Implementing an E-Democracy System in Nigeria

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Abstract

E-democracy basically comprises the use of electronic communications technologies such as the internet, in enhancing and advancing the democratic process within a democratic republic. E-democracy is an innovation still in its infant stage; and is still subject to much debate and activity within government, civic oriented groups and societies around the world. In most developing countries including Nigeria, there exists a low attitude of participation of the citizens in governance. Social, political, insecurity, Corruption and other forms of electoral manipulation discourage the electorate from getting involved in government From the various elections conducted since independence, about half the number of registered voters actually voted during elections. In addition, less than half of those who voted were involved in participatory governance. The objective is of this paper is development of a web-based system that will foster and encourage active citizenship participation by implementing democratic practices like voting and election campaign. The system was developed using PHP as front end, Apache as web server and MySQL as Database. The benefits of having an e-Democracy system are numerous: It reduces the success of rigging during elections. It is time saving because it reduced some undue electoral processes. It allows for easy communication between the citizens and their elected candidates.

Keywords: Citizen, e-Democracy, Election, e-Governance, Voting and Participation

1.   INTRODUCTION

Democracy as a form of governance and as a concept of free rule stretches beyond elections, voting and other electoral practices as its basic components. Interaction, cooperation and communication among all participants in a democratic setup are also a very critical component of a "working" democracy. Democracy actually entails the running of a nation by the people of the nation. People of the nation comprise both the elected and the ordinary citizens or voters. Putting an "e" in front of democracy means nothing more than using information technology tools to facilitate, improve and ultimately extend the exercise of democracy (Caldow, 2004). E-democracy is positioned as a tool in enhancing and making the democratic process more accessible; ensuring citizen participation in public policy decision-making. This would enable broader influence in policy outcomes as more individuals involved could yield smarter policies; increasing transparency and accountability, and keeping the government closer to the consent of the governed, increasing its political legitimacy, especially in the Nigerian context where issues like lack of transparency and bad governance constitute hindrances to the development of our infant democracy.

ICT has grown at an exponential rate, and does not only focus its attention on the internet but also spreads its wings to cover telecommunication, whereby people are connected and can communicate to themselves through cell phones, home personal computers and other medium.
Internet, from statistics, has been discovered to be the most used and sort after medium of communication than the personal computers and the telephone put together. ICT has the potential to engage people in all areas of the political process such as the generation of information, enhanced deliberation among citizens, and most of all enhance participation in decision making (Briony, 2003). ICT is one of the best means of bridging the communication gaps between the people and the government. Through the internet, it is now possible for the government to communicate with the citizens of the nation more effectively, and also aids the communication between citizens and their fellow citizens to discuss political and governmental issues which could be a resourceful contribution to the improvement of governance and most democracy.

Nigerian citizens continually expresses dissatisfaction over results of elections. The general opinion is that individuals who are declared as winners of the various elections must have rigged to win. No doubt, we are in a transition period after over a decade of military rule but we cannot continue to give excuses for our lack of coordination and ability to perfect the art of democracy. Bribery and corruption has been the order of the day at all levels of governance. Citizen-participation in governance is at it's lowest in the nation. This clearly indicates

that the Nigerian democratic system is quite porous, inefficient and susceptible to negative infiltrations. Therefore it will not be out of place to declare that our overall democratic process in Nigeria requires some "step up".

The world of ICT provides a perfect "step up" solution as it makes available, a platform on which the "ills" of lack of citizen-participation and lack of transparency in governance can be adequately treated. E-democracy as a concept is the fusion of ICT and traditional democratic practices in an attempt to involve the nation's citizens in policy making. It is not aimed at throwing out traditional democracy but its main aim is fulfilling the essence of democracy by involving the citizens fully through the use of the various technologies, methods, tools and systems made available by the internet. It is also aimed at developing digital citizenship through the use of ICT to create personal contact, dialogue and consultation among participants in democracy (Flavio, 2005). E-democracy does not just stop at the levels of the citizens, but goes as far as fostering the communication among administrators, associations, public and private entities among the various tiers of governments. E-democracy is a form of e-government. E-government is the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions(Godwin & Amodi, 2012).

In Nigeria, there is a high lack of trust, probity, transparency and accountability in the running of government. Access to government officials is on a monumental low, interaction among players in the national democratic setup is lacking. The average Nigerian does not have a proper platform to clearly express his or her views, opinions and ideas in the light of moving the nation forward. This has led to lack of patriotism and national cooperation.

The objective of this study is to develop a web-based e-democracy system for increased citizen participation in governance, building a stronger democracy and nationwide community through the power of information and communication technologies using Nigeria as a case study. The system will foster and encourage active citizen participation by implement democratic practices like voting and election campaign. Oral interview and direct observation were the techniques used in the collection of data for this study. Several Nigerian citizens from various ethnic backgrounds and a few INEC officials were interviewed to help us decide on which design of the system best fit the need of the people. The tools engaged in implementing the system include use of PHP and HTML as front end, Apache as web server and MySQL as Database.

2.   LITERATURE REVIEW

Over the years, e-democracy systems have been adopted by various governments with respect to some peculiar features of the environment in which such governments operate in. Previous researches have discusses how information and communication technologies (ICTs) might be used to help engage people, both old and young, in the democratic process (Oates, 2003). Examples of such systems include the following(OECD, 2003):

(1) Electronic democracy New Zealand which has built a web site for easy communication between government officials with their citizens. The web also allows for suggestions, has links to different facilities like the electronic voting facility, political party sites and other features that enable the citizens to contribute. (2) Electronic Democracy USA, has fused her e-Democracy with its conventional system of government. They decided to make democracy more participatory, trustworthy and the results dependable. (3) Electronic democracy Australia, Australia also has adopted the electronic democracy system and according to reports has recorded some form of success though there are some forms of short comings. For the past twenty years, they have seen the acceleration and the intensification of the use of the computer and other digital means to improve and make significant impacts on the economic, social and political participation and democracy. In their own way, they have decided to make the software they use for this system an open source software, this free software allows and even encourages the source code to be modified and adapted, a more recent twist to the open source content is open content, or media created by witnesses and sent to wide audiences through various media channels, which make the citizens know that no form of manipulation takes place during the elections.

However, some factors have been identified by (Kamar and Ongo'ndo, 2007) as barriers to effective E-Government implementation in developing countries such as Nigeria. These includes (1) The government being faced with management challenges in the implementation of E-Government. The uncoordinated E-Government

activities result from low level of public administration of E-Services as well as low quality and insufficient E-Content information from grassroots levels. (2) Low information technology literacy in a country which slows down the process of E-Government, among others. Notwithstanding, The most important anticipated benefits of e-government in a developing country include improved efficiency, increase in transparency and accountability of government functions, convenient and faster access to government services, improved democracy, lower costs of administrative services and these benefits can be realized (Adeyemo, 2011)

3.   SYSTEMS DESIGN AND IMPLEMENTATION

The electronic democratic system was designed using unified modeling language (UML). The e-democracy developed consist of the following modules:-e-mail, e-petition, e-voting, e-polls, e-campaign, e-forum, chat, news and information monitoring. This modules work hand in hand in the realization of the overall objectives of the e-democracy system. The software administration module principally involves the operations and processes that focus on the general administration and management of the system. The module of the e-democracy system includes the following:

E-voting module: comprises of the functionalities that enable users cast their vote during elections. Users cannot vote until the administrator has set the election date and other parameters.

E-campaign module: allows government officials and electoral candidates to campaign during elections.

E-mail module: is used to foster communication among participants in democracy. Citizens can send e-mails to one another and to government officials. This makes government officials very accessible. E-mails are sent using the national ID card number of the receiver as the e-mail ID. **E-forum module**: comprises of the facilities that enable users of the system post forum topics, discussing issues of national relevance, deliberating on government policy generation and implementation and other important issues. The forum also allows users reply and contribute to forum topics posted by other users.

News and information module: basically entails the provision for dynamic posting and monitoring of news on the system by all users and visitors to the site. The software administrator posts the news which can be viewed on the home page of the system.

Chat module: comprises of the facilities that enable users that are online interact in a public chat room.

E-petition module: provides functionalities for citizens to make complaints and state observations. A petition could be either public or confidential. A public petition is posted on the home page for all to view, while a confidential petition is viewed only by the administrator who handles the petition appropriately.

E-poll module: makes available functionalities for the creation of opinion polls for users to cast their vote on. This is a tool for the assessment and evaluation of government progress and public opinion on a particular issue.

The system is designed such that every Nigerian has a user account; however for security reasons, and to be registered on the system you would need to obtain your national ID card. Free registration on the e-democracy Nigeria website will make the system susceptible to security attacks as miscreants could register fake individuals and so on. The system will be plugged on to the database of the federal government agency in charge of national ID cards. On the other hand, there is the administrator who has the privilege of registering users. What this implies is that immediately the national ID card is obtained by the Nigerian, he automatically has an account with the system. The default username for logging in is the national ID card number of the individual while the default password is the individual's surname; which can be changed at will.

Users of this system are: The citizens, the government officials and the system administrator.
Every Nigerian who does not hold a political office falls under the category of users described as citizens. They have the privileges of voting, sending e-mails, adding and replying forum threads or topics, sending petitions, chatting and changing their login passwords which are by default their surnames. Individuals registered as government officials are those who are elected and sworn-in political leaders such as senators, governors, representatives, and the president. Electoral candidates are also registered as government officials. The government official has all the privileges of a citizen plus the privilege to campaign during elections.

The system administrator is the overall administrator of the system. He can register users, add electoral candidates, add political parties, view petitions, create opinion polls, edit member records, set election dates, upload news and other information, and publish election results. This system does not intend to totally remove the conventional system, but there is meant to be a fusion between the existing traditional system and e-democracy system.

A formal model of the proposed system was built using Unified Modeling Language (UML). The UML is a modeling system which provides a set of conventions that are used to describe a software system in terms of

objects (Mincer-Daszkiewicz, 2003). It offers diagrams that provide different perspective views of the system parts. Figure 1 shows the activity diagram of the E-democracy system. A user log into the system with a unique user name and password to access all the modules that make up the system. When done, he or she click on the logout button to exit the system.
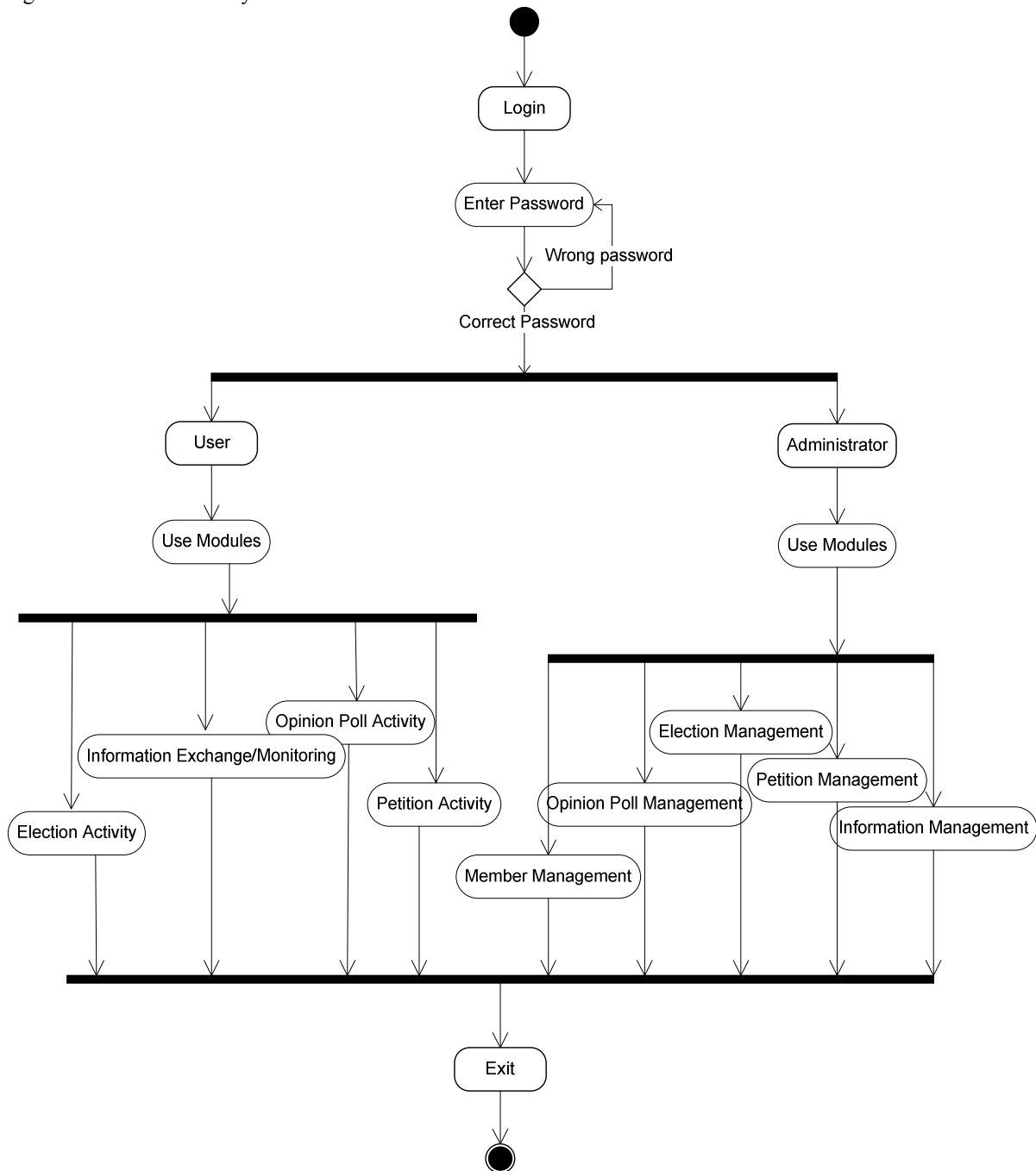
Figure 1: Activity diagram for e-democracy system

The implemented e-democracy system contains several screen shots, out of which the following five figures could be reported. Figure 2, View Election Result Page, shows the results for presidential, gubernatorial and senatorial elections. Figure 3, View Petitions Page for Administrator, contains the petitions sent by citizens to the system. This page is only accessed by the administrator. Figure 4, Send E-mail Page for Citizens, provides an environment for citizens to send email to another citizens or government officials. Figure 5,   Chat   Page, enables registered users to chat, and Figure 6, Opinion Poll Result Page, shows the outcome of an opinion poll submitted by users of the system.

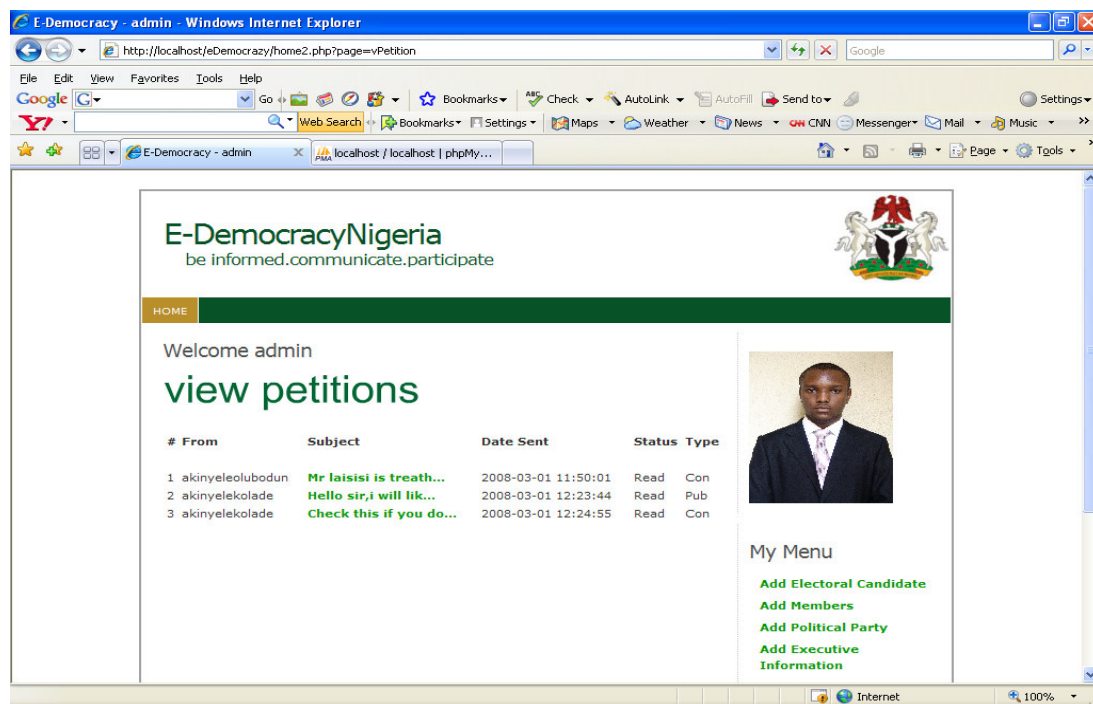**Figure 2: View Election Result Page**
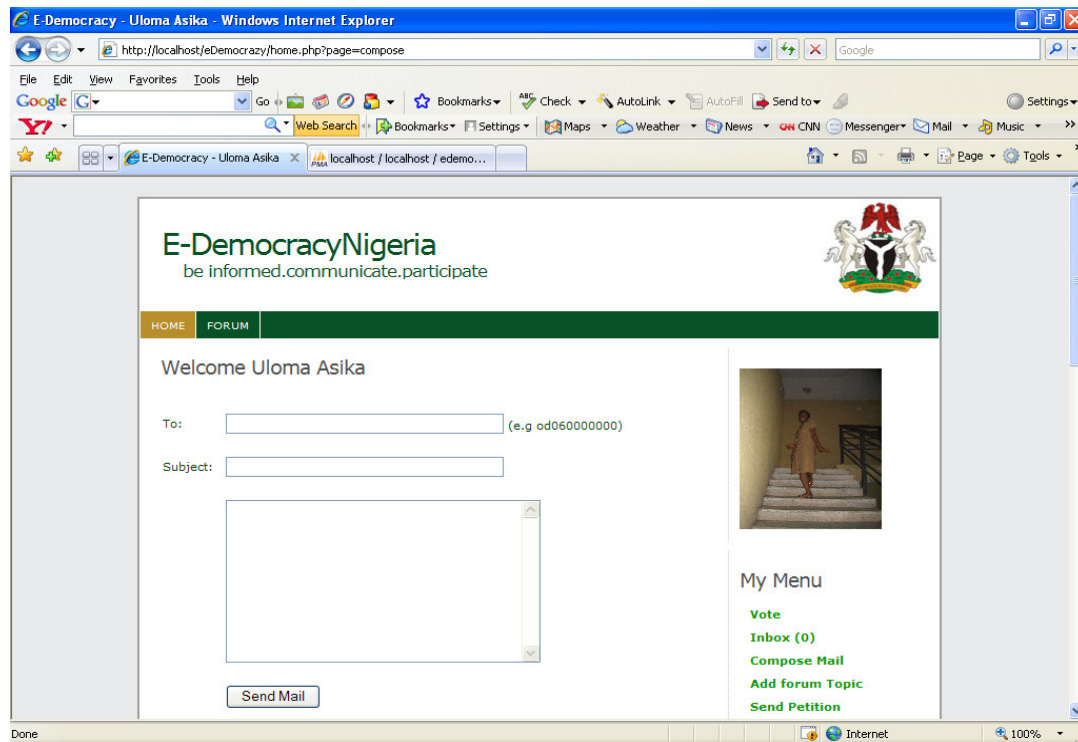

Figure 3: View Petitions Page for Administrator

Figure 4: Send E-mail Page for Citizens.

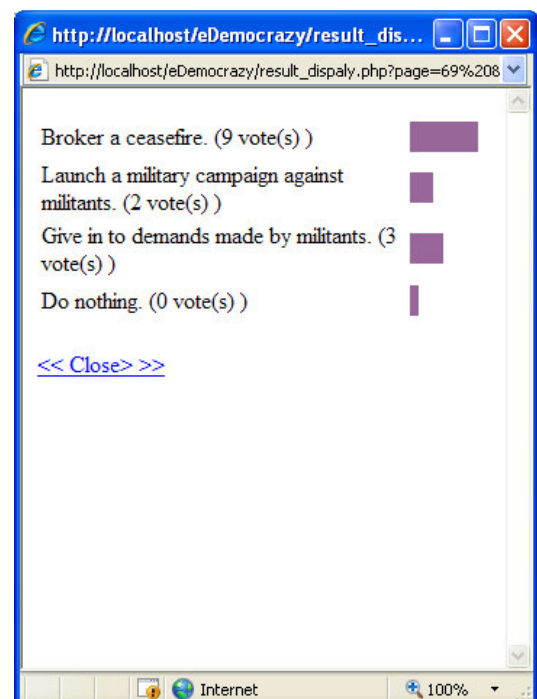**Figure 5: Chat Page.**

Figure 6: Opinion Poll Result Page.

4.   RESULTS AND DISCUSSIONS

The Merits of the new system are as follows : (i) the process of rigging an election is minimized, (ii) it is time saving because some long electoral processes are eliminated, (iii) it allows for easy communication between the citizens and their elected candidates, (iv) it gives the citizens outside the country an opportunity to vote if they so please, (v) it automatically puts the tedious registration exercise aside and makes registration easier, (vi) It makes

voting more interesting and more participatory since all the citizens are giving an opportunity to speak their mind, (v) It tries to make all citizens know that they all have equal rights and opportunities, and (vi) it is more accessible to all kinds of people because of its global nature.

This study has demonstrated that electronic solutions are available solve the problems of election malpractice, lack of communication between the elected and the voter, and corruption in Nigeria as in other developing countries. It will be paramount to state that if this e-democracy system is to be properly and efficiently implemented and deployed in the Nigerian context or in any other country, it will be expedient for the government of the nation to legally institute an e-democracy agency and endorse it's activities by making some inclusions and adjustments on the constitution guiding the administration of the nation's democracy. We also recommend that the e-democracy agency be charged with the duties of administering the e-democracy system, ensuring it remains secure and safe from every form of security, making sure the system is up-to-date with any changes in policies or government administration.

As part of our recommendations, this system to be put to functional use, the government of Nigeria should set-up as many computer centres as possible in the local governments that are fitted with VSAT facilities to ensure reliable internet connectivity and instead of the traditional ballot system. Every Nigerians citizen can log on to his/her account on the e-democracy system and vote. We also recommend that the government makes effort to improve the internet penetration in the nation so as to make the system accessible to the people. Some of the limitations of this study includes: Insufficient information resources available to us from the Nigerian government, Inadequate; and epileptic internet connectivity, and as a result access to online resources was strained.

As part of further works, The e-democracy system can also be modified to be implemented on the mobile platform. This will increase the accessibility of the system as mobile phone use is wide spread in Nigeria today. A multi-lingual system can be developed to help people with English deficiency have access to the system. An advanced search module can be implemented on the system to enable users search for information about anything that pertains to Nigeria and Nigerian government.

5.   CONCLUSION AND FURTHER RESEARCH

This study has led to the development of an e-democracy system, achieving the basic objective of making available to all the participants in the democracy system the fundamental tools and resources that are required to adequately perform their individual roles in the running of the democratic state.

The citizens of the nation can communicate freely with elected government executives and political office holders through e-mails; they also have access to updated information on happenings in the government; can express their views on issues ranging from policy generation and execution to national development through a multi-dynamic forum; can engage in brainstorming sessions with other citizens online through a chat functionality; and some other functionalities that basically establish the individual as a relevant participant in the democracy of the nation. As regards the election module, voting at local government and House of Representative levels may be included in further research.

Another major enhancement that will be added to this research is to develop a speech-based e-democracy module that allows users to access the system through telephone (mobile and land phones), as well as web interface. The inclusion of SMS-based module using the SMS-based e-participation framework (Ayo et al., 2010) is also considered as future works in this research.

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