Challenges of e-Service Adoption and Implementation in Nigeria: Lessons from Asia

Kazeem Oluwakemi Oseni, Kate Dingley

Abstract—e-Service has moved from the usual manual and traditional way of rendering services to electronic service provision for the public and there are several reasons for implementing these services, Airline ticketing has gone from its manual traditional way to an intelligent web-driven service of purchasing. Many companies have seen their profits doubled through the use of online services in their operation and a typical example is Hewlett Packard (HP) which is rapidly transforming their after sales business into a profit generating e-service business unit.

This paper will examine the various challenges confronting e-Service adoption and implementation in Nigeria and also analyse lessons learnt from e-Service adoption and implementation in Asia to see how it could be useful in Nigeria which is a lower middle income country. From the analysis of the online survey data, it has been identified that the public in Nigeria are much aware of e-Services but successful adoption and implementation have been the problems faced.

Keywords—Adoption, Asia, e-Government Service, Implementation, Nigeria.

I. INTRODUCTION

The recent trend in world globalization has been promoted by the advancement in information technology especially with what internet and telecommunication have brought, both developed and a few less developed nations take in this concept at both national and state levels, the thinking is that strategic use of internet and telecommunication be sufficient in providing better e-services to the public in Nigeria as experienced in Asia. In other words, faced with the persistent demand of e-services by the population, not only at national and state levels but also at local government level in both developed and a few less developed nations of the world, could such e-Services provision be extended to the public? Furthermore, it may be possible for the public and users to use e-Services in Nigeria considering benefits associated with its usage and taking into consideration the amount of money being given to all tiers of government (Federal, State and Local Governments) monthly and money made from tax payers while creating and sustaining competitive advantage in the market place. The concept of e-government emerged in the late 1990s despite that the history of e-Government as a tool in government establishments could be traced back to the origin of computer itself and just like other e-platform concept such as e-commerce, the term e-government was born out of the internet world [2].

A few decades ago, e-Government as a term and as an identified activity was unknown before now and because of the rapid growth, there is a possible future direction for the research domain [14]. It is important to know that “e-Government initially began as an intra-governmental communication tool” according to [27] shortly before government organizations developed their websites with useful information for their citizens. Online transactions started soon after the information of government websites were understood, following the private sector’s focus on electronic government [27].

In the light of the above, section one of this paper will focus on the introduction and e-Service definition, while section two will provide some background and related works relevant to this work. Section three will focus on the research methodology and approach followed by section four analysing the result of the findings based on the pilot study conducted for the purpose of this work, a brief history of ASIA, lessons learnt from ASIA on e-Service adoption and implementation, is covered as it shed more light on Nigeria. A brief history, and e-Service, barriers affecting e-Service adoption and implementation in Nigeria will also be discussed. Section five will discuss the research recommendations and proposed further work. Section six is the conclusion section and that will be followed by section seven which is the reference section.

II. E-SERVICE

The term e-Service represents content centered and interactive internet based customer service, driven by the customer and integrated with related organisational customer support processes and technologies with the goal of strengthening the customer provider relationship” [26]

Moreover, [28] argued that e-service as a term is not only about “electronic” and “service” but the true e-service operation may be where part if not all interaction between service provider and customer is done via internet. This was also substantiated by [30].

Though, the governments of developed nations have realised that the provision of essential public services cannot be shoudered alone and the obstacles in demand patterns coupled with the limitation in resources have brought about the need for Public Private Collaboration [25]. Also, given the advent of global and competitive markets, many governments have come to accept that there is the need to create and sustain competitive advantage via cost reduction, product

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differentiation or augmentation, while providing these public services [25].

Many companies have seen their profits doubled through the use of online services in their operation and a typical example is Hewlett Packard (HP) which is transforming their after sales business into a profit generating e-service business unit [26]. Despite the fact that e-governance is still a bit low in some countries in Asia region [11], there are still lessons to be learnt from the region’s e-Service adoption success, for example the e-Perolehan system (a procurement system) in Malaysia [17]. This was designed to assist government in service procurements among other objectives such as ensuring transparency and accountability in all procurements by government [17]. “E-Perolehan is the new procurement system allows the Government ministries to electronically select items to be procured from the desktop, initiate an electronic approval process and also create, submit and receive purchase orders, delivery orders and other related documents electronically” Although this quote was found in the article written by [17] but the authors were quoting [24]. The initiative was a success even with a major challenge which is how an appropriate and context tailored strategy could be established in order to guide the project [17].

Another e-Service success from the Asia region is the government investment in China on e-government by the Chinese central government which established over 90 portals with many regional and municipal websites [19] and this is also supported by [25] that the investment assisted China to take over as the largest online population from Japan and they are now only just behind the USA in global ranking [25].

III. BACKGROUND

E-Government service implementation has begun in lower middle income countries like Nigeria but the lack of evidence and research has hindered a clear framework for the adoption as expected, infact e-government activities are actually very low in the country [23]. It is well known fact that from 1960 upward, the use of information systems in transforming and improving operations in both public and private organisations has been a success and moving from paper-based operations (manual) to computerised based one has been part of the transformation witnessed as sited by [18] face to face approach and the use of telephone in doing business transactions with citizens has been faced out to some extent through the use of online based services [18].

However, the issue is how long Nigeria as a country will keep avoiding the adoption and implementation of e-Service despite the facts that the same e-Services have been adopted and implemented successfully to some extent in Asia and other part of the world. There are benefits associated with these e-Services. Despite the rapid growth of E-readiness in most countries in the world, from the study conducted by the [40], the Middle East and Africa currently serve a total of about 1m internet broadband subscribers, a small sum compared with the 53m in Asia and 42m in the Americas. Low levels of investment and limited sources of financing constitute the primary reasons for the slow development. With public and private funds for infrastructure development lacking, even broadly available technologies remain too costly for widespread adoption. The EIU study shows that Nigerian E-readiness ranking in 2005 is 3.46 out of E-readiness 10 maximum points available [31].

It is good to know that focusing on customers is the main e-service fundamental philosophy, that is, to be able to meet customers’ needs in order to make both markets and revenue grow. Technology has a vital role to play in e-service as it is seen as enabler and businesses can exploit the opportunity provided through technological enhancement to gain market competitive advantage, this will open new forms of customer focused and e-services support services that are more convenient for many users [24].

IV. RELATED WORK

There are related research papers on e-Service, challenges, adoption and implementation [1], [9], [23], [27]. Nigeria is an unusual country in having the highest GDP in Africa [32] but it is still ranked as poor in the UN’s Human Development Index [35]. The high GDP is contributed to by growing telecoms and banking, but there is no clear framework to use either of these for e-Government adoption and implementation. This research will attempt to recognise and recommend opportunities for adoption.

To this end, this paper will examine the various challenges confronting e-Service adoption in Nigeria highlighting previous works. The author will conduct a pilot study through survey questionnaires. Lessons learnt from e-Service adoption and implementation in Asia will be reviewed, journal articles written by [22], [29], [37] and others on e-Services in the Asian region to see what lessons may be useful in Nigeria’s case.

V. RESEARCH METHODOLOGY

Qualitative research as described by [8] “a researcher identifies with postpositivism” where researchers have an understanding of the research and interacts with stakeholders on what is being researched. This method will be used in this study where an online survey using questionnaires was sent to various stakeholders in e-Service adoption and implementation in Nigeria and United Kingdom such as government officials, students, non-governmental agencies, private business owners through email and social media technologies.

There are other methods like case studies, quantitative methods but the authors decided to use qualitative survey questionnaires because these have been used and validated by previous researchers in this field [22], [29]. We considered the distance from United Kingdom to Nigeria and there are often difficulties meeting with widely dispersed stakeholders.

In this study, the questionnaires were designed to help in data collection and the questions are into two categories namely: demography which were used and validated by [22], [29] and the second part of the questionnaires is about e-
Service adoption and implementation whose questions have been used and validated by [7], data were collected between 23rd September 2014 and 30th October 2014 and a total of 120 responses were received, with details in the findings section below.

VI. FINDINGS

Early research findings were based on reviewing related works on e-Government development in Nigeria [9], [23] where a framework was proposed for e-Government at federal government level. However, there are still many challenges facing the full implementation and adoption considering many shortcomings in the content of both states and federal government websites. In reviewing the responses from survey questionnaires and method used by [6] where primary data were sourced through the use of 100 unstructured questionnaires with 25 respondents each from 4 sectors namely Banking, Government officials, Contractors and Academics, as stakeholders.

From the recent survey conducted by the authors between 23rd September and 30th October 2014 for the purpose of this paper, the results show that the 120 participants who participated in the questionnaires have now heard of e-Service but the implementation is not forth-coming as expected. They acknowledged also that there are many challenges in e-Service Adoption and Implementation in Nigeria. More will be discussed and analysed in the data analysis.

VII. DATA ANALYSIS

This section will highlight the main findings in the survey conducted between 23rd September and 14th October 2014 and provide indications from the opinions of the participants towards the challenges facing e-Services adoption and implementation in Nigeria. Questionnaires were used in the study [38].

At 30th October 2014 we have 120 respondents, among which 72 respondents (60%) are Nigerian, 7 respondents (6%) Africa, 3 respondents (3%) American, 15 respondents (13%) British and Western Europe, 12 respondents (10%) Asia, 6 respondents (5%) Dual Nationalities, 2 respondents (2%) Others.

A. Demography Analysis

Fig. 1 Sex Analysis from Survey

Fig. 2 Age Analysis from Survey

Fig. 3 Nationality Analysis from Survey

Fig. 4 Education Analysis from Survey

Fig. 5 Occupation Analysis from Survey

B. E-Service Adoption and Implementation Analysis

Fig. 6 E-Service Service Awareness Analysis from Survey
and 28% have used several e-services, though this is not peculiar to Nigerian alone as the survey capture other nationalities including the United Kingdom. More of the analysis will be done in future work.

VIII. NIGERIA AND E-SERVICE

Nigeria is in the west and most populous country in Africa with over 170 million, Britain held Nigeria as colony from 1885 and it became a British protectorate in 1991 [38]. In 1960, Nigeria gained independence from Britain and was officially pronounced a country on October 1st 1960 and the country became a republic in 1963 [38].

The level of e-government services in Nigeria is still very low [23] and the government needs to improve in the area of ICT provision including telecommunication and infrastructure. Although the coming of mobile communication into the country in 2001 looked promising as it has increased the economic strength of the country because of rapid growth in the sector [1]. However, the majority of the population have limited or no access to the internet due to lack of availability of network infrastructures. Another critical issue is the frequent interruption of electricity in the country, which means that citizens cannot rely on an e-service being available and the government will have to increase their efforts to combat the problem if Nigeria wants to be identified as one of the best countries in e-government services provision to the citizens in the world [1].

IX. CHALLENGES OF E-SERVICE ADOPTION AND IMPLEMENTATION

There are various challenges facing the adoption and implementation of e-service in Nigeria as obtained and analysed by the survey results, higher scorers are Political crisis, Trust issue, Finance, Usability Issues, Leadership and Management -Corruption, Cultural difference, Lack of information security and privacy and others as indicated in Fig. 9.

According to the survey and as shown in Fig. 9, we will be discussing the first five barriers affecting adoption and implementation of e-service in Nigeria, they are:

Finance (38%): This is essential in e-Service implementation as the project might not see the light of the day if there is no money for the implementation [22]. Finance issues could come from the high cost of ICT equipment, and of the setting up and maintenance of telecommunication infrastructure across a large variable terrain country. Financial security matters in e-government projects [12]. Looking at the Nigerian perspective involved in this pilot study, this barrier ranked 3rd and no one is sure of exactly how much money the Nigerian government has reserved for e-government projects in the yearly budget as there is no documentation. One issue with finance in Nigeria projects is even if money is allocated, due process is not always followed in the disbursement of the fund due to high corruption.
Moreover, leaders don’t account for what they do in government in Nigeria, and there are no checks and balances, the legislative arm of government who could challenge the executive is seen merely as a rubber-stamping body and there is belief that they may be bribed to ignore abnormalities [16].

Usability Issues (33%): This is another serious challenge facing the adoption and implementation of e-Service in Nigeria because of high levels of illiteracy and according to [5]. Usability aims to make sure users are satisfied with the e-Service usage, this needs to be considered when designing a website as it should be accessible to all prospective users irrespective of their background. Cultural contexts for all intended users is also put into consideration when designing websites as this will go a long way to encourage the usage of these services and it is advisable that World Wide Web Consortium (W3C) guidelines should be followed during website design [15]. Mobile services have now presented their own challenges that go beyond the basics of website design, and usability on a personal computer [15].

Political Crisis (42%): In modern day Nigeria where the issue of political crisis has been very prominent especially in the northern part of the country [3]. Terrorists called Boko Haram are killing both citizens and foreigners in the name of rejecting western education, making it difficult for e-Service projects to evolve. Western education brings with knowledge and reliance on e-services and where this is being challenged by terrorists can prevent future involvement in information sharing and decision making [3]. In the pilot study as shown in Table I, the political crisis is highlighted with 42%, more than any other challenges facing the adoption and implementation of e-Service in Nigeria and tackling this problem will be beneficial to all [3].

Leadership and Management – Corruption (35%): The support of leaders and management in implementation and adoption of e-government services is highly important in achieving the desirable success [22] but in present Nigeria that might be difficult as many of the top management staff in various government offices, agencies and ministries are highly corrupt [6]. Corruption is as prominent in the country as power is being abused for personal gain among officials [39] paying bribes to contractors, influencing and the manipulation of elections happens. Setting up the anti-corruption agency to curb corruption is not really effective as they take orders from government rather than being independent body [6].

Trust Issues (40%): The security of the e-Service portals will be of the great benefit not only to the users but the government and private organisations who venture into provision of e-Service to the populace [22]. As shown from the pilot study, trust issues came second and very close to political crisis in the league of the challenges facing e-Service adoption and implementation in Nigeria with 40%, [22] are of the opinion that the e-Government services must be built on trust among the stakeholders like government, citizens, NGOs and private organizations. People might not be willing to participate in using an e-Service portal if they feel the security of their data will be breached [7]. Furthermore, privacy principles must be respected and accepted by the e-Services providers in order for the required benefits in implementing the projects to be achieved [21].

X. LESSONS FROM ASIA ON E-SERVICE ADOPTION AND IMPLEMENTATION

Asia as a continent is the most populous and the largest among the continents of the world with over 4.4 billion population and land area of 44,579,000 km² [38]. Asia continent is bordered in the west by Europe, Mediterranean Sea (the eastern coastline), the black Sea, Sea of Marmara, the Bosphorus strait and the Caspian Sea [40].

Fig. 9 Challenges confronting e-Service adoption and implementation in Nigeria.
The papers on e-Service adoption and implementations in Asia [22], [29], [37]; show that the region have invested a lot in e-Service projects despite the various challenges and threats they face such as environmental issues [13]. They have taken bold steps in e-Governance development and the result shows they recently overtook the USA based on purchasing power parity [34] as the world’s biggest economy with gross a domestic product is worth $17.6 trillion (€13.84 trillion) according to the International Monetary Fund [33].

According to the United Nations 2014 E-Government Development Index (EGDI) survey, following the huge investment in e-government in the region, the Asia region retained the top ranking in the world, especially among the 25 very high EGDI countries of e-government. They have index values in the range of 0.75 to 1.00 as indicated in Table I [35].

<table>
<thead>
<tr>
<th>Country</th>
<th>Region</th>
<th>2014 EGDI</th>
<th>2014 Rank</th>
<th>2012 Rank</th>
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<tbody>
<tr>
<td>Korea Republic</td>
<td>Asia</td>
<td>0.9462</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Australia</td>
<td>Oceania</td>
<td>0.9103</td>
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| Very High EDGI Average | 0.8368 | World Average | 0.4712 |

Finally, the lesson from the Asian region on e-government services development for Nigeria is that the country should take a bold step in investing largely in e-government service projects. Leaders should stop being partial and inflating contract for personal gain and they should eradicate corruption. The long term benefits of these projects to both government and citizens, a sophisticated and modern ICT in all government agencies and ministries will be the bedrock and foundation stone of e-Service adoption [22].

XI. RESEARCH RECOMMENDATION

We are of the opinion that the government in Nigeria should be able to take a bold step in investing money in e-governance through the provision of e-Services to the public and citizens; it is quite unfortunate that Nigeria has 774 local government area councils and none of them has a functioning website [10], [20]. There are some recommendations that could be beneficial in reducing if not totally eradicating the challenges facing e-Service adoption and implementation in Nigeria based on the survey results:
More money should be more money allocated to e-Government services development in the country’s yearly budget as presented to the legislative arm of government by the executive arm. The minister and top directors in charge of information and the telecommunication ministry should map out strategies of full implementation and allocation of money meant for e-Service development and they should ignore corruption and favouring dishonest contractors, if the country is to achieve desired and expected results.

Culture and usability issues need to be addressed when designing e-service websites and applications. Well-developed sites and apps will benefit the illiterate as well as the middle class literate members of the population, and could ensure the rapid expansion of e-services.

Political crisis is collapsing Nigeria’s present economy, especially in the northern part of the country where terrorists are killing citizens because of their want all to accept Islamic states. There is a need for government in Nigeria and international communities to form a partnership to stop the violence created by the terrorists, as e-Government services will only be adopted and accepted when there is peace and a conducive environment, allowing people to move freely without fear and intimidation of any form of attack.

Trust is another major factor and for the e-Governance projects to be successful, trust must be built among the stakeholders like government agencies, ministries, citizens, business owners and banks. Citizens and users of e-Services will be using their information online so there must be adequate security to protect their data and privacy.

Good leadership and management should be in place for e-government services to work in Nigeria and it will not work in a corrupt environment, so there should be a focus on the side of leaders in order to achieve expected results and benefits of implementing the service.

The awareness level of e-Services should be addressed as the users and citizens have more knowledge of the existence of e-Services and a comprehensive advert and campaign could be put in place. However, until there are reliable e-Services to use, this could only further awareness and not usage.

Interactive tools should be included in designed e-Service websites to enhance interactions between government and citizens.

A well-structured strategic plan should be built for e-Service projects and issues relating to culture should be addressed for e-Service adoption success.

XII. CONTRIBUTION AND FURTHER WORK

In this paper, we have been able to contributes to the analysis of e-Service adoption and implementation in Nigeria with the pilot study conducted for the purpose of this work, where we have been able to capture the thoughts of various stakeholders involve in the provision, implementation and adoption of e-Government services in Nigeria. We have also made necessary recommendations that will improve the e-Service adoption and implementation in the country.

The research is significant as government need to invest money and commitment in the provision of e-Services to citizens, and it is rather unfortunate that at the moment, there is no Local Government in Nigeria with a functioning website [10], [20] and this lack being a barrier to the use of e-Services by the citizens.

There is still a lot to do in the area of e-Services in Nigeria if the country is really serious in overcoming the challenges in the adoption and implementation. The survey conducted for this pilot study could not fully reflect the true position of Nigerians as other nationalities too, have been considered while analysing the questionnaires. Although we were working on challenges confronting e-Service adoption and implementation in Nigeria together with lessons learnt from Asian, we brought in other nationalities in order to have a comparative. A more specific survey could be done in future to take into consideration the various stakeholders in Nigeria in an attempt to focus the findings.

XIII. CONCLUSION

We have been able to discuss various challenges facing e-Services adoption and implementation in Nigeria with analysis of lessons learnt on e-Services implementation in Asia region, and recommendations have been made towards the development, implementation and adoption of these government services in Nigeria.

Though, e-Governance is still young in many lower middle income countries like Nigeria, successful e-Service implementation and adoption will provide increased revenue and the boost economy. More research is now needed to identify and implement cost-effective, usable e-Service systems for the country, and there is a need for government to make positive change in the way services are being delivered to citizen and others stakeholders. Issues like awareness and availability of services and trust all need further development in order to allow e-Government services to be delivered and used by citizens.

REFERENCES


