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## **An X-Ray of the Level of Electronic Purse Usage in Nigeria**

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### **Abstract**

*This study sets out to examine the level of e-purse usage in Nigeria. Despite the invasion of e-purse as electronic banking channels that has the potential of disempowering the cash systems of exchange and granting firms competitive edge, it is interesting to note that the rate of cash usage still dominates in the Nigeria society. Thus, when compared with more advanced countries, less technically developed nations like Nigeria tend to be backward in terms of e-purse adoption and usage. The study results show that such factors as*

*insecurity, erosion of privacy, customer inertia, operational difficulties and the like are the factors militating against e-purse usage in Nigeria. It is believed that if these inconsistencies are taken care of, the rate of e-purse acceptance will outweigh its present status in the near future.*

## **Introduction**

Before now, the conventional system of banking was typically manual and as such cash handling was absolutely on physical basis. But according to Shittu (2010), the inception of the cards regime is gradually creating a cashless society where consumers no longer have to pay for all their purchases with hard cash. GPayments (2001) also acknowledges that, "With the advent of the electronic age, the concept of value was transferred to plastic cards with a magnetic stripe which securely carried personal account information. These plastic cards allowed a person to access value through a global automated teller machines and EFTPOS devices". According to Gates (2000), banking has gone digital and a cashless society is slowly being evolved which will put you on the leading edge of a shock wave of change that will shatter the old ways of doing business. Jim (2005) equally submits that the traditional brick and mortar banking is gradually giving way to an e-platform, which enables the offering of financial services through the electronic media to various customers irrespective of place, time and distance.

E-purse also known as electronic wallet carries a pre-loaded monetary value and can be used as a means of payment for multiple small value purchases (Jim, 2005). Shittu (2010) gave a broader description of the term when he states that depending on the sophistication, it can be used as a Credit Card, Debit Card and ATMs (Automatic Teller Machine) card. Jim (2005) went further to explain that e-purse is the predominant type of plastic money in use in Nigeria at the moment and that less than 1% of the Nigerian population use e-Purse. Similarly, Amedu (2005) aver that while the electronic card is gaining popularity in USA and Nigeria, the Spanish financial Institution demonstrated the highest implementation and update of smartcards across Europe. E-purse is an electronic banking product that has been described by The New Webster's Dictionary of the English Language as the use of magnetically encoded plastic cards at terminals outside a regular bank location for cheque cashing, deposits and other money transfer functions. The concept of e-purse was introduced into the Nigerian banking industry by Computer Hardware and Maintenance Services (CHAMS) Incorporated, in 1985. The company pioneered systems integration services and local area

network in banks, companies, government agencies and parastatals in Nigeria.

“The development of electronic purse has been driven by commercial and technological organizations rather than by demand from consumers. The organizations operating electronic purse systems gain from the use of the money stored on the cards. The recent preference of e-banking to the traditional brick and mortar banking system is due mainly from such factors as convenience, accessibility, flexibility, speed, efficiency and time saving capacities which the former offers. Despite this, Jim (2005) holds that less than 1% of the Nigerian population use e-purse. The researchers believe that this customer inertia towards e-purse acceptance and usage cannot be without reasons. This paper therefore seeks to x-ray the factors responsible for the slow pace of e-purse acceptance and usage in Nigeria by juxtaposing the factors that make this innovation to thrive in other advanced economies with that of Nigerian situation. The rationale is to see why the level of usage of this innovation in Nigeria has been greeted with apprehension despite its anticipated virtues. The result of this study will be useful to banks because with our large population, a sizeable market potential is extant for players in the industry.

### **Empirical evidences on electronic purse usage**

Studies on the usage of e-purse seem to be limited in the literature. But since The Webster’s Dictionary of English Language puts it that e-purse encompasses electronic banking products or services, hold shall be taken of this definition to assert that e-purse is an electronic banking process. This view was equally supported by George (1997) who states that Electronic banking embraces payment cards (including credit cards, cheque cards, charge cards, debit cards, cash cards, cheque guarantee cards, gold cards, international cards and smartcards (electronic purses). If e-purse is an e-banking process, the literature on e-banking shall be deeply consulted in respect of the usage of this unprecedented innovation in the banking system generally and Nigeria specifically. However, the contributions of authors in respect of the usage of e-banking are replete across the globe. Early studies indicate a modest move away from traditional brick and mortar banking to the recent banking process supported by electronic platforms. Latter studies focused on customers’ acceptance of e-banking products and services and the factors responsible for this attitude. However, the researchers narrowed their review more to specifics towards the end to some e-purse channels.

Thornton and White (2001) examined customer orientations and usage of financial distribution channels in the Australian financial industry and found that more recently most financial institutions, faced with competitive pressure after the introduction of deregulation in 1983, have rethought their strategies to take full advantage of IT. Similarly, Lu et al. (2005) reveal that one of the key strategic responses of banks in China before joining WTO was to develop e-banking. Jasimuddin's (2004) investigation of the role of e-banking in Saudi Arabia indicated that the majority of Saudi banks had taken advantage of Internet technology to establish web sites but few offered e-banking services. He suggested that if the Saudi Arabian banking industry wished to be successful in the global economy it would need to integrate Internet technology into its banking strategy. Similarly, Agboola (2006) investigated electronic payment systems and telebanking services in Nigeria. The findings revealed that there has been a very modest move away from cash. Payments are now being automated and absolute volumes of cash transactions have declined. Elisha (2010) submitted that Nigerian banks have embraced innovative banking technologies and e-banking services in recent years.

He went further to affirm that due to emergence of global economy, e-business has increasingly become a necessary component of business strategy and a strong catalyst for economic development. It is equally worthy to note that countries vary in their level of embracement of e-banking products and services because of differences in their level of technological development. This idea holds a great deal of substance because Kolodinsky and Hogarth (2007) captured that in 2003, 91% of US households held bank accounts and 93% of those used at least one electronic transfer of funds option with their account while Jim (2005) held that despite e-purse being very much available in Nigeria at the moment, less than 1% of the Nigerian population use e-purse.

Furthermore, Yang et al (2009) presents a comparative study about the issues of current available e-banking services among the young consumers between China and USA. The findings of this study are of great interest. For example, the gap between the two nations about the awareness and usage of e-banking services is quite significant, as less available services and lower service quality are two critical problems, owing to a low competitive banking industry in China and lack of nationwide credit system. It is also interesting to see that Chinese customers are more willing and open to new available services (both in e-banking service and in m-banking service) of which US

customers are less aware and more cautious to, owing to the different cultures and traditions, an idea which Levesque and McDougall (1996) staunchly shares.

Christopher et al (2006) examined consumers' decision-making between electronic banking and non-electronic banking in New Zealand. The research uses the consumer decision making process (or paradigm) to identify factors that consumers use when deciding between electronic banking and non-electronic banking. The findings of this research confirm the positive relationship between the service quality and user input factor dimensions and electronic banking. In a similar study, Jayawardhena and Foley (2000) explored e-banking as a new delivery channel arguing that e-banking may help to overcome the inherent disadvantages of traditional banks; it is very clear that if e-banking is conducted successfully it leads to big volume of transactions. Also from firms' perspective, Dandapani et al. (2008) submits that a study about e-banking between 1999 and 2006 shows that the application of e-banking can improve banks' performance in terms of the growth in assets, reduction in operating expenses and portfolio enhancement. Even in the 1990s, Sraeel (1996) emphasizes that creating virtual banking will not only create a new service delivery channel, but also lead to value creation to both banks and customers (as cited in Murphy, 2007). Through interviewing banks in a small island and examining their e-banking websites from 2004 to 2006, Jenkins (2007) indicates that those banks were using e-banking as an assurance to their customers to maintain a competitive quality of service. Elisha (2010) empirically examined the impact of e-banking in Nigeria's economy using Kaiser-Meyar-Olkin (KMO) approach and Barlett's Test of Sphericity which supports the use of factor analysis in order to extract independent variables associated with e-banking. Results show that e-banking has become popular because of its convenience and flexibility, and also transaction related benefits like speed, efficiency, accessibility, etc. Wu et al., (2006) argues that to continually improve the performance of e-banking services, such core-capacities as planning new IT infrastructure, enhancing transaction security, providing value-added content, delivering differentiated services, conveying value propositions, managing customer relationships, the retention and expansion of relationships with relative older and lower IT awareness customers are critical. Liao and Cheung (2002) indicate that the most important quality attributes underlying perceived usefulness of e-banking are expectations of accuracy, security, network speed, user-friendliness, user involvement and convenience. Rombel (2006)

equally, reveals that the winners in e-banking industry are those banks that are able to successfully enhance their offerings while simultaneously enhancing security measures and getting customers to believe in them. In a nut shell, the recent invasion of e-banking of which e-purses cannot be exempted is pledged on such factors as convenience, speed, service quality, round the clock availability etc from the users' perspective and competitive weapon, cost minimization and revenue maximization from firms' perspective.

Lee and Lee (2000) investigated the diffusion of various electronic banking technologies, such as ATMs, debit cards, smart cards, direct deposit, and direct payment, along with the characteristics of adopters and non-adopters based on the DOI theory. They used the 1995 Survey of Consumer Finances and discovered that more educated, affluent and younger consumers who were likely to communicate with professional information providers tended to adopt electronic banking technologies more readily than their counterparts. Despite this, the specific factors that described adopters and non-adopters varied across different types of banking technologies. Stix (2004) studied the levels of cash inventories held by Austrians and to examine how ATM transactions and cashless payments affect their demand for cash. The key results of this study are based on survey data on the cash withdrawal habits of Austrians aged 14 and over. The results suggest that the cash held by this group of individuals for transaction purposes accounts for only a relatively small share of the total cash in circulation (approximately 10%). This indeed implies that cash means of transactions settlements in Australia is still dominant despite the acclaimed good intents of virtual systems of consummating exchanges. The study also deals with cashless payments, which were found to have had an impact on the use of cash: the share of cash payments has fallen since 2000 (projections suggest a decline of some 6 to 7 percentage points from 2000 to 2002).

In Gregory, Kent and Tasha's (2003) empirical study of smart card technology, it was found that Smart card technology remains novel for consumers and merchants, in spite of several attempts by financial institutions and other interested parties to deploy the technology on wide scale bases. After Citibank, Chase, VISA and MasterCard launched a smart card trial in New York City; the trial was deemed a failure and was subsequently cancelled. Drawing from innovation and critical mass theories, and using merchant and consumer data, the researchers provided explanations for the trial's failure. Despite the fact that the technology's

relative advantages were significantly related to consumers' and merchants' acceptance, it was found that consumers and merchants disposed to this smart card technology. Contrary to this, Karen et al (1998) concluded that in terms of dollar-value, National Automated Clearing House Association (NACHA) estimates that cash accounts for less than 3 percent of retail payments. The data also show significant growth in the use of electronic payment media—credit cards, debit cards, and automated clearing house (ACH) payments, including ACH credit transfers such as direct deposit of payrolls, and ACH direct debits such as automatic mortgage payments. He reports further that the nearly 40 percent increase in credit card transactions over the 1992-to-1996 period contributed substantially to the overall shift toward electronic retail payments.

### **Factors limiting e-purse usage in Nigeria**

Taking inferences from the factors favouring the acceptance and usage of e-banking in other technically advanced countries from the past researches captured above, the researchers have been able to deduce the following as the factors that act as setback to the adoption and usage of e-purse in Nigeria.

- (a) **Insecurity:** Jim (2005) states that the major problem facing e-purse includes the fact that they are offline and not integrated with the host banks and prone to fraud. Agboola (2006) asserts without reservations that fear causes customers' slow acceptance of electronic payment systems. Chiemeké et al's (2006) empirical investigation on adoption of e-banking in Nigeria shows that insecurity is one of the inhibiting factors to internet banking adoption in Nigeria. Fraud and counterfeiting are other problems associated with some aspects of New-age banking. Credit card fraud is a major problem particularly in developed economies although proponents of Smartcards boast of their virtually fraud-free qualities particularly its PIN protection, Chip and access security and the fact that the chip is tamperproof amongst its other security features (Bull 1997). It however appears that there are emerging attacks on Smartcard systems despite their reputed invincibility. This might be why Ahmad (2005) confirmed that a lot need to be done to create confidence in the minds of customers about the benefits and security of the new delivery channels. Additionally, the more consumers and companies transfer money electronically, the greater will be the potential for thieves to intercept or tap into these flows. The technology that makes our personal and business lives easier and

more convenient, obtaining credit and making payments anywhere in the world, performs the same service for the fraudster but the systems to protect the integrity of these marvelous creative technologies lag far behind and the gap is ruthlessly exploited by the fraudster.

- (b) **Operational Facilities:** According to Jim (2005), e-purse leads to delays in loading cards for customers and do not have enough Point of Sales (POS) terminals and user acceptance is low. Agboola's (2006) investigation of electronic payment systems and telebanking services in Nigeria shows that these technologies are capable of broadening the customer relationship, retain customer's loyalty and enable banks to gain commanding height of market share if their attendant problems such as, ineffectiveness of telecommunications services, epileptic supply of power are taken care of. Although most banks in the country are either on the ValueCard or SmartPay consortium, only very few that have deployed dedicated and well trained marketing teams into the smartcard businesses are reaping the fruits. Even without reference to this, it is obvious still to a casual observer that the operational imbalances in which Nigerian banks are duped will rarely allow them reap the full benefits accruing to the deployment of e-purse.
- (c) **Erosion of Privacy:** One of the problems of e-purse acceptance is that consumers' privacy has been seriously eroded. This makes the use into which e-purses can be put limited regardless of its ability to perform other functions. For instance, Lewis (1991) found that users mainly used ATMs for withdrawal of cash and obtaining account balances. Negative factors regarding ATM usage were concerned over personal safety, lack of privacy and operational problems such as machine being regularly out of cash or out of order and cards getting stuck in it.
- (d) **Instability:** The researchers equally believe that the unstable state of the Nigerian banking industry over the years accounts greatly for why the country's e-purse acceptance and usage have remained low in recent times despite its increasing acceptance in other developed and emerging economies of the world. Even though Nigerian banks have recorded significant growth since the inception of conventional banking in 1952, the distress and failures that subsequently befell

Nigerian banking till the 2004/2005 bank consolidation has perpetually destabilized the banking system. The recent CBN deposit money banks reforms is another case in hand. The result of this is absolute loss of confidence in banks by customers which by extension equally affected the usage level of e-purse in the country.

- (e) **Demographic Factors:** Lee and Lee's (2001) study showed that adopters of Internet banking tend to be more highly educated, more wealthy and younger with good knowledge of computers and especially familiarity with internet usage. Kolodinsky, Hogarth, and Shue (2000) research yielded similar results. Wang et al. (2003) found that age has a significant influence on user acceptance of Internet banking. Moreover, Alagheband (2006) asserts that young individuals are more likely to adopt Internet banking. Venkatesh and Morris, (2000), investigated gender differences in the overlooked context of individual adoption and sustained usage of technology in the workplace. They found gender an important determinant of short-term usage, and can be used to predict sustained usage behaviour in individual adoption and continued usage of technology in work places. Education also plays a significant role with regards to attitude toward technology use. Highly educated customers such as university graduates are more comfortable in using technology, like the internet or Internet banking. A reason for this is that education is often positively correlated with an individual's level of Internet literacy (Burke, 2002).
- (f) **Customer inertia:** Jim (2005) aver that customer acceptance of e-purse is low. He further states that Nigerian cash based economy is attributable to the psychology to physically hold and touch a payment medium like cash; a culture informed largely by ignorance, illiteracy and lack of appreciation of the merits of digital payment instruments like Smart Card, Debit Card. But Fest (2007) explains that only 40% of US households took advantage of e-banking service, whereas over 50% of households that had not been attracted yet to e-banking because those customers might have had a bad experience on a self-service site. Ahmad (2005) equally asserts that despite electronic banking products development and services delivery, queues are still seen in the banking halls and bank customers still handle too much cash. In this connection, he questions whether customers are really enjoying these services.

Findings show that customers still see interaction with human tellers as very important.

### **Discussion**

Technology has given rise to more effective and efficient means of effecting transactions that were hitherto cash-driven. Electronic platforms are taking the lead. But it is interesting that despite the anticipated virtues of the electronic systems of transacting businesses, there has been a lag in consumer acceptance and usage of these innovations. This study provides the necessary inputs for justifying the reasons behind this especially in Nigeria where it has been confirmed that the shift away from cash transactions to e-purse is far below expectation. The competitive pace of the contemporary business environment and the fear not to be left behind have compelled financial institutions especially banks to follow the tempo of technology and adopt e-banking platforms as a means of remaining relevant in the market and achieving competitive advantage. The connection between technological development and usage of e-purse is worthy of highlight here as it has been observed that more technically advanced economies are likely to accept technical innovations more than countries that are less privileged technically. At times, even with high technical development, cultural tendencies still determines to a great extent, the attitudes of customers towards innovation.

It was equally been alluded in this study that the rate at which Nigerians accept e-purse is far below expectation due to inadequate legal framework and low technology. It is equally important to pinpoint that customers shy away from e-purse usage due to problem of erosion of privacy which culminates into insecurity that leads to loss of confidence in the banks' services that tantamount to customer inertia. This was further worsened by the instability in the Nigerian banking system which was visited by countless distress and failures since the inception of conventional banking in the country to the present time. The slack in operational facilities such as power, telecommunication facilities as well as demographic variables has also been implicated in this study. It therefore follows that until these imbalances are checked, it will be difficult to get customers accept and use e-purse as much as they should.

### **Conclusion**

There has been an unpretentious move away from cash to cashless society as a result of advances in information technology which gave rise to electronic banking systems that saw to the emergence of e-purse. This shift is informed

by the anticipated virtues of IT enabled business processes which among others include convenience, speed, efficiency and effectiveness. Despite these benefits, the rate of usage of e-purse in Nigeria by far ranks very low. With respect to the acceptance of e-purse, researchers tend to be divided in their view. While some hold that this technology is widely accepted, some maintain that cash still remains to a great extent, the means of consummating exchanges. However, it is the position of the authors in this paper that even though there seem to have been a modest move away from cash to cashless systems of transactions settlements, cash by far still remains the dominant system of payment in Nigeria whilst there are anticipations that in the near future, consumers acceptance of this innovation will eventually reverse the tide. Results equally show that insecurity, inadequate operational facilities, erosion of privacy, illiteracy and the like are the factors that have contributed to this situation.

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