



Developing E-banking Capabilities in a Ghanaian Bank: Preliminary Lessons

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Abstract

There is relatively little known about electronic banking (e-banking) in developing countries, particularly in Sub-Saharan Africa. This paper addresses this knowledge drawing from the lessons a Ghanaian bank learned whilst developing its e-banking capabilities. The paper explores some of the issues that affected the key decisions that the bank made. These decisions relate to entering e-banking, e-banking channel choice, e-banking development, enticing customers, and managing channel conflict. The findings indicate that operational constraints related to customer location, the need to maintain customer satisfaction and the capabilities of the Bank's main software have been influential factors in motivating the decision to enter electronic banking services. The bank's electronic channel choice is influenced by the systemic competence of a software technology that the bank acquired and the nature of the diffusion of

information and communications technology among its clientele group. Technological and human resources capabilities together with the development of electronic transactions in the Ghanaian market influenced the e-banking development. The sophistication of the current e-banking services and the incremental approach followed in rolling out e-banking appear to influence strategies to entice customers and channel conflict issues. The paper concludes by highlighting the need for African Banks to understand customers' needs; the corresponding services to offer; the resources and partnerships required to offer it; and develop appropriate e-banking strategies that maximize value for both customers and banks.

Introduction

Information and communications technologies (ICTs) have changed the way of conducting business transactions and meeting the growing demands of customers for most organizations. The promise of ICTs in the banking sector has been seen in terms of its potential to increase customer base, reduce transaction costs, improve the quality and timeliness of response, enhance opportunities for advertising and branding, facilitate self-service and service customization, and improve customer communication and relationship (Garau, 2002). Most banks in developed and some in developing parts of the world are now offering e-banking services with various levels of sophistication. However, most African banks seem to be content with having a Web presence with only a few of them making strides towards full-fledged e-banking applications. This paper intends to explore the lessons to other African Banks from the experience of a Ghanaian Bank.

In addressing the above objective, this paper also seeks to respond to the paucity of knowledge on e-banking in Sub-Saharan Africa (SSA). Extant literature has focused on e-banking in Asian countries including Malaysia (Permul, 2005; Goi, 2005; Vijayan et al., 2005); Thailand (Rotchanakitumnuai and Speece, 2003) and India (Singh and Malhotra, 2004; Rao et al., 2005). The few research that have contributed knowledge on Sub-Saharan Africa include a study on regulating Internet banking in Nigeria (Ezeoha, 2005; 2006) and on the determinants of Internet and cell-phone banking adoption in South Africa (Brown and Molla, 2005). Sub-Saharan Africa is a region in dire need of development and probably one with the greatest need of research attention. In view of the many benefits that could accrue for SSA countries that successfully implement electronic business solutions, a study that focuses on such an under-researched part of the world is relevant and cannot be over-emphasized (Mbarika and Okoli, 2003). By exploring the key strategic decisions and the lessons from a Ghanaian Bank, this paper contributes to the cumulative knowledge of e-banking in general and in the Sub-Saharan African context in particular.

The main question this paper answers is "what factors affect e-banking decisions in a developing country bank?" The paper begins with a brief literature review on e-banking, which is followed by the case of a Ghanaian bank, and the analysis of its key strategic decisions regarding e-banking. It concludes with a set of recommendations for banks in developing countries seeking to adopt e-banking, and a call for further research in e-banking.

Electronic Banking

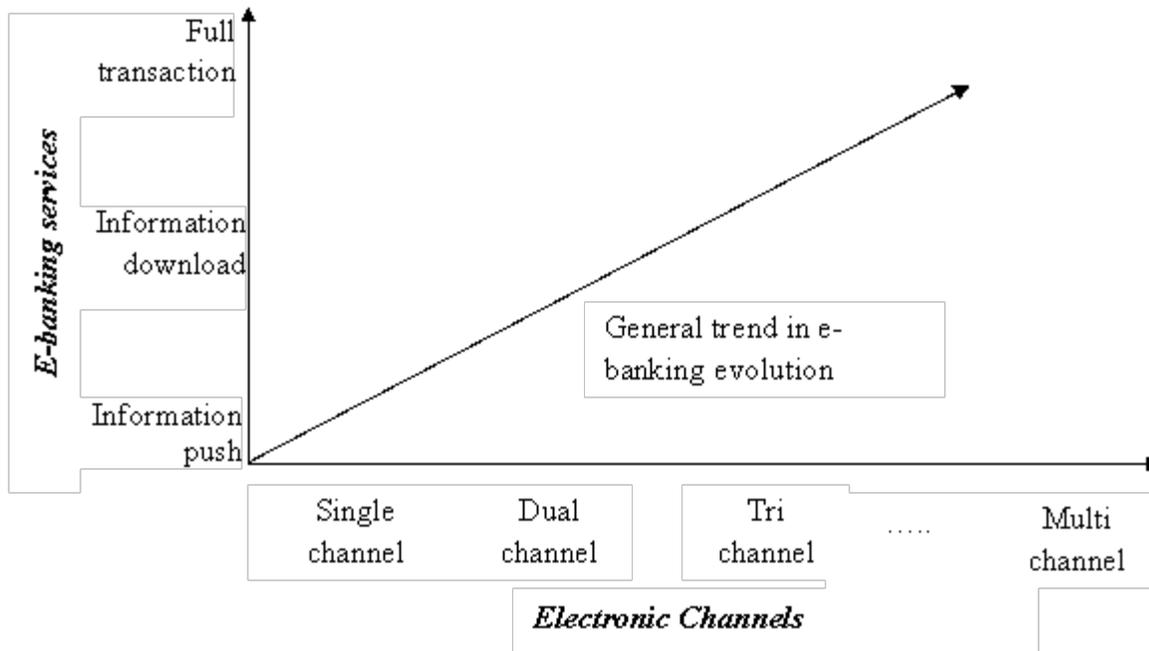
E-banking can be defined as the deployment of banking services and products over electronic and communication networks directly to customers (Singh and Malhotra, 2004). These electronic and communication networks include Automated Teller Machines (ATMs), direct dial-up connections, private and public networks, the Internet, televisions, mobile devices and telephones. Among these technologies, the increasing penetration of personal computers, relatively easier access to the Internet and particularly the wider diffusion of mobile phones has drawn the attention of most banks to e-banking. However, the continuing convergence of information, communications and media technologies is also opening up new electronic channels (such as "*pod-banking*") of delivering banking services.

Significant differences exist among banks in terms of their e-banking capabilities. These differences can take two main dimensions. The first is the use of electronic channels and the second is the

sophistication of banking services delivered over an electronic channel. Many established banks in developed countries began with ATMs and evolved through Personal Computer-banking, Telephone-banking, Internet-banking, TV-banking, and Mobile-banking. However, this evolution is not visible in recently established banks and in most of the African countries with the exception of South Africa. It appears that e-banking has dawned in Africa with Internet-banking (see Brown and Molla, 2005).

In terms e-banking services sophistication, this ranges from one way *information-push* services where customers receive information about the bank, its products and services to *information-download* where customers can download (or ask in case of telephone-banking) account information and forms to *full-transaction* services where customers can perform most banking transactions (such as transfer between accounts, bill payment, third party payment, card and loan applications, etc) electronically (see for example Diniz, 1998; Singh and Malhotra, 2004). Some banks do also provide new banking products (such as e-saving) that are only accessible electronically. Figure 1 shows the general trend in the evolution of e-banking along the dimensions of electronic channels and banking applications.

Figure 1: General Trend in E-Banking Evolution



Some of the key drivers of offering e-banking services include reducing transaction costs, increasing convenience, availability and timeliness of transactions, and improving accessibility for better fund administration (Brown and Molla, 2005). Achieving these objectives tend to contribute strategic benefits in terms of better customer relationship management, increased customer base, and improved market image.

A bank may therefore need to decide on *what* e-banking services to provide to *which* customers and *when* and *how* (channel choice) to provide those services. The seeming dominant strategy is the "click and mortar" model in which the bank combines or adds an online presence to its physical presence (UNCTAD, 2002: 134). A number of factors related to a bank's motivation, its resources and capabilities, and strategic orientation and positioning can affect the specific path a bank takes in terms of developing e-banking. In addition, other factors related to customers awareness, customer readiness, the specific nature of ICT diffusion in the wider market, and experience with electronic based transactions can also influence this path (see Jasimuddin, 2001; Awamleh et al., 2003).

In addition, issues related to customers, development choices and potential channel conflict need special attention (Janice et al., 2002). A critical assessment of these issues can enable a bank to formulate the objectives of entering e-banking services, make strategic decisions on the services to be provided and the appropriate delivery channels to deploy and manage these services efficiently. The strategic choices are deciding between information-oriented services or full transactional services across single/dual or multiple channels. Hence, from a critical assessment of the issues earlier outlined, the bank may start by providing information-oriented services over a limited number of delivery channels, and gradually advance through organizational learning to providing full transactional services across

manageable number of multiple delivery channels. Making the right strategic choice with respect to the bank's resources and capabilities is essential to achieving success in providing services and in creating a unique value proposition to customers.

We would now explore the Ghanaian bank's experience with e-banking; the key strategic decisions; the factors that influenced these decisions and the lessons learned by the bank in its e-banking initiative.

Research Methods

A case study approach was adopted for this research. Yin (1994) emphasizes the use of case study to address "why" and "how" research questions. By asking how or why, the case study approach tends to be valuable in generating knowledge or construction of a fresh perspective of the phenomena that we seek to investigate (Eisenhardt, 1989). Within this research, our objective is to explore the key strategic decisions of a bank in developing e-banking capabilities, the factors that influenced these decisions and the lessons that can be drawn from this case. The use of case study approach facilitates the evaluation of these issues of e-banking within real-life context

The bank used in this research is a Ghanaian bank, which for the sake of a confidentiality agreement would be referred to as Cofian Bank. Data was collected through interviews with the managing director, IT manager and deputy IT manager. Additional data are collected through an analysis of organization literature and artifact evaluation of a Bank's Website with staff in the IT Unit, and a demonstration of e-banking services provided by the Bank.

Cofian Bank's Background

Cofian Bank Ltd was incorporated in May 1997 and commenced business in December 1999. Its mission is to *"be a leading financial institution, in providing professional and innovative services, meeting customers' particular needs with attractive and creative solutions"* (Cofian Bank, 2006). Its brand essence is *"Your needs ?. Our Concern"* (Cofian Bank, 2006).

As a late comer to the Ghanaian financial market, Cofian Bank identified a niche by focusing on the financial needs of small and medium enterprises (SMEs) in sectors of the economy least served by its predecessors. These SMEs include furniture/cabinet manufacturers, home and office appliances manufacturers, hotel and restaurant operators, road and building contractors and civil engineering consultants. For example, in the construction industry, after the major bank supporting that industry became liquidated, Cofian Bank through collaborations with contractors associations like Ghanaian Association of Road Contractors (ASROC), is gradually emerging as the main bank for SMEs in the construction industry.

The products and services of Cofian Bank include deposits accounts, credit facilities, and personalized banking services such as concessionary rates and charges and free speedy clearance of high valued checks. Credit facilities available for customers (both private and business) include overdraft facilities and loans (with installment repayments). Other credit facilities specifically targeted at business customers or SMEs include equipment financing, suppliers guarantee scheme, and export financing. As of May 2006, the Bank has approximately 3000 registered customer accounts. The bank employs 100 people and has three branches (one in the south-central and another in the western province of Ghana) including its head office in Accra- the capital city located in south-eastern province of Ghana.

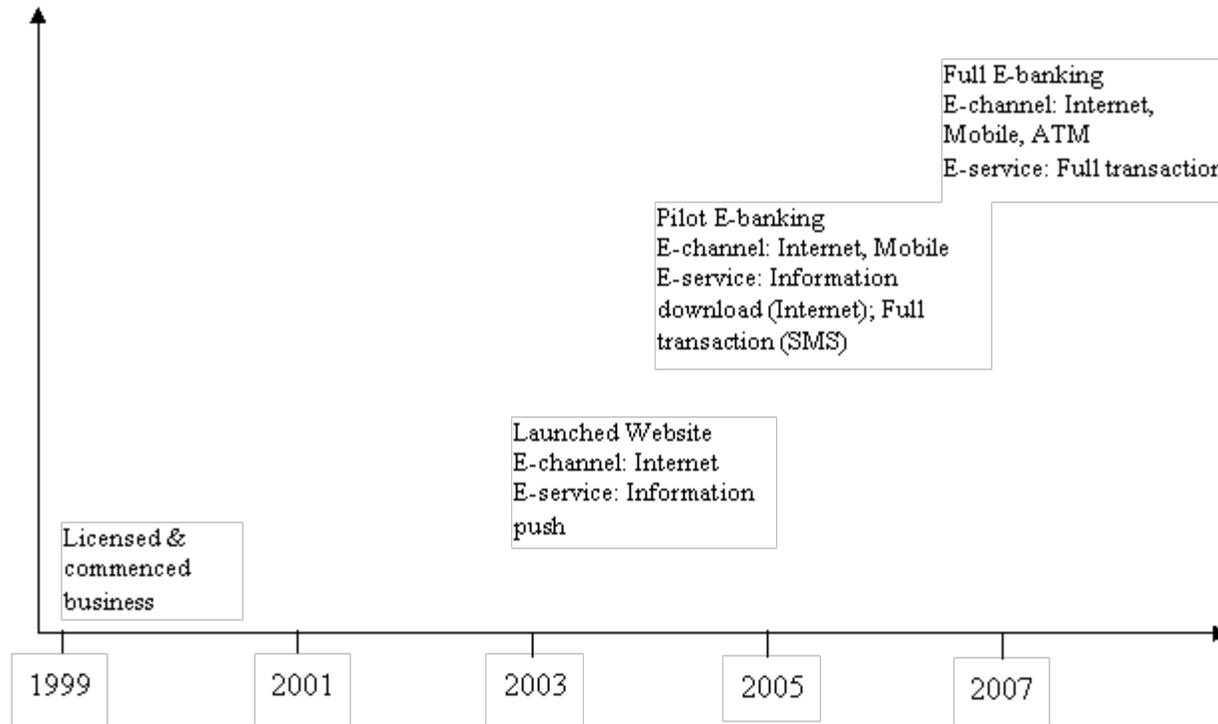
Cofian Bank's E-Banking Evolution

The Bank began its e-banking initiatives with the launch of an informational Website in 2003. As the Bank was becoming recognized and acknowledged through banking awards, the Website was aimed to enhance the image created offline and to market and inform customers and the general public of Cofian Bank's products. The design and hosting of the Website was outsourced to a local Internet Service

Provider (ISP). By 2004 the growth in the customer base within and outside the cities of the physical locations of the bank emphasized the need to provide secure access to the banking services timely and conveniently. In response to this demands, the Bank decided on extending its service provision through Internet and SMS banking. These forms of e-banking were rolled out on a pilot-basis in 2004 and are expected to be fully operational in 2007. Through the pilot stage, the Bank intends to evaluate customer needs and address feedback on services and other consumer concerns before a full scale rollout.

Services provided through both the Mobile (SMS) and Internet banking include a) checking account details; b) retrieving account balance and statement; c) check transactions - ordering check books and stopping issued checks; d) transfer funds - transferring funds from one account to another. Services that are available through the Internet but not Mobile banking include submitting requests and applications for Letters of Credit (LC) and Bank draft. Flash pay - make payments to individuals that do not have accounts with the bank; and mobile phone units/credit recharge are additional services available to SMS but not Internet banking clients. There are currently 86 (3% of total clientele) and 115 (4% of total clientele) clients registered and using SMS banking and Internet banking respectively.

Figure 2: Summary of Cofian Bank's E-banking Evolution



The Bank had its Website redesigned by another IT firm in which these new e-banking services were incorporated. The Website has information on all the products offered by the Bank including application forms for SMS and Internet Banking. There is also detailed reference information on foreign banks which the Bank corresponds with in making foreign transfers and establishing Letters of Credits. Other information includes the contact details of the Bank's auditors and the two branches in Ghana. The Bank attempts to integrate the informational content of its Website with the products and services offered offline in the physical branches. Overall though the information content of the bank's Website is very limited. For instance there is no information about the Bank's privacy and security policies. The user-guide for Internet and SMS banking users is quite poor. Neither is there a FAQ section nor a search engine nor any organizational report. Such limited content might affect the confidence of potential and existing customers about e-banking services.

Discussion: Strategic Decisions and Lessons

As mentioned earlier, a bank may decide on *what* level of services to provide to *which* customers and *when* and *how* to provide those services. In this section, we explore some of the key strategic decisions Cofian Bank took, the factors that influenced these decisions and the lessons learnt.

E-channel Choice

In providing services for a growing niche of customers, the primary focus of Cofian was to manage customer relationship effectively in order to ensure higher customer satisfaction and retention. With the lack of adequate physical branches, the Bank faced the need of providing a timely and convenient access to banking services for its growing customer base. The IT manager commented that "*we realized that there was a need, because of our limited number of branches, and we had a lot of customers up north who always have to come to Accra or Kumasi, just to check their balances and make transfers*".

The bank had the option of opening more branches and/or introducing Automated Teller Machines (ATMs) across the country in order to increase accessibility to banking services. However, opening new branches immediately was quite an investment which required more resources and time. The use of ATM is also very expensive as it involves keeping the cash inside the machines, secured physical locations and using the network infrastructure of other banks at an extra cost to Cofian Bank. Within these considerations, the Bank had to assess its present resources and operational constraints to ascertain a cost-effective means of improving access to its services. These considerations led to the decisions of rolling out Internet banking and SMS banking on a pilot basis.

Two major factors have motivated Cofian Bank's choice of Mobile phones and the Internet: the capabilities of Cofian Bank's Equinox banking software and the nature of the diffusion of ICT in Ghana in general and in Cofian Bank's clientele group in particular. Cofian Bank uses an integrated state-of-the-art Banking system ? *Equinox Banking Solution*. This system is developed by a UK based Neptune Software with global offices in Kenya, Uganda, Nigeria, South Africa and Congo and partners in Ethiopia, Nigeria, Zimbabwe and Togo (Neptune, 2006). As a result, Equinox is growing to become one of the fastest selling banking software in Africa. As of July 2006 there are 30 banks across the Sub-Saharan Africa using the system. Equinox "supports multiple delivery channels i.e. Internet, ATM, POS, Mobile, WAP, SMS, Phone to provide multiple options to bank's customers by unifying service experience across all the channels" (Neptune, 2006). Cofian Bank's investment on this modular-based system that allows the delivery of services on a "plug and play" basis was instrumental in its decision to pilot SMS and Internet banking as a response to its operational needs.

The diffusion of Internet and Mobile phones in Ghana was also another factor that informed the channel choice decision. As is common in other parts of Africa and developing nations, mobile phones are one of the fastest diffusing technologies compared to personal computer penetration, wired telephones and the Internet (see table 1). Therefore Cofian Bank has made a decision to pilot SMS-banking in addition to Internet banking. SMS banking had earlier been introduced by other banks in the country and as such some Ghanaians were fairly familiar with the use of cell phones to access bank accounts.

Lesson I: *Organizational capabilities, external constraints, customer needs and channel operation costs are critical on adding a banking channel (e or otherwise).*

Table 1: The State of ICT Diffusion in Ghana

	Ghana	Africa	World Total
Internet penetration per 100 inhabitants (2004)	1.72	2.6	13.62
Mobile Phone penetration per 100 inhabitants (2004)	7.93	9.14	27.61

Source: ITU Basic ICT Statistics (2006)

E-banking Development Approach

Cofian Bank's e-banking development approach revolves around its core banking technology choice, the pilot-led development; e-banking functionality selection and attention to human resources development.

The Bank acknowledges that its e-banking initiative is greatly influenced by its IT infrastructure driven by the Equinox Banking software. The modular nature of Equinox and its simple user-friendly interface for e-banking has been critical in the deployment of e-banking services. The modular functionality of the software also opens opportunities for the relative seamless integration of new banking products into the existing delivery channels and thereby streamlining their banking processes to reduce costs and increase value to

customer. However, any new services or other services not integrated but deemed necessary as result of the pilot stage evaluation of e-banking services would have to be developed by the vendor firm in Nigeria at a cost to the Bank. The Bank therefore works in maintaining an open business relationship with the vendor firm as it considers this partnership to be very critical and integral to all its operational activities.

Lesson II: *Making an appropriate choice for the core banking technology can help reduce the marginal cost of adding new electronic channels.*

Internet and SMS banking were the forms of advanced e-banking services rolled out on a pilot-basis by Cofian Bank. In carrying out the pilot project, invitations were sent out to selected customers to register for SMS and Internet banking. Subsequently, the application forms for these e-banking services were made available through the Bank's Website, and other customers could now register if they desire to do so. Cofian has been reluctant to widely advertise its e-banking before accumulating adequate learning and building its own confidence. The physical branches of the Bank coupled with telephone support have been used as means of providing advisory and support services to customers using these services. With Internet banking, not all the functionality of software is being currently offered by the bank. For example, the software allows customers to make utility payments online, however, since the Bank does not currently offer utility payments in its physical banking services, that functionality is not available for customers. Thus only services currently available through the traditional delivery channels and sustainable within existing resources and capabilities of the Bank are made available through the Internet and mobile phones.

In the short to medium term the Bank is not seeking to use these new delivery channels to introduce or create new banking services but to support the delivery of existing services in more timely and convenient manner. Thus, the pilot study was essential to evaluate customer needs, address feedback on services and other consumer concerns, assess existing resources and restructure the requisite banking processes before a full scale launch.

Lesson III: *Starting small is critical to developing adequate organizational learning before full scale launching.*

One of the critical challenges that Cofian Bank faced in its e-banking endeavor has been the lack of adequate human resources. Though the IT Unit is reasonably financed, the Unit is understaffed, currently run by only two people, the IT manager and the deputy IT manager. The former IT manager who had been trained on the Equinox software in Nigeria left in 2005. This has put extra strain on the activities and responsibilities of those left in the IT Unit. For example, there is still much to be done on the informational content of the Website such as providing feedback and email forms for existing and potential customers and regular updates of the Website. Though there are plans to hire additional human resources in the near future, the focus of the IT Unit is to get the Equinox software running efficiently. To achieve this, the bank relies extensively on its Equinox vendor and network infrastructure provider. The IT manager assessed the reliability on the network infrastructure provider to be 90 percent.

The bank has given due attention to the training of banking-staff working at the head office and branch levels on Equinox software and basic troubleshooting. These banking staff are supported with advice and instructions from the IT department through telephone. Another challenge is having a stable power supply for the entire network infrastructure supporting Internet banking and other banking operations. The frequent loss of power requires a large investment into alternate sources of power, surge protectors and backup systems. This added to the cost of operating and maintaining the banking network infrastructure and hosting of the Website for Internet banking services.

Lesson IV: *Investment in both high-technology and in human resources is critical to a successful e-banking development.*

Enticing Customers

Cofian Bank has not yet implemented an extensive marketing strategy to attract customers to adopt or move onto using e-banking services. The only measures in place are the e-banking invitations sent to customers, the downloadable applications forms on the Website, and the advisory services (including materials like brochures) provided through telephone and the physical branches. These measures may be convenient for the pilot stage of e-banking services provision. However, as the bank approaches its full launching of SMS and Internet banking, its biggest task and perhaps a challenge as well, is to convince customers away from physical branch-based transactions into e-banking transactions. This shift is going to be a daunting task that requires a wider level collaboration as it also involves a cultural shift from cash-based to non-cash (or limited cash) society. It is therefore important for a bank to profile its customer

groups (such as for example in terms of e-banking aficionados and non e-banking aficionados and in terms of the most preferred channel) and design a customized marketing strategy. This is critical for a successful adoption and use of e-banking services by its customers.

Lesson V: *E-banking success also depends on efforts aimed at educating customers to migrate to e-channels.*

Managing Channel Conflict

As Cofian Bank is contemplating its full-scale roll out of e-banking services, one issue that it is going to face is the potential channel conflict among the various banking channels, namely branch-based banking, SMS banking and Internet banking. However, because Cofian Bank is a new entrant to the banking sector and has not yet invested heavily in branch-based banking, the extent of this conflict will be very limited. Currently, the bank considers the Internet and mobile technologies as additional delivery channels through which its customers can be provided with the convenience and timeliness of accessing their accounts. The physical branches coupled with telephone support are used as advisory centers for customers requesting e-banking services or invited to use these services. Thus Cofian Bank is using the *high-touch* branch environment to educate and introduce customers to its *high-tech* e-banking environment. In so doing, it is reducing channel conflicts by leveraging its existing resources. Notwithstanding, management needs to be aware of the potential of channel conflict and devise an appropriate strategy to deal with such issues once the bank's e-banking clientele group has reached a critical mass in the future.

Lesson VI: *Potential channel conflicts can be managed by seeking opportunities for channel complementarities.*

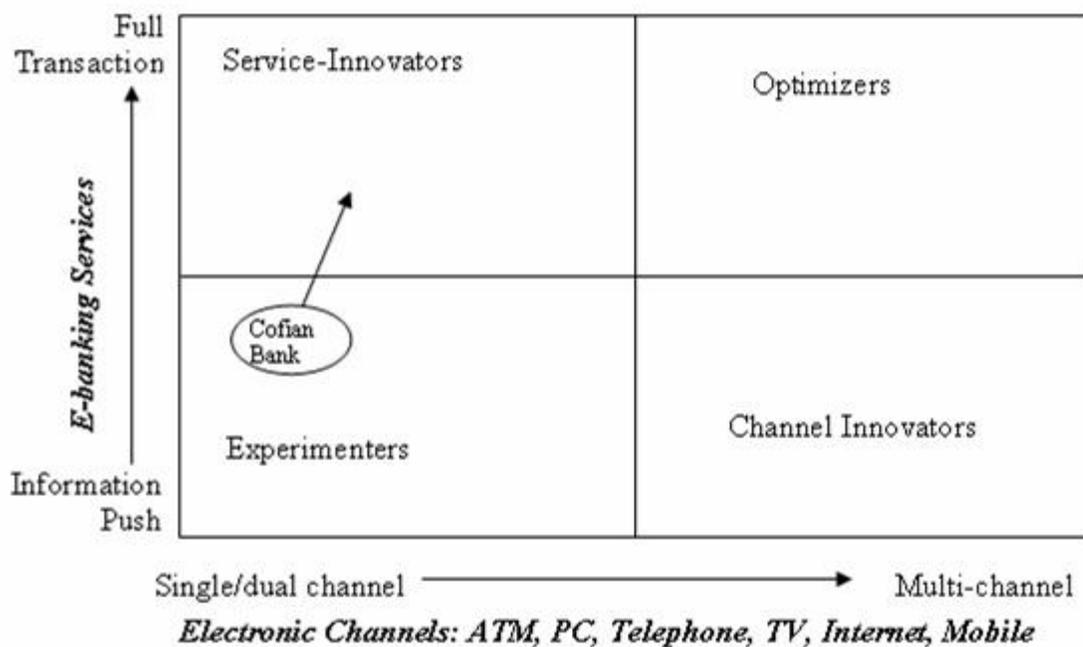
Table 2: Summary of Cofian's E-banking Strategic Decisions and Lessons

Strategic Decisions	Influencing factors	Lessons
E-channel choice	<ul style="list-style-type: none"> • Operational constraints • Capabilities of core banking system • ICT diffusion in Ghana 	Organizational capabilities, external constraints, customer needs and channel operation costs are critical on adding a banking channel (e or otherwise)
E-banking development approach	<ul style="list-style-type: none"> • Lack of internal e-banking experience • Modularity of core banking system • Vendor support and relation • Organizational learning • Synergy with branch-based services • Human resources • Electronic transactions development in Ghana 	<p>Making an appropriate choice for the core banking technology can help reduce the marginal cost of adding new electronic channels.</p> <p>Starting small is critical to developing adequate organizational learning before full scale launching</p> <p>Investment in both high-technology and in human resources is critical to a successful e-banking development</p>
Enticing customers	<ul style="list-style-type: none"> • Sophistication of e-banking services • Objective of the pilot stage. 	E-banking success also depends on efforts aimed at educating customers to migrate to e-channels.
Managing channel Conflict	<ul style="list-style-type: none"> • New player • Limited investment in traditional channel • Management goal for e-banking 	Potential channel conflicts can be managed by seeking opportunities for channel complementarities.

Conclusion

From the above discussion, it can be realized that a number of factors influenced the evolution and future intention of e-banking in Cofian Bank. The lessons from Cofian's experience show that, in adopting e-banking services, banks in developing countries are faced with strategic options between the choice of delivery channels and the level of sophistication of services provided by these delivery channels (see Figure 3). Considering electronic channels, Banks have the options of ATMs, Personal Computer-banking, Telephone-banking, Internet-banking, TV-banking, and Mobile-banking. However, the choice of a delivery channel or combination of channels depends on the level of sophistication of e-banking services the Bank intends to deliver. E-banking services can begin at the basic level ranging from *information-push* services to *information-download* to an advanced level of *full-transactional* services. By assessing their capabilities and the constraints of their context, banks in developing countries can make the strategic choice of which services to provide over an e-delivery channel they can effectively deploy and manage.

Figure 3: Strategic Options for Entering E-banking



The combination of electronic channels and services can lead to four strategic options or positions (Figure 3). We refer to these four position/options as *Experimenters*, *Channel Innovators*, *Service innovators* and *Optimizers*.

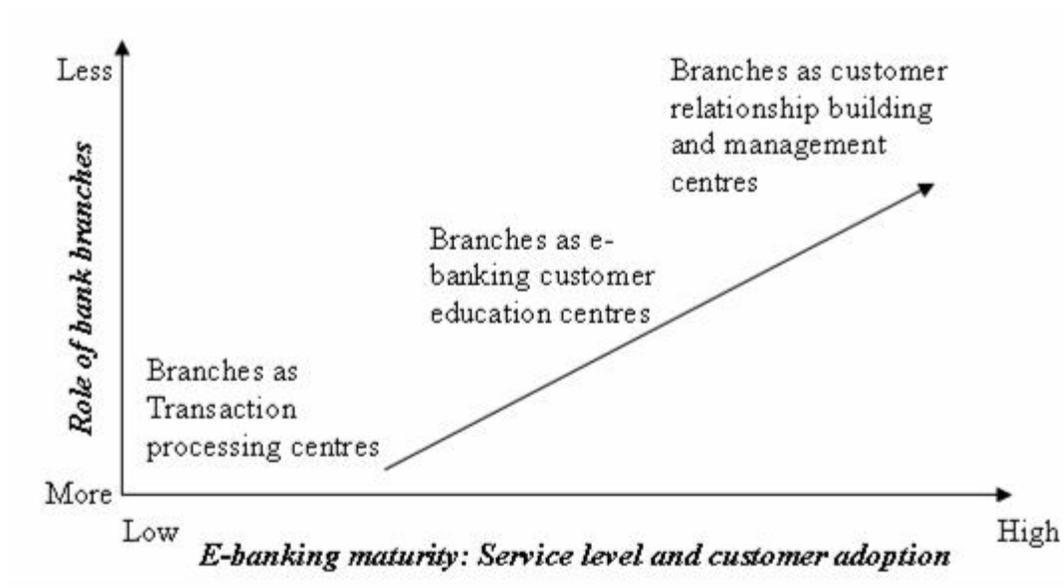
Banks in the *Experimenters* quadrant refer to those banks that provide information-push to information-download services through single or dual delivery channels. *Experimenters* may achieve the benefits of extending the marketing 'reach' of their services and attracting potential customers as the public becomes more informed. *Experimenters* can decide to grow their e-banking either by adding more channels to render the same service or by adding more services with existing channels. Banks that focus on complementarities of services delivered through multiple channels may be characterized as *Channel-Innovators*. By increasing the accessibility of services provided through multiple-channels, *Channel-Innovators* have the potential of developing a unique value proposition to their customers.

The increase in sophistication of services requires moving from basic information-oriented services to full-transactional services. *Service-Innovators* tend to specialize on one or two channels but increase the services that can be delivered over these channels. The choice of using a limited number of channels can be justified due to operational constraints (limited resources and capabilities), external constraints (such as market readiness), and value proposition to customers (core purpose). As *Service-Innovators* seek to expand the services through multiple channels (existing and new), such banks move to the optimal level becoming *Optimizers*. This position indicates banks whose processes are integrated

and services are seamlessly provided through multiple channels. Thus, banks become more visible and increase their market 'reach' by attracting new customers; improve their customer relationships; improve their reputation and create a potential competitive advantage. The challenge for banks in moving through these strategic positions is to devise a strategy for enticing customers to migrate to e-banking services and for managing potential channel conflict as customers reach a critical mass.

Though generalizations cannot be made from a single case study, the lessons learnt by Cofian Bank, exemplify that, it is firstly important to consider electronic and communication networks as parallel channels for offering banking services which needs to be integrated with existing delivery channels instead of being viewed as a separate business entity. This implies that, a bank needs to understand its clear purpose ? customer needs and the products and services to offer; identify the enablers to offering it ? resources, capabilities and partnerships; and determine appropriate delivery channels to deliver these products and services. A bank with an existing physical presence has an advantage of using its physical branches as potential advisory centers to educate and encourage customers about e-banking. These centers can also be equipped with Internet ready computers which can be used to show-case and show-case e-banking use to customers. With time and adequate education, a bank can gradually integrate other services to upgrade the level of service and thereby increase the value of e-banking to customers. This choice of integrating e-banking technologies with traditional delivery channel of branch networks can redefine the primary role of bank branches (Figure 4).

Figure 4: Redefining the Primary Role of Bank Branches



The implication to future research is the need to explore factors which influence the strategic options between the choice of e-banking delivery channels and the level of sophistication of services provided by these delivery channels. Further research with other banks would open the door for more knowledge to be contributed.

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