TOWARDS A CASHLESS SOCIETY: THE PAINS AND THE GAINS OF AUTOMATED TELLER MACHINE IN NIGERIA.

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ABSTRACT

The desire of man to operate a cashless society was realized with the advent of Electronic Payment (e-payment). ATM has become integral part of the society. Automated Teller Machine has relived man the stress of carrying money around. Similarly, it has eliminated the traditional queues in the banking hall. Furthermore, the introduction of this machine has changed the way and manner transactions are being handled within the society. In spite of the obvious changes these machines have brought, it also came with is own peculiar problem. This paper examines the Gains and Pains of associated with the Automated Teller Machine in society and also proffers solutions to some of the problems associated with them.

Keyword: Automated Teller Machine, Gains, Pains, Cashless Society, E-payment.

1.0 INTRODUCTION

Universally, the introduction of Automated Teller Machines (ATMs) has been widely embraced by every individual across the globe. Automatic Teller Machines (ATMs) conduct many transactions that would otherwise require staff attention; they furnish account information, accept deposits and transfer funds. They offer significant benefits to both banks and customers. The Machine can enable depositor to withdraw cash at more convenient times and places than during banking hours at different branches. At the same time, by automating services that were previously completed manually, ATMs could reduce the cost of servicing depositor demands. These potentials benefits are multiplied when bank share their ATMs, allowing depositors of other bank to access their account a bank's ATM (Mcandrews, 2003). Encyclopedia Britannica (2002) reported that higher output and increased productivity have been two of the biggest reasons in justifying the use of Automated Teller Machines. Furthermore, ATMs have brought banking to the next generation of customers, who are unfamiliar with the concept of queueing up at a branch to be served. Thus, the traditional long queue in the banking hall has gone into extinction. Olatokun and Igbinedion (2009) contend that banks have become the principal deployers of ATMs. Two reasons for this are that they want to increase their market share, although due to the prevalence of ATMs, it is not likely to be the primary means by which ATMs

increase profitability for most bank's; potentially less than the cost of transactions per unit than are tellers. Deposit these benefits with the deployment of ATM, it also come with certain security issues that must be seriously addressed, In recent years, there has been a proliferation of ATM fraud as well as diminishing its impact are important issues that face financial institutions as fraud techniques have become more advanced with increased occurrences.

Depositors in Nigeria have complained bitterly about their experiences with the use of Automated Teller Machine. These includes: Card jamming, insufficient fund, Card fraud et.c.

This paper contains an overview of the gains (benefits) of ATM, the pains and customer safety issues. It exposes the ATM security issue (Fraud) and other related issue to keep the depositor safe from the pains as well as enjoying the gain accruing from the use of ATM in Nigeria.

2.0 AUTOMATED TELLER MACHINE: *THE NIGERIA EXPERIENCE*

The introduction of ATM has changed the face of electronic payment in Nigeria. Automated Teller Machine (ATM) was introduced into the Nigeria market in 1989, as a matter of fact, the very first ATM was installed by National Cash Register (NCR) for the defunct Societe Generale Bank Nigeria (SGBN) in 1989 (http://www.oppapers.com/essays/Automated Teller Machine and (Atm) in Nigeria : The present. The Future /178455). Banks in the country are now adopting self and service (ATMs) technology because it is cost effective in the long run. Intermare Consulting Limited (2007) from its survey reported that ATM services provided by banks and non-financial institutions have emerged the most popular e-business platform in Nigeria.

In the past few years, Nigerian Banks and Financial services industry in particular, have embraced concept of e-money. Changes are beginning to take place in the Nigeria financial landscape and customers are increasingly raising the hope of expectations for quality customers services. They offer convenience to customers and provide banking services beyond the traditional brick and mortar service period. They also ensure that a lot of cash is still within the banking system where it can be managed and channelled into productive use, instead of bulk withdraws that we use to witness in the past. Babalola (2009) stated that Nigeria presently have about 8,000 ATMs installed in various Bank Branches and off bank premises such as

shopping malls and hostels. He claimed that the total number of ATM transactions on the interswitch Networks at 31st December, 2008 was approximately 100 million transaction as against 42 million transactions recorded as at 31st December, 2007; an increase of over 100 percent within a space of one year, and the trend is increasing.

3.0 CONCEPTUAL FRAMEWORK

3.1 ATM CONCEPT AND COMPONENTS

In this section, we introduce the various ATM concepts, components and terms in more detail. An Automated Teller Machine (ATM) is a computer telecommunications devices that I provides the same clients (depositor) of financial institution with access to financial transactions in a public space without the need for a human clerk or Bank teller. However, customer is identified by inserting a plastic ATM card with a cheap that contains a unique card number and some of security information such as expiration date. Authentication is provided by customer entering a personal identification number (PIN). ATM gives depositor access to their bank account in order to make cash for withdraws (or credit cash advances) and check their account balances as well as as purchasing mobile cell phone prepaid credit. ATMs are placed not only near or inside the premises of banks but also in locations such ashoppingcentres/Malls, airports, grocery stores petol/gas Station, restaurant etc. These represent two types of ATM installations : on and off premise. On premise ATMs are typically more advanced, multi-function machines that complement an actual bank branch's capabilities and thus more expensive. Off premise machines are deployed by financial institutions and also ISOs (or Independent Sales Organizations) where devices (http://en.wikipedia.org/wiki/Automated_teller_machine).

3.2 HARDWARE

An ATM is typically made up the following devices :

An ATM has two input devices

- **Card reader** - The card reader captures the account information stored on the magnetic stripe on the back of an ATM/debit or credit card. The host processor uses this information to route the transaction to the cardholder's bank.

- Keypad - The keypad lets the cardholder tell the bank what kind of transaction is required (cash withdrawal, balance inquiry, etc.) and for what amount. Also, the bank requires the cardholder's personal identification number (PIN) for verification. Federal law requires that the PIN block be sent to the host processor on encrypted form.

And four output devices :

- **Speaker** - The speaker provides the cardholder with auditory feedback when a key is pressed.

- **Display screen** - The display screen prompts the cardholder through each step of the transaction process. Leased-line machines commonly use a monochrome or color CRT (cathode ray tube) display. Dial-up machines commonly use a monochrome or color is LCD.

- **Receipt printer** - The receipt printer provides the cardholder with a paper receipt of the transaction.

- **Cash dispenser** - The heart of an ATM is the safe and cash - dispensing mechanism. The entire bottom portion of most small ATMs is safe than contains the cash.

3.2 SOFTWARE

(http://en.wikipedia.org/wiki/automated_teller_machine) contend that since ATM has migrated to PC hardware Standard, common operating system and programming environment can be used inside of the ATMs. Typical platforms used in ATM development Include RMX, OS/2, and Microsoft operating systems (such as MS-DOS, PC-DOS, Windows NT, Windows 2000, Windows XP Professional, or Windows XP Embedded). Java, Linux and Unix may also be used in these environments.

4.0 ATMs AND THE GAINS

There is no doubt that the introduction of ATM has contributed immensely to the economic development of Nigeria. This section contains an X-ray of the gains (benefits) of ATMs to Nigerians. Some of the gains of ATM as discovered by Batiz-Lazo and Barries (2005) and cited in Olatokun and Igbinedion(2009) includes reduction in operating costs, coupled with output (number of transactions) that resulted in greater efficiency. They concluded that the introduction of ATM was profitable for banks as well as customers.

Listed below are some of the benefits of ATMs:

- **Brings Convenience, Speed up and Control to Customers:** The introduction of ATM has given depositors the power and control of over their financial Transactions. Furthermore, customers can now access their account at different times and places with the assistance of a bank teller or clerk. The emergence of ATM is gradually forcing the transitional long queue into extinction. Thus, waiting line in bank is now a thing of the past. Similarly, depositors can now carry out their transactions at the speed of light.

- **No Need to Carry idle Cash:** Many financial institution across the world have adapted to the change towards the Cashless Society by implementing Electronic Fund Transfer (ETF) via Automated Teller Machines (ATMs). By having a plastic card, Society could completely eliminate the need for cash.

- **Extended Service Hours:** They offer convenience to customers and provide banking services beyond the traditional brick and mortar service period.

- **Low Cost to banks:** The emergence of ATMs has led to the reduction in operating cost for most banks since it involve replacement of human labour by an automated system Encyclopedia Britannica (2002).

5.0 ATMs AND THE PAINS

The introduction of ATM into the Nigeria Market has heralded the era of the proliferation of frauds and insecurity in the financial landscape. In this section, we shall highlight some of

problems associated with the deployment of ATM in Nigeria. (http://www.oppapers.com/paper/Atm-Security/199706) stated that most of the issues affecting ATM security in Africa have to do with card fraud and security breaches.

5.1 ATM FRAUD

Generally, ATM fraud comes in varieties: card - reading devices, card-trapping devices and distraction scheme

Card Reading Device: Criminal alter the ATM itself by adding skimming machine and a mini-camera to it. The first device, mounted on the card entry slot, reads the bar code on your card. The second record you as you enter your PIN. After you complete your transaction ,receive your card, someone else has your number and your access code. Usually, perpetrators make a new card and use it to withdraw money from your account. The skimming device are not always the easy to spot.

Card-Trapping Devices: An alternative from of altering the ATM itself involves inserting a thin ribbon of X-ray tape into the card slot. The loop traps your card and makes it seem as though the bank has repossessed it. At this point, someone else, a purported "Good Sam retrieve your card by re-entering your PIN code. He watches while you do so. After your card still refuse to emerge and you walk away from the ATM, the perpetrator removes the device and your card, which he then use to withdraw money from our account.

Distraction Scheme: Distraction schemes do not rely on tampering with ATM by adding skimming machine themselves; instead, they involved interrupting you while you are withdrawing funds.

5.2 ATM FRAUD TECHNIQUES

This section is poised at providing a comprehensive overview of the possible fraudulent activities that may be perpetrated against ATMs. We shall also tray to discuss the different techniques and methodologies of know ATM from attempts on a global scale and provides recommend approaches to be prevent them. These techniques include:

1. **card jamming** -where a customer's ATM card is swapped for another card without their knowledge whilst undertaking an ATM transaction.

2. **Vandalism** - where an ATM machine and is deliberately damage and/or the card reader is not jammed preventing the customer's card from being inserted.

3. **Physical attacks**-where an ATM machine is physically attacked with the intention of removing the cash content.

4. **Mugging**- where a client is physically attacked whilst in the process of conducting a transaction at an ATM machine.

5. **Skimming Devices**- Another method of accessing a customer 's account information is to skim the same information off the phone card. Skimming is the most frequently used method of illegally obtaining card track of data. "skimmers"are devices used by criminal to capture the flag data stored in the computer magnetic strip of the card. Reading and deciphering the information on the magnetic stripes of the day card can be a accomplished through the application of small card readers in close proximity to, or on top of, the only actual card reader input slot, so it is able to read and record the information stored on the magnetic track of of the card.The device is then removed,allowing the recorded data.

6. **Malware/Trojan**- This malware captures magnetic stripe data and pin codes from the private message memory of space and of transaction -precession I applications installed on compromise ATM.

7. **Shoulder Surfing**- Shoulder and Surfing the is the best act of direct observation, watching what number a person taps on the phone keypad.The criminal or the other perpetrator usually positions himself in close but not direct proximity to the ATM to covertly watch as the ATM user enters their PIN.

6.0 RECOMMENDATION

Despite the imminent problems associated with the use of ATM, there are various method the depositors can adopt to protect themselves from the pains accruing from the use of ATM. (http://www.fraudinvestigator.co.za/atm_fraud) listed tips depositors can adopt to be safe from the pains of using ATM as follow:

- Do not reveal your PIN to anyone.
- Do not keep your PIN and card together.
- Make sure that you are not observed when keying in your PIN.
- Key in your PIN only when prompted to do so by the screen.
- Don't let anyone distract or assist you when you are using the ATM.
- Make sure the card in your possession is in fact I yours before and after a transaction.
- Avoid poorly lit ATM's.
- If only one ATM is working in a specific area, the others could have been sabotaged to direct you to that one.
- Do not count your money at the ATM.
- Lower your daily and monthly withdrawal limits.
- Cancel your card immediately if it is lost, stolen or retained by an ATM.
- Immediately report your lost or stolen cards to your bank and police.

6.1 General Practices To Prevent Fraud

Globally, there method or techniques of preventing fraud. These includes amongst other;

6.2 Video Surveillance

The primary method use to increase awareness and deter fraud attempts at the ATM, is the installation of closed circuit television camera(s) mounted in plain view on or near the ATM.

Video surveillance use in the branch environment has proven itself invaluable as it continually assist in the deterrence an apprehension of bank rubbers. Video surveillance is the primary method use to increase awareness and data fraud attempts at the ATM as well.

6.3 Awareness and Consumer Education

Solution to potential fraud attempts can be achieved by a joint effort involving financial institutions, the consumer, and ATM manufacturer /service provider. Financial institutions should stress the importance of awareness at the ATM to their consumers and promote vigilance in reporting any irregularities in the appearance and operation of the ATM.

7.0 Conclusion

These dangers aside, ATM, if used effectively, can yield substantial opportunities for the future. There is an opportunity to relieve humans from repetitive, harzadous, and unpleasant labour in all forms. However, this paper is not an exhaustive one, it does give a good idea of some issues that will be addressed in time to come.

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