E-BANKING IN RURAL AREA - RECENT TREND AND DEVELOPMENT: A CASE STUDY

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ABSTRACT

This paper discusses recent trend and development of e-banking (banking though Internet) for small and community banks in rural areas through a case study. The applications of e-banking of several local banks in rural areas are investigated and examined. The research objective is to investigate the trends and level of prevalence of on-line banking (i.e., e-banking) focusing on some emerging issues and challenges. Managerial implications are discussed with suggestions for future research.

Suggested Track: Electronic Commerce

1. INTTODUCTION

The Internet has changed the operations of many businesses. With more than 300 million computers on more than 200,000 networks worldwide communicating with each other, the Internet has been becoming a powerful channel for business marketing and communication. As a result, more and more companies, especially small firms and new start-up businesses, take their business online to take full advantage of this huge potential market, as this new *virtual* marketplace allows small companies competing with business giants by *just* having a better web presentation of their products. New entrepreneurs and traditional mid-sized businesses were the pioneers exploring on the forefront of e-commerce. Additionally, many companies are enthused about reaching potential customers online as it is low in cost but wider in reaching. Under the same wave, customers can enjoy a wider choice of products, more competitive prices, and being able to buy their favorite items from the sellers located thousands miles away. It provides communication between consumers and companies and through *electronic data interchange* (EDI), buyers and sellers can exchange standard business transactions such as invoices or purchase orders with remarkably easy.

The banking industry has followed this Internet application trend in recent years, and sometimes called "*e-banking*" referring to all banking transactions now completing through Internet applications. Some key issues addressed in the recent literature about the e-banking include: customer acceptance and satisfaction, services rendered, value added for both consumers and banks, privacy concerns, profitability, operational risks, and competition from non-banking institutions. Smaller community banks, among others, are more interested in the application of e-banking to gain certain competitive edges over their larger counterparts.

In addition to previous electronic banking delivery systems - automated teller machine (ATMs) and telephone transaction processing centers, online banking provides banks a new and more efficient electronic delivery tool. While ATMs were first introduced in early 1980s and initially an attempt to reduce operating costs, telephone call centers were developed in the 1990s to handle simple transactions and provide added customer services from a remote location where labor costs were relatively low but work ethics were relatively high. E-banking has been viewed as an advanced upgrading from previous electronic delivery systems to open many new business opportunities for the banking industry. A survey revealed that at that time there was a planned $2 billion new investment in the new electronic banking technology within the banking industry (Radeki, etc. 1997). Among surveyed banks at the time, about two third (66%) planned to invest in telephone banking technology, and the remaining one third (34%) already targeted e-banking options.

There have been several major challenges and issues faced to the e-banking growth and the e-business in general. One major obstacle addressed most is the security concern. Customers are certainly concerned of giving their bank account number online or paying an invoice through Internet. Another issue challenged e-business (including e-banking) is the quality of delivery service - including both delivery speed (i.e., short advance time required in ordering) and delivery reliability (i.e., delivery of items/services on time). Limited payment options available to online customers are also being complained. Additionally, customers (who are non-computer "*genius*" like most senior citizens) have been reluctant in their choice of doing business (including banking transactions) online and worried their unfamiliarity about the computer placing them in a disadvantageous position.

It has been predicted that to be successful in long-term, the operations of an e-business must compete differently from those traditional business counterparts. That is, the strategic positioning decision of an e-banking operations must establish its own unique competitive priorities and "*order winning criteria*"- to obtain competitive advantages (over its traditional business competitors as well as its e-banking counterparts) and sustain its customers on a regular basis. Currently there are two different approaches in e-banking: a separate (from its traditional office) Internet e-bank with all transactions being transacted online, or to add an online banking section to the services already being offered by its major bank office. Both approaches have advantages and issues to be addressed in practice.

This research is an attempt to address some key strategic issues of e-banking - especially from the perspective of small and community banking institutions through a case study – the e-banking operations of three local banks in Georgia are investigated and examined.

2. The Banking Industry and the Trend in E-Banking

Banking has never been more important to our society than it is today. The American economic system would fail overnight without a competent and efficient banking system. The advance of communication and computer technology and the availability of the Internet have made it possible that one can do most banking transactions from a remote location even without stepping into a physical financial structure - i.e., the emerging of e-banking (the e-business application in the banking industry). E-banking has been viewed as a revolution progress in the banking industry. For instance, 20 years ago, 70% of all consumer financial transactions went through a bank office with brick and mortar structures. Today, less than 30% of the same consumer financial transactions run through a branch office or the lobby of a main bank office.

As a result, the banks, as an industry, are formulating strategic plans to fight back in winning their customers. The industry believes that by adopting new technology, the banks will be able to improve customer service level and tie their customers closer to the bank. Meanwhile, the banking industry has been also looking for new methods to expand its customer base and to counteract the aggressive marketing effort of those non-traditional banking entities. Through the competition, many banks quickly realized that there are a momentous number of customers like to do banking electronically. As such, many banks, based on their existing 24-hour telephone banking systems, have developed and implemented several important e-banking applications so that their customers now are able to pay bills, transfer money among accounts, check account history, download statement information, and computerize their checkbooks online all at easy and around the clock

Facing extremely intensive competition from non-banking sector, the banking industry has adopted a more aggressive approach to fight competitors for the financial services market share. For example, a number of banks, especially some community banks, decided to provide Internet access to their customers and becoming the dominant provider of local Internet connection services for the local community, thus hoping to *lock* in customers to their financial institution. Some larger banks are stepping ahead to install advanced software to process all consumer loan applications on-line, a new paperless e-loan process. Customers will receive hard copies of all documents signed for their personal records. And interestingly, the signatures will be created from images collected by special electronic signatures (e-signature), which has been available and legal since 2000.

As an integral part of the e-business, the e-banking has been growing at a rapid pace. It is believed that the e-banking will help banks to cut costs, increase revenue, and become more

convenient for customers. Due to different motivational factors, however, banks have placed different investments in their e-banking efforts. It is reported that only about 20% of national banks offered e-banking options in 1999. While larger and national banks are leading in the e-banking forefront, the same can not be said about smaller and community banks - only about 7% of smaller community banks were reported to explore the e-banking operations in the same year. This has been attributed to the fact that those smaller community banks were in general *lack* in both financial and technological resources in their e-banking efforts. While more variety of e-banking services has been projected, over half of the growth in e-banking services was predicted from smaller community banks.

Currently, the e-banking operations focus mainly on business lending and credit card businesses, other than rely on deposits for funding. For smaller community banks, this is consistent with recent reports that smaller banks are concerned about traditional sources of funding and view the addition of e-banking as a way to offer products that reduce their dependence on core deposits. E-banking options also generate a higher proportion of their income from nontraditional activities - over 50% more of their profits from non-interest income comparing to banks without e-banking operations. As a result, these banks have adopted a business strategy of using the e-banking to target business customers and more wealthy consumers for not only in loans but other fee income services.

The application of e-banking has also been proven as an effective way to reduce the costs of operation for the financial institutions. For instance, e-banking services will allow banks to reduce expenditures on physical structures. Larger banks that maintain expensive branch networks tend to have the greatest incentive to adopt e-banking services. In comparison, smaller banks have higher start up costs and tend to have a high initial technological cost in developing

e-banking services. In fact, most small banks were motivated to develop e-banking services for potential future cost savings and gaining a competitive edge in the competition. That is, among 85% banks nationwide offering e-banking, the biggest growth has been coming from small and local community banks. Another recent trend revealed is that about 93% of consumer deposits were served by the banks with e-banking services. That is, about 9 out of 10 banking industry customers today have access to e-banking services. Under the pressure of competition, many banks are not only increasing their customers' online access but also expanding their e-banking services.

Another important benefit from e-banking is a more effective information collection and management. The Internet is an extremely efficient channel for banks to collect the information from customers and manage information flow to meet a wide-range financial needs of individuals and businesses. In fact, offering e-banking services is not only allow small banks to enter markets and reach customers that were previously off limits to them, but also to provide a considerable economies of scale in record storage and data processing - which were only available to large banks (which have the necessary equipment).

Currently it is believed in general in the banking industry that a combination of a low percentage of customers using e-banking services on a consistent basis and a relatively low start-up cost in developing e-banking services - will make the impact of e-banking (positive or negative) quite limited on the bottom line of most financial institutions. The exception to this statement, of course, can be heard among some larger banks that have a large share of current e-banking market. Many small banks that offer e-banking services were unprofitable in the book, as those banks had to absorb all related costs of developing e-banking services during the first few years on their annual balance sheets. On another hand, e-banking services could be highly

demanded and desirable to accommodate the sudden, rapid growth that has occurred in other information-intensive industries such as travel and securities brokerage.

The e-banking sector has been growing to reach a competitive level. Some new e-banking services have gained a growing popularity such as e-payments and statement aggregation. It is predicted that the service of *statement aggregation* will become a critical e-banking feature in the future. This service is used to drive new business, increase profitable cross selling opportunities, and initiate improved service quality and quickly becoming popular among bank customers. The monthly online credit application – another key e-banking service - has grown from none in 1995 to 40,000 applications per month in 2003. E-banking has become a serious competitor to traditional banks, especially in large urban areas. With the advantages of quick and easy application process, less and less technical glitches, more funding options for banking customers, and low minimum opening deposit requirement, traditional banks nowadays have to compete more relying on their conventional face-to-face services, first-name calling friendly environment, and trust and secure feeling of transacting business with a person in a financial institution.

There are several important decisions a bank must make in the development of e-banking services. On the top of its priority list is to address the bank's privacy policy and procedures – which will be scrutinized by the related governmental regulatory bodies. Several successful emerging information technology and security systems are reported now available in the marketplace. Those reported systems are able to protect customer privacy concerns and will remove one of the key concerns by current e-banking customers. In short, the development of a comprehensive privacy policy and security system must be the first step in the implementation of e-banking services. Second on the priority list should then be focused on e-banking disclosure

policies to fully define the bank's responsibilities and liabilities and also those of its customers regarding the e-banking service. The disclosure policy may differ from bank to bank but must share one important element regarding privacy. For instance, it should clearly speak out that it is the customer's responsibility to maintain the confidentiality of ones' password, and to notify the bank as soon as possible in the event the password has been compromised. Next decision should consider the package of e-banking services to be offered to its customers, ranging from a standard package (including funds transfer and balance inquiries), or a more complex service offerings (including bond purchases, ACH file transfers, wire transfers, and e- payments), and even a whole package (including Federal tax payments, cash orders, bill payment, direct payment, new account enrollments, and commercial cash management). There could be a huge cost savings from those e-banking services. For example, assuming a consumer would need to write 10 to 15 checks per month on average. If e-payment service is used by 95 millions households in the U. S., American consumers could save more than $5.6 billion annually in postage cost only.

Finally, the development of e-banking service has encouraged the adoption of a decentralized approach to give banks more needed flexibility to distribute Internet access to a much larger number of employees and potential customers. The decentralization approach is motivated by the fact that a decentralized system could respond to customers' e-requests in a more timely fashion. Currently, some banks have assigned an employee with the title of e-banking branch manager – who will proactively manage the e-banking delivery to reduce response time to customers' e-requests. In fact, the most criticized aspect of the current e-banking service is the slow response to customers' e-requests. Customers do not like to be

ignored. Under today's highly competitive market, banks must respond to customers' requests in their e-banking services more promptly and forcefully.

In the following sections, the e-banking operations of three local community banks are described and summarized.

3. E-Banking at the Bank of Gary, Georgia

The Bank of Gray is located in Gray, Georgia. The bank is the second oldest financial institution in the community - with a total population of approximately 26,000. The major banking products offered to their customers include: a wide range of checking accounts, other traditional savings accounts, money market accounts, and other interest bearing accounts such as: the certificate of deposit accounts, individual retirement accounts, and other trust services. The *bread and butter* of the bank, however, has been its tremendous growth in customer loans. The bank has a very personal approach to lending money within their community, like offering a loan from $100 up to $1,000,000 with proper collateral to secure the loan request.

The Bank of Gray defines the bank's overall mission as to remain an independent community bank serving the financial needs of its local market. The bank is the market leader for its community and has been sustaining over 90% of the estimated local market share since 1996. However, the recent competition has been coming from several surrounding local banks that have moved into this community to compete for market share. The two major competitors, for example, the Exchange Bank (headquartered in Milledgeville, Georgia) and Magnolia State Bank (headquartered in Eastman, Georgia) had *invaded* into this community in 1998, and since have gained over 15% market share from the Bank of Gray. The Bank of Gray strategically countered the competition by building a new $2 millions state of the art banking facility in 1999 with online banking in their plan. There are also outside competitors as well as the community-

wide competition for financial services. For instance, many large financial brokerage firms and insurance companies are now offering individual retirement accounts through distance. The bank has grown in asset value from $65 million in 1993 up to $170 million in 2000. The loan portfolio has gained dramatically during the same period of time - from $31 million in 1993 up to $110 million in 2001. The growth has come from the influx of business in the land development and real estate mortgage market for the local community.

The Bank of Gray was also the community leader in regard to utilize the Internet for its customers. For instance, the bank was the first one to advertise its home page on the Internet, and then signed up local merchants to join them in putting together Internet shopping services. The Internet has been a great source of advertisement for banks to help their local community merchants as well as to promote their own e-banking services of a wide range to its customers. The bank is recognized as the leader in promoting e-business across a wide range of industries. One key e-banking service currently offered by the banks of Gary is that new customers now can apply for opening a new bank account online - 24 hours a day electronically with necessary e-signatures. This e-banking service has been able to free up more personnel to attend to other duties and more emerging service requests that require face-to-face attentions. The new account information will be eventually uploaded electronically to the host mainframe computer and then downloaded for verification and conformation. The customer has an option to retain paper copies for their personal records, while the bank is no longer retaining hard copies to reduce its operating costs. At the time of this research project, the Bank has been considering to develop e-banking service of loan application process, so as to maintain its market leading position within the local community.

The Bank of Gray has invested in the technology advancement since later 1990s to prepare the bank for the Internet era. Today, the bank provides all of its 30 full time employees with a personal computer setting up at each workstation - all connected via Internet through a local area network. The computer networks and online capability are then used for processing new accounts, consumer loan origination, regulatory compliance disclosures, word processing, spreadsheets, asset/liability management, liquidity management, telemarketing, and customer information files. From the beginning, a major concern regarding offering e-banking service was the security system. The bank currently uses a three-tiered security system to ensure safety. The first stage uses encryption. The second tier is designed to prevent unauthorized access from both inside and outside of the bank. The third level is an individual vault system. A computer hacker would have to penetrate each account, one by one, starting from scratch each time if the goal is to *steal* money from more than one account. The bank also assures their customers if the security system is breached the bank will refund the lost money to their customers rather than face the public relations problem of having an unsafe security system.

The Bank of Gray started its e-banking development by setting up an informational web site to gain an Internet presence and examined the e- banking programs of other leading institutions. Based upon industry experiences, the bank then addressed the issue of privacy of customer information to ensure strict privacy protection of customers. The bank refrains from revealing customer account information to third parties unless (1) the information is necessary to complete a transaction initiated by the customer, (2) the release is required by law, or (3) the customer requested that the information be released. The bank has decided to employ a wide selection service strategy with regard to its e-banking operations. Towards this end, the bank has adopted automation for many of its financial services, such as: automated teller machines,

electronic funds transfer systems, MICR coding on negotiable instruments, optical scanners, and computerized bank statements. Currently, the bank (like most small local banks) is only able to offer three basic e-banking services: balance inquiry, e-billing payment, and e-transfer between different accounts. In contrast, many larger banks tend to offer a premium e-banking service package - consisting of all three online services above plus other advanced online services including: online credit applications, new account online setup, online brokerage services, e-billing, e-insurance package, cash management, and fiduciary services. It has been suggested that the bank should move in this direction once their clientele becomes more comfortable with the e-banking services. Another e-banking service under consideration is to offer cash management services to their customers to preserve their best commercial customers.

The Bank of Gray started offering e-banking services in July 2000 and currently (July 2004) has 3000 e-banking customers (a town with a total population of 5,000 and 20,000 in the surrounding area). A monthly activity report for January 2004 showed some interesting data. The banks' Website had 1048 successful logins for the month with 248 failed attempts to sign - which generated 49 account lockouts. In this month, the bank had 1,024 hits to view account summary information; 833 hits to view checking account, 27 hits to view savings account, 22 hits to access certificate of deposit account, and only 8 times to access loan information. In addition, there were 1,023 hits to view checking account history, 262 hits to view banking new service messages on the web site, 34 transactions for funds transfers, 12 times to access savings account history, and 67 times for pin number change requests. Meanwhile, the e-banking branch manager had to perform 2 account lockouts during the month due to unauthorized usage on the web site. For comparison purposes, a later 3-month period summary revealed a remarkable

increase in almost every e-banking service item (mentioned above), ranging from 50% increase in online loan application to a 300% increase in checking account inquiry.

The online loan and trading has been receiving some bad press recently. The current e-loan process is not well received by many consumers – as it is uncomfortable, time consuming, and not open for a better loan application. The Bank of Gray has learned that by helping customers research loan rates and applying for loan with other lenders, the bank could maintain their primary relationship with these satisfied customers. The level of service displayed by helping customers in this matter could then result in more loyal customers. In addition, the bank has also realized the importance to have a better online loan application service in the competition. For instance, the bank is fully aware that there are so called e-banks (i.e., Internet-oriented banks) that will close six-figure home equity loans without the customer leaving their homes. Those e-banks hire a freelance notary to drive to the customer's house on a weekend to close the loan. Those e-banks will clearly become a new threat to the traditional brick and mortar small community banks in the future competition. In this regard, the bank decides to focus on staying in tune with the new technological developments. A good example is a growing popularity of new e-banking services such as e- payments and statement aggregation – that has been recognized as a critical e-banking feature in the future. As these new e-banking service has been used to drive new business, increase profitable cross selling opportunities, and initiate improved service quality by reducing servicing costs. The bank has decided to start a value-added account aggregation service soon to stay on the cutting edge of e-banking technology.

In terms of aligning the responsibilities of e-banking services, the Bank of Gray (as a small bank) decided to take a centralized approach for control purposes (while most large banks use a centralized approach). Under such a centralized approach, same bank employees will be

responsible for performing majority of related e-banking services including: reviewing and responding to secure messages, providing direct customer support and confirming that the customer balance and transaction file update to Internet banking is performed successfully, establishing new customers and accounts, and providing centralized support for the bank's use of all related Internet product.

The Bank of Gray understands the importance of quality in the e-banking service competition. As a successful business will accurately reach its customers' expectation, the bank developed a series of quality improvement programs for its e-banking branch. For example, a critical criterion for quality service in the e-banking business is its response time to customers' requests (e-requests via e-mail system). The bank has properly trained all employees to promptly handle customers' requests in a timely fashion. The bank uses its job enrichment and job enlargement programs to counteract long customer service response time. With its operations strategy - as a cost leader in the e-banking industry while offering high quality products and services, the Bank of Gray is confident that the bank will succeed in its e-banking business.

4. E-Banking at the Milledgeville Century Bank & Trust, Georgia

Century Bank & Trust (CB&T) is a privately owned and controlled bank located in Milledgeville, Georgia. It is a local bank consisting of only two locations - the main office in downtown and the branch on the north side of town. Its major services offered are various types of checking accounts, savings accounts, personal and commercial lending, credit cards, and a full-service Trust and Investment Department. It serves primarily the Milledgeville and Lake Sinclair area, but has customers across Central Georgia.

CB&T targets individual customers as well as business customers in an attempt to gain more of the market share in local market and increase shareholder wealth. The company's main competitive advantage is its relatively small size and personal atmosphere. Their overall strategy consists of gaining and maintaining customers through devoted, one-on-one attention and providing a friendly "hometown" business and working environment conducive to customer comfort and ease. Customers interact constantly and face-to-face with bank employees to air suggestions and take care of their banking needs. Furthermore, another very significant advantage is the offering of investment opportunities and trust accounts. This allows customers to handle all of their banking and investment needs in one location and develop personal relationships with the individuals who are helping them plan for the future. Century's major competition in the marketplace comes from other local banks in the area, along with a few national banks. Those local banks include: Exchange Bank, Branch Banking & Trust (BB&T), Robins Federal Credit Union, and Magnolia State Bank. They all offer very similar products and provide the same basic services.

CB&T began to react to the sweeping e-business trend in the fall of 1998. They realized the necessity of offering some sort of e-banking in order to compete with others in the industry. Furthermore, when its customers were beginning to notice other local banks that offered e-banking services, CB&T realized that it had to act quickly to stay ahead of the local competition. The bank currently is basically taking a "follower strategy" in the market and playing "catch-up" in the e-banking development. The bank first established an e-banking task force which studied the market as well as their competitors. After determining the basic needs for their e-banking system, other than developing in-house, the bank outsourced its website design for a best online solution to an outside company - known as *Digital Insight* (www.digitalinsight.com). That is,

the e-banking system of CB&T was designed, created, and operated from the outside by *Digital Insight*. In comparison to an in-house developed e-banking system, the outsourced approach empowers financial institutions (like CB&T bank) to provide best e-banking solutions to their retail and commercial customers via more a cost-effective, outsourced service." More specifically, for CB&T bank, an outside service bureau (*Digital Insight*) in fact operates and maintains its e-banking system from outside locations (not the client's), handles all facets of the system, and responds to client requests to fix any running errors that may occur. This approach allowed CB&T to concentrate on their core competencies in their daily operations while at the same time moving into the new e-banking era smoothly.

CB&T currently only offer some basic e-banking services to customers: (1) *Providing service information online* - the bank placed the information and rates about all of their services online to all customers and non-customers alike who can access the Internet. Additionally, it gives suggestions on which type and age of consumer each account is normally best suited for. Such an aggressive online promotional information display is designed to target potential customers to "shop" for the type of accounts and services which best suit their banking and finance needs. (2) *Providing online account access* - the bank allows both business and personal customers to access their accounts on-line. That is, customers can review online their account balances, check recent and past activity, initiate balance transfers between accounts, and print out up-to-date statements. Also, customers are able to download account information directly to their Quicken (or other Microsoft Money financial) software so that they can incorporate the information in their budgeting and money-management processes – which has been credited by many of its business customers for more efficient and cost-effective services. (3) *Providing e-payment service* – a very popular and rapidly growing e-banking service, also

called as “on-line bill payment.” This service, for a small monthly fee, allows customers to set-up automatic payments to be drafted out of their CB&T accounts at agreed upon days of the month. With this, customers can have recurring bills directly taken out of their account electronically. For example, a car payment or insurance payment may be drafted out on the 25th of every month. This saves the customer time and money otherwise spent on envelopes, postage, and checks. Also, it gives customers piece of mind in knowing their bills will be paid on time and directly, never worrying about losing the bill in the mail. One requirement for this e-banking service is that customers must keep their balance high enough to make the payments. Using it as a competitive edge, this service is offered free to employees, senior customers, and customers with the VIP Golden Web account. (4) P*roviding other online banking services* –such as online application for credit cards, loans, and online transactions for buying CD's or dealing with IRA accounts. Those services allow customers to apply for a CB&T credit card or a loan without having to physically come into the bank, learning current interest rates and available options from home, starting normally a tedious lending and setup processes to begin immediately, and even dealing with all those processes while out-of-town.

Another gain from the e-banking system is the reduced lead time in most banking transactions. For example, traditionally customers deposit money and cash checks off their accounts, these deposits (checks) are sent to the Federal Reserve for verification and notation and then sent back to the bank it was drawn off of and accepted or rejected as non-sufficient funds (NSF). Without e-banking system, such a check will run through all related offices in at least few days (if not weeks) to see if it can clear. With e-banking system today, customers can expect that the whole process will be shortened to only a day or two (if not a few hours).

The e-banking system also brings new issues and challenges, such the imbalance between the capacity and workload. For instance, CB&T currently has about 750 customers who signed up for the e-banking services with about 1,200 total accounts. Among them, about 60 are signed up for e-payment service, up to 15% of the total checking accounts of the bank. While the online services save customers time and effort, the bank discovered that offering e-banking services is very labor intensive on the administrative end. That is, though the inputs from traditional teller services are cut in a big way, the transactions must still be processed right along from the teller stations. Another challenge is about how to keep its traditional high quality services into its new e-banking system. Being in the service industry forces the bank to compete using higher quality and greater levels of customer service. The quality of bank services is highly dependent on the training and actions of each employee, due to the fact that most banking services offered from bank to bank are very similar, with only the customer service and employees differentiating them. As knowledgeable employees with accurate transaction skills are the key to the success of the bank, CB&T has worked closely with its outsourced on-line service provider to provide high quality e-banking services through its Website. The bank has addressed the quality of its e-banking services in terms of user-friendliness, available links, speed, and types of information and services offered. Meanwhile, the bank has constantly compared its e-banking services with its competitors to stay up with the advanced technology. For this purpose, the bank has contracted its online service provider to report some key e-banking performance information on a monthly basis, such as: the average number of customer visits per day, the average number of visits by page viewed, the average visit time duration, specific pages viewed by day, and the total number of successful transactions completed via internet.

As in many local banks, key concerns of CB&T for providing e-banking services are customers' information security and privacy, as well as related government regulations. During an e-banking process, very sensitive information, such as bank account numbers and credit card numbers are traveling through the Internet. Given the importance of such information and potential consequences of misuse, banks must provide the highest level of security possible for its e-banking customers. In this effort, CB&T currently asks its online service provider (*Digital Insight*) to employ all available and necessary measures to ensure customers' safety. In addition to those unique customer passwords required to access individual account information, the bank also embraces and promotes highly the e-banking tips provided by the Federal Deposit Insurance Corporation (FDIC) to its customers (www.fdic.gov). To protect consumers, there has been steady stream of government regulations regarding e-banking over the last few years. For instance, the Office of the Comptroller of the Currency has issued various mandates on what and how e-banking operations can be run, with the objective of attempting to form uniform standards of e-banking operations for all states. Because when a bank is offering its banking service via Internet, its customers may come from anywhere across the country. As such, the possible application of multiple state standards to a banking transaction conducted via the Internet *may* become an expected obstacle to banks engaging in permissible banking services through Internet across the nation or even a few surrounding states. CB&T has been in full compliance with all regulations regarding e-banking services in place today.

Currently, providing e-banking services has not been viewed as a really high priority to the management of CB&T, as the bank believes that its e-banking now is costing more than savings, so far has not significantly contributed to the banks success in the marketplace. On another hand, while the bank has been satisfied with its current e-banking services, suggestions

and recommendations have been made to improve and streamline the system: (1) the bank has asked for its main page to be updated more timely and formatted in a manner of more user friendly; (2) a more persuasive promotion of the e-banking should be conducted more regularly; (3) a company-wide training and customer service for e-banking initiatives should be implemented; (4) the bank should integrate more services into e-banking operations and search the areas where e-banking operations could further cut its daily operating cost, (5) the bank should provide more useful links on its e-banking website to its business partners; (6) the large "dead space" of its current website should be used to add more eye-catching pictures to make it more appealing to consumers surfing the net; and (7) finally, the bank should consider to take over its website from its current online service provider and running it "in-house", so that the bank could have total control of its website and be able to make necessary changes more quickly and effectively.

5. E-Banking at Robins Federal Credit Union – Georgia

In 1954, thirteen Robins Air Force Base civilian and military personnel formed Robins Federal Credit Union (RFCU). Today it is one of the largest credit unions in the State of Georgia, with over $619 million in assets and over 115,000 members. RFCU is a not-for-profit financial institution that is 100% owned by its members and providing services to individuals in 13 surrounding counties. The banking strategy of RFCU is to offer a return to its members in the form of higher dividend, lower loan rates and a full line of quality low cost services including: checking and savings accounts, certificates of deposits, individual retirement accounts, club accounts, loans for mortgages, vehicles, recreational and equity lines, as well as several different types of Visa charge cards, as well as a range of investment services for educational or

retirement purposes. RFCU has two major competitors: the small hometown community banks and the larger city banks. The business strategy of RFCU is to move customer's along the new technology trend (such as online banking services) to retain customers and create a proposition that stimulates growth within an established customer base and attracts new customers.

RFCU started offering e-banking services with online account application, then followed by providing its online banking service package, called <CU@Home> available to all members free of charge. Currently its e-banking service package includes: online access to current balances on all loans and all checking and savings accounts, downloading quicken files for easier reconciling of monthly statements, online viewing recent banking activity, online inquiry year to date tax information for IRA's, dividend and interest earnings, online transferring funds between accounts, as well as the Web Bill Pay service - an online bill payment service that allows members the convenience of paying bills directly through the Internet.

While large banks in the U.S. had been estimated to spend almost 25% of their expenditures on Information Technology, including e-banking services. Smaller community banks, such as RFCU, also had realized that they must move from the question of "Should we go online?" to "How should we go online?" One answer is coming from using the integrated software systems that make a wide variety of services more economical and secure than ever before. For example, one technique is online check imaging - where digital photos of customers' canceled checks are available via the Web in lieu of mailing the images or actual processed checks. Another new development is the Bill Pay service – even currently only 5% of RFCU customers utilize this service, the bank is predicting that this online bill paying service will be growing to reach 12 % within 5 years. Finally, to enhance the security of online banking services, RFCU has adopted new advanced IT technology such as secure firewalls, 128-bit

encryption schemes, and digital certificates that accurately identify authorized users, in order to compete in the Middle Georgia region. Those new e-banking services have helped the bank to reduce many old fashioned paperwork and attracting many new customers.

Credit unions, like Robins Federal Credit Union (RFCU), were slower at the beginning than large competitors to embrace the Internet and e-banking applications. Lately these smaller institutions had joined in this direction with strategies for promoting the e-banking services very innovative and unconventional. For example, as credit unions focus on member satisfaction, RFCU has realized that e-banking services can increase customer satisfaction, boost retention, and improve profits.

In 2002, a survey by the American Banker Gallup indicated that while e-banking has moved beyond the early users – still 52% (of the respondents with a personal computer at home) said they were not interested in using e-banking services mainly due to security concerns. In this regard, RFCU has been working on those customer privacy and security issues to ensure its members and attracting new customers. It has been expected that the number of U.S. households that are either e-banking or paying bills online will increase form 20% in 2001 to 33% in 2005. RFCU is looking forward to the increase in e-banking customers. Workshops have been held to familiarize branch employees with the updated e-banking services so that the bank is better positioned to retain customers and add new ones.

Like in traditional banking, the quality of e-banking services are measured by the following criteria: (a) speed and ease of enrolling for on-line services; (b) ease in understanding disclosure information, rules, and regulations; (c) user-friendliness of the main Web page; and (d) timeliness in receiving confirmations of bills paid, loans paid, or transfer of money between accounts. RFCU currently offers a full range of e-banking services for its customers and those

services appear to be of adequate quality in all the criteria above. Additionally, the bank offers assurances of high-level security measures, such as a Secure Sockets Layer that provides advanced encryption techniques. This means that information submitted is scrambled or encrypted and is virtually impossible to decode. RFCU also uses a digital certificate key to secure any data sent between its server and the customers' browsers as well as a sophisticated firewall that isolates all internal data from the Internet.

Today, banks compete with brokerage firms, insurance companies, and mutual funds firms for assets. Through their Websites, banks now offer these services either directly or electronically (indirectly), thus increased customer retention. In our highly mobile society, people frequently move for job opportunities and are now able to continue utilizing their "old" banks literally thousands of miles away from a new location. This is a "win-win" situation for both parties as business is retained and customers are saved the time and effort involved in searching a new bank and enrolling in its services. For instance, for RFCU, the productivity also increased as the bank extended its geographic reach through e-banking services, thereby spreading its fixed costs over an increased customer base.

The operations of e-banking also allow companies to capture transaction and customer information more readily. As such, the bank can identify which customers are most profitable and to target special offerings to maintain their loyalty. For RFCU, its statistical analysis revealed that its online customers are on average making more transactions and have higher combined average household incomes, indicating that the most attractive and profitable customers will be those more likely to demand e-banking services in the future. According to the American Banking Association, the average cost for a full-service paper transaction is $1.07 compared to $0.54 for a telephone transaction, $0.27 for an Automatic Teller Machine

transaction, and only $0.01 for every Internet transaction. The savings associated with Internet transactions are even greater due to the small incremental costs of servicing additional customers compared to the large costs associated with opening a new branch. However, at current time, most banks (including RFCU) have not materialized those benefits of transaction cost reduction due to the fact that only a small percentage of their customers using their e-banking services. It has been recognized as another primary motivational factor in promoting future e-banking services.

Robins Federal Credit Union's e-banking service, while still in its infancy, is increasing customer satisfaction, boosting retention, and improving profits. The bank has invested and will continue to invest in features such as customer service, account management, funds transfer, lending, and e-payments. As a "brick and mortar" bank, RFCU is meeting and exceeding customer needs with its e-banking services.

6. A follow-Up Survey and Results Analysis

To capture the newest trend and development of e-banking by small and local community banks, a questionnaire survey was conducted from January to March of 2005, after the descriptive investigation of the e-banking operations of the three small and local banks discussed in the above sections. Four local banks in the middle Georgia area were selected for this survey research, including the three described above. The survey focused on three primary areas and perspectives of e-banking operations for small and local community banks: current status of their e-banking operations, current e-banking services provided, and future directions of their e-banking operations.

This paper presents only some preliminary results of the proposed survey research. The results of a more comprehensive analysis will be discussed in a later report. The current status of

their e-banking operations of the surveyed banks is summarized in Table 1. For example, as shown in Table 1, a 50% surveyed banks had their e-banking Websites designed by the in-house IT professionals and thus gaining the capacity of upgrading and maintaining their e-banking services on a timely fashion, while another 50% depending on outside It professionals and as a result slower in responding any emerging demand and request. In terms of their e-banking operations development, majority (three out of four) have started their e-banking services over three years or longer, even starting with a very limited available service options, now have learned practical lesions through their experiences and ready for further exploration. Among four surveyed banks, one is the branch of a larger regional bank with over 2000 customers, and all other three are categorized as small and local banks with customers from 500 to 2000. Consequently, all four banks have their customers primarily by individuals and only one plus some small businesses (the branch of a larger regional bank). Not surprisingly, all four banks reported that their revenues are mostly generated by their individual customers.

Insert Table1 above here.

The current available e-banking services provided by the surveyed banks are listed in Table 2. It can be seen that those basic online services are now available by all survey participants, such as: inline account inquiry, online account application, online financing options, Internet checking and savings account, online purchasing of CDs and IRAs, and even online payment option. Some newer e-banking options, however, are only available by two relative larger banks (50%), including online services to small business, online trusts fund account management, online investment brokerage service, and Internet insurance option. It indicates a

clear direction for the future e-banking development for those small and local community banks. More discussions will be reported in a later paper.

Insert Table2 above here.

Four key questions about the future direction of their e-banking operations are asked in the proposed survey and the results are presented in Table 3. When asked for the major challenges and difficulties for their current e-banking operations, a half (50%) argued for the lack of in-house IT professionals, as expected that the delays and slow responses from outside IT technological support when those small banks outsourced the development of their website design and e-banking service operations. In an Internet era, customers have been very unhappy about the slow response to their e-request and expected a more timely result. While each has a 25% response to the need for more employee trainings in IT technology, more innovative design of e-banking services, and sometimes increased extra workload due to the task of processing all those online requests. Those areas certainly demand more detailed exploration and investigation for the continuing future research. In comparison, all surveyed banks indicated that e-banking operations will be ranked as a high priority for in the near future. But for timely updating their e-banking Website, only one bank (25%) answered that it updates on a daily basis, another one (25%) doing it weekly, and another two banks (50%) would not keep their e-banking Websites updated until the end of each month. As a result, those two banks admitted that they had heard from their customers complaining about this issue and they do have a plan to improve in this direction.

Insert Table3 above here.

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7. Conclusions and Future Research

The banking industry has been a leader in the Internet application in recent years. "E-*banking*" (referring to all banking transactions completing through Internet applications) has thus become a hot topic in the related literature. Some key issues addressed in the recent literature about the e-banking include: customer acceptance and satisfaction, services rendered, value added for both the banks and consumers, privacy concerns, profitability, operational risks, and competition from non-banking institutions. Smaller community banks, among others, are more interested in the e-banking services to gain competitive edges over their larger counterparts. This paper describes a case study of three such small local banks and their efforts in developing and operating their e-banking services. Both their successes and struggles discussed in this paper could provide some meaningful insights and serve as comparative examples (i.e., benchmarks) in evaluating the performance of e-banking operations, especially for those small and local community banks. A follow-up questionnaire survey is conducted to collect updated information about the recent development of the e-banking operations for those banks discussed in this paper. Some preliminary results of this survey are explored and discussed accordingly. For future research, more similar small and local community banks will be selected to further collect the information about their newest trends and development in their e-banking operations - to enhance managerial implications to be learned from this project. More results and analysis will be presented in a later (more completed) paper.

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Table-1: Current E-Banking Service Status

Who is the primary designer of your local website?	In house IT professional/staff	50%
	Outside IT professional	50%
	Help from local community	0%
	Help from higher level Government Agencies	0%
	Other	0%
How long has the current Website been established since the last overall design update?	Less than a year	0%
	Between 1-2 years	0%
	Between 2-3 years	25%
	3 or more years	75%
How many customers does your bank serve?	500 – 2000	75%
	2000-9999	25%
	10000-14999	0%
	15000-19999	0%
	20000+	0%
Your banks customer base is primarily comprised of:	Individuals	100%
	Small Businesses	25%
	Corporate Clients	0%
Your bank generates the most revenue from:	Individuals	100%
	Small Businesses	0%
	Corporate Clients	0%

Table-2: E-Banking Services Offered

Which of the following E-Services does your bank provide?	Bank 1	Bank 2	Bank 3	Bank 4	Total Percentage
Online Inquiry	X	X	X	X	100%
Online Payment	X	X	X	X	100%
Mortgage Application		X	X	X	75%
Information/ About Us	X	X	X	X	100%
Small Business		X	X		50%
Locations	X	X	X	X	100%
Employment Information	X		X		50%
Trusts		X	X		50%
Financing	X	X	X	X	100%
Estate Planning		X	X	X	75%
Brokerage		X	X		50%
Loans	X	X	X	X	100%
Checking/Savings	X	X	X	X	100%
Investment Management	X	X	X		75%
ATM/ Visa Check Card	X	X	X		75%
CDs and IRAs	X	X	X	X	100%
Insurance	X		X		50%
Commercial and Corporate		X	X		50%

Table-3: Future Direction of E-Banking

What major challenges and difficulties has your bank faced when dealing with E-Banking?	Lack of in-house IT professionals	50%
	Lack of interest from customers	0%
	Extra workload from processing online banking services	25%
	Need for employee training in IT technology	25%
	The innovative nature of E-Banking	25%
	Others	0%
Is E-Banking a Priority for your bank in the future?	Yes	100%
	No	0%
How frequently do you update your services and website?	Daily	25%
	Bi-Weekly	0%
	Weekly	25%
	Monthly	50%
In which direction does your bank believe that the Banking Industry will shift?	Traditional Banking	50%
	E-Banking (greater than 50%)	50%