

Enabling Socio-Economic Development of the Masses Through e-Government in Developing Countries

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Abstract: The masses connote the lower strata of the society, comprising the low income, and lower-middle income earners, and the less-privileged people in the country. Data from the World Bank reveals that greater percentage of the population live in the rural areas in most low resource countries (developing countries). A major global challenge is how to facilitate a transitioning of the masses to higher social and economic status. This paper performs an objective critique of existing e-Government initiatives that are geared towards enabling socio-economic development of the masses in many developing countries; using Nigeria as a case study, it argued that a change of direction is required. Second, we discussed how e-Government could be a veritable tool for inspiring developments of the masses in developing countries. The propositions of this paper would give impetus for new pragmatic e-government initiatives for socio-economic developments of the masses in developing countries.

Keywords: Developing countries, e-Government, masses, e-Technology, ICT, socio-economic development,

1. Introduction

The masses connote the lower strata of the society, comprising the low income, and lower-middle income earners, and the less-privileged people in a country. The World Bank statistics on many developing countries – particularly the low resource countries in Africa and Asia, as at 2012 reveals that greater percentage of the total population live in rural communities. Even in the bigger cities, more people live in the less-developed areas where basic infrastructures such as water, good roads, electricity supply, and good housing are not readily available. Sub-Sahara Africa (SSA) is the poorest region of the world with a negative growth rate in per capita income during the last 30 years (Quinna, 2008), where majority of the population live below USD 1 per day. The rate of illiteracy and unemployment in these countries are also exorbitantly high (CIA Factbook), while there exist a large percentage of unbanked population – persons who do not keep their money with banks, because they do not make enough money to save, or they chose to keep their money at home. All of these present a clear picture of the poor socio-economic status of the masses in most developing countries. Socio-economic development of the masses implies the transition of the large population of less-privileged persons from their state of poverty and deprivation to the state of economic wellbeing, good infrastructure and good quality of life. In an ideal scenario, this should be the objective of governments at all levels. Studies on the quality of governance in most developing countries have revealed that this is currently not the case (Nkohkwo and Islam, 2013; Hossain, 2005; Schuppan 2009). For example in Nigeria and many other countries in SSA, living in the rural communities or sub-urban areas is not convenient because of lack basic infrastructures such as good housing, water, and good roads, and poor economic development. For these reasons, it is imperative to devise new pathways to improve the quality of life of the masses.

E-government, also called technology-driven governance, entails the use of information and communication technology (ICT) for the delivery of government services to the citizens, exchange of information communication transactions, and integration and coordination of government subsystems for efficiency (Almarabeh and AbuAli, 2010). The different models of e-government include Government-to-Citizen (G2C), Government-to-Employee (G2E), Government-to-Business (G2B), and Government-to-Government (G2G).

So far, many e-government initiatives for socio-economic development have been reported in the literature, however most of these initiatives have failed to address the subject in a holistic way. For example, the study of the challenges to the successful implementation of e-government by Nkohkwo and Islam (2013) identified the issues of poor ICT infrastructure, poor finance, poor political leadership, poor organization and communication, and lack of technological infrastructure are the most challenging problems for successful e-government in Sub-Sahara Africa (SSA) countries. This is also true for most other developing countries (Schuppan 2009; Yonazi et al., 2010). Hence, the question to ask is “what are the ingredients for socio-

economic development of the masses in developing countries". The objective of this paper is to answer this question by drawing basis from previous studies and different possibilities that e-government affords.

The rest of this paper is as follows. Section 2 discusses related work, which are principally a review on e-government initiatives for socio-economic development in developing countries. In section 3, the ingredients for socio-economic development of the masses were discussed. Section 4 gives a profile of concrete challenges and probable e-government solutions, and the prospects of the proposed solutions. The paper is concluded in Section 5 with a discussion of imperatives for the realization of the proposed solutions and outlook of future work.

2. Overview of Related Work

Some studies on e-government initiatives for socio-economic development of the masses have been reported in the literature. Mittal and Kaur (2013) investigated the state of e-government initiatives in rural India-Punjab region, and their effectiveness. The study was aimed at creating awareness among rural people on e-government and increase participation. Rajalekshmi (2007) reports the delivery of e-government services through telecentres in rural India. The paper described how the quality of service delivery was aided by the use of trusted human intermediaries. Kumar et al. (2013), reports the use of ICT for service delivery for e-governance in rural areas of India, how ICT was used to promote local self-governance. However, the paper did not show how the ICT-based rural initiatives address the direct socio-economic needs of the rural communities. Schuppan (2009) assessed necessary imperatives for successful e-governance in Africa. First, the study observed that most initiatives before 2009 have been mostly ineffective, and recommended new approaches to enhance the success of e-government in Sub-Sahara African (SSA). Hossain (2005) gave a critical analysis of the focus and orientation of e-government initiatives in developing countries until 2005, drawing largely from the Bangladesh perspective. The study found that e-governance if not properly managed can widen the gulf between those who have, and those who do not have access to resources in the developing countries. The author also observed that there is a tendency to neglect the less privileged and the masses if e-governance is not properly managed.

Some of the most recent reviews on e-government initiatives in developing countries include Almarabeh and AbuAli (2010), which developed a framework for the e-government, and discuss the challenges, opportunities and success of e-government projects, and the role of ICT. The paper also echoed the most challenges that may be faced by e-government initiatives, and gave recommendations. Some of the challenges include *infrastructure development, law and public policy, digital divide, e-literacy, accessibility, trust, privacy, security, transparency, interoperability, records management, permanent availability and preservation, education and marketing, public/private competition/collaboration, workforce issues, cost structures, and benchmarking*. Nkohkwo and Islam (2013), is a literature review of the challenges to successful implementation of e-government in Sub-Sahara Africa (SSA). The study found that *ICT infrastructure, human resources, legal framework, Internet access, the digital divide, and connectivity* are the most important factors in terms of challenges that determine successful implementation of e-government initiatives in Sub-Saharan African countries. The study also showed that many salient issues that could have facilitated socio-economic development through e-government are yet to be addressed in SSA.

Summarily many studies show that globally a larger percentage of e-government initiatives failed to meet their target goals, because many attempted to do too much or too little (Heeks, 2003, Almarabeh and AbuAli (2010). In addition, many e-government initiatives have failed to address the key obstacles and salient issues that are crucial for successful implementation. We conjecture that in order to increase the chances of success, the objectives of e-government initiatives should be more narrowly defined. Therefore, if the focus of e-government is to enable socio-economic development of the masses, then the key triggers of successful e-government for socio-economic development must be identified.

3. Socio-economic Challenges of the Masses: The Nigerian Case

Nigeria is a country located in the West Africa with an estimated population of 170 Million. Nigeria has the largest population in Africa and the eighth most populous country in the World. After independence from Britain in 1960, Nigeria experienced a period of national prosperity and economic buoyancy, particularly between the period of 1971- 1977, which is generally referred to as the Nigeria Oil Boom era. Since the early

eighties, the country's economy has continued on a downward slide, such that today 50% of the Nigeria population still live in the rural areas, there are challenges of power, housing, water in most communities. Also, there is a huge national deficit, and high level of unemployment among young people. The economic and political climate in Nigeria is mostly characterised by violence (religious, sectarian, political), corruption in government, and low level of human development.

However, Nigeria is endowed with huge natural resources, highly educated population consisting of elites, a urbane working class, vibrant youths and high information technology diffusion. It could be said that Nigeria is a mix of the good and the bad. The challenge that successive governments in Nigeria have failed to address is how to translate the vast national potentials into viable instruments of national economic growth and human capital development. The masses in Nigeria are confronted with issues of shortage of food, poor shelter, poor standard of living, poor healthcare, unemployment, insufficient access to quality education, and insecurity on a daily basis (Ewetan and Urhie, 2014). While the elite and the rich live in reckless opulence, the Nigerian masses contend with a many socio-economic challenges. The scenario of Nigeria is similar to what obtains in many other developing countries, particularly in sub-Sahara Africa. A view of some demographic indicators on Nigeria is shown in Table 1.

Table 1: Demographic indicators that pertain to Nigerian Masses

Demographic Indicator	Value
Urban Unemployment Rate	29.5%
Rural Population	54%
Physician Density	0.4 physicians/1,000 population (2008)
Hospital bed density	0.53 beds/1,000 population (2004)
Life Expectancy	Total population: 52.62 years male: 51.63 years female: 53.66 years (2014 est.)
Maternal Mortality Rate	630 deaths/100,000 live births (2010)
Literacy	Definition: age 15 and over can read and write total population: 61.3% male: 72.1% female: 50.4% (2010 est.)
Sanitation facility access	Improved: urban: 30.8% of population rural: 24.7% of population total: 27.8% of population Unimproved: urban: 69.2% of population rural: 75.3% of population total: 72.2% of population (2012 est.)
Drinking Water	Improved: urban: 78.8% of population rural: 49.1% of population total: 64% of population Unimproved: urban: 21.2% of population rural: 50.9% of population total: 36% of population (2012 est.)

Source: Nigeria Demographic Profile, 2014.

4. Impetus for Socio-Economic Development of the Masses

In this section, we present the key factors for socio-development of the masses in developing countries that we have identified. These factors were drawn from contemporary studies on socio-economic development of the masses and observations from the Nigerian context as a model of a developing country.

4.1 Quality Leadership

One of the most challenging issues that have impaired socio-economic at the national and local levels in many developing countries is poor leadership (Nkohkwo and Islam, 2013). Most elections in developing countries lack credibility, and are prone to manipulations. There is also lack of good democratic institution that will entrench a strong democracy. Hence, there is need for a credible and efficient democratic process that will ensure that the best candidates win elections, and that election results reflect the choice of the people. In addition, there is need to ensure that persons at all levels of leadership obtain the requisite expertise and management skills for good governance.

4.2 Wealth Creation and Equitable Resource Distribution

In many developing countries, particularly SSA countries access to the good life and prosperous living is still the exclusive preserve of a few (CIA factbook, World Bank data). There is the need to put in place sustainable models and initiatives that will empower the masses for greater prosperity, irrespective of their vocational callings whether formal or informal. The informal sector in most developing countries has not received the right level of motivation to make them more vibrant, and contribute to the economy. In Nigeria, which is the largest economy in Africa, the informal sector accounts for about 58% of the economic growth, yet the needs and aspirations of operators in these sectors have been largely unattended to (Fasanya and Onakoya, 2012). Therefore, it is important to seek ways to empower the small market traders, small businesses, small and medium scale enterprises (SSME) for increased productivity and profitability. This will result in a win-win situation where the people make more money and government gets more revenue through taxes.

4.3 Fiscal Discipline

Fiscal indiscipline and corruption are major hindrances to good governance at all levels in many developing countries, particularly in SSA (Meyaki, 2010; Almarabeh and AbuAli, 2010). According to the Transparency International, six of the ten most corrupt countries in the World are in SSA. Therefore, there is the need to devise ways to curb waste, promote accountability, and implement financial transaction schemes that are effective, less tempting and tighter for those who have the propensity to steal. This will greatly enhance the rate of socio-economic development.

4.4 Inclusive Governance

Studies have shown that there is low level of trust in the integrity of government in most developing countries (Rajalekshmi, 2007; Gupta et al., 2008; Al-Adawi et al., 2005). In many cases, there is a big disconnect between the government and the governed. Most governments even at the local levels in developing countries have not been as responsive to the needs of the people as expected because of lack of direct communication (Gupta et al., 2008). Therefore, there is need for an effective feedback system that allows governments at the local levels to monitor and evaluate the impact of their programmes on the people they serve. This could include pre-assessment of planned Government initiatives, and post-assessment of impact of government programmes and initiatives on the community.

4.5 Good Education

There is a high level of illiteracy and lack of access to basic education by the inhabitants of most rural communities in many developing countries (Almarabeh and AbuAli, 2010). Since quality education remains the bedrock of socio-economic development of a people, it essential to provide good education to rural people in order to hasten socio-economic development of the masses. It is essential for governments at various levels to commit to lifelong education of the masses by using both formal and informal modes of learning.

4.6 Telecommunication Infrastructure

Telecommunication, particularly through mobile technology has emerged as a key driver of socio-economic development in many developing nations. India and Nigeria are good examples of this (Almarabeh and AbuAli, 2010; Nkohkwo and Islam, 2013). Today, there are over 120 Million mobile phone users in Nigeria, which is significant (NCC Subscriber Data, 2014). A significant percentage of these mobile phone users live in the

masses. The impact of mobile telephony is bound to increase when the rural telephony initiative that has been proposed in some SSA (e.g. Nigeria, Ghana) takes off.

4.7 Good Healthcare

The masses in most developing countries are underserved in terms of access to good medical healthcare (Abdulraheem et al., 2012). This is due to the low ratio of qualified doctors-to-patient, and poor medical facilities. Since it has been said that a healthy people are a wealthy people, the provision of good healthcare facilities and services is crucial for socio-economic development of the masses.

4.8 Peace and Security

Peace and the security of life and property is a major impetus for socio-economic development. Communal and religious conflicts, acts of terrorism, political instability and chaos are inimical to socio-economic development. Most governments in developing countries, particularly in SSA need to do more by creating models that enable government to interface better and faster with the people to handle issues of sectional conflicts, disaster management, security threats, and the likes, in order to improve the level of peace and security, which is crucial for socio-economic development of the masses.

5. e-Government and Socio-Economic Development of the Masses

At this point, we now highlight the specific technology-oriented solutions that can enable the realisation of the eight ingredients for socio-economic development of the masses that we have identified.

5.1 e-Democracy for Quality Leadership

E-Democracy is the use of information and communication technology to facilitate the active participation of the citizenry in democratic process such as voters' registration, elections, election monitoring, electoral process assessment and the like (Ayo et al., 2009). E-Democracy is a government-to-citizen (G2C) model of e-Governance that can enhance the efficiency of the democratic process. It will help to ensure that the democratic process of electing leaders at the local level is credible. For example, historically, Nigerian elections have been plagued with issues of electoral fraud and electoral violence. The story is the same in many other developing countries. The chaos that usually attends the electoral process in developing countries can be reduced significantly through e-voting and e-elections. For example, the increased level of Internet penetration in Nigeria, and the large population of mobile phone users make it possible to implement an integrated e-voting framework that would allow people to vote during elections through the Internet, mobile phone, or at designated voting centres (kiosks) using the electronic voting machine. This framework will also guarantee efficient authentication of all voters in such a way that multiple voting, rigging and manipulation of election results are eliminated (Ayo et al., 2010). The authors of this paper have done some previous work in the area of e-Democracy (Ayo et al., 2009, 2010). Currently we have an ongoing work on the implementation of the integrated e-voting framework that was mentioned above, in a bid to improve the quality of the electoral process in Nigeria. We believe that a vibrant implementation of e-democracy will assist in no small ways to improve the quality of leadership by ensuring that election results reflect the choice of the people. The quality of leadership at the lower levels can also be improved through e-skills enhancement, which entails the creation of e-learning opportunities by local governments to develop the capacity of their employees.

5.2 Wealth Creation through e-Empowerment of the Masses

Currently, the cloud technology is one of the key drivers of economic growth all over the world. Cloud computing is a concept of computing that allows information technology infrastructures and services that are hosted on the Internet to be made available to willing customers, who will pay for what they use per time without having to incur the full cost of owning such resources (Daramola et al., 2014). These net-based resources could be hardware, software, storage, or a service. In order to further emphasise the prospects of using cloud computing for the benefit of the masses, let us consider the scenario of a small business operator who has a small computer with limited storage capacity to accommodate a growing clientele. He has the option to buy a more expensive computer, but he may also run out of space with time as the customer base grows. Cloud computing provides a way out, because he can instead store his customers' data on the data

server of a third party company (Cloud service provider), and pay a harmless fee for such a service on a monthly basis – just as he pays for electricity. With this arrangement, the small business owner can store information as much as anyone can, without having to buy a bigger computer. Thus, IT-based initiatives such as cloud computing and mobile computing can be used to increase the profitability of businesses of the masses. Small business owners including small hotels, farmers, hairdressers, product retailers, and artisans who cannot afford the cost of hosting a website or a newspaper advert can have access to electronic advertisement (e-advert) services on the local/county/district government websites while they pay a token. Through the e-Advert service, that particular local government authority would have given increased visibility to such small businesses thereby helping them to attract more customers; these small businesses will make more money, and will in return, pay for the service rendered by the local government authority, and pay more tax because the business is now more profitable. The improved prosperity of businesses is critical for socio-economic development of the masses and e-government can help to drive this.

5.3 Electronic Payment, Electronic Procurement for Improved Fiscal Discipline

Fiscal discipline and accountability, which is absent in many agencies of government in many developing countries can be attained through government-to-business (G2B) model of e-government such as electronic procurement (e-Procurement) and electronic payment (e-Payment). E-procurement ensures that the key processes in the procurement value chain from request for information to eventual contract award and payment are automated (Oni et al., 2009). E-procurement will ensure transparency in the dealings of government on issues that pertain to the acquisition of goods and services. For example, the Central Bank of Nigeria recently made a policy on implementation of a cashless society and the growing sophistication of Nigerian banks that makes online transactions like mobile banking, electronic fund transfer and forms of electronic financial transactions possible. Many other developing countries have implemented similar initiatives. These forms of policy initiatives make it compelling for government agencies to modernise their procurement mechanisms. With e-Payment, government can actually minimise fraud and mismanagement of funds. For example, reports show that e-government initiatives such as e-Billing, e-Tax, and e-Vehicle registration that have been implemented by some states in Nigeria have resulted in increased revenue. Many other developing countries can emulate this.

5.4 e-Participation for Inclusive Governance

It is possible to increase the level of trust in governance and the participation of the masses in the process of governance by implementing technology-based solutions. For example, government authorities at the local/district/county levels can invest in technologies that will engender active engagement with the masses to obtain their viewpoints on both proposed and executed projects. E-opinion poll technology will enable appropriate arms of government to obtain direct feedback from the people on proposed or ongoing programmes of government instead of relying on accolades from sycophants or criticisms from political opponents who may not be objective at all times. E-government solutions that leverage on SMS, mobile technology (random phone calls, tweets, and social media) can be implemented to ensure the masses participate in governance.

5.5 e-Learning for Improved Education of the Masses

Governments at the local levels can embrace the implementation of e-learning initiatives that are aimed at educating the masses. Such e-learning initiatives should embrace aspects of social conduct and behaviour, culture, moral values, training in entrepreneurship and the like. It should accommodate both formal and informal learning. Many of the previous education initiatives of government in Nigeria and many other developing countries have failed because they mainly targeted formal learning, which makes them unattractive to the masses. It is possible to implement technology-based informal learning schemes using mediums such as radio, television, and mobile phone to help people learn in informal settings. This will accelerate the emergence of a more informed and enlightened masses.

5.6 Leveraging Mobile Technology for Development

Increased technology diffusion has made it possible for more persons at rural areas to have access to mobile telephone. For example, Nigeria with over 120 Million mobile phone users has huge potential for socio-

economic development of the masses. Indeed a significant percentage of Nigerian masses have access to mobile phones. Therefore, e-Governance initiatives that are based on the use of mobile technology should be explored in many developing countries. A few of these are:

Mobile learning – This involves the use of the mobile phone as means to educate the populace either on issues that pertain to government-to-citizens (G2C) interaction or personal capacity development of the people, care of the environment, mass orientation and so on.

Mobile Commerce – This entails the use of mobile technology as instrument for the exchange of goods and services, and facilitation of commercial transaction between different entities. This could be in form of payment of bills to government, or dissemination of information to business groups such as trade cooperatives, farmers unions and so on, in order to eliminate undue bureaucracy and activities of middlemen. This will yield the benefit of improved productivity and profitability of the local traders and farmers.

5.7 Improved Healthcare for the Masses through e-Health Initiatives

The doctor to patient ratio in Nigeria is 1: 6,400 as against the World Health Organisation (WHO) standard of 1:600 (Business Day Online). The trend is the same in many developing countries as shown in Table 1. There is also poor geographical distribution of doctors in most developing countries, where fewer doctors are available to serve the masses. Hence, governments at the local levels must devise electronic health initiatives that can improve the quality of healthcare for the masses. Some of the e-services that could be explored include preventive healthcare services, health consultation services, health counselling, lightweight diagnosis, and health information services – providing information on the facilities and expertise that are available in specific hospitals within the community per time. All of these forms of electronic health services can be implemented as SMS-based services or as Mobile Apps that people can download to their mobile phones and use. The services can also be hosted on websites maintained by the government or a government hospital.

5.8 e-Governance for Peace and Security

Governance is about maintenance of peace and security and creating enabling environment for economic growth and wellbeing of the people. The spate of communal conflicts, killings, crime, war, and terrorism in many developing countries particularly in SSA will hinder socio-economic development. The governments of developing countries need to be more aggressive in their pursuits of technology initiatives to tackle these problems. Some of the e-governance initiatives that would be useful to attain peace and security of the masses include e-Surveillance, and m-Surveillance. Governments at the local levels should have arrangements that allows people to send messages through SMS to some dedicated numbers – just like calling ‘999’ in case of an emergency. The sent message could be received by a computer server, which then routes the message automatically to the appropriate agency of government that should respond to it, whether it is the fire service, health emergency units, or security agencies. It is imperative for all levels of governments in developing countries to make adequate provision for handling emergencies and disaster situations. There are technology-based solutions such as e-Conflict Management and Resolution, e-Complaint Management, e-Surveillance, e-Disaster Management that governments at all levels should invest in, so as to foster peace and security of the masses. An overview of the key technology enablers for socio-economic development of the masses is presented in Table 2.

Table 2: e-Government enablers for socio-economic development of the masses

S/No	Ingredient for Socio-economic development	Model of E-governance required	Specific E-Governance aspect required
1.	Quality Leadership	Government to Citizen (G2C), Government-to Government (G2G)	e-Democracy, e-Elections, e-Participation, e-Orientation
2.	Wealth Creation and equitable resource distribution	Government to Citizen (G2C), Government-to Business (G2B)	e-Empowerment through Cloud/Utility computing, e-Commerce, m-Commerce

S/No	Ingredient for Socio-economic development	Model of E-governance required	Specific E-Governance aspect required
3.	Fiscal Discipline	Government to Business (G2B), Government-to Government (G2G), Government-to Employee (G2E),	e-Procurement, e-Payment, e-Revenue, e-Billing
4.	Inclusive Governance	Government to Citizen (G2C), Government to Employee (G2E)	e-Participation, e-Opinion polls, Internet survey
5.	Good Education	Government to Citizen (G2C), Government-to Employee (G2E),	e-Learning (formal and informal), m-learning, e-mass orientation, e-skills development
6.	Good Telecommunication Infrastructure	Government to Citizen (G2C)	m-Commerce, m-Learning
7.	Healthcare	Government to Citizen (G2C)	e-Healthcare, m-Healthcare
8.	Peace and Security	Government to Citizen (G2C)	e-Conflict Management and Resolution, e-Complaint Management, e-Disaster Management, e-Surveillance, e-Emergency Response, Ambient Intelligence

6. Conclusion

In this paper, we have undertaken an objective assessment of e-governments initiatives for socio-economic development in developing countries. The summary our findings based on evidence obtained from the literature is that most have been ineffective or failed in addressing the core challenges that pertain to the masses. This paper then identified a set of factors that could engender socio-economic development in developing countries and the imperatives for the realization of the proposed solutions. It expected that many developing countries would subscribe to these recommendations and pursue them as pragmatic options that will engender true socio-economic development of the masses. In future work, we intend to undertake realistic research objectives that will ensure the realization of some of the proposed solutions in the Nigerian context, as a model of a developing nation.

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