This might be one of the reasons why low-income populations use agents to pay bills, but there has not been a significant increase in the use of other formal banking services. We believe that agents should not be expected to take over more than transaction handling. Without adequate product development, marketing, and sales support from the bank, the role of agents in supporting and developing their communities will be limited.

⁸ For more information on the regulatory environment for the use of agents, see Lyman, Pickens, and Porteous (2008).

Annex 1. A nontechnical guide to POS technology options

This annex describes alternative technology implementation options for the POS that may be used by an agent under the trust scheme described. At a minimum, a POS device must contain:

- A card reader that can read the information stored on the magnetic stripe or chip of a card. (As discussed below, it also may be able to write information into the chip, if using the offline mode, and the card may be virtual, i.e., embedded in a mobile phone.)
- A numeric keypad, through which users can enter their PIN and transaction amounts.
- A screen large enough for the users to be able to view and validate information pertaining to the transaction.
- A set of encryption keys held in highly secure memory, so that all communications between the POS terminal and the bank's server can be conveyed securely, with no possibility of decryption by a third party. The standard is keys of a minimum length of 128 bits.
- A printer, to issue receipts for each (successful or attempted) transaction.

Optionally, a POS device might include a full keyboard (if additional customer information is to be captured, e.g., name and address for account opening), a biometric (e.g., fingerprint) reader, a barcode scanner (to capture bill information), or a camera (for security).

There are several ways in which these requirements can be implemented. We consider the two main decision choices: whether to have an online or offline capable system, and whether to use dedicated terminals or mobile phones as POS devices. We then discuss the benefits and requirements for technical interoperability.

Online versus offline transaction authorization

The simplest authorization mechanism that can be established for transactions at the store is having a real-time communications link between the store and the bank. The authorizing module is within a bank server, and the POS terminal acts merely as an information relaying mechanism. Such online transacting incurs higher communications cost and

requires continuous fixed or wireless signal strength. But it works with standard magnetic stripe cards and with lower specification POS terminals, because the cards themselves do not need to hold any transactional information.

There is an offline technology solution that requires only sporadic connectivity, as little as once a day, entailing the use of smartcards—cards with an embedded chip that can securely store and update information on available bank balances and recent transactions. The retail outlet's smartcard holds the balance of its account at the bank, and the client's smartcard holds the balance of the client's account at the bank. As long as all transactions are done through the cards, and these are updated after each transaction by a POS device, the cards ought to contain the latest balances on their respective accounts. The POS device is then in a position to authorize the transaction between the agent's card—holding the store's account balance—and the client's card—holding the client's balance—without connecting to the bank's main server. As long as both are within limits, the transaction will be authorized, and their respective balances on the cards will be updated by the POS terminal (acting now as card writer rather than reader). Here the bank-installed POS at the store (rather than a central bank server) acts as the authorizing entity.

Occasionally, wireless connectivity by the POS terminal will need to be established to communicate the updated balances and the full transaction history of the POS device since the last synchronization, so that all account balances can be recalculated on the servers of both the acquiring and the issuing banks. Additionally, all the POS terminals in the system must record all recent transactions undertaken so that, if a customer loses his or her card, the transaction history can be reconstructed and a new card can be issued, with no loss of value to the customer. All customer transactions need to take place with the card; otherwise the card cannot by itself keep track of the available bank balance.

Specialized POS device vs. mobile phone

The discussion in this paper assumes that the cash transactions at the retail outlets were recorded through in-store POS devices, but they could also happen

through mobile phones. The two are fundamentally the same thing: the mobile phone is a POS in your pocket. Traditional POS systems physically separate the card, which is kept by the customer, from the card reader, which is typically deployed at the store. A mobile phone is a card (think of it as the SIM card) with a card reader attached (the handset itself).

Which device to base a transactional solution on is simply a question of numbers. When there is no deployed infrastructure at all, it makes sense to set up infrastructure at the agent because there are fewer stores than customers; just let the customer hold the piece that stores his personal information. With the spread of mobile phones, we now find ourselves in the lucky situation where the number of potential POS devices has ballooned—most customers have one. Being able to leverage this deployed base of card readers means that customers can undertake POS transactions remotely, without necessarily having to gain access to a third-party card reader. This is the true transformational power of mobile transactions.

There are two ways in which a mobile banking transaction will differ from a POS transaction. First, with a mobile phone transaction, two devices are involved: one in the hands of the agent and the other in the hands of the customer. These are separate communications channels that somehow need to be linked so that the bank can deal with the information relating to this specific transaction. This is solved by having one party provide the other party with their phone number (e.g., the retail outlet might ask the customer to fill in a cash deposit/withdrawal slip stating his mobile number and the amount of the transaction). From then on each party communicates through its own mobile, but it is as if the parties are sharing a POS.

Second, in the case of a card-based system, the card number identifies the issuing bank and the customer's account number, so swiping the card serves the

purpose of communicating the account information to the agent. With a mobile phone, the customer cannot be expected to type in his bank details on a tiny keyboard each time he transacts, so his mobile phone number must be linked to his bank account automatically, through a database managed either by the bank (if it is a proprietary mobile banking system) or a payments network provider (if it is an interoperable industry solution). This database would need to be maintained with due concern for privacy and confidentiality of customers' information.

Technical interoperability

There should be a high degree of technical interoperability between all the cards and POS terminals issued in a particular market. Even if there are no commercial arrangements in place to enable infrastructure sharing between banks, deploying technically interoperable solutions has multiple advantages: it allows banks to retain the option of reaching commercial interworking agreements in the future without having to change the installed base of cards and POS terminals; it allows banks to purchase standard equipment at lower unit costs because of the higher scale economies in production; and it minimizes the risk of technical obsolescence of equipment. Technical interoperability requires the following:

- The size and technical characteristics of each generic type of physical card (magnetic stripe, smartcard) must be standardized. For instance, smartcards might be based on the now widely accepted Eurocard MasterCard Visa (EMV) specifications.
- More advanced POS terminals should be able to interact with multiple (typically older) types of cards (e.g., smartcard readers that also have a magnetic stripe reader, as well as a mobile payments client).
- There should be a unique numbering scheme for all cards, so that any card in principle can be related to a bank account held at any bank.

Annex 2. Risk analysis of bank agents

The following table lists a variety of risks that may exist when a client–bank interaction occurs through a third party. Each risk is associated with possible risk mitigation options and the party that assumes the residual risk if the risk in fact comes to pass. This table is merely illustrative; it is not meant to be a comprehensive list of all risks, nor of all the measures

that need to be taken. It is intended to show how, for most risks that one can think of, there is generally a potential technical solution; regulators and banks will need to decide what is the appropriate balance between risk minimization and cost and complexity of the technical solution.

Type of risk	Possible risk mitigation options	
Theft of cash		
The client is robbed in or around the agent premises	<ul style="list-style-type: none"> Bank chooses agent based on security of location. Bank monitors incidents to establish patterns and possible connivance by agent's staff. 	Client (as with an outdoor ATM)
The agent's cashbox is robbed, or the agent is robbed on the way to/ from the bank branch	<ul style="list-style-type: none"> Agent can keep smaller amounts of cash and travel more often to the branch. Bank can offer pooled insurance to all its agents. 	Agent
Identity theft		
Clients share or do not sufficiently protect their credentials	<ul style="list-style-type: none"> Require two-factor authentication (e.g., card plus PIN) Financial education by the bank 	Client (as with an ATM)
In a moment when the POS is unsupervised, someone uses it fraudulently	<ul style="list-style-type: none"> POS operators need to authenticate themselves with card plus PIN. Set defined session periods, after which operator needs to reauthenticate. POS works only with two cards and two PINs (operator and client), so securing POS alone is not enough. 	Agent
Errors or fraud relating to receipts		
Client's transaction does not match what is stated on the agent's receipt	<ul style="list-style-type: none"> Receipt is produced automatically by the POS device, with no manual intervention. Minimum content of receipt is specified by regulation (bank name, agent name, POS device ID, time and date, amount of transaction, etc.) Financial education: check the receipt. 	Client (as at a branch)
Transaction that appears to have failed (hence, no exchange of cash) did in fact go through.	<ul style="list-style-type: none"> Receipt is produced in all cases, even if transaction failed, to notify client of transaction status. Financial education: always get a receipt and check it before leaving. 	Client
Client is told printer is not working but is assured the transaction can still be made.	<ul style="list-style-type: none"> POS device blocks automatically if there is no paper or printer malfunctions. Printer is clearly visible to the client, so the client can see that a receipt is being produced. 	Client (if he agrees to a nonreal time transaction)

Type of risk	Possible risk mitigation options	
Bank errors or fraud		
The receipt states successful transaction, but does not correspond to what happened in the client's account	<ul style="list-style-type: none"> • Direct communication between POS at agent and bank's core systems. • Proper controls on bank systems. 	Bank
The receipt states successful transaction, but the value of the deposit subsequently disappears	<ul style="list-style-type: none"> • Standard bank regulation and supervision. • Deposit insurance for the client, if the bank ceases operations. 	Bank
Fraud by third parties		
POS device is stolen and used fraudulently	<ul style="list-style-type: none"> • POS must be used with card and PIN of authorized operator. For improper use, would also need a client card and PIN. • POS tied to communication point of agent (phone number, IP address). • POS automatically shut off by bank outside of agent's business hours. 	Bank
Client goes to a fraudulent agent, with a "fake" POS	<ul style="list-style-type: none"> • Bank could give a unique identification code to each client, and POS could show it before transacting so clients can verify they are "talking" to the bank. • Clients should be able to easily check list of authorized agents from the bank or a public registry. 	Bank
The POS is manipulated (e.g., spyware is introduced)	<ul style="list-style-type: none"> • Use of specific-purpose terminals, avoiding open architectures. • Software can be updated only remotely with proper bank authorization. 	Bank
The communication between the POS and the bank is intercepted and manipulated	<ul style="list-style-type: none"> • All communications are encrypted end-to-end. • Appropriate level of security (e.g., at least 128-bit encryption keys). 	Bank

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