

# Evaluation of E-Government Implementation: The Case of State Government Websites in Nigeria

Aderonke A Oni<sup>1</sup>, Adekunle Okunoye<sup>2</sup> and Victor W Mbarika<sup>3</sup>

<sup>1</sup>Covenant University, Ota, Nigeria

<sup>2</sup>Xavier University, Cincinnati, USA

<sup>3</sup>Southern University A&M College, Baton Rouge, USA

[ronke.oni@covenantuniversity.edu.ng](mailto:ronke.oni@covenantuniversity.edu.ng)

[okunoye@xavier.edu](mailto:okunoye@xavier.edu)

[victor@mbarika.com](mailto:victor@mbarika.com)

**Abstract:** This study evaluated the extent to which current status of e-government implementation in Nigeria conforms to the national IT policy strategy. The study is based on content analysis of the official websites of the thirty six states and the federal capital territory of the country. It focuses on the content, functional and construction features of the websites. It was found that, out of the thirty six states, only twenty-three (64 percent) had websites and mostly provide textual information; few provide downloadable digital documents and functional online interactions. We recommend that, in addition to the National IT policy, Nigerian government needs to have an established guideline for its e-government implementation and NITDA needs to be more proactive in its duty of monitoring IT policy implementation. The site designers should acknowledge the importance of government websites as the main channels for information dissemination, for facilitating citizens' interaction with government and for transforming government operations. Thus, the websites must be more than static notice boards but be function-oriented, dynamic and interactive.

**Keywords:** content analysis, e-government, Nigeria, Website, evaluation, IT policy, ICT

---

## 1. Introduction

Government and public sector managers have, within the last decade, come to the realization that Information Communication Technology (ICT) is a viable tool that can help them achieve their aims; deliver efficient and cost effective services to its citizenry, clients and partners (Olasina, 2012). Nigeria, a burgeoning democracy in Africa (Olatokun and Adebayo, 2012), has come to realize the fact that no developing country or growing economy can be sustained without the integration of ICT with its development strategy and therefore, has adopted technology aimed at enhancing the growth of her economy. The Nigerian Government saw the need for the country to participate in the race to becoming a digitized society and how ICT can empower the people (Akinsola et al., 2005). Due to this, ICT was declared a national priority, resulting in the formulation of a policy for Information Technology in 2001. Nigeria being a fast growing and lucrative telecommunications and ICT market in Africa is still ranked low in e-government provision to its citizen (Adeyemo, 2010).

The United Nations E-government survey in 2012 showed that Nigeria has e-government development index of 0.3063 and occupies the 136<sup>th</sup> position in the overall world ranking. It is important to note that this index is below the world's benchmark index of 0.4882 (UN e-government survey, 2012). The benefit of implementing e-government in a developing country such as Nigeria include among others, improved efficiency, convenient and faster access to government services, increased transparency, accountability of government functionaries, reduced costs of administrative services, and improved democracy (Kamar and Ongo'ndo, 2007). Nigeria is however, far from achieving these practices.

The aim of this paper is to examine the extent to which the current status of e-government implementation in Nigeria conforms to the national IT policy. The motivation for this research is in three folds; first, to examine how government institutions at the state level have responded to the National IT policy strategy to use technology to bring government close to the people, promote transparency, accountability and strengthen democracy. The second motive is to evaluate the provisions on state governments' portal websites towards achieving the e-government objectives. Third, to proffer useful suggestions that when incorporated, will enhance the achievement of e-government objectives in Nigeria. The paper is organized as follows; Section 2 provides a brief background to e-government, e-government models, review of previous government websites evaluation research and the Nigerian e-government implementation process. Section 3 presents the research framework. Section 4 reports the research findings and Section 5, recommendations and concluding remarks.

## 2. Literature Review

E-government refers to the use of internet technology as a platform for exchanging information, providing services and transacting with citizens, businesses, and other arms of government (UN government survey, 2004, 2005, and 2008). The World Bank defined e-government as the use of information communication technology to transform government by making it more accessible, effective, and accountable to its citizenry (2010). In recent times, several countries around the world are making major efforts at improving their public sector and regenerating their public administration in order to make them more transparent, proficient, streamlined, and more service oriented through the use and application of ICT. The appropriate use of ICT to achieve the goals of the governments of nations for a reformed public sector and ultimately for improved economic development is what makes up e-government. The focus of e-government is therefore, on the provision of governmental services via the use of information technology with the aim of enhancing the service level relationships between government and its various stakeholder groups, such as the citizen, businesses, tourists and other governmental agencies (UN, 2008).

E-government cannot be seen as a single-step process or executed as a solitary project. It is evolutionary in nature, involving multiple stages of implementation (Jayashree and Marthandan, 2010). There are various models developed to describe the stages of e-government implementation. These models have some stages in common but also have some differences as well. A few of these models which have been tested and seen to be consistent include: the World Bank's three stage model (Jayashree and Marthandan, 2010), the Gartner's four stage model (Baum and Di Maio, 2000), Layne and Lee's four-stage model (Layne and Lee, 2001), United Nation's five stage model (UNASPA, 2001) and the Jayashree and Marthandan's five stage Model (Jayashree and Marthandan, 2010). The UN's model has been the most popular and adapted in various e-government reports (UN e-government survey, 2004, 2005, and 2008). The stages in the model are:

**Stage 1 - Emerging presence:** Here, a government makes its online presence with an official website which include links to ministries or departments. Information is majorly inactive and there is little or no interaction with citizens.

**Stage 2 - Enhanced presence:** Governments provide more information on public policy and governance and makes them easily accessible to citizens. Links are made to record information such as newsletters, documents, reports, laws etc.

**Stage 3 - Interactive presence:** Governments provide online services like downloadable forms for applications and an interactive portal with services to ease their use by citizens

**Stage 4 - Transactional presence:** This stage enables a two-way contact between 'citizen and government'. It includes options for paying taxes, applying for ID cards or passports and other functions similar to G2C interactions.

**Stage 5 - Networked (or fully integrated) presence:** This is the most sophisticated level of e-government implementation. It integrates all e-government service dimension Government to Government (G2G), Government to Citizens (G2C) and Government to Business (G2B). At this stage, government, through technology, becomes proactive in connecting with and answering citizens' needs.

### 2.1 Government Website Evaluation Metrics

Website is a platform through which governments around the world promote openness and facilitate efficient interaction with citizens. Web measurement index is one of the factors that contribute to high e-government development index (UN E-government Survey, 2008). Several research works and frameworks for evaluating government websites have been reported in literature following the recognition of the prominent role that websites play in bringing together citizens, businesses and governments.

The Website Attribute Evaluation System (WAES) was developed by Cyberspace Policy Research Group (CyPRG). WAES is being extensively used to analyse e-government websites for organizational transparency, interactivity, and openness (La Porte et al., 2001). The UN's Division of Public Economic and Public Administration proposed e-government readiness index which has been used extensively to assess the progress of UN member countries in e-government implementation. The UN e-government readiness index averages Web Measure Index, Human Capital Index and Telecommunication Infrastructure Index to determine e-government implementation status of member countries. Liu et al. (2010) further developed a framework consisting of content index, function index and construction index for evaluating government portal websites. West (2005) assessed and rated the global e-Government initiatives based on the information availability, service delivery, and public access features in the government websites.

Evaluation of e-government implementation has attracted the attention of researchers within the last two decades. Many research works in this domain have been conducted using government websites. The research works have had different focus though the object of evaluation is the same. For instance, Kaaya (2001) used content analysis approach to determine the websites status of Kenya, Tanzania and Uganda governments. The evaluation criteria used in this study is a combination of WAES (La Porte et al., 2002) and utility indicators (Holliday, 2002). Attributes adapted from WAES include website ownership, freshness and usability attributes (Kaaya, 2001). Kaylor et al. (2002) assessed the level of e-government implementation using function attributes of government website. Boussarhan and Daoudi (2014), in their own approach, focused on accessibility using Web Accessibility Initiative Guidelines (WCAG). The main focus of the research works include accessibility, usability, website quality, level of implementation and performance. Table 1 gives a summary of prominent research works on government website evaluation.

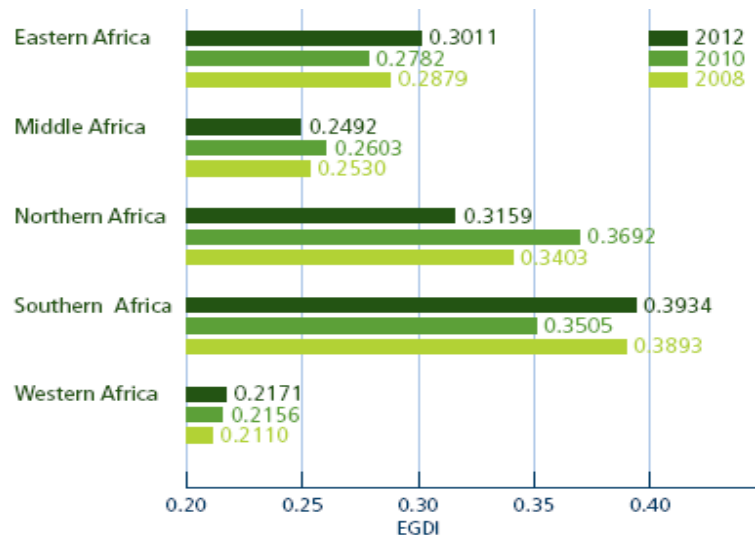
**Table 1:** Selected Government Website Evaluation Research

Reference	Study Area	Key Dimensions Used	Research Focus
Boussarhan and Daoudi (2014)	Website of the Ministry of Health, the Ministry of Social Development and the National Fund of the Social Provident Bodies, Morocco.	Web Accessibility Initiative Guidelines (WCAG 2.0)	Accessibility
Makoza (2013)	Government ministries and departments websites of Malawi	Functions and characteristics	Level of implementation
Asiimwe and Lim (2010)	Govt. websites in Uganda	Design layout, navigation, legal policies	Usability
Liu et al. (2010)	Content, function and construction	Websites of the 30 capital cities in China	Performance
Baker (2009)	e-Govt. websites in the U.S	Online services, accessibility accommodations, information architecture, legitimacy, navigation, user help	Usability
Stoica and Iias (2009)	Website of Romanian Cities	Security, personal data protection, usability, contents type of services provided and digital democracy.	Level of implementation
Parajuli (2007)	Ministerial Websites of Government of Nepal	Transparency, interactivity, accessibility, and usability	Usability
Toots (2006)	Social security services website in Estonia	Content, interactivity, usability, aesthetics	Website quality
Carrizales et al, (2006)	Websites of international cities	Security & privacy, usability, content, services, citizen participation	Performance
Esterling et al. (2005)	Websites members of the U.S. Congress	Audience, contact, usability, interactivity, usability, innovation	Website quality
Abanumy, Al-Badi and Mayhew (2005)	Saudi Arabia and Oman	Worldwide Web Consortium (W3C) publishes Web Content Accessibility Guidelines (WCAG)	Accessible
Choudrie et al. (2004)	Singapore, Finland, Canada, Hong Kong and Australia	Accessibility, quality and privacy.	Usability
Kaylor et al. (2002)	U.S Municipal Government	Payment, images, Registration, Audio/Video, permits, Documents, Customer Service, Applications, Communication Licenses, Miscellaneous	Function/ e-services availability

## 2.2 E-Government in Nigeria

The Nigerian Government recognized the potential of Information Communication Technology to empower citizens especially youths, women and disabled and the need of the country to participate in the race to becoming a digitized society (Awolaye et al., 2008). To this end, ICT was declared a national priority, resulting in the formulation of a policy for Information Technology in 2001. Nigeria laid foundation for e-government when it adopted the National Policy on Information Technology (IT) 'USE IT' policy document. The document spelt out the strategies and guideline for e-Government implementation in Nigeria. The enabling law of the National Assembly known as the National Information Technology Development Act of 2007 was later promulgated. This law formally set up the National Information Technology Development Agency (NITDA). NITDA was authorized to formulate, devise, develop and promote the use of Information Technology in Nigeria (Olatokun and Adebayo, 2012). E-Nigeria, an initiatives aimed at connecting communities, vital agencies, institutions of government and educational institutions at all levels with ICT are currently being pursued by the government (Fatile and Olufemi, 2012). Despite these government initiatives, Nigeria still struggles to have a notable improvement in its e-government ranking.

UN e-government survey (2008) showed the world's e-government readiness average as 0.4514. Europe was reported taking the lead among the five regions in the world with an average of 0.6490 followed by the Americas with an average of 0.4936, Asia was next with 0.4470, Oceania had 0.4338 and Africa lagged far behind with an average of 0.2739. Also in the 2012 United Nations survey, West Africa is seen to be the lowest in Africa with a regional index of 0.2171 as compared to the world's average of 0.4882. The graph below illustrates e-government ranking of African regions.



**Figure 1:** Trends in e-government development in Africa 2008-2012 (Source: UN E-Government Survey, 2012)

The surveys by the United Nations from 2008 to 2012 showed that Nigeria dropped in its rankings from 2008 through to 2010, 2012 but experienced a rise in 2014. This is clearly illustrated in Figure 2.

Country	E-gov. development index			World e-gov. development ranking		
	2014	2012	2010	2014	2012	2010
Cape Verde	0.3551	0.4297	0.4054	127	118	108
Ghana	0.3735	0.3159	0.2754	123	145	147
Gambia	0.2285	0.2688	0.2117	167	161	167
Nigeria	0.2929	0.2676	0.2687	141	162	150

**Figure 2:** Nigeria's e-Government readiness ranking in 2010 to 2014 (Source: UN E-Government Survey, 2012 and 2014)

Nigeria came in with an average of 0.3063 and 136<sup>th</sup> position in the overall world ranking; Cape Verde (0.4158) and Ghana (0.2997) took the first and third positions in West Africa respectively in the 2008 survey, but in the 2012 survey, Nigeria dropped to 0.2676 and an e-readiness ranking of 162 and also dropped to fourth position

in West Africa as Cape Verde (0.4297) remained in first place while Ghana (0.3159) and Gambia (0.2688) took second and third positions respectively. In 2014 report, Nigeria was able to move up leaving position 162 to 141 with 0.293 e-government development indexes (EGDI) and also ranked among the countries with lower middle e-government implementation (UN E-government Survey, 2014).

According to the United Nation 2008 survey, it was noted that countries that were always at the top positions and had high rankings (i.e. the European countries) had invested heavily in deploying broadband infrastructure, coupled with an increase in the implementation of e-government applications for their citizens. And countries that lagged at the bottom were because of low scores on the education, infrastructure and Web measurement indices.

### **3. Research Method**

According to Parajuli (2007), there is a conjuncture between websites and their contents to materialize e-government vision. It thus implies that contents and functions provided by government portal websites have important roles to play in achieving e-government goals. Likewise, a well-designed website in terms of attractiveness and ease of use are additional motivating factor for users. Incidentally, previous research works on government websites evaluation are largely skewed away from these focus. While many research works have majorly focused on accessibility and usability as reported in Table 2 contents and functions have not been given adequate and the much needed attention. Nielson (2000) rated websites content to be much more important than sites look and feel. Kaylor et al. (2002) observed a lacuna in research which could help decision makers determine the exact set of functions that constitutes leading edge. This study therefore, made a choice of the Lui et al. (2010) framework to evaluate State government websites in Nigeria because it integrates the contents, functions and construction indexes for evaluating government websites identified in literature.

**Content index:** Deals with how well government is committed to disseminating timely information. Government websites is not an ordinary website; it should promote openness and transparency of administration by providing adequate and updated information about government and its activities. The UN e-government model defines the enhanced online presence of government as one in which it provide dynamic, specialized and regularly updated information. The content of government should be geared towards open administration, publicity and provision of unique and innovative services to citizens. Open administration according to Liu et al. (2010), is governments using the portal websites as platforms to periodically disclose the official information such as governmental notice, personnel change, financial report, statistic result, tourist guideline, policy, and regulation, profiles of government official including official responsibilities, photograph and contact information to the public. Promoting open administration through web content extends to providing information on official recruitment, government's annual plan, general regulation, notification and breaking news. Publicity refers to how well information about the basic characteristics of the city is presented on regular basis.

**Function index:** The function service index checks if the government portal is service oriented. A service-oriented government portal is one that delivers integrated online services to the citizens with high efficiency and effectiveness (Liu et al., 2010). The function index also examines the interaction performance of the government websites, that is, functions that facilitate citizens understanding of government's administrative procedure, allows online services such as license renewal, registration forms download and submission and offer citizens and government interaction. The functional index captures major highlights of transactional and connected presence of e-government model (UN e-government survey, 2004, 2005; 2008). According to World Bank, online transaction has the potential for cost savings, accountability through information logs and productivity improvements for governments (Jayashree and Marthandan, 2010). Government website function can be categorized into four subdivisions: online transactions, administrative question and answer, citizen participation and special function such as link to external social media sites. Kaylor et al. (2002) in assessment of e-Government initiatives identified twelve categories of services that governments provide through their websites. These services include payments, registration, permits, licenses, communication, document, application etc. Aside online transactions, government websites should also provide platforms for two-way communication between government and citizens to enhance public participation in policy making (Moon, 2002; Parajuli, 2007; Liu et al., 2010).

**Construction index:** The construction index examines the technological performance of government websites including design features, information features and Web features of the websites. Design features include aesthetic properties, the normal property, user's perceived ease of use of the website and multiple versions of

the website in different languages. Information features refer to website management functions such as timeliness, diversity of content presentation and regular update of the information presented on the websites. The Web features include the website's clicking rate connecting speed, stability and accessibility of government websites. According to Zahedi, Pelt, and Song (2001) and Parajuli (2007), websites should be accessible to all the people regardless of their expertise, literacy personality, physical abilities and etc. Good layout, aesthetics, ease of use, multi-language, timeliness, connecting speed, stability, accessibility and system maintenance are all requirements for a government portal website to deliver good services to the citizens as well as function well in internal management.

### **3.1 Survey Method**

The study is based on content analysis of the official websites of the thirty six states in Nigeria. Content analysis is a logical method of coding symbolic content by identifying common patterns in media (Panagiotopoulos, Moody and Elliman, 2012). However, there is no need to code symbolic content in this study, we used the web content to document the features appearing in the Nigeria state government websites and Federal Capital Territory (FCT) website based on the coding framework developed from Liu et al (2009) content index, function index and construction index for government websites. The initial code was validated by an expert revision to ensure that the research instrument will capture the essential features in a considerably good amount of time per website. The final coding framework used for the survey as shown in Tables 2 and 3 consists of 28 variables describing the content, function and construction features e-government websites. The governmental website survey lasted for one month starting from February 2, 2015.

The content and function evaluation was conducted by the first author, who is an experienced web designer and e-government scholar. One evaluator is appropriate and sufficient since the content and function indexes questions do not entail subjective judgements. In the evaluation, websites that do not provide the kind of contents or functions in the coding framework is marked "0" for the respective variable.

The third index, i.e., construction, involves three sub-indexes which are design features, information features and web features. These are all technological variables for assessing the effectiveness of government websites. Due to the subjective nature of the questions involved in assessing the construction index, six experts who are experienced in web design from the Department of Computer and Information Sciences, Covenant University, Nigeria were involved in the evaluation. Each of the Experts evaluated twenty-three websites based on the variables in Table 3. Six-point Likert-type scale ranging from 1 = Strongly Disagree (SSD), 2 = Disagree (SD), 3 = Slightly Disagree (D), 4 = Slightly Agree (A), 5 = Agree (SA), and 6 = Strongly Agree (SSA). Features that is completely absent is scored zero. This approach was used to determine the level of agreement of the six evaluators with the existence of the features in Table 3 on the government websites.

## **4. Finding and Implications**

Only twenty three (23) states and the federal capital territory have dedicated websites, which means only 68% of Nigerian State Government is online. The website of Sokoto State Government is under construction; Benue State Government maintains only online blog; Eboyin, Kastina, Kano, Kebbi, Imo, Gombe, Zamfara, Nasarawa, Yobe and Bayelsa State Governments are not online.

### **4.1 Content**

Openness of administration is the efforts of governments using websites as platforms to constantly disclose official information to the public, such as governmental notice, personnel change, financial report, statistic result, tourist guideline, policy, and regulation. The analysis on open administration implies that the state governments are not open to the public in their administration. Considering the nine indexes of open administration provided by Liu et al. (2010), content analysis of the 23 state government websites and the federal capital territory, revealed that only fourteen (58 percent) of these websites have contents relating to official information. The websites of States such as Ogun, Rivers and Delta provide only names and positions of

administrative officials such as the executives, legislatures and judiciary members. The websites of Enugu and Abia states provide names, positions and contacts of executive members but photos and duties are not provided. Osun State website provides only photo and credential of the executive members.

In respect of basic organizational introductory information such as information relating to organization functions, affiliated organization, persons in charge of various responsibilities, office addresses and contacts information, only thirteen states (54 percent) provided some of these information. Akwa Ibom, Osun, Edo and Delta States for instance provide functions or objectives of various ministries and persons in charge but office address and contact of officials were not made published on the site. Ogun State on the other hand provides only names and contacts of various heads of ministries and detailed information about departments and agencies including their mission, objectives, vision, office address, emails and phone numbers.

It was also revealed that state governments in Nigeria are not using their websites to educate citizens on regulation and policies. None of the state websites contains information relating to work regulations. Only two states (8 percent) have information on policies. Lagos state for instance, provides information on traffic policy and Niger State makes available Nigeria constitution and policies and guideline for public private partnership in the state.

As presented in Table 2, almost all the states dedicated their websites to publicizing news on government activities, breaking news in the state but information relating to specific departments or agencies were generally not presented on the websites. Contrary to recommendation for open administration, it is generally not the practices of state governments in Nigeria to publish information on recruitment, give notification on call to tenders or public spending. The only exceptions are Lagos and Oyo States. Oyo published the names of school teachers who were reinstated after an initial compulsory retirement and Lagos State during the period of this investigation published a notice for recruitment on the website Bulletin. The state governments are also not yet in the practice of publicizing their annual administrative plan. The analysis revealed that only ten states (42 percent) have the government agenda for the tenure published on their websites. Seven states (Lagos, Delta, Enugu, Ogun, Rivers, Niger and Cross River states) constituting 29 percent, provided downloadable PDF report of government financial activities and development plan. Lagos state provides document relating to various financial activities such as budget appraisal, budget review, budget analysis, budget call circular, yearly and half year financial appraisal, audited financial statement, etc while the other five states provided only state budget. The websites of sixteen states (67 percent) contain information about the basic characteristics of the state such as geography, climate, resource, population, etc. This information are generally well presented in all the sixteen states websites so that visitors can have good knowledge of the respective states.

**Table 2:** Variables Examined for Content and Function Indexes

Variable	Description	Total	%
1.	Is there official information such as credential of government officials, photo, position, duty, contact information?	14	58%
2.	Is there organisational information such as organisation functions, affiliated organization, person in charge, office address and contact of officials?	13	54%
3.	Does the site contains information relating to the responsibility of government officials such as duty, affiliated office/organisation, office address and contact information?	6	25%
4.	Is there information on government policy?	2	8%
5.	Does the site contain news relating to department, industries, State government activities, breaking news, popular topics of the state?	23	96%
6.	Does the website contain information on administrative plan or proposed activities	10	42%
7.	Is there information on legislative activities?	4	17%
8.	Is there any information about official recruitment?	2	8%
9.	Does the website contain information about the basic characteristics of the state such as geography, climate, resource, population, etc?	16	67%
10.	Is there annual report of government activities?	7	29%
11.	Does the website contain state-featured exhibition?	4	17%
12.	Does the website provide introduction about online transactions available?	1	4%
13.	Does the website allow downloading of forms for service registration or complaint?	3	13%
14.	Does the website allow submission of forms?	0	0%
15.	Does the websites offer any form of public consultation or suggestions?	0	0%
16.	Are there online channels for complaint?	12	50%
17.	Does the website provide online survey functions?	0	0%
18.	Are opinion collection functions provided?	3	13%

19. Is online comment function provided?	2	8%
20. Does the website provide functional online messaging forum, blog, and RSS?	6	25%
21. Does the website provide specialized functions such as links to Facebook, email, Twitter, LinkedIn, etc?	19	79%

**Table 3:** Website Construction (on a 1-6 scale)

Variable	Description
1. The layout of the website is very good?	
2. The website is easy to navigate?	
3. Is there multiple version of the website in different languages?	
4. Does the website give current and updated information?	
5. Is the content of the website provided in different format using words, tables, picture, audio and video?	
6. Does the website load fast when you click to go to a new page?	
7. When view the site on different browsers, does it present the same content in consistent manner?	

## 4.2 Function

Information provisioning is the basic function of government websites while provision of online transactions such as registration, service reservation form download and online interaction with citizens serves as the main platform through which public bodies are transforming their array of relationships with citizens, businesses and other governments. Analysis of the function index of Nigerian states websites based on online transaction and citizen participation, shows that Nigerian states e-government implementation is still at basic information provisioning stage. The transformation aspect of having a Web portal is yet to be fully incorporated in all the twenty four state with online presence.

**Electronic Services:** None of the state government websites have implemented online transaction such as renewal of vehicle license, and driver’s licenses payment of taxes and traffic tickets; change of address; application for certificates, making appointments for vehicle emission inspections and driving tests. Not making provision for these services on the websites is an indication that government bodies are not ready to use technology to transform their operations. Lagos State on the other hand implemented a fully functional house hold energy and emission calculator which citizens can use to predetermine their monthly electricity bill but no payment functionality implemented. Niger and Ogun States are the only states that show signs of future implementation of electronic services. The two states made provision for various electronic services (online bidding, Tax payment, job application, vehicle registration services, bill payment services, birth & death registration, etc) on their websites but the functions are under implementation.

**Online Interaction:** Platforms for online interaction with citizens have been introduced to an extent in some of the states’ websites. States such as Osun State provides a direct online submission to the office of the Executive Governor of the state on various topics of interest. Twelve state websites in all; Anambra, Oyo, Enugu, Akwa Ibom, Taraba, Edo, Delta, Bauchi, Niger, Rivers, Kogi and Osun, making 50 percent of the total sample have online contact page which could be used to submit comments or complaints. Edo and Oyo States also implemented comments platforms for sharing opinion on each of the news posted on the website. Six States; Edo, Anambra, Niger, Osun, Ogun and Rivers provide Really Simple Syndication (RSS) while nineteen states (79 percent) provide other specialized functions such as links to Facebook, email, Twitter, LinkedIn, etc.

## 4.3 Construction Index

Result of the construction index of the twenty four state government websites evaluated for design features, information features and web features is presented in Table 4. The evaluation of design features of the websites with respect to layout, ease of navigation and multi-language shows that the websites have good layout and are easy to navigate. Twenty two states (92 percent) have mean score greater than 3.5 for good layout the only exception are Kogi and Ondo states with 2.0 mean score. The analysis also shows that the navigation features in websites except in Lagos, Cross Rivers, Kogi, and Anambra are considerably good. Twenty states (83 percent) have mean score above 3.5. However none of the states provided versions of the websites in another language besides English, probably because English is the official language of the country. Since English is not the major language for any region of the country, government may need to rethink its Web strategy to provide versions of the websites in major language of the respective states to promote inclusive participation.



Analysis of the information features of the state government websites, in terms of timeliness and diversity of presentation, revealed the poor maintenance and management of some state websites. For instance, most recent article in Niger state website was published in October 2012 and last account record available for download is for 2010 accounting year. Likewise in Anambra state, the latest news published is Dec 17<sup>th</sup> 2014. Only seven States (29 percent) could be said to really provide timely and up-to-date information. A more detailed analysis of the features shows that only Lagos state has up-to-date content for downloadable documents. Other states that allow document download such as Delta, Enugu, Ogun, Rivers, Niger and Cross River States have 2013 documents as the most recent content on the site.

The Web features of the government websites was assessed using three variables: connecting speed, clicking rate and stability. Only three states Oyo, Ondo and Anambra did not present the same content on different browsers. They also do not load fast when clicked to go to a new page. This study does not focus on the entire web feature guideline but also observed that all the state websites have functions yet to be fully implemented and as a result, there are a lot of broken links in all the websites.

## 5. Conclusion

This research examined e-government implementation in line with the Nigeria national IT policy statement which is to use IT as the major driving force to re-engineer and rapidly transform governance to interface with the needs of its citizenry by establishing transparency at national, state and local government levels. State governments’ websites were therefore evaluated to assess their level of compliance with the policy statement. The empirical work presents an overview of the efforts of state governments towards implementation of e-government. The level of implementation since 2001 when the policy statement was issued shows that government institutions are not maximizing the potentials of ICT to achieve the stated objectives.

The yardsticks used in the study may not have been completely exhaustive in assessing e-government implementation in the country, but have helped to characterize the overall e-government status in Nigeria. Government intends to replace traditional government with electronic governance, create an easy and free access to government information, establish websites for improved government image and serve as information centers for the citizenry (NITDA, 2001) but the contents, functions and web features that are critical to actualizing these are not fully implemented or completely missing in most of the government websites. Continuous lack of appropriate content to promote transparency and functions that will transform government activities both internally and in interacting with citizens will further make the country rank low in the global competition of digital governance initiatives. The site designers should acknowledge that government websites are the main channels for disseminating information as well as platforms for transforming government operations. Thus, they must be more than static notice boards but function oriented, dynamic, interactive, ubiquitous, searchable and networkable.

**Table 4:** Mean Score of the Technological Performance of State Websites and FCT

	Layout	Ease of Navigation	Timeliness	Presentation Diversity	Connecting Speed	Stability
Mean Score						
Lagos	3.17	2.67	3.67	3.83	2.33	4
Edo	3.5	3.83	4.33	3.5	4	4
Ekiti	3.67	4	4	4	4.33	4.33
Abia	4	4.6	2.2	3.6	4	4
Ondo	3.58	3.78	3.55	3.73	3.67	4.08
Anambra	3.17	3.5	1.67	3.17	3.5	3.33
Oyo	3.51	3.73	3.24	3.64	3.64	3.96
Kogi	3.57	3.91	3.16	3.61	3.86	3.95
Enugun	3.58	3.92	2.97	3.62	3.83	3.94
Akwa	3.57	3.9	2.8	3.56	3.75	3.88
Taraba	3.5	3.79	2.9	3.56	3.71	3.86

Borno	3.49	3.79	2.79	3.53	3.71	3.82
Delta	3.54	3.84	2.98	3.59	3.75	3.9
Bauchi	3.54	3.86	2.93	3.58	3.77	3.89
Jigawa	3.54	3.85	2.89	3.57	3.75	3.88
Kaduna	3.53	3.84	2.88	3.56	3.74	3.87
Kwara	3.54	3.85	2.9	3.57	3.75	3.88
Niger	3.53	3.84	2.9	3.57	3.75	3.88
Ogun	3.53	3.85	2.91	3.57	3.75	3.88
Osun	3.53	3.84	2.9	3.57	3.75	3.88
Rivers	3.53	3.84	2.9	3.57	3.75	3.88
Plateau	3.53	3.84	2.91	3.57	3.75	3.88
Cross River	4.67	4.17	4.83	4.5	4.67	4.67
FTC	3.91	3.95	3.55	3.88	4.06	4.14

We recommend that in addition to the National IT policy, Nigerian government needs to have established guideline for its e-government implementation taking clue from countries such as UK, USA, etc who have successfully used IT to transform government operation from traditional to electronic governance. Establishing a national standard for government websites design will assist the nation to further exploit the benefits offered by ICTs in promoting good governance and monitor compliance. As noted by Parajuli (2007), e-government should continuously grow through learning, investing, and developing guidelines and standards to achieve successful implementation and to meet citizens' expectation. The National Information Technology Development Agency (NITDA) needs to be more proactive in its responsibility of monitoring, regulating and evaluating the progress of National IT Policy implementation.

In the first category of features, the state governments need to use their websites to educate citizens on regulation and policies. They also need to provide more value adding information to the citizens such as information on call to tenders or public spending, recruitment, budget, financial appraisal and audited financial statement. It is also important for the websites to provide information on administrative plans, proposed activities and legislative activities. Information provided on responsibility of government officials such as duty, affiliated office or organisation, office address and contact information need to be improved upon to make them more accessible to the citizens.

In the second category of features, the implementation needs to go beyond information provisioning. Online services that will make the government websites useful to citizens and business needs to be implemented. These include online transaction such as renewal of vehicle and driver's license, payment of taxes and traffic tickets; change of address; application for certificates, making appointments for vehicle emission inspections and driving tests. Implementation of these features will help the government to maximize the benefits of ICT in transforming their operations and in rendering quality services to the public. As observed by Maheshwan et al (2007) and Asimwe & Lim, (2010), however, implementing these features however, requires planning. For instance, selecting appropriate partner for service delivery or other third party operations such as electronic payment (e-payment) must be carefully planned out.

In the third category of features, the state governments need to rethink their Web accessibility strategy. Multilingual options is completely missing in all the websites studied. According to Parajuli (2007), state governments need to recognize the existence of plethora of languages and cater for multilingual communities. Accessibility features such as keyboard support and transcript of audio should be included in the websites design for people with disability.

Comparing the attributes assessed with the UN e-government model, it can be concluded that twenty-three state websites are in second stage of e-government implementation model. The implementation can however, be described as moribund because some important feature of the emerging presence and enhanced presence of the UN e-government are missing in almost all the twenty-three websites. For instance, none of the sites has links to ministries or departments, only two sites provide information on laws and there are no reports on government activities.

It is unwholesome that thirteen states are yet to have online presence since 2001 that IT policy was enacted and information infrastructure provided across levels of government in Nigeria. The present status of e-government websites indicate that technological potential has not been maximized to comply with National IT strategy. Moreso, this current status of implementation lacks capability to promote transparency, accountability and strengthen democracy that e-government is set achieve. Future work in this domain should therefore, investigate internal constraints and factors that impact on each state's e-government implementation. The evaluation metrics used in this study can be used in future studies to assess the federal government and other agencies websites.

## References

- Abanomy, A., Al-Badi, A. and Mayhew, P. (2005). e-Government Website Accessibility: In-Depth Evaluation of Saudi Arabia and Oman. *The Electronic Journal of e-Government* Vol. 3 No 3, pp 99-106,
- Adeyemo, A.B. (2010). 'E-government implementation in Nigeria: An assessment of Nigeria's global e-gov ranking' *Journal of internet and information system*, Vol. 2 No. 1, pp. 11-19
- Akinsola, O.S., Herselman, M.E. and Jacobs, S. J. (2005) 'ICT provision to disadvantaged urban communities: A study in South Africa and Nigeria', *International Journal of Education and Development using ICT*, Vol. 1, No. 3
- Asiimwe, E. N. and Lim, N. (2010) Usability of Government Websites in Uganda, *Electronic Journal of e-Government* Vol. 8 No. 1, pp 1 – 12.
- Azeez, N.A., Abidoye A.P., Adesina, A.O., Agbele, K.K., Venter, I.M., and Oyewole, A.S. (2012) 'Threats to E-Government Implementation in the Civil Service: Nigeria as a Case Study', *The Pacific Journal of Science and Technology* Vol. 13 No. 1, 398-402 Available at: <http://www.akamaiuniversity.us/PJST.html>
- Baker, D. L. (2009). Advancing e-government performance in the United States through enhanced usability benchmarks. *Government Information Quarterly*, 26(1), 82–88.
- Basu, S., (2004). E-governance and Developing Countries: An Overview, *International Review of Law Computers*. Vol. 18 No. 1.
- Boussarhan, I. and Daoudi, N. (2014). The Accessibility of Moroccan Public Websites: Evaluation of Three E-Government Websites. *Electronic Journal of e-Government*, Vol. 12 No. 1, pp 67-81.
- Carrizales, T., Holzer, M., Kim, S., & Kim, C. (2006). Digital governance worldwide: A longitudinal assessment of municipal websites. *International Journal of Electronic Government Research*, Vol. 2 No. 4, pp. 1–23.
- Choudrie, J., Ghinea, G. and Weerakkody (2004). Evaluating Global e-Government Sites: A View using Web Diagnostic Tools. *Electronic Journal of e-Government*, Vol. 2 No. 2, pp. 105-114.
- Esterling, K., Lazer, D.M. J., & Neblo, M.A. (2005). Home (page) style: Determinates of the quality of the House members' websites. *International Journal of Electronic Government Research*, Vol. 1 No. 2, pp. 50–63.
- Fatile, J.O. (2012), 'Electronic Governance: Myth or Opportunity for Nigerian Public Administration?', *International Journal of Academic Research in Business and Social Sciences*, Vol. 2 No. 9, pp. 122-140
- Jayashree S. and Marthandan G. (2010) 'Government to E-government to E-society', *Journal of Applied Sciences*, Vol. 10, pp. 2205-2210. Available at: <http://scialert.net/abstract/?doi=jas.20.10.2205.2210>
- Kamar N, and Ongo'ndo M. (2007). Impact of e-Government on Management and use of Government Information in Kenya, World Library and Information Congress: 73rd IFLA general Conference and Council, pp. 19-23
- Kaaya, J. (2004). Implementing e-government services in East Africa: Assessing status through content analysis of government websites. *Electronic Journal of E-government*, Vol. 2 No. 1, pp. 39-54.
- Kaylor, C. Deshazo, R. and Van Eck, D. (2002). Gauging e-government: a report on implementing services among American cities. *Government Information Quarterly*, Vol. 18 No. 4, pp. 293-307.
- Layne, K., & Lee, J. (2001). Developing fully functional E-government: A four stage model. *Government information quarterly*, Vol. 18 No. 2, pp. 122-136.
- La Porte, M., Demchak, C.C., de Jong, M., and Friis, C. (2001) 'Webbing governance: Global trends across national level Public agencies', *Communications of the ACM*, Vol. 44, No. 1, pp. 63-67.
- Liu, Y., Chen, X., and Wang, X. (2010) Evaluating Government Portals Websites in China, Pacific Asia Conference on Information Systems (PACIS) Proceedings [Online] <http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1087&context=pacis2010>.
- Maheshwari, B., Kumar, V., Kumar, U. & Sharan, V. (2007). E-Government Portal Effectiveness: Managerial Considerations for Design and Development. Proceedings of International Congress of e-Governance, Hyderabad, pp. 258-269.
- Makoza, F. (2013). The level of e-Government implementation: Case of Malawi. *Electronic. Journal of e-Government*, Vol. 11 No. 2, pp. 268-279.
- Mundy, D. and Musa, B. (2010) 'Towards a Framework for e-Government Development in Nigeria' *Electronic Journal of e-Government*, Vol. 8 No. 2, pp. 148-161, Available at: [www.ejeg.com](http://www.ejeg.com)
- Nielson, J. (2000) Designing Web usability: The practice of simplicity, New Riders Publishing, Indianapolis.
- Nigerian National Information Technology Development Agency (NITDA) (2001). National Policy for Information Technology. [http://portal.unesco.org/en/files/3107/1023717285\\_nigeriaitpolicy.pdf/nigeriaitpolicy.pdf](http://portal.unesco.org/en/files/3107/1023717285_nigeriaitpolicy.pdf/nigeriaitpolicy.pdf)
- Olasina, G. (2012) 'A Review of E-government Services in Nigeria' *Indian Journal of Library & Information Science*. Vol. 6 No. 3, pp. 301-305.

- Olatokun, W.A. and Adebayo, B.M. (2012) 'Assessing E-Government Implementation in Ekiti State, Nigeria', *Journal of Emerging Trends in Computing and Information Sciences*, Vol 3 No. 4, 497-505 Available at: <http://www.cisjournal.org>.
- Oyekanmi, O. (2005), Nigeria's Place in the ICT World Today. The University of Ibadan Press, Ibadan, Nigeria
- Panagiotopoulos, P., Moody, C. and Elliman, T. (2012) Institutional Diffusion of Participation in the English Local Government: Is Central Policy the Way Forward?, *Information Systems Management*, Vol. 29, pp. 295–304.
- Parajuli J (2007) 'A Content Analysis of Selected Government Websites: a Case Study of Nepal', *The Electronic Journal of e-Government* Vol. 5 No. 1, pp. 87 – 94, available online at [www.ejeg.com](http://www.ejeg.com)
- Rogers, W.O. (2002) 'Electronic governance: re-inventing good governance: Commonwealth Secretariat', London Available at: <http://webworld.unesco.org/publications/it/egov/wordbank%20okot-uma.pdf>.
- Stoica and Ilas (2009) Romanian urban e-Government. Digital services and digital democracy in 165 cities, *Electronic Journal of e-Government*, Vol. 7 No. 2, pp. 171-182.
- Toots, A. (2006). Explaining internet service quality in social security agencies using institutional theory. *Information Polity*, Vol. 11 No. 3, pp. 273–282.
- United Nations Department of Economic. (2005). Global E-government Readiness Report 2005: From E-government to E-inclusion, UNPAN/2005/14, United Nations publication, United Nations. <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan021888.pdf>
- United Nations Department of Economic. (2008). United Nations E-government Survey 2008: From e-Government to Connected Governance. <http://unpan3.un.org/egovkb/portals/egovkb/Documents/un/2008-Survey/unpan028607.pdf>
- United Nations Department of Economic. (2010). *United Nations E-government Survey 2010: Leveraging E-government at a Time of Financial and Economic Crisis (Vol. 2)*. United Nations Publications.
- United Nations Department of Economic. (2012). *E-Government for the People*. United Nations Publications. Available at: [www.unpan.org/e-government](http://www.unpan.org/e-government)
- United Nations Department of Economic. (2014) *United Nations E-government Survey 2014: E-Government for the Future We Want*. United Nations Publications [http://unpan3.un.org/egovkb/Portals/egovkb/Documents/un/2014-Survey/E-Gov\\_Complete\\_Survey-2014.pdf](http://unpan3.un.org/egovkb/Portals/egovkb/Documents/un/2014-Survey/E-Gov_Complete_Survey-2014.pdf)
- West, D. (2007) Global e-government, 2007. Accessed 17 Feb., 2015 from <http://www.insidepolitics.org/egovt06int.pdf>
- Zahedi, M.F., van Pelt, W.V., and Song, J. (2001). 'A conceptual framework for international Web design', *IEEE Transactions on Professional Communication*, vol. 44, no. 2, pp. 83-103.