Towards Cashless Society – An Analytical Assessment Of Ghana’s Progress So Far

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ABSTRACT

The amount of transactions and information have increased so rapidly during the last decades, so it is impossible to even think about banks without information technologies that bring along innovative means to facilitate operations. In the world of banking, the developments in information technology have had an enormous effect in the development of more flexible payment methods and more user-friendly, convenient, fast and secure banking services. Many people, researchers and commentators are upbeat about the growing trend towards cashless society in Ghana. Stakeholders are currently excited about the opportunities a cashless society brings. A cashless society has the potential to resolve many perennial exchange rate problems but, some banks have developed cold feet attitude because of infrastructure problems and the high cost of equipment. This study is an empirical study cum descriptive literature review which analytically assesses various cashless payment systems in Ghana today on ‘value for money’ (VFM) criteria.

Keywords: ‘Cashless society’, Internet, ‘e-zwich’, ‘Card payment’, e-banking, ‘Mobile Money’

1.0. INTRODUCTION

The use of cash as an exchange for goods and services has been replaced since the commercialisation of the internet that came to accommodate a host of online services. As buyers and sellers increasingly transact business miles away from each other, there has been an increased demand by both parties for alternate means of payment. The recent modes of payment include electronic payment, mobile payment, debit card, credit card, etc. Research shows that the reliance on physical cash has gradually being replaced with electronic cash. At the moment, transactions are carried out on electronic networks, which instantly debit the account of the payer and credit the payee. Most students, businesses and organisations transact pay for the fees and orderings through these electronic mediums, which is an indication that most Ghanaians are beginning to understand and embraced ICT innovations in the banking sector.

Customers are also demanding greater convenience and accessibility as reflected in longer branch opening hours and an increase in the choice of delivery mechanisms. Therefore, many banks globally have started to take initiatives to set in place more cost-effective alternative service delivery systems (Shih & Fang, 2004). The trend has been the proliferation of service delivery channels through which consumers can interact with the banks. Therefore modern banks provide their consumers with increased channel choice, reach out consumers through many routes. As such, ATMs, telephone, internet and wireless channels are now available to the consumers to perform their banking transactions in addition to the traditional branch banking.

Rapid technological advancements coupled with the expansion of the global economy in the past two decades paved way for the transformation of the banking system role from traditional trade financing to mobilizing and channelling financial resources more effectively other than resorting to the use of case – a system often referred to as cashless society. A cashless society helps to reduce cost of printing
cash, the risk of losing money through robbery, fire and flood, ensuring convenience in paying bills, fees, purchase of goods and services without necessarily having to be physically present (GNA, 2012).

1.2. BACKGROUND

The term “Banking Technology” refers to the use of information and communication technologies together with computer science to enable banks to offer better services to its customers in a secure, reliable and affordable manner and sustain competitive advantage over other banks. Banking Technology also includes the activity of using advanced computer algorithms in unravelling the patterns of customer behaviour by sifting through customer details such as demographic, psychographic and transactional data for analysis and decision making purposes.

To bring services closer to a customer and to guarantee the opportunity to use them anytime a customer wants to, have been the most important targets in banking during the last twenty years. The continuing development of more and more complicated back-office systems would not have been possible without information technology. In many cases, computers have replaced banking personnel and they have become the most important factor behind the decreasing amount of working places (Lehti & Kari, 1996).

The development of a modern banking technology began in the 1960s. Computers have made it possible to handle a huge amount of transactions in a very short time. These new opportunities and changes had an important effect on the organisation of work. Banking personnel left routine based and time consuming work to computers and began to concentrate on the service-sector.

Prospects for continued employment growth in the services industry are increasingly influenced by applications of information technology. In recent years many services industries, including banking, started to use computer and information technology, leading to increasing productivity, product development, innovations and value added activities in service sector also.

The financial services industry has changed the way it operates significantly with the advent of the computer and the rapid technological evolutions with the use of the internet that come along with strong competitive environment, globalization and financial deregulations, liberalization and consolidation of the financial markets.

2.0. LITERATURE REVIEW:

“Payment system – a set of instruments, banking procedures and, typically, interbank funds transfer systems that ensure the circulation of money” (European Monetary Institute, 1997). However, the World Bank’s, ‘Global Survey’ report in 2008 cited by Kofi (2010), stated that a “payment system is the infrastructure (comprised of institutions, instruments, rules, procedures, standards, and technical means) established to enable the transfer of monetary value between parties discharging mutual obligations”.

Cash is the physical legal tender that acts as the generally accepted medium of payments. It must be acknowledged that cash still dominates the global payment market today. This is because cash offers both privacy and anonymity because traditional currency does not contain information that can be used to identify the parties or used to determine the transaction history. This is mostly preferred by many small scale stakeholders in the payment system (Swartz, 2004). Every day of the year, millions of cash payments are made around the world. Within the global payments market cash accounts for approximately 90%, of all transactions (about 95% in U.K (European Monetary Institute, 1996). Money is a media that people are willing to accept for the goods, securities, and services that they sell. Money serves three purposes. First, money serves as a media of exchange. Because people readily
accept money in trade for goods and services, transactions are greatly simplified. Second, as a standard of value, money serves as a measure for the value of a good or service and therefore provides a standard for making comparisons between different goods and services. Finally, money functions as a store of value. Money can be saved and used in the future (Saarinen, 1996). Other payment methods typically require some form of clearing and settlement impossible for private individuals, impractical for small value payments and expensive for small retailers. (Eriksson & Kokkola, 1992)

Very important long-term technical changes are beginning to affect the payment systems, especially the continuing decline in computing costs and the physical size of powerful computer chips, along with the associated spread of powerful telecommunications technologies. The widespread availability and acceptability of computers both at home and in the offices has accelerated the process. At the same time, the cost of communications has been falling dramatically, broadly opening up markets worldwide. These trends have a marked impact on the payment systems and they offer potentially significant avenues for improvement of the efficiency of existing arrangements and for the creation of new payment mechanisms.

Cashless society may be misunderstood by many as a society without cash at all. What many people ask is whether or not in a cashless society, all cash is eliminated. The response to a question like this is definitely ‘NO’. However; a cashless society is an economy that minimizes the use of cash by providing alternative methods or systems for making payments. Money is what money does and it does not necessarily have to be physical cash.

The growth of electronic funds transfers systems and plastic card-using devices has been the most obvious effect of the computer revolution. Without modern computing technology the costs involved in producing such assets could be prohibitive. Technological advances and subsequent innovations have also led to the creation of new markets. It can be considered, that computer technology has offered a solution to an increasing banking sector by making payments faster, more convenient and cheaper to process (Howells, 1996).

It is with this issue that the management of Ghana Interbank Payment and Settlement Systems (GhIPSS) began a sensitisation programme on the Automated Clearing House (ACH) from the end of February 2011. ACH, which is largely an electronic funds transfer system, went live about almost a year ago. It makes transfer of funds less cumbersome and less expensive. According to officials of GhIPSS, all the banks would be involved in the sensitisation programme while close to 200 other companies would also be covered (Ghana News Agency, 2011)

2.1. Major Cashless Payment Systems
2.1.1. Electronic money

Despite the rapid growth of the Internet and online services, there will be a need for cash in the future. But what do we mean with cash after ten years, it might be something else than coins and paper money. The small-value transactions will be the big question. Nowadays the use of a payment mechanism called electronic money is increasing rapidly. Many banking people and analysts think that electronic money is the solution in the future. "Electronic money products are defined as "stored-value" or "prepaid" products in which a record of the funds or "value" available to a consumer is stored on an electronic device in the consumer's possession” (Crockett 1996).

Electronic money is a payment mechanism that is a direct substitute for traditional cash; value is transferred electronically to pay for goods and services at vending machines, retail establishments, over networks, or through direct person-to-person exchanges. It has been suggested that electronic money is likely to "lead to a new concept of pocket money, give birth to a new commercial payment system for the Internet, change the way governments pay out benefits electronically, and revolutionise
the movement of value over telephone lines and airwaves.” The use of electronic money in low-value, high-volume transactions opens up a wide variety of new services and changes the way in which old ones can be delivered. (Pauli & Koponen, 1997)

A smart card is a plastic card with a computer chip inserted into it and that store and transacts data between users. (Smart Card Basics, 2004) The data, in a form of value or information is stored in the card’s chip, either a memory or microprocessor. “Smart card-enhanced systems are in use today throughout several key applications, including healthcare, banking, entertainment and transportation.” (Smart Card Basics, 2004) One of the features of this card is that it improves the security and convenience of transactions.

2.1.2. Cards: Payment cards comprise bank (debit) cards, credit cards, combination (multifunction) cards, charge cards and euro-cheque cards. ATM cards (including cash cards) also belong to the range of instruments that can be used in connection with bank accounts. In terms of technology the cards can be divided into basically magnetic stripe cards and smart cards. There are some significant differences between one kind of card and another. A credit card allows you to pay via instalments and/or a revolving line of credit, with the limit set by the issuer. Generally, if you pay the entire bill at the end of the month, no interest is charged. If a balance is outstanding, interest is charged at a predetermined annual percentage rates that differ from issuer to issuer. A debit card is directly linked up to your checking or savings account, and the amounts of your purchases are deducted directly from it. In fact, a debit card functions as a paperless checking account(Swartz et al 2004).

In India, the use of cards as payment media has grown gradually over time. From the available statistics, it is fairly evident that traditional credit cards have never played an important role in the Indian payment system, and, moreover, that their significance has diminished over the last few years. Instead, debit cards have gained in importance, most notably debit cards linked to bank accounts and known as bank cards in India. They usually combine several functions: those of a debit card for paper-based as well as EFTPOS (Electronic Funds Transfer at Point Of Sale) transactions, an ATM card for cash withdrawals, and a credit card, to the extent that the bank account to which the card is linked has an overdraft facility attached to it (European Monetary Institute, 1996). Cash, cheques and credit cards, have all had an enormous impact in our daily life. When credit cards appeared in the market, in the beginning of 1980s, it was something new. When people found out how practical they were, cards became popular very fast. Credit cards have succeeded in keeping their leading position all these years and I suppose, that they will continue to be one of the most common payment methods in the future as well.

2.1.3. Stored Value Card
Stored value cards, credit card-sized devices, also known as "smart cards," are electronically encoded with value using an integrated-circuit chip embedded within the card. The stored value may then be drawn down at will, by the user to effect purchases. The smart card concept is the electronic equivalent of carrying a wallet full of cash. The card may be disposable or capable of being replenished with value. Current technology enables value to be replenished through an ATM terminal, a telephone equipped with a card reader, or a personal computer equipped with a card reader. Consequently, stored value cards provide a secure offline transaction alternative in environments where online processing is time consuming and expensive.

The use of electronic money could influence the level of costs, benefits and risks facing consumers in their day-to-day economic transactions. Potential consumer benefits could include the availability of lower cost, faster and more convenient means of payment, as well as increasing the diversity of payment options available to consumers who have a diversity of preferences and circumstances. Those who object to visions of a cashless economy often stress the continuing need for currency. The advent
of smart cards makes this argument less tenable. Indeed, low-value, frequent transactions are those for which stored value cards are ideally suited. (Group of Ten, 1997)

Smart card pilot projects of various designs have been started since 1995 in most European countries, including Belgium, UK, Austria, Germany, the Netherlands, Denmark, Finland, and Switzerland. Involved are (besides banks and credit card companies) retailers, telecommunications, and public transportation industries. Before they come into wide-spread use, an extensive infrastructure of terminals has to be installed (European Monetary Institute, 1996.)

2.1.4. Electronic Cheque
Electronic cheques are used in the same way as paper cheque – the clearing between payer and payee is based on existing and well known banking settlement system. The only difference between paper and electronic cheques are the dematerialization of the payment instrument which is passed on via computer networks like Internet in the later technology. E-Check proposed by Financial Services Technology Consortium (FSTC) is an example of the electronic cheque. (United States Department of the Treasury Conference, 1996)

Electronic cheques address the electronic needs of millions of businesses, which today exchange traditional paper cheques with the other vendors, consumers and government. The e-cheque method was deliberately created to work in much the same way as conventional paper cheque. An account holder will issue an electronic document that contains the name of the financial institution, the payer’s account number, the name of payee and amount of cheque. Like a paper cheques e-cheques also bear the digital equivalent of signature: a computed number that authenticates the cheque from the owner of the account. Digital chequing payment system seeks to extend the functionality of existing chequing accounts for use as online shopping payment tools.

The concept of cashless society has been implemented in many countries especially in the developed countries where its citizens are inclined to the use of technology. One of the main quests for migrating to a cashless society is the move towards globalization and reduced cost of cash management. The ability to purchase goods across borders is fostered with the ease of instant payment not necessarily with physical cash but electronic cash, for example purchases made online at Amazon and e-bay, further driving the world into a global village. Besides the ease of purchasing goods and paying for services that can be done within and outside one’s geographical location, another major drive towards the cashless society is cash management.

3.0. METHOD OF ANALYSIS:
This is a qualitative research aimed at assessing Ghana’s progress towards a cashless society. The methodology is descriptive analysis of literature review that combines empirical study through the use of unstructured interviews. This supporting interview technique is meant to assist in confirming certain assertions the literature review comes across to do its analysis. According to Kumaga (2011), several electronic payment systems have been introduced into the country in recent times with the most significant being ATMs, e-zwich smart card payment system, cardless ATM, internet banking systems, telephone banking e-banking, Electronic bank transfers, Electronic Bank transfers at Point of sale, and Electronic Mobile Money Transfers that are in use in Ghana today.

The analysis assesses these electronic payment systems and pegs each against value for money (VFM) criteria to elicit the progress in the application of the above cashless payment systems in Ghana. Value for money has been described by many writers as comprising the (3E’s) which are: ‘Effectiveness, Efficiency and Economy’. Effectiveness is about whether targets are met or not. Efficiency is about whether or not measurable inputs generate the expected outputs. Economy, a third element of the 3E’s model, covers the cost of the resources consumed and the value of the output delivered (Brewer, 2010).
4.0. ANALYSIS (Assessing the Major Payment System in Ghana):

Payment system, according to Bank of Ghana (2012) is the ‘entire matrix of institutional infrastructural arrangements and processes for initiating and transferring monetary claims in the form of commercial and central bank liabilities which covers the following:

- Payment instruments used to initiate and direct funds transfer
- Network arrangements for transacting and clearing payment instruments
- Institutional players in the system
- Market conventions and regulations
- Legal and regulatory framework’.

According to Kumaga (2011), ‘several electronic payment systems have been introduced into the country in recent times with the most significant being e-zwich smart card payment system, a national domestic smart card payment system meant to reduce the large amount of cash held outside the banking system’. ‘Ghana's payment system had improved a lot since 1997 when the Magnetic Ink Character Recognition (MICR) cheques were introduced, and continues to evolve to meet the developmental needs of the country.

‘Sika Card’, which is similar to a world-wide "Smart Card", was also introduced and launched in Ghana by the Social Security bank (SSB) in 1997 to enable 'holds' money electronically, and also to solve problems associated with the excessive handling of currency notes which included loses through theft and degradation of the notes through improper care. It worked as an alternative to using bank notes and cheques because it enables the holders to conduct transactions with one another and the bank without the use of cash. The card once bought, is loaded electronically with equivalent cash presented at the Bank's counter or transferred from an account in a bank other than SSB. However, with the advent of more bank cards introduced into the banking sector by VISA, MasterCard and VISA Electron etc., its use has gradually diminished. It serves as an electronic wallet or purse because the card has a lot of potentials not yet fully exploited for the improvement of the Ghanaian economy. Apart from affording the user the personal convenience and safety in carrying huge sums of money for business transactions, the card eases the resources and pressure on the government to print new currency to replace defaced and mutilated notes (Ghanaweb, 1999). Pin-based debit cards that enable cardholders to make payments or withdraw cash from their deposit account at ATMs and EFTPOS terminals are available in Ghana and their use is growing (Bank of Ghana, 2012).

**ECOBANK’s credit card also called gold card:** the only credit card system introduced in 2007 and still is the only one on the market today has not received significant patronage and usage partly because of poor publicity and partly also because of poor residential addressing system in Ghana. Though the economic benefit in the use of credit cards remain a great potential of ECOBANK’S gold card, its efficiency and effectiveness have been slow or diminished due to the poor addressing, identification and also the recent reluctance of the bank to issue them to customers.

The current trend in Ghana's payment systems development is being driven by economic, financial, public policy factors as well as a growing local ICT industry and global trends in payment systems development. Consequently, over-reliance on cash as a means of payment is gradually giving way to a range of cashless and safe payment instruments. The cheque remains the major inter-bank retail payment instrument which constitutes about 95% of the total retail payments both in terms of volume and value. The remaining 5% is contributed by the inter-bank credit transfer. High value funds transfer is made with the Ghana Inter-bank Settlement (GIS) system, which is a real time gross settlement system. At the retail level banks offer ATM and other debit card services. Telephone and internet banking services are available but in their use is not widespread (Bank of Ghana, 2012).
4.2. Automated Teller Machines (ATMs) in Ghana

The first ATM was installed in Ghana by the Trust Bank in the 1980s. Since then, many banks have followed suit, installing ATMs for the convenience of their customers. However, the ATMs are operated on stand-alone basis and are therefore uneconomical, inconvenient to customers and inconsistent with the growing trend of ATM interoperability worldwide.

4.2.1. Efficiency of ATMs in Ghana: In September 2005, a common ATM switch known as the Ghana National Net Settlement Service (GNNSS) was inaugurated to link together the disparate ATM machines of five major banks. Prior to the inauguration of the common switch, which is owned and operated by Visa International, banks operated ATMs that were, literally, not talking to ATMs of other banks. Consequently, ATM customers of a particular bank had to locate ATM machines of their bank to withdraw cash. The introduction of the common switch has greatly enhanced the efficiency of the ATM system since customers of banks on the system can withdraw cash from ATMs of member banks (Abbey 2012).

Inter-bank transfers took a long time to be cleared and electronic payment systems were largely non-existent. As a result, the Ghana Interbank Payment and Settlement Systems (GhIPSS) has introduced “Gh-Link”, an interbank ATM transaction switching facility that will among others allow local cardholders from any bank to withdraw cash from any of the configured bank’s ATMs across the country. Gh-Link is an interbank switching and processing system that interconnects switches of financial and third party institutions, thus providing a common platform to perform a number of interbank transactions in an effective and efficient manner under a secured system.

The economy was, and is still, cash-based and heavily segmented. The network of banks developed individual products like ATMs and debit cards for their respective customers. This objective is still not greatly achieved since there is huge number of Ghanaians still outside the networked banking sector and also many customers are not knowledgeably equipped enough to use ATMs, hence ATM facility is still a potential and not a reality here in Ghana (Hesse, 2012). The country is working towards a national ATM policy that would make it mandatory for ATMs nationwide, to be link together (Bank of Ghana 2012).

4.2.2. Effectiveness of ATM payment system in Ghana: Most of the universal banks issue Debit cards. Debit Cards are used to withdraw money from Automated Teller Machines as well as make payment of purchases at Point of Sale outlets. “Gh-Link” ATM transaction switching facility has been able to, among others things, allow local cardholders from any bank to withdraw cash from any of the configured bank’s ATMs across the country. Currently, customers with various banks are enabled to withdraw money from any other bank’s ATM other than their own banks which was not the case a couple of years ago (Bank of Ghana, 2012).

At the moment, fourteen banks in the country have completed the process by which their customers can use each other’s automated teller machines (ATMs) while efforts are underway to enable visa and MasterCard to be endorsed to make such services universal in Ghana. This is good news which indicates that Ghana is on the path toward a cashless society.

Innovatively, United Bank for Africa (UBA) Ghana has presented to the public a first of a kind of card-less ATM withdrawal service that allows a third party to withdraw cash on its ATM without a card adding more convenience and value to customers. The breakthrough innovation in the banking sector was part of three ATM Value Added Services which the bank has outdoored to the public in 2012. Apart from the card-less ATM withdrawal, the value added services allow customers of the Bank to pay their bills (utility), DSTV subscription fees and also purchase mobile recharge credit on their phone or for third parties. The ultimate aim is to reduce the cost in terms of time and money in
getting these simple transactions done and to complement Ghana’s efforts of becoming a cashless society (Abbey, 2012).

However, the number of ATMs in the country is quite inadequate and highly concentrated only the major regional capitals in Ghana. Also a very important functionality that is disabled on debit cards in Ghana, for some reasons, is its secure electronic transaction (SET) ability, thus, limiting the effectiveness greatly. There are question marks about the preparedness of financial institutions, regulators and law enforcement agencies in Ghana in ensuring electronic payment standards as well as secure online payment processes required to comply with baseline standards such as the Payment Card Industry Data Security Standards (PCI-DSS).

4.2.3. Economy of ATM’s in Ghana: A widespread installation of ATMs ensures value creation to both the Banks and to the customers. In terms of the banks, as machines take over the customer services functions, it has helped to reduce the operational costs as the number of personnel required to service customers withdrawing small amounts of cash has reduced. The time required to queue in order to withdraw money is eliminated (Mustapha 2011).

ATM installations are however few in Ghana with the concentration of their service limited to only major regional capitals of the country. It must also be noted that the use of ATMs especially of another bank other than the issuing bank, in Ghana, attract charges of about 35% of a Ghana Cedi to one Ghana Cedi each time of withdrawal by the bank on the user called charge advance charges. A customer will have to look for an ATM that is owned by his or her banker to avoid these charges, thus making it expensive.

“Many bank, customers, however are losing money as Ghanaian banks intensify their campaign to decongest the banking hall through the use of ATM cards” because swindlers are becoming sophisticated and are taking advantage of introduction of Ghana Interbank Payment and Settlement System (GhIPSS) and the proliferation of bank cards as a seemingly legitimate way to get personal bank data. In a fresh campaign to defraud ATM cardholders, convincing phishing emails are being sent to unsuspecting bank customers requesting them to register their card as the system is being upgraded (My joy business news, 2012).

4.3. The case of E-zwich electronic clearing and payment system

The e-zwich was introduced as response to security problems with savings and withdrawals using ATM cards, cashless payments for transactions and money transfers. It is an innovative and very secure way of paying for goods and services throughout Ghana. The e-zwich is an electronic clearing and payment system designed to establish a common platform and thereby link the payment systems of all banking and financial institutions in Ghana. To facilitate the smooth implementation of this project a private company, the Ghana Interbank Payment and Settlement System (with the banks on its governing board) has been set up to manage the payment and clearing system. The introduction of e-zwich in Ghana has taken the global lead in electronic clearing and payments system technology and, coupled with a resilient economy, Ghana would have been on the verge of cashless society since its introduction in 2008. E-zwich is anchored on biometric (fingerprint) identification technology and allows smartcard holders to perform business and financial transactions such as fund loads and transfers, and payments for goods and services including bills, both online and offline. These can be done at any e-zwich point of sale (POS) or ATM across Ghana when the system becomes fully integrated and operational (Hesse, 2012).

4.3.1. Efficiency: Unique to the e-zwich is the biometric feature which reduces the need to use figures for purposes of identification while guaranteeing the security safeguards of traditional banking. All the cardholder requires to authenticate a transaction is his or her fingerprint. This eliminates the problem
of identifying theft associated with card transactions authenticated through the use of PINs. Also, a person does not need to be a customer of a bank or have an account with a bank to have the e-zwich smartcard (Hesse, 2012). According to Hesse (2012), the system has a number of advantages over traditional bank accounts:

i. ‘The e-zwich is much easier to obtain than a traditional bank account. All one requires to obtain the e-zwich smartcard is one’s fingerprints and any photo identification such as a passport or driving licence.

ii. A cardholder can perform all transactions associated with a traditional bank account: paying for goods and services, money transfers, cash withdrawals, bill payments, receiving salaries and pensions at any e-zwich POS terminal in Ghana.

iii. The informal section of the population who previously could not benefit from banking and financial services, thus creating a dual economy, now has access.

iv. Ghana is on the verge of developing a cashless economy, or reducing the use of cash to the barest minimum, as the e-zwich cardholder can access any service without the need to carry cash.

v. The e-zwich has introduced cell-phone banking.

vi. The e-zwich is compatible with the ATMs of all banks, as well as with any e-zwich POS terminal.’

E-zwich, however, hit a stalemate as its patronage has achieved the economic significance expected in Ghana. According to Aggrey (2008) the e-zwich smart-card system faces frustrations often associated with ambitious projects in developing economies. As maiden national electronic business-transaction card introduced by the Central Bank of Ghana, it’s being managed by the Ghana Interbank Payment and Settlement System (GhIPSS). Services on the e-zwich platform are, however, being provided by a Stratus server running South Africa-based Net1’s Universal Electronic Payment System (UEPS). Service providers for banks using applications other than those provided on the Stratus server have to link up with the main platform. Both the software and the hardware for the e-zwich platform were provided by Net1, but POS devices are being provided by Sagem with the e-zwich network connected to telecommunication networks. This disjointed arrangement of technical service providers comes with its own challenges. According to Issahaku (2012), some of the attendant challenges include: Link Failure, Frequent Breakdown of Machines, and Slowness of Transaction resulting in long queues for e-zwich service.

4.3.2. Effectiveness: The e-zwich electronic payment and settlement platform is aimed at bringing a new lease on life to financial institutions including savings and loans companies. Majority of e-zwich users pledge their loyalties regardless of its challenges explained above, at least, in the next 5 years (Aggrey 2008). These assertions were born out of the confidence they have in e-zwich due to its cost effectiveness, security, reliability and accessibility among others. However, banks are now developing cold feet because of infrastructure problems and the high cost of equipment. Since the introduction of the e-zwich in April 2008, inquiries to program participants indicate that few (only 5 out of more than 25 banks by the 2009) banks have so far met the criteria to offer the card service and have begun registering customers.

4.3.4. Economy: The e-zwich system also requires the establishment of point-of-sale (POS) terminals and hence, the training of bank and merchant staff to manage daily transactions and operate facilities linked to the platform. This puts additional operational cost burden on the banks. Additionally, interested banks must have local connectivity to the platform and pay a membership fee of US$150,000 (Aggrey 2008). This is also one of the reasons why some of the banks have been dragging their feet in becoming participants.

4.4. Mobile Money Banking/Tele-Banking

Telephone banking or telebanking is a form of virtual banking that deliver financial services through telecommunication devices. Under this mechanism, the customer transacts business by dialling a
touch-tone telephone connected to an automated system of the bank. This is normally done through “Automated Voice Response (AVR) technology” (Nwaolisa and Kasie, 2012).

In Ghana today, Mobile Money Wallet Service e.g. MTN mobile money wallet, Airtel Money and TiGo Cash have been launched since 2009 to enable Ghanaians to make financial transactions on their mobile phones.

4.4.1. Effectiveness: Mobile Money service has received a lot of publicity in Ghana. MTN Mobile money Manager commented that the ‘aim is to promote a cashless economy and through this reach out to customers through the mobile phone’ (Ghanaweb, 2012). The effectiveness of the publicity in terms of reaching customers and achieving their patronage will be taken up by future research. MTN Mobile Money is doing an average of 1.5million transactions worth over GHC50 million on monthly basis. October, 2012 did almost GHC52million worth of transactions in just that one month. Over 100,000 out of the about 3million Mobile Money customers actively use the platform on a monthly basis according to Mr. Eli Hini, Head of MTN Mobile Money (Myjoyonline, 2012).

The telephone banking is more effective regarding the activities occurring on a customer’s account. This service allows the bank to send information on any activity occurring on the account to the customer’s mobile phone immediately they happen. The continued development of the telephone banking has led to beneficial developments whereby customers receive alerts on their mobile phones regarding accounts balances and of any withdrawals and deposits made into them. Customers of some banks receive SMS messages on their cell phones in real time, whenever a change is effected in their accounts. Immediately a customer’s account is credited or debited, the customer receives a text message indicating the exact nature of the transaction. Customers of some banks can purchase and upload call credits on their cell phones by using SMS. In some banks, customers can transfer money to other accounts by simply sending SMS messages. During the redenomination exercise in Ghana, the Bank of Ghana sent text messages to Ghanaians on the exercise. Some banks also announce new products to prospective customers through SMS technology.

Although SMS suffers a limitation from the 160 character text-only format, innovations such as the ability to send barcodes improve opportunities for coupons, point-of-sale redemption, and ticket purchases (Trappey & Woodside, 2005) have opened opportunities for marketing via mobile phone. With the SMS system, the user can request for his current balance by (requesting) sending a text to a bank message code and then get a response. The message code helps to identify the user and then recognise his request, in which it will initiate a response (sending his current balance).

One might think that this is a perfect solution to make some business with bank, but telephone banking contains some problems too. During an important transaction, there might be some disturbing factors in telephone lines, so that the whole connection goes down. Customers therefore are uncertain whether or not the transaction has been successful. Another problem is security although Banks and telephone companies have been developing different kinds of methods to make sure that customers can be safe.

4.4.2. Efficiency: The service enables customers to purchase mobile phone network airtime conveniently anywhere saving time and hustle in purchase top-up cards. E.g. TiGo Cash, Airtel Money and MTN money send or receive money locally and remittances from abroad pay bills including MTN and TiGo Post Paid Internet service etc., DSTV, ECG Bills and school fees using the mobile phone. According to ‘Ghana News Agency’ - GNA (2012) MTN money, alone, has been able to provide immediate banking service to their customers on their mobile phones recording about 9.5 million transactions totally about GHC113 million ($58 million) in a matter of two years (between 2009 and 2011). The company expects to record 13.5 million transactions worth more than GHC300 million ($154 million) in 2012. That's an increase of 265% in transaction value (Myjoyonline, 2012).

The statistics however available which is as old as the year 2000 indicates that SMS sent in Ghana grew from an initial 22,000 to over 130,000. With Ghana’s mobile telephony density standing at about
7.6 million subscribers coupled with increased activities in and new ways of communicating, the figure could be higher. Most banks in Ghana use SMS technology in their services. (GNA, 2012).

The disadvantage of SMS system of banking is that scammers send SMS messages identifying themselves as the bank, and also request for further bank details from the user such as PIN number, account number etc. This fraud has made the SMS system of banking insecure.

Another disadvantage is the user cannot store his or her credit card information on the mobile devices to pay a bill due to poor mobile infrastructure in place in West Africa. Also, no payment history can be derived from the mobile device when using an SMS system of banking.

The other challenges in the use of telephone banking is the fact that sometimes, banks provide toll free telephones to enable customers call to transact businesses, it is surprising to realize that banks staffs don’t pick such calls especially during their pick periods of the day. No voice mail service is attached to this service to enable customers to leave a message.

**4.4.3. Economy:** SMS is one of the few services in consumer history that has grown very fast without corresponding decreases in pricing. A lot of time and cost is saved in shopping as customers can also shop online, purchase airline tickets, order and make payment for food from their favourite restaurants. Mobile Money also enables customers to purchase micro insurance (Mi life Insurance) and pay for micro investment products e.g. shares in the stock market. Thus, this demonstrates the enormous potential of electronic payment platforms (Appiah and Agyemang, 2006).

**Speed Banking:** One innovative move towards a Cashless society is the Speed banking service introduced by First Capital Plus in 2011. In this system, the financial institution developed coded account top-up vouchers called Money cards of different values of money. Customers could just conveniently purchase any value of money card from GH¢50 to as little as GH¢1 or GH¢2, which customers normally will not spend time going to bank, from retailers in the streets. The code only had to be sent as SMS to the financial institution via the customers registered number with the bank. A confirmation SMS is returned to customer for the transaction to complete. Sadly, this innovative banking strategy has not been able achieve the required objective for which it was set up and the financial institution has nearly abandoned it.

**4.5. Internet Banking (e-banking)**

Internet Banking is beneficial for both the provider and the customer. The rationales of banks’ usage of the internet banking technology from the bank’s perspective are mainly related to cost savings. Internet banking offer services regardless of geography and time and banks thus provide its services to the customers for them to use at their convenience. Such services save the time and money of the bank with an added benefit of minimizing the likelihood of committing errors by bank tellers and extending banking hour to 24 hours each day.

Internet banking has been one of the most successful of all the traditional commercial ventures that have adopted the internet platform. The internet is taking over as a main access channel to complement branch and call centers in the banking industries’ efforts to enhance their services, improve integration with partners and interaction with their clients. The high level of internet penetration in Europe and particularly in the Netherlands has made it a very attractive channel (Ensor and Tongeren, 2005).

**4.5.1 Efficiency of e-banking in Ghana:** Ghana, as it stands now, is one of the African countries with the lowest internet patronage of internet banking with only about 1.8% of the population accessing the internet in general. This is partly because of the lack of education and skills making this service not economically efficient to provide the service. Successive governments in Ghana have shown commitment in providing the needed infrastructures for a take-off.

**4.5.2. Effectiveness of e-banking in Ghana:** Banks are not achieving the patronage of e-banking as expect partly because banks initial levied exorbitant charges on customers for the facility and partly also because the market-readiness was didn’t match the technology. The current internet banking system in Ghana, therefore, leaves a lot to be desired as the cost of using internet banking far exceeds
the benefits derived and banks tend to transfer the cost to the users by charging them for e-banking. However, in all that customers get for e-banking in Ghana is the ability to download statement and view account balances. There are no permissions to alter records such as moving or transfer of funds from an account to another either intra or interbank. Customers still have to walk into the banking floor to get these done. It appears the market is not ready for e-banking at this state and therefore many of them reject the offer for the service. The reasons for this may as well be lack of the skills and the technological facilities to facilitate e-banking systems in Ghana.

4.5.3. Economy of e-banking in Ghana: As seen above, there seems to be no cost savings currently in internet banking. In recognition of the fact that the advent of internet banking comes with value-added service to customers to the banks themselves, moving towards a cashless society, Ghana faces cybercriminal challenges known locally as ‘sakawa’ otherwise known as internet 419 criminals. The banks must bear additional cost to ensure the safety and data integrity of its clients using their e-banking facilities in accordance with Data Protection Act in 2012 (Act 843). Oluniyi (2007) has thrown a challenge to banks to create customer awareness in the form of education about potential fraud right when they pick-up the form to apply for Internet Banking facilities. In addition to verbal communication, customers should be presented with a flyer informing them about scams emails and how to detect fake email messages and fake websites. Aside the day of sign-up, the financial institution should always include a warning at the bottom of every email they send out, educating their customers about scams and how to avoid being scammed. Banks should educate every customer to look-out for the security padlock on their web browser before entering their login details.

5.0. Findings and recommended direction towards cashless payment systems:

The shift toward a cashless society is visualised as an emerging aspect of the economy that needs to be closely supported by policy makers, monitored and regulated because it is highly economical, beneficial and efficient system of payment. If, indeed, price (currency exchange rate) in a free market, according to price mechanism theory, is determined by demand and supply, then probably one major cause for the perennial politically controversial unstable exchange rate of the Ghana Cedi in relation to major foreign currencies is due to the poor development and support for cashless payment systems in the country for cross-border trade.

If traders had internationally recognised and acceptable cash-cards (VISA, MasterCard and debit cards), electronic cheques and other reliable electronic payments systems by their local bankers that were convertible with appropriate rates without undue charges, then merchant would not resort to purchase of hard paper currencies to travel out of the country to engage in trade. The pressure to obtain physical dollars or euros etc. would be drastically reduced if merchants would not require paper currencies to make most of their payments. When merchants are able to make payments outside the country in major currencies with ease the pressure to obtain physical cash for payment of their merchandises would be removed reducing the demand for the major currencies. Demand for the dollar or euro would, therefore, fall and it would stand to reason that the supply will of the dollar in the country would improve. A new stable lower equilibrium price (exchange rate) would fall in place to for Ghana to be able to achieve a stabilised Ghana Cedi she has always hankered for.

As the situation is now, commercial banks in Ghana prefer physical cash deposit to electronic money deposit. This is depicted by the fact that commercial banks charge higher fees on cross-border interbank electronic transactions and transfers than they do for cash-based transactions. Clients’ reaction is to prefer purchase and deposit of cash to international interbank payment systems and this further complicates the gapping exchange rate problems.

The following recommendations are suggested:

i. About 99% of cash cards are not internationally recognised and therefore limits the country’s ability to enter global e-commercial markets. ATM cards are not e-payment friendly currently even though some of them are designated Visa; they are only good for Visa ATM’s in Ghana. This may
partly be as a result of the low quality standards of e-commercial operations in the Ghanaian economy. Though security is still a problem, for cash cards to perform its intended purpose effectively, these functionalities must be enabled. It is recommended for the Government of Ghana to provide the needed leadership and support for electronic payments. About 80% of the population of Ghana is out of the banking systems and political support for the e-zwich card system would have automatically hooked more people into the banking system.

ii. The use of cash comes with its own disadvantages and problems that electronic payments can eliminate. Cash and cheques must go through several processes which increases their risk of being lost or stolen. Most Ghanaians are not aware of the benefits of electronic payments and are therefore slow to adopt it. It is recommended that, to facilitate a widespread patronage of these electronic payment devices, they should be installed and seen in public and private institutions such as mosques and churches to facilitate the payment of bills and electronic donations. There is the need to create more awareness to entice the unbanked people into the banking system. All public and private schools should be encouraged to use these systems in the payment of fees conveniently without the need to go and queue long hours at banking halls to pay fees and other bills. It should also be installed at petrol retail stations, restaurants, stadiums, market malls, and all other corner shops across the country. The taxman (The Internal Revenue Service), VAT Services, Social Security and National Trust (SSNIT) and all government revenue collection agencies should install such devices in their premises so that taxpayers don’t spend their precious times queuing to pay their Pay As You Earn (PAYE, SSNIT, VAT etc.).

“It is expensive to get the idea of electronic money and mobile money across to people so government must get involved actively firstly by getting its agencies to start using mobile money make payments such as national service allowances, National Youth Employment wages, over the counter payment to labourers on government projects, pension allowances and several other bulk payments of small amounts” (Myjoyonline, 2012).

iii. It is important that banks create an efficient help desk service, embedded with voice mail service. It is been observed that help desk staff who picks the telephones do not understand the ascent of the customers, especially when they are foreigners. Banks should include a voice automation embedded with frequently asked questions that could walk the customer through until it is beyond the reach of the automation, thereby triggering help desk assistance. It is also recommended that because of globalization banking staff should be a blend of both domestic and international staffs to serve customers better.

iv. It is recommended that ATMs are installed at many vantage points, for example, all gas and petroleum retail filling stations and at sports stadia’s across the whole country to enable drivers use their bank cards to pay for the fuel bills. The widespread use of ATMs should be encouraged to minimise robbery and swindling in the cities on innocent people by eliminating all charges of users in the use of ATM facilities across the country. A service that is also recommended is a feature of future ATMs in Ghanaian banks in which ATMs are enabled to issue ATM cheques signed automatically by the chief executives of their respective banks for interbank payments.

v. 6.0. Conclusion
Consumers are said to face far higher net private costs for cash and checks as compared to cards. In fact, consumers receive net benefits from using credit to pay for larger transactions. This is why Consumers are gradually moving away from paper payment instruments and toward electronic ones, especially payment cards.

A cashless society, in Ghana, is indeed very beneficial and appears to be the next best alternative risky cash transactions for any growing economy with huge security challenges. Many financial institutions and other stakeholders are currently excited about the opportunities of a cashless society bring, but it is worth noting that every opportunity comes with its own attendant challenges and problems. A lot of people, researchers and commentators are upbeat about the growing trend towards cashless society but, some banks have developed cold feet attitude because of infrastructure problems and the high cost of
equipment. In Ghana and other parts of the world a lesson should also learn from the events that have led to data integrity breaches leading to loss of confidence in cashless payment systems.

Ghana’s progress into a cashless society has been remarkable so far but not without serious challenges. While many banks and other financial institutions have some form of supporting policies in place, some of these policies were generally established before the explosion of some of these facilities that are enabling cashless transactions e.g. mobile devices. The security of electronic cash cannot be the sole responsibility of financial institutions. Beyond the knowledge of prior mishaps with going cashless and the anticipated challenges, the benefits of such a society should not be forgotten. However, given that in a cashless society, we trade in two major currencies – electronic cash and trust, all hands must be on deck to ensure that maximum benefits and minimum the risks are derived.

7.0. REFERENCES:


