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Electronic Payment System in Nigeria: Its Economic Benefits and Challenges

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Abstract
The crux of this study is on the adoption of E-payment system in Nigeria: Its economic benefits and challenges. The arrival of the internet has taken electronic payments and transactions to an exponential growth level. Consumers could purchase goods and services from the internet and send unencrypted credit card numbers across the network, which did not provide much security and privacy. But a wide variety of new secure network payment schemes have been developed as consumers became more aware of their privacy and security. The benefits of e-payment are unquantifiable in that it would galvanize Nigeria into a cashless society and elimination of fear of the unknown. Though e-payment is faced with challenges, like public acceptability, lack of uniform platform being, operated by the banks, lack of adequate infrastructure and issues of security, with the proper use of e-payment system, corruption which is a cancer in government arena will be holistically addressed.
Keywords: Electronic payment, e-commerce, e-banking, digital money and infrastructure

Introduction

The payment system is an operational network governed by laws, rules and standards that links bank accounts and provides the functionality of monetary exchange using bank deposits (Summers, 2012). The payment system is the infrastructure consisting of institutions, instruments, rules, procedures, standards and technical means established to effect the transfer of monetary value between parties discharging mutual obligations. Its technical efficiency determines the efficiency with which transaction money is used in the economy and risk associated with its use (Biago & Massimo, 2001).

What makes it a "system" is that it employs cash substitutes with the use of electronic money and other ICT related equipment in its operations. Traditional payment systems are negotiable instruments such as draft-cheques and documentary credits such as letter of credits. With the advent of computers and electronic communications a large number of alternative electronic payment systems have emerged. These include debit cards, credit cards, electronic funds transfers, direct credits, direct debits, internet banking and e-commerce payment systems. Some payments include credit mechanisms, but that is essentially a different aspect of payment. Payment systems are used in lieu of tendering cash in domestic and international transactions and consist of a major service provided by banks and other financial institutions.

Payment systems may be physical or electronic and each has its own procedures and protocols. Standardization has allowed some of these systems and networks to grow at global scale, but there are still many countries and product- specific systems. Examples of payment systems that have become globally available are credit card and automated teller machine networks. Specific forms of payment systems are also used to settle financial transactions for products in the equity markets, bond markets, currency markets, futures markets, derivatives, option markets and to transfer fund between financial institutions both domestically using clearing and Real Time Gross Settlement (RTGS) Systems and internationally using the SWIFT network.

Electronic Payment Systems (EPS) apart from their convenience and safety also have a significant number of economic benefits which include mobilising savings and ensuring most of the cash available in the country are with banks. This will make funds available to borrowers both businesses and individuals. Furthermore, an electronic payment system has the ability to track individual spending; to facilitate the design of products by the banks. This information is also useful to the government when making decisions. EPS also have the ability to reduce cash handling and printing costs. According to Moody's Analytics (2010) real global GDP grew an extra 0.2% a year on average beyond what it would have without card usage. Simply put card usage increases a country's GDP by 0.2% annually.

Moving from a society where 90% of cash is held outside of the banks to a cashless society is a big change. It is therefore an enormous challenge for the government, financial institutions, individuals and other stakeholders responsible for making this system achieve its economic benefits. There are likely to be operational, financial, economic and marketing changes that need to be managed properly (Delali, 2010).

Since the overcoming of barter in the history of mankind, trade usually involve the exchange of goods and services and an equivalent abstract value such as money. Asaolu, Ayoola & Akinkoye (2011) noted that

since money was invented as an abstract way of representing value, system for making payments have been in place. In the course of time, new and increasingly abstract representations of value were introduced. A corresponding progression of value transfer systems, starting from barter, through bank notes, payment orders, cheques and credit cards has finally culminated in electronic payment system. As the transition to electronic payment systems take place, the stock of currency hold outside the banking system which constitutes a potential source of unproductive economic resources because they are not available for credit expansion is integrated into it thereby expanding the deposit base of the money system.

Nigeria payment system has been predominantly cash-based for both positive and negative reasons positive because of its instant convertibility to other forms of value without intermediation of any financial institution and negative because of its anonymity and untraceability in unethical electronic payment was introduced because government was inundated with allegations of corruption in the Federal Civil Service. The Federal Government through its treasury circular reference NO TRY/A8 & B8/2008 of 22nd October 2008 directed that payments from all funds from it be made electronically as from 1st January, 2009. The policy has been condemned by all and sundry for lack of planning, inefficiencies and delay in the payment for goods and services (Asaolu, Ayoola & Akinkoye, 2011; Ogedebe & Babatunde, 2012).

Conceptual Framework

Delali (2010) in Vassiliou (2004) defined electronic payment as a form of financial exchange that takes place between the buyer and seller facilitated by means of electronic communication. According to Cobb (2004), the value of electronic payment goes way beyond the immediate convenience and safety of cards to a greater sphere of contributing to overall economic development.

The term electronic payment can be referred narrowly to e-commerce- a payment for buying and selling goods and services offered through the internet, or broadly to any type of electronic funds transfer (Massimo & Garcia 2008).

Ayodele (2007) defined e-payment as electronic transfer of cash via online transactions for business-to-business (B2B), business-to-consumer (B2C), person-to-person (P2P), and most recently administration-to-consumer (A2C) purposes. A2C payment addresses the payment of taxes toward the government.

Humphrey, Kim & Vale (2001) defined e-payment as cash and associated transactions implemented using electronic means. Typically, this involves the use of computer networks such as the internet and digital stored value system. This system allows bills to be paid directly from bank, and without the use of writing and mailing cheques.

Guttman (2003) defined e-payment as credit card details, or some other electronic means, as opposed to payment by cheque and cash. It is also defined as a payer's transfer of monetary claim on a party acceptable to the beneficiary (Worku 2010).

Electronic payment can also be defined as convenient, safe and secure methods for payment of bills and other transactions by electronic means such as card, telephone, the internet, EFT and etc. Electronic payment gives consumers an alternative to paying bills and debts by cash, cheque, money order etc. Its main purpose is to reduce cash and cheque transactions.

In the Nigeria context, e-payment is effecting payments from one end to another and through the medium of the computer without manual intervention beyond inputting the payment data, it is the ability to pay the suppliers, vendors and staff salaries electronically at the touch of a computer button (Agba, 2010).

Types of E-payment

In Nigeria context, there are two types of e-payment namely;

i. **End to End processing:** Here, all the processes from approvals to the receipt of value by the beneficiary are done electronically.

ii. **Manual e-payment or use of Mandate:** It is the mixture of manual and electronic process where the available infrastructures cannot support the End to End processing.

However, there are many forms of e-payments these include cards, internet mobile payments, financial services kiosks, biometric payments, electronic payment networks (Osibote, 2010; Asaolu, Ayoola & Akinkoye, 2011).

Economic Benefits of Electronic Payment System in Nigeria

Delali (2010) in Fiallos & Wu (2005) noted that the arrival of the internet has taken electronic payments and transactions to an exponential growth level. Consumers could purchase goods from the internet and send unencrypted credit card numbers across the network, which did not provide much security and privacy. But a wide variety of new secure network payments schemes have been developed as consumers became more aware of their privacy and security.

Digital money has significant benefits for financial institutions, banks and merchants (Fiallos & Wu, 2005). Digital Money is an electronic payment technology, which can provide anonymous flexible electronic payment, like paper cash, but with added security requirements needed for internet transactions. In a related work by Lee, Choi & Rhee (2003), a secure electronic cash system can guarantee anonymity of legitimate users but also provides traceability about illegally issued cash or laundered money. If illegal activity did take place, it can cancel anonymity of the digital cash in order to protect the bank. Lee, Oh & Lee, (2004) added that since digital money can trace double spending, and double spending protects content by exposing the double spender's identity, digital cash is a fool proof way of guarding against illegal redistribution of intellectual property and materials. Digital money can also be used to deter illegal content copying and distribution by inserting tracing content factors into the digital cash payment scheme that prevents users from individual replication activity, (Lee, Oh & Lee, 2004). By using this function, legal, anonymous purchasers can spread contents to other paying anonymous users while abiding by copyright laws. Using digital money in industries like digital entertainment can increase the demand for products through easier and safer dissemination channels. Digital money can trace who is illegally reproducing and distributing copyrighted intellectual material, therefore increasing security for authors and at the same time deferring lost revenue and sales for digital media entertainment companies (Lee, Oh & Lee, 2004).

Digital Media entertainment, as well as property providers and distributors, can also implement this technology and its safety features in order to ensure greater copyright compliance between consumers (Fiallos & Wu, 2005). By adopting such a method of payment and distribution, software and intellectual property piracy can be halted and eventually eliminated. Digital money can provide financial institutions with decentralized structures, faster transaction and decision making processes, and more cost effective ways of doing business.

Electronic payments as argued by (Taddesse & Kidan 2005) have a significant number of economic benefits apart from their convenience and safety. These benefits when maximized can go a long way in contributing immensely to economic development of a nation.

Automated electronic payments helps deepen bank deposits thereby increasing funds available for commercial loans- a driver of all of overall economic activity. According to Taddesse & Kidan (2005), efficient, safe and convenient electronic payments carry with significant range of macro- economic benefits. "The impact of introducing electronic payments is akin to using the gears on a bicycle. Add an efficient electronic payments system to an economy, and you kick it into a higher gear. Add better controlled consumer and business credit, and you notch up economic velocity even further" (Taddesse & Kidan 2005).

While the high level of cash transactions creates an opportunity for the electronic payment industry, it also imposes a cost on local economics. Cash has to be minted, securely transported, counted and reconciled, kept secure and maintained for re-use time and time again. The per-payment cost is high, and will always remain high whereas the costs of electronic system are fixed. Once the infrastructure has been built, the costs per-transactions is very low.

When cardholders use their cards at the point of sale they are helping to keep money in the banking system. EPS can help displace shadow economies, bring hidden transactions into the banking system and increase transparency, confidence and participation in the financial system. Taddesse & Kidan (2005) observed that there is a correlation between increase in point of sales volumes and rise in demand deposits. "Automated electronic payments act as a gateway into the banking sector and as a powerful engine for growth. Such payments draw cash out of circulation and into the bank accounts, providing low cost funds that can be used to support bank lending for investment- a driver of overall economic activity. The process creates greater transparency and accountability, leading to greater efficiency and better economic performance.

Electronic payment is very convenient for the consumer. In most cases, you only need to enter your account information- such as your credit card number and shipping address- once. The information is then stored in a database on the retailer's web server. When you come back to the website, you just log in with your username and password. "Completing a transaction is as simple as clicking your mouse: All you have to do is confirm your purchase and you are done." Worku (2010) emphasized the fact that electronic payment lowers costs for businesses. The more payments that is processed electronically, the less money is spent on paper and postage. Offering electronic payment can also help businesses improve customer retention. "A customer is more likely to return to the e-commerce site where his or her information has already been entered and stored".

According to Taddesse & Kidan (2005), electronic payments can thus lower transaction costs stimulate higher consumption and GDP, increase government efficiency boost financial intermediation and improve financial transparency". They further added that "Governments play a critically important role in creating an environment in which these benefits can be achieved in a way consistent with their own economic development plans".

The introduction and use of electronic payment instruments holds the promise of broad benefit to both business and consumers in the form of reduced, greater convenience and more secure reliable means of payment and settlement for a potentially vast range of goods and services offered worldwide over the internet or other

electronic networks. One such benefit is that electronic payments enable bank customers to handle their daily financial transactions without having to visit their local bank branch. Electronic payments products could save merchants time and expense in handling cash (Appiah & Agyemang, 2007).

The resource cost of a nation's payment system can account for 13% of its GDP. Since most electronic payments cost only about one-third to one-half as much as paper-based non-cash payment, it is obvious that the social cost of a payment system could be considerably reduced if it is automated (Appiah & Agyemang, 2007). Automating and streamlining electronic payments made from self-serve channels such as ATMs, branch office terminals and point-of-sale (POS) systems can reduce paper-based errors and costs.

A research work carried by Visa Canada Association in collaboration with Global Insight revealed that electronic payments provide transactional efficiency to consumers, merchants, banks and the economy. Electronic payments have contributed $107billion to the Canadian economy since 1983 and represents nearly, 25% of the $C437 billion cumulative growth in the Canadian economy over the same period (Delali, 2010). Over the same two decades, $C60 billion of the increase in personal consumption expenditures was directly attributable to electronic payments, with credit card holding a commanding share of this growth ($C49.4 billion) over debt cards ($C10.4 billion) (Delali, 2010).

Nigeria is lagging way behind most of the world in the general quest to boost micro economic activity by reducing the role played by physical cash in daily transactions and by encouraging the creation of cashless society, this can be averted (Dankwambo, 2009).

However, experts in the financial sector have stressed that unless something radically innovative, functional and savvy is introduced, which accounts for attitudes as well as the huge un-banked population, the country's dream of building a functionally cashless society in the shortest possible time could be elusive (Dankwambo, 2009).

Challenges of Electronic Payments

Electronic payments despites its numerous benefits come with its own challenges even in the developed world. The problems militating against e-payment as listed by Ogedebe & Babatunde (2012) in Sumanjeet (2009) generally revolve around.

- Integrity: to ascertain that transmitted financial information is unchanged in transit.
- Non-reputation: to ascertain that all parties have non-deniable proof of receipt.
- Confidentiality: to ascertain that transactions are protected from possible eavesdroppers.
- Reliability: to ascertain that there is reduced possibility of failure.
- Authorization: to ascertain that individuals are recognized and granted the desired rights and privileges.

The system which is still in its early stage requires a lot of information and education of the public to enable them appreciate the laudable programme put together by government to protect their interests. If they are properly and adequately educated, the chances of total acceptable of the programme can be assured. The banks also need to be carried along in the implementation process as they play a crucial role. Furthermore, many see e-payment as an imposition.

Lack of Uniform Platform of Banks and MDAs

There is no compelling law mandating the banks to use common software platform. Every bank is left to use whatever platform that they felt will perform the e-payment services on behalf of the clients. There is the problem of switches in effecting transfer from one bank to another. Interconnectivity has been a problem. No uniformity of account numbers since different banks different numbering systems. Happily enough, the Federal Government according to Dankwambo (2009) through the Office of Accountant General of the Federation will be rolling out a a common platform configuring soon.

- **Lack of Adequate Infrastructure**

The e-payment system is being partially implemented. If it is to be fully implemented, a number of IT infrastructures will have to be put in place. These include but not limited to laptop, desktop, scanners, good internet connectivity, training and global software. The provision of basic Information Technology infrastructures according to Ovia (2002) is a major challenge.

- **Platform Security**

Atanbasi (2010) pointed out that the major challenges of e-payment in the country are security. Security in terms of platform, hackers and virus attacks. This will ensure that output from the system are reliable and accurate. The MDAs still carry their schedule(s) to the banks with compact disks (CDs), flash drives or e-mail attachments.

- **Lack of Seriousness by Banks**

While a number of banks have deployed the necessary infrastructure in place to ensure effective implementation, it is sad to note that some banks are still not fully ready for this new payment regime.

- Resistance to changes in technology among customers and staff due to:

(i) Lack of awareness on the benefits of new technologies
(ii) Fear of risk
(iii) Lack of trained personnel in key organizations
(iv) Tendency to be content with the existing structures, and
(v) People are resistant to new payment mechanisms.
(vi) Security. Where disclosed of private information, counterfeiting and illegal alteration of payment data may be rampant (Daukwambo, 2009).

- **High rates of illiteracy:** Low literacy rate is a serious impediment for adoption of e-payments as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of e-payments, they should not only know how to read and write but also possess basic ICT literacy.
- **High cost of internet:** The cost of internet access relative to per capita income is a critical factor. Compared to developed countries, there are higher costs of entry into the e-payments and e-commerce market. These include high start-up investments costs, high costs of computers and telecommunication and licensing requirements.
- **Frequent power interruption:** Lack of reliable power supply is a key challenge for smoothly running e-payments and e-banking.

According to Microfinance Nigeria (2010), urban dwellers are not receptive to the efforts of ICT investors to migrate payment system through substantial investments in crucial infrastructure like Point of Sale (POS) terminal in thousands of supermarkets, fuel stations, hotels, recreational centres and many others.

Evaluation of E-payment in Nigeria

In achieving the mission of introducing e-payment system in Nigeria it is crystal clear that only a few of the objectives have been achieved. These include among others the following:

- Elimination of many risks involved in carrying large sums of money such as armed robber, fraud, theft and others.
- At least government organizations no longer pay cash to “contractors” and civil servants.
- Elimination of the use of cash to facilitate speedy payments for all transactions. But to a very large extent, the following objectives have not been met.
- Fast tracking the implementation of government policies through the elimination of delays in government payment system. There are instances of delay in payment to contractors who are not ready to play bale. There has been a complaint from some contractors handling projects in the rural areas over difficulties associated with the e-payment model.
- Minimize interaction of government, officials and contractors to eliminate opportunity for corruptive tendencies. It will be difficult to eliminate this as interaction at which every level will continue formally or informally if Nigerians are to be honest with themselves. In which ever case, there is need to ask the question. Who are the contractors? Is the due process of government working or not? Who are the officials subverting this and other laudable programme of government? Can corruption really be stamped out of the system?
- Achievement of economy and efficiency in government financial transactions. For as long as corruption remains within the polity, there can be no efficiency in the system. The EFCC and the judiciary will have to find a common ground to tackle this cankerworm that has defiled all solution. China’s example could be the best solution but for tribal and religions sentiment among some Nigerians.
- Enhancement of real time reporting and improve quality of financial reporting system in the public sector it has been observed that since the implementation of the policy, there have been late returns or no response in respect of unapplied funds. The existing system cannot guarantee real-time reporting of finances. As result there can be no good financial reporting (Ogedebe & Babatunde, 2012).

Conclusion

Technology has unarguably made our lives easier. It has cut across distance, space and even time. One of the technological innovations in banking, finance and commerce is the electronic payments. Electronic payments provides greater freedom to individual in paying their taxes, licences, fees, bills, fines and purchase at unconventional locations and at whichever time of the day. The success of e-commerce payment systems is largely depended on consumer preferences, ease of use, cost, industry, agreement, authorization, security, non-reputability and acceptability.

Despite the numerous benefits that electronic payments bring to the nation, banks and individuals, it also has its challenges. The challenges as discussed in the study can be categorized into four main groups that is, security, infrastructures, legal and regulatory issues as well as socio-cultural issues (Ayo, 2011; Delali, 2010).

Recommendations

1. There is the need to create more awareness to entice the unbanked people into the banking system.
2. The banks must perform more education and advertisement on electronic payments so that the Nigerian population will appreciate and use electronic products available. The use of cash comes with its own disadvantages and problems that electronic payment can eliminate. Cash and cheques must go through several processes which increases their risk of being lost or stolen. Such processes include transportation and counting. Most Nigerians are not aware of the benefits of e-payments are therefore slow to adopt it. The banks must also be educated to promote e-payments; training programme for senior management of the banks will assist in achieving this.
3. The government of Nigeria should provide the much needed leadership and support for electronic payments.
4. Applicable regulations including those for electronic approval processes, consumer protection and e-transactions should be developed and standardized as needed.
5. Government and private organizations should systematically expand the necessary infrastructure by promoting the development of necessary technologies, recruiting experts and expanding high speed information network as this will foster a strong foundation for e-payment.
6. In order to be appreciative of the benefits emanating from the use of the new payment regime (EPS) there should be steady power supply in the country.
7. Security to CDs/flash drive-measures should be taken to ensure that storage media be jealously guarded and delivered as intended.

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