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Standard Bank of South Africa's E Plan: Harnessing ATM Technology to Expand Banking Services

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Introduction

Ongoing innovation in Web-based financial applications and banking technologies, and the accompanying reduction in the costs of account maintenance and transactions, suggest that the lower income market segment is no longer as unbankable as in the past. In particular, the emergence of banking products based predominantly in automated teller machine (ATM) transactions, with minimum in-branch services, has helped to lower the costs of providing banking services while reducing the risks of overdrafts for the low-income customer. Some players in the banking industry are realizing the income-generating potential of this technology, transforming their ATMs into more sophisticated portals for financial services and moving from traditional branches to e-branches, so that the accompanying cost-savings enable them to expand their market to client segments that they were previously not able to serve profitably.

Recent years have seen a number of efforts by financial institutions to harness technology to reduce the costs of serving their clients, particularly low-income, low-balance customers. ATMs are one of the most frequently used technological devices, though other electronic payment systems such as point of sale (POS) terminals, with debit cards and stored-value cards gaining popularity as well. The prevalence of this approach to banking the unbanked is seen in the United States, where, according to the Towers Group, a third of all banking transactions are conducted via ATMs (Whitehead, 2003, 2), and one third of the initiatives funded by the federal government's 'First Accounts' grant allocations to draw the unbanked into the financial mainstream rely on ATMs as the primary delivery system (U.S. Department of the Treasury 2003).

ATMs are an incarnation of developments in kiosk technology, and the banking sector has made use of the convenience, accessibility, and income-generating and cost-saving advantages of this form of technology for decades. Since the late 1970s, when on-line multi-function ATM machines first appeared^{*}, they have grown rapidly in number and function. Today there are more than one million ATMs worldwide, conducting 40 billion transactions annually ("Cash Withdrawals" 2002). This year ATMs are expected to surpass bank branches as the highest-volume banking channel in the United States, with more than 13 billion annual transactions (Weissbourd 2002, 16). The newer, Web-enabled ATMs, which can cash checks, issue money orders, accept loan payments, and provide information on financial planning and investment products, are essentially electronic kiosks. Either by using a card with a magnetic stripe and connecting real-time to the institution's central computer, or by using a card with a chip ("smartcard") on which the client's banking information is stored, many clients have round-the-clock global access to almost all aspects of their finances. Moreover, the functions of bank ATMs are no longer restricted to financial services, but are being broadened to serve retail functions as well—a process referred to as kiosk-ATM convergence. For example, the ATMs of First Union Bank headquartered in Charlotte, NC sell prepaid phone cards, those of Chevy Chase Bank in Washington, D.C. offer postage stamps (Weissbourd 2002, 16), and those of Australia's Bendigo Bank dispense phone cards and travel tickets.

* The very first machines, installed by Barclays Bank in the United Kingdom in 1967, were not strictly ATMs since they served only the function of dispensing cash and were off-line machines (Moore 2002, 167).

Banking companies here and elsewhere have begun using card technology and ATMs to expand their client base and reduce operating costs in innovative ways, including electronic distribution of wages to employees without bank accounts, and for wiring money abroad by immigrants. With respect to the former, First National Bank, among others, has developed a payroll card to reduce crowding in their branch lobbies on paydays as workers without bank accounts attempt to cash their paychecks (Bills 2002). Card-only accounts have been opened for employees, and employers deposit wages directly into the accounts. According to F.N.B, these employees have proven to be very good customers, making use of other bank products and services.

There is also the possibility that Mexican migrant workers with card-only accounts will be able to obtain duplicate cards for family back home, enabling them to withdraw from ATMs in Mexico, thus facilitating the transfer of remittances and eliminating the costs of international money orders or wiring funds. Similar services are offered by Bank of America, which first offered a payroll card in 1998 and has since introduced a Visa-branded version of the payroll card, as well as the SafeSend, ATM-based card service, which facilitates funds transfer to Mexico (Bills 2002).

In the United Arab Emirates, the meBank approach of the Emirates Bank Group is certainly one of the most progressive in the world. A far cry from traditional labor-intensive branches, each meBank contains a number of ATMs and PCs on which clients can themselves conduct all routine transactional services. Rather than dealing with mundane everyday transactions, the staff's job is to welcome customers and offer advice on loans and other financial services. meBanks are also conveniently located in accessible places convenient to its customers, such as corporate buildings, airports, universities and coffee shops throughout Dubai ("Branching Out" 2002).

Standard Bank of South Africa has launched an even more ambitious electronic delivery system called E Plan to target low-income customers. Among other e-banking efforts for the unbanked, E Plan is innovative in its use of a separate brand or product suite as opposed to a single account, as well as for the challenging context in which it occurs. E Plan offers a combination of card-based account features geared to meet the financial needs of low-income consumers; has a fee structure that encourages electronic-only transactions; and focuses on simplicity and convenience. Standard Bank's E Plan will be examined in detail below, including the banking and social contexts in which it exists, specifics of the product, and the challenges it faces moving forward.

The South African Challenge

The Poor and Unbanked in South Africa

For a developing country, South Africa has an exceptionally sophisticated banking sector. The electronic banking technology, smart cards, and point of sale devices compete with the most advanced banking systems anywhere in the industrialized world. In 2002, the number of electronic, or cashless, payments in South Africa exceeded the number of paper check payments for the first time ("SA Banks Aim" 2003, 13). Moreover, effective banking supervision has

resulted in a stable and competitive banking environment (Evenhuis 2001). In general, the South African government has issued guidelines rather than prescriptive regulations governing the development of e-commerce (Evenhuis 2001). This approach has offered the country's banking institutions regulatory flexibility, enabling them to test different approaches in an effort to meet both market demand and their business requirements.

However, while many South Africans have access to world class banking products, the vast majority of the population remains unbanked, most of them in the lower income segments. Estimates indicate that 60% of South African adults, some 17.6 million people, have no basic bank accounts. For comparison, the unbanked proportion in the United States is roughly 10% of households (Porteous 2003, 2). The South African unbanked include 72% of all blacks, 53% of coloured, 43% of Indians, and 12% of white South Africans (Holden 2003, 18). In addition to the high proportion of residents with no formal basic banking relationship, Standard Bank's existing customer base presents challenges – roughly 45% of its 5 million customers are illiterate, and 60% are indigenous Africans who together speak thirteen different languages (Edwards 2001).

Targeting the Unbanked as an Industry and Policy Priority

The dearth of banking opportunities for lower income people arises, in large part, from difficulties on the supply side, where banks traditionally have not been able to profitably serve the poor (Moore, 2000, p. 124). International experience suggests that small account balances and a low volume of transactions, among other considerations, result in high administrative costs for these accounts, especially in over-the-counter banking environments, with the consequence that people with incomes below certain thresholds may be denied bank accounts. In South Africa, in particular, the banking products and distribution channels of most established financial institutions have been found to be appropriate to the needs and socioeconomic profile of only the minority of more affluent, educated, and sophisticated people (Moore 2000, 2). Even the most basic accounts have features that lack transparency, are costly, and feature complicated permutations of charges, minimum account balances, or sliding scales for withdrawals and transactions (Moore 2000, 2). With respect to distribution channels, the operating costs associated with labor-intensive regional offices and branch networks are too expensive for banks to profitably serve clients who maintain low account balances.

Yet drawing low-income unbanked clients into the financial mainstream is recognized as critical to economic growth and social stability in South Africa, as evidenced by this statement from South Africa's central bank, the South Africa Reserve Bank:

There is general consensus that financial development and access to finance, especially among the marginalized, in the context of macroeconomic stability, are necessary elements for economic growth. Macroeconomic stability indirectly plays its role by fostering macroeconomic certainty, predictability and credibility. Financial development contributes, *inter alia*, to mobilisation of savings, facilitates risk diversification and pooling, enhances selection of the best investment opportunities and fosters corporate governance through its monitoring systems. Most pertinently accessible financial services such as banking can assist

poor and vulnerable households to hedge themselves against negative shocks such as loss of a job, death of a breadwinner or natural disaster. (South Africa Reserve Bank 2003, iii)

As a result of this recognition, there were by early 2003 a number of policy and regulatory proposals to enhance the availability of banking services to the low-income unbanked in South Africa. One important example is the Nedlac Financial Sector summit, a meeting of government, business, labor, and community representatives held in August 2002. Attendees committed to promoting greater access to transaction and savings facilities, as well as creating a monitoring mechanism to ensure that the principles are being met. (Porteous 2003, 5)

On the policy side, the South Africa Reserve Bank and national treasury proposed legislation in April 2003 that would allow a host of new entities, both in and out of the traditional financial services sector, to obtain banking licenses with the intent of reaching more unbanked. These new opportunities range from lending institutions now moving into retail banking to cellular telephone companies being allowed to use subscriber identification module (SIM)[†] cards as electronic purses ("New Regime" 2003).

Standard Bank as a Leader in the South African Banking Industry

With 6 million accounts, and total assets of R395b (\$48.8 billion), Standard Bank, is South Africa's second largest bank overall and its largest retail bank (Standard Bank Group Country Profiler, accessed 2003). Standard Bank's South African customers have impressive market share across all income groups, with 38% of the high-income market, 30% of the medium-income market, and 35% of the low-income market (Polkinghorne, accessed 2003).

South African banks have seized the challenges and opportunities offered by developments in technology, and Standard Bank, with 4.7 million accounts electronically linked, has proven to be particularly innovative in using technology to expand banking services to previously unbanked communities. Reducing the costs of transactions through its ATM-reliant E Plan product, and changing distribution channels through the construction of kiosks called E Centres, the bank has managed to reach hundreds of thousands of new lower-income clients. However, whether the business model underlying E Centres will prove to be sustainable will depend on the sophistication of low-income and unbanked clients, their take-up rates of the various, as well as the cost structure and achievable scale economies.

Standard Bank's outreach efforts to this new market segment are summarized by CEO Jacko Maree (from Standard Bank Group Country Profiler, accessed 2003):

We believe that there is huge potential to bank the previously unbanked population, but as in all our business ventures, we are approaching this market conservatively and slowly.

[†] A SIM (subscriber identity module) is a chip card the size of a first-class postage stamp. It is a key element in over 600 million mobile phones—representing about 70% of the mobile handset market. A SIM has memory (for data and applications), a processor, and the ability to interact with the user. Current SIMs typically have 16 to 64 kb of memory, which provide plenty of room for storing hundreds of personal phone numbers, text messages, and value-added services. ("SIM - Software Shift" accessed May 2003)

We have a valuable relationship with the leading micro lender, African Bank, and hope to leverage this. As an industry we have embraced new technology as well as any other country, and lead most. Standard Bank has been fortunate to be at the forefront of product innovation in South Africa for decades and also has a good record of making technology work for its customers.

The E Plan Product

Standard Bank's E Plan account employs ATM technologies to lower the account cost structure and serve clients who were previously viewed as unprofitable. E Plan offers a combination of account features geared to meet the financial needs of low-income consumers; it has a fee structure that encourages electronic-only transactions; and it focuses on simplicity in its processes and convenience in its locations. The program's scale indicates that E Plan has proven an effective way to draw low-income people into banking: In a country with a working population of 11 million (Moore 2000), 2.7 million accounts were open by the end of 2002, with a growth rate of 50,000 new accounts per month (Polkinghorne, accessed 2003).

E Centres are an important part of the E Plan concept since they represent a transformation of the traditional branch into an electronic branch, or kiosk, where routine transactions can be performed on ATMs rather than over the counter. One modestly-staffed E Centre with two to four ATMs services approximately 8,000 to 10,000 accounts. There are typically two or three assistants, fluent in the appropriate local languages, available to teach clients how to use the ATM machines and to assist with more complex transactions, open accounts, and sell E Loans and funeral plans (Moore 2000). The kiosks operate during extended hours, sometimes from 7 a.m. until 6 p.m., close to where clients perform their daily activities, such as in busy streets or shopping centers, and often adjacent to a traditional Standard Bank branch. Because of a high incidence of crime around such places as train stations and minibus taxi stands, Standard Bank has avoided those busy locations (Moore 2000).

E Centres' ATM interface is a key feature of E Plan. The machines have friendly, demonstrative graphics instead of strictly text, easy-to-read screens, short and simple menu choices, and self-explanatory transaction slips, which is discussed in more detail below (Edwards 2001, 2).

Development of the E Plan Concept

Today's E Plan has its origins in a product called E-Bank, which was developed and implemented by Standard Bank in 1994 in response to a problem plaguing much of the international banking community, the existence of a highly segmented market. Virtually all of Standard Bank's profits were being generated by the top 20% of its clients; the remainder were either "line ball" (i.e. neither generating profits nor losses) or clearly inflicting losses (Edwards 2001, p. 1).

Rather than move out of the low-income market, which dominated the "other 80 percent," Standard Bank decided to try to lower costs by using electronic-driven technology in

an effort to turn that market segment into a profitable one (Polkinghorne, accessed 2003). It launched E-Bank as a separate subsidiary of the Standard Bank Investment Corp (Stanbic) with a strong focus on the low-income market.

However, the E-Bank product failed to attract the required critical mass from the bank's existing customer base, a fact Standard Bank analysts attributed to client suspicion of a new brand with separate distribution channels (Polkinghorne, accessed 2003). The decision was made to recast E-Bank as E Plan and brand it as Standard Bank's main mass market product. Moreover, in 1997, Standard Bank took decisive steps to improve E Plan's customer base by shifting 570,000 low balance clients involuntarily from PlusPlan, its other account product, to E Plan. There appears to have been little opposition to this move, since many of these clients maintained balances below the interest rate threshold for the PlusPlan account[‡] but could easily reach the lower interest rate threshold for E Plan.

Product Features

The E Plan account is a card-based, 'two-in-one' account, consisting of two 'pockets' or linked sub-accounts: a cash or transaction pocket and a savings pocket which can be activated on the client's request. Clients have the option to easily transfer money between the two pockets or may establish a standing order to transfer from the cash pocket into the savings pocket and vice versa, as deposits automatically default into the cash pocket. Interest is paid on the savings pocket balance, provided that a minimum balance of R250 (approximately \$31) is maintained. (At the time of this writing, the exchange rate was roughly 8.1 South African rand to the US dollar.) Interest is paid at low rates relative to conventional South African savings accounts, but for low-income clients this account has the advantage that interest is paid on a relatively low balance. An additional incentive for maintaining the minimum balance is that an interest bonus is paid to all savers who have maintained a minimum monthly balance of R250 for six consecutive months.

One account feature that seems particularly aimed at meeting the needs of low-income, low-balance clients while keeping down costs is the lack of formal bank statements. Instead, E Plan account holders receive detailed receipts, or "ministatements," from each ATM transaction; these include the current balance and information on their last six transactions. This not only saves the cost of generating printed monthly statements but also reduces the number of balance inquiries, typically a frequent activity of low-balance customers (Edwards 2001, 3).

With E Plan, account holders do not have personal checks, but this is not unusual in South Africa. However, they can withdraw bank-guaranteed checks at Standard Bank ATM machines. The client chooses the value of the check to be printed and the money is deducted from his account in the same way as a cash withdrawal. The E Plan ATM card also functions as a debit or cash withdrawal card at outlets using widespread point-of-sale (POS) technology. Acceptance remains at the discretion of the merchant, however, but payments or withdrawals can be made at most shops that are part of MasterCard's Maestro electronic funds transfer (EFT) network. It can be used to make non-gasoline purchases at selected service stations[§], as well as

[‡] Currently set at R500.

[§] A separate petrol card is required for the purchase of gasoline. ("SA Banks Aim" 2003, 13)

purchases at grocery stores and Pick and Pay, the largest retailer in the country (Paulson and McAndrews 1999, 12). In addition, a facility called Autopay enables clients to pay for purchases online from participating retailers by entering their E Plan account number in place of a credit card number. This feature is not unique to E Plan, and its usefulness to low-income clients is questionable, as only a few online retailers accept the E Plan account.

An element of E Plan that is unique is its innovative security feature: a “stop” card that can be inserted into any Standard Bank ATM machine to instantly block access to the client’s account in the event of theft of an ATM card and PIN, without the need to visit tellers, phone banks, or remember any codes. Interviews with E Centre supervisors indicate that this feature is used fairly frequently. To further enhance the security of clients’ account information, at one time Standard Bank was experimenting with storing a facial image and biometric data, such as a fingerprint, on a memory chip. If this were implemented, E Plan assistants would be able to check whether the person engaged in the transaction was the same as the person on the screen, making the problems associated with lost or forgotten PIN numbers obsolete. However, Standard Bank would need the support of the entire industry for such an innovation to be feasible (Polkinghorne, accessed 2003). Nevertheless, the safety and security of E Plan cards is a top priority, and Standard Bank has established itself as a market leader in ATM security. In 2002, for example, Standard Bank was awarded the international ATM Security Best Practice Award for protections it developed against card-reader fraud at ATMs (“Warning issued” 2002).

Transaction Charges

There is no charge to open an E Plan account, but an initial deposit of R50 (about \$6 US) is required. The monthly account maintenance fee is kept low at R5.50 (\$1.47), unless the account balance is less than R500 (\$62), in which case the fee is raised to R11 (\$1.35).

A look at fees charged E Plan clients reveals the incentives the bank is providing to use ATMs rather than traditional branches. Cash withdrawals cost R25 (\$3.08) over the counter compared to R4.15 (\$.51) at a Standard Bank ATM and R10.15 (\$1.25) at other ATMs. Similarly, using the kiosk check-writing machine costs R15 (\$1.85) as opposed to R35 (\$4.30) per check at the tellers. In general, all Standard Bank ATM-based transactions are charged at a flat R4.15 (\$.51), while transactions at other ATMs are charged R10.15 (\$1.25). Using the E Plan card as a debit card incurs a charge of R1.80 (\$.22) for purchases and R3.60 (\$.44) for simultaneous purchase and cash withdrawal.

Table 1: E Plan Transaction and Account Charges, January 2003

Transaction	Direct (online, ATM or phone)	Branch
Cash Withdrawal	Standard Bank ATM R4.15 (\$0.50) Other ATM R6.00 (\$0.75) third-party fee plus R4.15 (\$0.50) ATM fee=R10.15 (\$1.25)	R25 (\$3)
Check Withdrawal	Autocheck from ATM R15 (\$1.85)	Bank check R35 (\$4.30)
Deposits Cash<R500 (\$62) Cash>R500 Post-dated Check Special Clearance	free R2.75 (\$0.35) +0.85% of deposit value R45.49 (\$5.60) R45 (\$5.50)	R25 (\$3)
Inter-account transfers	R4.15 (\$0.50)	From all other R25 (\$3)
Account Payments	EAP R3.75 (\$0.46) Debit order R4.15 (\$0.50) Stop Order – to establish R8 (\$1) – per transaction R4.15 (\$0.50)	R25 (\$3)
Bank Statements Provisional Statement Balance Inquiries	1 free per month, then Autoplus R2.25 (\$0.25) Standard Bank ATM free Other ATM R3.50 (\$0.45) Ministatements at ATM free	1 free per month, then R6.00 (\$0.75)
Fixed Management Fees*		Active Account R5 (\$0.60) Inactive Account (balance <R500 (\$62)) R11 (\$1.35)
Debit Card Purchases Cash Withdrawal and Purchase Over the Counter Withdrawal		R1.80 (\$0.20) R3.60 (\$0.45) R25 (\$3)
Debit Orders		R4.15 (\$0.50)
Other Transactions		
Stop payment		R18 (\$2.20)
Card replacement fee		R17.50 (\$2.15) (first) and R35 (\$4.30) thereafter
Declined cash payment at ATM		R2.35 (\$0.30)
Dishonored or unpaid fee		R30 (\$3.70)

Notes:

Prices include Value-Added Tax (VAT)

Exchange Rate (Jan 2003): US\$ ~ R8.10

* Account holders age 61 and older are not required to pay monthly management fees.

Accessibility and Convenience

Accessibility and convenience are key concepts in the E Plan business strategy. It is innovations in these areas that were particularly lauded by World Bank researchers investigating E Plan in its earlier years (see, for example, Paulson and McAndrews 1999 and Moore 2000).

The E Plan is designed to be very simple for low-income people to acquire and use (as well as not very cumbersome for the bank to open and manage). Only three forms are required: an “opening form,” a form the client signs acknowledging receipt of his ATM card, and a sheet containing the PIN number. These forms are kept at the E Centre where the account was opened and used to verify the signatures and identity of clients when over-the-counter withdrawals are made at branch offices. The little paperwork required to open an account is in line with more general attempts—like substituting detailed ATM slips for monthly statements—to make E Plan as paper-free as possible.

Clients receive their ATM cards at the time they open their account so they can begin using the account immediately, another convenience and accommodation for this market segment.

Transactions can be conducted at any of the 2,600 ATMs in the Standard Bank network and at those of other banks (for a foreign ATM surcharge), but clients are encouraged to use the row of special E Plan ATMs inside E Centres, where staff are available specifically to answer questions and guide clients through their electronic transactions.

The popularity of E Plan has actually created a burden on Standard Bank’s ATMs and in branches where E Plan clients stand in line to use them. As a result, the bank has begun to explore the next logical generation of meeting the transaction needs of this low-wage market segment: electronic funds transfer at point of sale (EFTPOS). Standard Bank is now switching from ATM cards to debit cards and rolling out POS terminals that can read them (Joffe 2003). This effort is designed to ‘direct’ clients from tellers to ATMs, then from overcrowded ATMs to food retailers’ POS terminals—essentially, a migration from cash to debit card to electronic purse. Retailers approve of this transition because it increases store traffic as people come there instead of standing in line at the bank. (Edwards 2001, 3)

Other Services related to the E Plan Account

As Standard Bank clients, E Plan account holders have access to a number of other banking-related products such as a funeral plan, micro-loans, and investment products. The latter include interest-bearing fixed deposit investments (similar to certificates of deposit) or 32-day notice deposits that appear to be fairly popular as a savings and investment vehicle. For investments of under R10,000 (\$1,234), clients earn 9.25% interest for a 32-day notice deposit and 11% interest for a 6 to 12 month fixed deposit.**

** The inflation rate is expected to be 7.7% in 2003 (Personal communication, South African Treasury, March 2003).

Funeral Plan

Originally E Plan accounts offered a free death benefit. Now, clients under the age of 65 have the option to purchase a funeral plan for themselves and their family members. The plan costs R38 (\$4.70) per family per month and pays out R10,000 (\$1,234) on the death of the main member or spouse and a smaller amount for the death of a child. The enrollment of clients into the funeral plan and E Loan programs is proceeding quite aggressively, and each E Centre has a daily and monthly target number of enrollments to meet. Since the staff's annual salary increases are tied to attaining the targets, the incentives to promote the programs are strong.

E Loans

Availability of short-term credit in small amounts is critical for very poor households to climb the economic ladder. This kind of credit is the necessary corollary to basic banking access and entry into the financial mainstream. Recognizing both this need and the potential profits of offering a credit component to E Plan, Standard Bank introduced the E Loan product. Although a short-term credit product is riskier than the depository product, the higher risk is off-set by the profit potential of a loan that depends on direct deposit for repayment.

South Africa has a huge micro-lending industry, exceeding R14 billion (\$1.7 billion) in outstanding loans, and with close to 1,300 registered lenders ("South African Banks and Finance" 2002). The clients of microlenders typically represent the poorest of the poor: 63% of borrowers from microlenders earn less than R1,000 (\$123) per month (*Business Times* 1999 <http://www.btimes.co.za/99/1128/comp/comp11.htm>). Since there is currently little regulation in the micro-lending industry, there may be even more demand for a loan that is provided through a recognized financial institution.

Since December 2000, small loans known as E Loans have been marketed to E Plan clients who have worked six months or more continuously with the same employer, earn a minimum required wage or salary,^{††} and have those earnings electronically deposited into their E Plan accounts. The capacity to offer E Loans is a direct function of banking technology. Automated accounts provide information that can be used in credit checks, and electronic deposits of payroll earnings mean that loan repayments can be deducted directly from E Plan accounts on a regular (weekly, fortnightly or monthly) basis, thus reducing the risk of default.

Loans of between R1,000 (\$123) and R10,000 (\$1,235) are available to monthly salary earners, while weekly and fortnightly wage earners may borrow up to R6,250 (\$772). On E Loan brochures and documents the interest rate is expressed as monthly repayments rather than as interest on the loans. The size of the monthly repayment depends on the period of the loan, which can vary from 12 months to 18 months for weekly wage earners, 24 months for fortnightly earners, and 36 months for monthly earners. For example, a monthly wage earner with a R5,000 (\$617) loan would make repayments of R449 (\$55) per month over 24 months or R668 (\$83) per month for 12 months (see Table 2). In this example, the client pays back R10,776 (\$1,330) over

^{††} The minimum net salary requirement is R228 for weekly wage earners, R456 for fortnightly earners and R901 for monthly earners.

two years or R8,016 (\$990) over one year; in other words, the annual percentage rates (APR) are 134% and 155%, respectively. These loans are certainly much more expensive than those that can be obtained by borrowers who are better off and can obtain loans at just above the prime lending rate of around 17 % (in January 2003).

Table 2: Sample E Loan Repayment Schedules, 2003

For weekly repayments

	12 months	15 months	18 months
R1,000 (\$123)	R33.50 (\$4.15)	R29 (\$3.60)	R26 (\$3.20)
R3,000 (\$370)	R100.25 (\$12.40)	R86.75 (\$10.70)	R78 (\$9.65)
R5,000 (\$617)	R167 (\$20.60)	R144.75 (\$17.90)	R130 (\$16.05)

For biweekly repayments

	12 months	15 months	18 months	24 months
R1,000 (\$123)	R67 (\$8.25)	R58 (\$7.15)	R52 (\$6.40)	R45 (\$5.55)
R3,000 (\$370)	R200.50 (\$24.75)	R173.50 (\$21.40)	R156 (\$19.25)	R134.50 (\$16.60)
R5,000 (\$617)	R334 (\$41.25)	R289.50 (\$35.75)	R260 (\$32.10)	R224.50 (\$27.75)

For monthly repayments

	12 months	15 months	18 months	24 months	36 months
R1,000 (\$123)	R134 (\$16.55)	R116 (\$14.30)	R104 (\$12.85)	R90 (\$11.10)	R77 (\$9.50)
R3,000 (\$370)	R401 (\$49.50)	R347 (\$42.85)	R312 (\$38.50)	R269 (\$33.20)	R231 (\$28.50)
R5,000 (\$617)	R668 (\$82.45)	R579 (\$71.50)	R520 (\$64.20)	R449 (\$55.45)	R384 (\$47.40)
R7,000 (\$864)	R936 (\$115.55)	R810 (\$100.00)	R728 (\$89.90)	R628 (\$77.55)	R538 (\$66.40)

Notes:

Minimum net salary requirements:

Weekly: R228 (\$28)

Biweekly: R456 (\$56)

Monthly: R901 (\$111)

Exchange Rate (March 2003): US\$ ~ R8.10

Source: E Loan brochure, Standard Bank, 2003

The E Loan is a joint venture between Standard Bank and African Bank,^{‡‡} which is responsible for verifying client eligibility, debiting the accounts, and supplying the loan money. Standard Bank is responsible for marketing the loans, with E Centres operating as the point of contact with the client. The venture is co-funded with costs and profits allocated on a 60-40 basis (60% to Standard Bank and 40% to African Bank) ("Joint Ventures and Alliances" 2001). The arrangement enables Standard Bank to use its existing infrastructure plus that of African Bank's to expand its market while better managing risk.

Since entering this market in December 2000, loans in excess of R300 million (\$37 million) have been made, and monthly loan volume is now approximately 6,000 (Standard Bank media release 2002).

Market Development and Penetration

Since E Plan's inception, great strides have been made toward reaching a high percentage of its target market. In the first year of operation, 150,000 accounts were opened (Paulson and McAndrews 1999, 2). By 1999, E Plan had 1.4 million clients, estimated at that time to be more than half of South African's low-income banking market (Paulson and McAndrews 1999, 21), and accounts were increasing by about 60,000 to 70,000 per month. In 2000, the E Plan customer base passed the 2 million mark, researchers estimated (Metcalf 2000, 1), and by mid-2002 had reached approximately 2.5 million, so that E Plan clients were the majority of Standard Bank's almost 4 million customers (Stovin-Bradford 2002). Standard Bank's most recent figures confirmed that about 2.7 million E Plan accounts were open, with about 50,000 more being added each month (Polkinghorne, accessed 2003).

On the other hand, E Centres have not proliferated as quickly as was expected. In 1997, when 70 E Centres each supported 8,000 to 10,000 accounts with two to four ATMs, it was predicted that there would be 190 kiosks by 2002 (Paulson and McAndrews 1999, 3). However, a recent case study shows that by 2002 only 100 E Centres had been established (Celent Communications 2002). Consequently, many E Plan clients rely on the same ATMs as other Standard Bank clients. E Centres are not found in every town, and penetration into rural areas is particularly low.

Marketing and Incentives

Although many of E Plan's new customers were walk-in clients, Standard Bank has also worked actively to increase the number of clients enrolled through the direct deposit of wages. In recent years South Africa's high crime rate, coupled with employers' desire to reduce administrative costs, has led many to use automatic payroll deposits even for very low wage employees. Because employers choose where to put their payroll deposits, they essentially have authority over where their employees bank. . Banks have thus competed for corporate clients by minimizing the fees charged for payroll services. Yet this stiff competition means that banks

^{‡‡} African Bank Investments Limited is the largest player in the South African microloan arena. Since August 2002, its market share in this industry has been in excess of 50%.

often cannot recover costs with payroll service fees, necessitating account volume growth and recruitment outside the traditional client base. (Paulson and McAndrews 1999, 5)

Marketing the E Plan brand is an important way to expand the client base. In 2002, Standard Bank launched an affinity E Plan ATM card for fans of the popular soccer clubs, Orlando Pirates and Kaizer Chiefs. In return for access to the clubs' fans, Standard Bank will pay the clubs an annual marketing fee, a percentage of all transactions made on the cards, and an annual fee per active card (Standard Bank media release 2002). Standard Bank expects to enroll over 1 million Kaizer Chiefs supporters alone in the first year of the agreement.

A monthly savers' draw is another instrument used to attract clients. A main prize of R10,000 (\$1,235) and 20 smaller prizes of R1,000 (\$123) each are awarded each month. However, this feature is not unique to E Plan, and anyone who saves with any Standard Bank product is eligible to enter this draw.

The new E Loan venture with African Bank, described in the previous section, is also sure to help expand E Plan's market coverage, because the loans must be repaid through an E Plan account. Since the venture is estimated to generate about R3 billion (\$.37 billion) in loans over the next five years, with about 6,000 new loans made each month ("Standard Bank Announces Merger" 2000), there should be a substantial increase in new E Plan clients.

Electronic Benefit Transfer

In another effort to expand the number of E Plan accounts, Standard Bank, along with First National Bank, recently joined a practice that is becoming common worldwide—linking the distribution of social welfare payments to electronic fund transfer technology. Standard Bank announced in April 2003 that it had established a partnership with the Eastern Cape Department of Social Development to offer a more secure and convenient method of disbursing social welfare grants in that rural province. Eastern Cape's 70,000 welfare recipients may choose to receive their benefit payments automatically and for free into a newly-opened or existing E Plan account. The arrangement allows recipients to access their money at any ATM in the country, rather than stand in line on specific days for their cash payments. The province has agreed to pay the bank R13.50 (\$1.65) per recipient per month to cover the account maintenance fee and two free ATM withdrawals. This is a significant savings over the R31.50 (\$3.90) the province currently spends to administer each grant (Rose 2003; "Standard Bank to Assist Government" 2003).

This effort, which links electronic benefit transfer directly to bank accounts, goes beyond similar initiatives in the United States. In the U.S., electronic delivery of welfare benefits simply means recipients receive a stored-value card that can be used to purchase groceries (in the case of food stamps) and, in some states, to withdraw their cash benefits at ATMs. However, there is no bank account to which these cards are attached. As such, recipients do not have a direct point of entry to the banking system or the opportunity to save or access more sophisticated banking products.

Costs and Revenues Associated with E Plan

As has been suggested, the main way in which ATM-based transactions drive down costs is by replacing the traditional branch office and associated manpower demands and paperwork with self-service electronic transactions. Although an E Centre costs approximately \$100,000 to build, this is only 40% of the cost of setting up a conventional bank branch (Celent Communications 2002, 13). Fixed costs for E Centres are 30% to 40% lower than those for traditional branches, because the outlets are smaller, insurance and security costs are lower, and all cash is loaded into an ATM, thus obviating the need for a larger vault (Moore 2000, 4). Labor costs are also lower, because E Plan assistants deal with automated transactions and consequently require less training and are paid lower wages than conventional tellers. Standard Bank has calculated that 49% of the expense of providing the E Plan product comes from ATM costs, 29% from staff costs, 12% from costs related to premises, and 10% from other costs (Polkinghorne, accessed 2003).

In 1999, a World Bank study reported by Paulson and McAndrews (1999) estimated that maintenance cost associated with an E Plan account amounted to R4.58 (\$0.57) per month—about half that of Standard Bank's other basic account product, PlusPlan. At that time, account maintenance costs were expected to fall to R2.77 (\$0.35) by 2002. The marginal cost of a withdrawal was estimated to be about R0.89 (\$0.11) based on the prevailing volume of transactions as of July 1997, while the service fee was almost three times that at R2.40 (\$0.30). Some of this differential was used to cover the costs of opening and maintaining accounts, but recovering costs was not too difficult because competition was relatively light. E Plan had a market share of 57% of new low-balance accounts, - and variable costs were expected to change very little. An accounting model of Standard Bank showed that net revenue was around R3 (\$0.37) per account holder per month.

Given the proprietary nature and strategic significance of current figures related to transaction volumes, costs, and revenue, a direct assessment of the profitability of E Plan can not be performed. Industry reports on E Plan conflict, but results are available that suggest positive performance. Cost-to-revenue ratios on E Plan, for example, improved from 80% in 1999 to 60% in 2002 (Polkinghorne, accessed 2003).

Since Standard Bank's profit is driven by fees associated with E Plan transactions, the most important determinant of revenue is account utilization. Standard Bank needs to achieve 8,000 transactions per ATM per month to make E Plan a viable business venture. In 1999, the average number of E Plan transactions per month per ATM was 12,000, but in 2002, the number was just at the breakeven level of 8,000 (Celent Communications 2002, 13). By comparison, the average bank-owned ATM in the U.S. yielded 4,479 transactions per month in 2001 (Dove Consulting, 2002, 2).

On a per account basis, transaction volumes were relatively low, at 2.8 transactions per month in 1999 (Paulson and McAndrews 1999, 3). At that time, this volume was not sufficient to generate an operating profit (defined as transaction fee revenue minus the cost of account maintenance, including the allocated capital costs and transaction costs). Then, analysts for Standard Bank expected to turn a profit by 2002 provided they could increase the average

number of transactions per account to 4 per month. However, in 2002, account usage appeared to hover around 3 transactions per month, still not enough to cover operational costs (Celent Communications 2002, 13). Another possible concern is the churn rate among account holders, according to a World Bank presentation by a Standard Bank official. Up to 300,000 accounts—more than 10% of total accounts—are closed each year (Polkinghorne, accessed 2003). It is unclear just how high Standard Bank's churn rate is relative to the rest of the industry, as national or even worldwide averages are difficult to locate. For example, the U.S. banking churn rate has been estimated as being as high as 20% ("Industry Perspective" 2003), while the European rate is estimated at just 3% ("The Account Snatchers" 1998).

Although it is not the prime source of E Plan revenue, the net interest margin, or float—the difference between the interest rate paid on account balances and the prime lending rate—suggests that there are profits to be made from the interest rate spread if a large enough client base can be generated. E Plan only pays interest on those funds that clients have explicitly requested be deposited into their savings pocket, but even those do not earn interest unless the savings balance exceeds R250 (\$31). Thereafter, however, interest is paid at 3%, with an additional 4.25% paid if balances are maintained at a certain level for 6 consecutive months^{§§}. By contrast, the prime lending rate was 17% in March 2003, suggesting a large spread. Irrespective of interest rate changes, however, few clients—only 4% in the late 1990s—use the savings pocket, and the average balance is low, equivalent to only 10% of each client's total E Plan balance (Paulson and McAndrews 1999, 21). Average balances on the transaction pocket of the E Plan account are also low but have been increasing. Average balances rose from \$47 to \$108 between 1997 and 1999 and were expected to climb to \$120 in 2000 (Polkinghorne, accessed 2003). Average annual account contributions have also increased over time. Although in 1997, net account contributions were negative at \$-2, they had increased to \$20 by 2000.

Challenges

Standard Bank's experience highlights the challenges of implementing a technology-dependent banking product among a low-literacy, extremely poor population. Account features that seem to enhance accessibility and convenience to someone who is well-educated and experienced using ATMs seem to be confusing and even alienating to banking clients who are functionally illiterate and unsophisticated. Moreover, even E Plan's cost structure geared toward low-income customers may be financially out of reach for a large segment of the South African population. In particular, the fee structure designed to encourage ATM-only transactions clashes with unsophisticated users' lack of understanding of and trust in technology, so they often end up paying the prohibitively higher fees to conduct their transactions over the counter. Examples of the effects of these obstacles follow.

Despite being trained by E Centre assistants, many E Plan clients cannot operate ATM machines by themselves and ask the staff for assistance with every transaction. Others can successfully operate the ATMs but only if the transactions are routine enough so the command sequence is familiar. Such difficulties are perhaps not surprising when one considers that E Centre ATM machines, like most ATMs in South Africa, typically provide information only in

^{§§} Interest rate figures are as of March 2003.

English and Afrikaans—despite the fact that for 77% of South Africans neither English nor Afrikaans is their first home language (Statistics South Africa 2002). In addition, half of South Africa’s population is functionally illiterate (Statistics South Africa 1999). Indeed, Standard Bank management has identified illiteracy as one of the largest obstacles to expanding E Plan’s client base (Polkinghorne, accessed 2003).

In addition, many E Plan account holders prefer to process their transactions over the counter. Since E Centres do not keep cash, clients wishing to withdraw or deposit money over the counter must go to the traditional Standard Bank branches, where they pay transaction fees that are more than five times higher than at ATMs. Certainly, the preference for traditional transactions must be related in part to the distrust and suspicion with which some clients regard ATM technology.

Overall, affordability of banking products is a serious issue for many South Africans. An analysis released by the South African Reserve Bank in April 2003 estimates that the average low-end banking product costs R40 (\$4.95) per month. If affordability is defined as 2% of gross household income, 40% of the population cannot access these ostensibly affordable accounts (Porteous 2003, 1).

Conclusion – Application to the U.S. Context

Standard Bank’s E Plan suggests that it may indeed be possible for formal financial institutions to profitably expand their services to a lower-income, unbanked market segment. The key is that they must look beyond simply offering low-cost accounts and focus on the combination of an appropriate range of services, charges, and benefits; and, more importantly, the exploitation of available technologies, and the use of creative distribution channels (Freund and Weil, 1999). E Plan’s cost reduction strategy relies on the direct interaction of the client with an ATM kiosk, POS terminal, or other computer, rather than a more traditional over-the-counter transaction.

E Plan makes it simple and realistic for low-income people to access mainstream financial services. Yet it also highlights the challenges of bringing technology into an unsophisticated and largely illiterate population, as well as establishing a fee structure that makes a banking product viable for both the bank and a high proportion of extremely poor clients.

Yet in spite of the obstacles of illiteracy and extreme poverty that have limited the success of E Plan, the concept may still be instructive for U.S. banks. Only 23% of American adults are estimated to function at the lowest level of literacy, and most of those can perform basic daily tasks such as totaling a bank deposit (“The State of Literacy in America” 1992). There is also a great deal of emphasis on basic financial literacy education in this country, helping even less-educated populations conduct their basic financial business. This means that the personal assistants available at Standard Bank’s E Centres to help with ATM transactions would likely be unnecessary in the U.S. context, thereby making this model even less expensive for American banks to implement (Freund and Weil, 1999).

Moreover, ATMs and other technology for conducting financial transactions are ubiquitous in American retail services. Specifically, policy efforts to make financial services available to low-income communities (such as the service test of the Community Reinvestment Act) and to reduce government costs by disbursing benefits electronically (Electronic Benefit Transfer (EBT) and Electronic Funds Transfer (EFT)) have provided low-income people with the opportunity and necessity of navigating ATMs.

Indeed, the use of technology is as pervasive, if not more so, among industries that traditionally target the low-income and unbanked as a customer base, such as check cashers. In addition to check cashing, check cashers offer, multiple services such as wire transfers, lottery tickets, payment for utility bills and traffic citations, and sales of public transit passes, all efficiently processed by very specialized high technology equipment.

The E Plan model provides an interesting combination of access to deposit accounts with the technology-driven, high transaction volume business model of the check cashing industry in the United States. The E Centre concept, in particular, with its convenient hours, high traffic locations, and reliance on technology, is similar to check cashing, with the critical difference that it offers a direct portal into the financial services mainstream by providing deposit accounts.

By providing this combination of characteristics geared to serving both the accessibility, affordability, and financial services needs of low-income unbanked families, Standard Bank of South Africa's E Plan model may provide a useful template for transfer to the U.S. context. If Standard Bank can attract 2.7 million low-income account holders in a nation that presents such challenges as high illiteracy and multiple languages, this suggests that U.S. banks have not yet fully exploited ATMs as an effective delivery channel for our low-income unbanked population. This examination suggests it is at least worthy of exploration.

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