Exponential Technology and Public Service Delivery in the Joint Admission and Matriculation Board (Jamb), Nigeria

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A b s t r a c t

Nigeria has the speedy developing ICT market and most rewarding telecommunications industry in Africa. However, in spite of this obvious and essential advancement, the country is still being ranked low in the provision of some basic social services to its citizens. This paper examines the effect of exponential technology on service delivery in the Nigerian public sector with specific reference to the Joint Admission and Matriculation Board (JAMB). The paper is anchored on Digital Era Governance Theory and it adopted a secondary data collection method. Data for the article was sourced mainly from journal articles, textbooks, newspapers, government publications, and internet materials. The paper observes that JAMB has drastically improved in its mode of operations in terms of coordination and monitoring of the Unified Tertiary Matriculation Examination (UTME) throughout the country. Also, JAMB in recent time has become part of the agencies of the federal government that generates revenue which also contributing significantly to revenue generated internally of the Federal Government. The paper therefore suggests that other government ministries, departments, agencies, and parastatals should imbibe the exponential technology model at all levels of government in Nigeria to enhance their efficiency. Also, there should be capacity building for leadership in various government institutions and agencies to enhance their efficiency. The paper concludes that training is an inevitable concomitant to exponential technology in the Nigerian civil service.

Background to the Study
Exponential technology has been one of the transformative system adopted and used in the delivery of public services to the citizens. It refers to the use of internet technology as a platform for exchanging information, providing services and transacting with citizen as a client, businesses, and other levels of government (Adesoye, 2018). Exponential technology can be applied at the government ministries, department and agencies to improve internal proficiency in the delivery of public services and strengthen democratic dividends or governance. The most significant anticipated benefits of exponential technology in a developing nation like Nigeria include improved efficiency, an increase in transparency and accountability of government functions, eradication of bureaucratic bottleneck, convenient and faster access to government services, improved democracy and lower expenses of administrative services (Kamal, 2017).

Also, exponential technology deals with issues relating to how the State utilizes Information and Communication Technology (ICT) to provide better services, often in partnership with the private sector and civil society organizations. Meanwhile, exponential technology deals with issues that relate to how the State makes use of technology to better regulate and provide public services such as price, quality, and accessibility. More so, its emphasis lies on how the MDA's utilized the most innovative technology such as the internet, to deliver to all citizens improved services, reliable information, and greater knowledge in order to facilitate access to the governing process and encourage deeper citizen participation (Owolabi, 2018).

However, the systematic models applied by this technology are Government-to-Citizen/Customer (G2C), Government-to-Business (G2B), Government-to-Government (G2G) and Government-to-Employees (G2E) model. Within each of this model, there is an interaction domain were the two-way style of communications existed which they are; government agency and the citizen; government and business; or a government agency to other government agencies. In this model, users can engage in dialogue with agencies, post problems, comments, or requests to the agency and conduct transactions (Chidozie, 2015). Thus, it is an unequivocal duty by policymakers to reinforce and strengthen the collaboration between the citizen and the public sector.

There is no doubt that Nigeria has the fastest growing ICT market and most lucrative telecommunications industry in Africa. This paper therefore examines exponential technology in Nigeria's public sector with reference to JAMB. The paper is exploratory and evaluated some recent improvements in JAMB's operation as an institution in terms of conducting and monitoring UTME via CBT, examination malpractice reductions, generating revenue to government coffers and also to know the implications of exponential technology model adopted by JAMB can have to other relevant government institutions.

Statement of the Problem
It is no gainsaying that exponential technology positively impacts government institutions, transforms it to enhance public service delivery provided it is used to

support and automate core administrative tasks that will promote transparency, accountability, effectiveness and citizen's participation (Owolabi, 2018). The explosion in digital connectivity, globalisation and the rapid growth in technologies has revolutionized the way the government performed its businesses and discharged her responsibilities. Presently, institutions in Nigeria are under pressure to transform into exponential system, in recognition of the efficiencies brought about by the appropriate use of information communication technologies (ICTs) in public service delivery and the need for improvement (Ahmed, 2013). The goal has been to maximize the state's capacity to serve its stakeholders such as the citizens, business, employees and other government and non-governmental agencies (Ovie, 2012).

Also, exponential technology has been a critical component of public sector reform in recent years in developing countries with a substantial amount of resources dedicated to the development of necessary systems and infrastructures. Thus, the sustainable utilization of technology in the delivery of public services is yet to be realized in developing countries including Nigeria although digital innovations have the potential to reduce costs and strengthen our institutions. More so, this innovation is not limited to the web-based government but encompasses the full range of ICTs, including radio, television, and telephones (fixed and mobile). The rapid spread of mobile phones across the nooks and crannies of the nation is supposed to enhance the delivery of public services (Mahmood, 2019). Mobile phones provide the main form of internet access in developing countries and the increasing trend in mobile technologies and applications is driving innovations that reach the poorest and most vulnerable (Ahmed, 2013).

Indeed, the challenge posed by the digital divide also requires genuine thought by the government if Nigerians must benefit from technology applications in various institutions. Meanwhile, existing research has observed that the gap in terms of digital divide between the developed institution and the developing ones. While the developed institutions are having 416 personal computers per 1,000 people, developing institutions are said to be having only 6 personal computers per 1,000 people (Mahmood, 2019). This is important since countries of the world today have discovered that technology is a censorious likewise vital asset and also the strategic resource to national development.

Notwithstanding the above challenges, certain factors have been attributed to inefficient public service delivery to the citizens in Nigeria. One of such factors is the bureaucratic bottleneck associated with policy implementation in most public institutions which can be eradicated with the adoption of exponential technology. Its adoption can create room for evaluation and review. There is no doubt that the problem of accessibility to ICT services as a result of lack of network infrastructure also inhibits service delivery to people in the rural areas. ICT infrastructure cannot function properly without constant supply of electricity. Unfortunately, the Nigerian government has failed to improve on electricity supply in different parts of the country. Also, the MDAs have failed to advance enough resources to the development of its human capital in their yearly financial plan so that the unavoidable changes that arise as a result of exponential

innovation will not be jeopardised (Chidozie, 2015). Also, lack of digital inclusion, low availability of and access to technological infrastructures by main public institutions saddled with the responsibility of providing public service delivery, digital illiteracy among the citizens as well as low skills among the civil servants that are in charge of service delivery have impacted public service delivery negatively. Although scholars such as Mahmood (2019), Ovie (2012), Ahmed (2013), et al examined how technology have enhanced public institution as it has failed to reflect public service delivery. However, none of them paid serious attention to some of the issues identified as problem in this paper. It is this observed gap in the extant literature that this paper seeks to explore in order to come up with possible solutions that engender improvement in service delivery in the Nigerian public sector.

Objectives of the Study
The main objective of this paper is to assess the extent to which exponential technology has improved the quality of public service delivery in JAMB and to make suggestions to other government institutions on the need to imbibe the current JAMB model to promote efficient service delivery to the public.

Conceptual Review
Two key concepts are central to this paper and attempt is made in this section to clarify them. These concepts are exponential technology and public service delivery. Exponential Technology has been described as a digital method of transacting with customers and clients otherwise known as the citizens. Nweke (2007) sees it as any technique or knowledge used by the institutions to create, store, manage and disseminate information. The World Bank (2017) defines exponential technology as a set of routines that facilitate the capturing, storage, processing, transmission and display of information by electronic methods . For Akunyili (2010), this form of technology is an umbrella term that covers all technical means for processing and communicating information which includes social media app, telegraphs, radio, television, computers, internet services, and wireless technologies . Exponential technology is therefore, a broad subject that is concerned with technology and other aspects of managing and processing large-scale information. This is what is regarded as computerized-government and digitalized-governance in the field of public administration (Ovie, 2012).

The digitalized delivery of public service in Nigeria is essentially an imported concept based on imported designs. An electronic delivery strategy in government institutions is not only about the automation of the current way of delivering services to the public rather it is about carrying out government responsibility by using collaborative transactions and processes required by the government departments to function effectively and economically, promoting innovation and competition in a bid to improve the quality of services to the citizens. The practices and applications of electronic technology in the government institutions in the developing countries show that it is a powerful means of delivering better quality services, reducing waiting time, red tape, raising productivity and improving transparency and accountability (Owolabi, 2018).

In addition, the great potentials of exponential tools and applications for operational proficiency, convenience, improved quality of service delivery, innovation and learning will aid government institutions (Eme, 2017).

Although, exponential technology is generally seen as an "enabler", it also has its own challenges. Park (2017) observes that the exact role of this form of technology in the delivery of services to the public has given rise to a disagreement among three categories of scholars namely: Technology optimists, Technology pessimists and Technology skeptics. While the technology optimists believe that exponential technology has a positive role to play in public service delivery, the technology pessimists argue that the application of exponential technology in government institutions can only reinforce and worsen existing disparities and problems. The technology skeptics, on the other hand, argue that both the hopes and fears of the optimists and pessimists respectively are exaggerated, as the application of exponential technology will make little difference one way or the other. For the technology skeptics, exponential technology will consistently adjust to the socio-cultural and political status quo (Mahmood, 2014).

Public service review is another concept that needs clarification in this paper. Public service is very sacrosanct in the provision of service to the citizens of any country. It is through public service that the government can manage its activities effectively and efficiently. Public service plays a vital role in delivering and distributing public services across the country. The major function of public service is to provide services; provide enabling environment for economic growth and prosperity for citizens as well as securing and strengthening democratic institutions (Ovie, 2012). The concept of 'public service delivery' can be defined as an institutional arrangement that the government adopts to provide public goods and services to its citizens (Eme, 2017). Consequently, the choice of institutional arrangements impacts the provision of service delivery to the public. Essentially, there are four broad types of public service delivery arrangements that governments everywhere have adopted: Direct Delivery of Service, Privatisation of Service Delivery, Alternative Service Delivery (ASD) and Decentralisation of Service (Martins, 2019).

Under the direct delivery of services, the federal government brings out legislation, enforces it, hires staff, puts money, produces and distributes services, either directly operating from the headquarters or through decentralised line agencies. It accepts full responsibility and is accountable not only for provision but also for service delivery (Olaopa, 2010). In privatisation of service delivery, the government transfers the delivery of public services to private companies. In such a case, it assumes no responsibility, except monitoring corporations or agencies compliance to legal framework. For government agencies that are contracting out responsibilities for service delivery, this requires setting clear goal-oriented objectives and defining appropriate performance measures to track success in attaining those objectives (Martin 2019). The third form of public service delivery is using alternative service delivery through a public-private partnership arrangement. It may be in the form of build, own, operate and

transfer (BOOT) or build, operate and transfer (BOT), or contracting out and among others (Eneanya, 2015). The fourth type of public service delivery arrangement is decentralisation. In this form, decentralisation depends on subsidiary principles of governance rule, were provisioning, production and delivery of services are to be devolved to the lowest tier of government (state and local units), subject to economies of scale and capacity (Olaopa, 2010).

Therefore, the need to enhance efficient public service delivery through exponential technology is germane in the provision of goods and services in Nigeria. It was the desire to promote excellence and improve citizen satisfaction that led to the launch of the Nigeria Service Delivery Initiative and Service Compact in 2004, yet the state, quality and nature of public service is still appallingly poor by all statistics (Akunyili, 2010).

Exponential Technology and Public Service Delivery in Nigeria
Technology no doubt offers enormous opportunities for institutions in Nigeria vis-à-vis public service delivery and citizen satisfaction and participation. This accounts for the connections between technology applications, optimization of government operations and achievement of important social development goals which is even a very convincing argument for the continued utilization of technology in our institutions (Eme, 2017). The application of exponential technology in government is no longer seen as an option but as a necessity for all countries aiming at having better and efficient governance (Gupta & Jana, 2003). This shows that there is a strong linkage between technology application and efficient service delivery.

Meanwhile, the application of exponential technology empower the public sector to maintain and strengthen good governance in the knowledge society, create a public sector that is open and transparent, governments that are understandable and accountable to the citizens and open to democratic involvement and scrutiny (Martins, 2019). Nweke (2007), opines that it also ensures that the public sector is at the service of all, promotes a productive public sector that delivers maximum value for taxpayers' money, less time is wasted standing in queues, errors are drastically reduced, more ties are available for professional face-to-face service and the jobs of the civil servants becomes rewarding in the process.

Exponential technology is a form of innovation and revolution that has brought the considerable potential initiatives aimed at fighting corruption and increasing the participation of citizens in the institutions of government (Owolabi, 2018). This technology has opened a new digital governance space that has huge potential for improving opportunities for the participation of citizens in governmental affairs. This type of setting enhances effectiveness, transparency, accountability, responsiveness, responsibility, equity and efficiency in the manifold transactions that link service providers (government institutions) and service beneficiaries (citizens) (Muchie, 2011).

It is instructive to note that proper service delivery is vital for the survival of modern democracy or government and access to government information by citizens and organizations is therefore a fundamental ingredient in effective service delivery. To this end, exponential technology is seen as a tool to support the work of governmental institutions and its agencies to deliver public services and information in a more convenient, citizen-centric and cost-effective manner. Thus, in Nigerian public service, exponential technology can be an effective tool increase access to government services, improved value for money as well as increased productivity, transparency and better service delivery (Achimugu, 2011).

Theoretical Review
This paper is anchored on digital era governance theory. The idea was adopted in 2005 by Patrick Dunleavy and Helen Margetts to replace new public management. Digital era governance has three key elements which are reintegration (bringing issues back into government control); needs-based holism (redesigning government around distinct client groups); and digitization (fully exploiting the potential of digital storage and internet communications to change governance and public service delivery) (Margetts, 2006). Digital technologies significantly impacted social and economic realities, making government institutions to discharge their mandate effectively and efficiently. These changes reached public administration, including the New Public Management (NPM), a bureaucratic model that advanced from both the new institutional economics and the notion of managerialism has been gaining traction in developing nations since the beginning of the 2010s (Bastow, 2016).

New public management which has been based on managerialism, decentralization, de-bureaucratization, privatization and a decrease of size and scope of the administration passed its peak in the mid-2000s. States have been experiencing a 'hollowing out' process, losing their role of provider of public services and causing increasing citizens to disconnect as the new public management has been failing to deliver results. This has coincided with the accelerating development of the notion of governance, a model based on power-sharing and the participation of citizens in the co-creation of institutional order and co-design of public services. Such governance, however difficult to define clearly in contrast to new public management, considered the social phenomena that traditional examinations of government and public administration have ignored (Oladuni, 2009).

In the view of Omar (2020), the transformational role of the internet had a fundamental impact on the relations between governmental institutions and the citizens. The internet has accordingly paved the way for the emergence of a new public administration model: Digital Era Governance (DEG) in which digital technologies are in the center of governments' organizational structures. As simple digitization of bureaucratic proceedings has no longer been delivering recognizable results, DEG embraces the permeation of government by the culture of the internet. The key features of the Digital Era Governance and its more advanced version – Essentially Digital Governance (EDGE) are reintegration (referring to the architecture of state administration), need-based holism (focusing on citizens' needs) and digitization changes (concerning cultural, social and technological adaptation)

DEG and EDGE both challenge public administration, requiring its internal and external opening, and lead to an administrative set-up described by simplification, automation of daily bureaucratic work and flexibility in delivering services. While the new public management model remains strong in many countries, its impact is diminishing and alternative scenarios can be drawn concerning how DEG and EDGE will be entering the practice of government and public administration in the years to come (Margetts, 2006).

Methodology
The data for this paper were drawn mainly from secondary sources. The paper adopted the qualitative paradigm of social research approach by sourcing information from extant literatures such as textbooks, journals articles, magazines, newspapers, government publications etc. To enhance on the reliability and validity of the paper, multiple secondary sources were utilized to limit the risk of error.

Adoption of Exponential Technology at Joint Admission Matriculation Board
The revolutionary dimensions of exponential technology have enhanced JAMB service which can only be applauded when compared with the former system where the examination process is full of malpractice, time wastage and other maladministration activities that may arise in the process. One can therefore see from the JAMB example that exponential technology has enhanced, improved, fast and accurate public service delivery as it eradicates time-wasting, loss of documents, delay in responding to requests, and kickbacks normally associated with traditional style of service delivery. Indeed, the idea of repeated visits to offices from a far distance which normally takes a toll on resources is gradually diminished through technology utilization (Eme, 2017). Exponential technology also permits the delivery of services outside normal working hours. Arguing in this direction, Chidozie (2015) asserts that digital governance initiatives put government services online thereby lessening bureaucratic bottlenecks, offers round the clock accessibility, fast and convenient transactions and improves the quality of service delivery. Similarly, intergovernmental relationships with other institutions are made faster, enhance and convenient. This can be found in the dominance of e-mails, which have taken over surface mails. In addition, exponential technology initiatives such as e-chatting, e-conferencing/video conferencing, FAQ, etc, are making the public service smarter with reduced risks of travel. These initiatives also empower both the government and the private agencies to have discussions at a distance and at the same time in their respective workplaces.

However, the JAMB revolutionised that became a shining model for others to borrow a leaf from cannot be overlooked without considering the leadership that steers the affairs of this great institution which is headed by Prof. Oloyede which is now a revenue-generating and money-spinning outfit. In 2017, the body, under the purposeful and innovative leadership, raked in a whopping N12 billion as revenue, and remitted N7.8 billion Naira to Federal Government, after deducting its expenses. Unfortunately, a paltry N52 million was what the board had remitted to FG in 40 years prior to Prof. Oloyede's emergence as Registrar of JAMB (Daily Trust, 2019).

Meanwhile, the JAMB current helms of affair piloted by Prof Oloyede subsequently remitted additional billions into government coffers in 2018. That the board now annually remits humongous revenue shows that it has succeeded in blocking all loopholes while checking unnecessary wastages. Indeed, the new face of JAMB has expanded the Unified Tertiary Matriculation Examination (UTME) monitoring teams and deployed hi-tech methodology such as routers, sophisticated software, etc in monitoring and checking examination malpractices. At the moment, all the accredited Computer-Based Test Centres in the nation have been standardized in terms of capacity, equipment, materials, competent human resources and security appliances including the Closed Circuit Television system (Punchng, 2019).

There is no doubt that sanity has actually and tremendously been deployed into the operations of JAMB, as evidenced in the migration from Scratch Card to virtual (soft) transactions such as e-pin. After abandoning the manual procedure of registration, JAMB now accepts payment for its essential services directly into the Treasury Single Account (TSA) through web payment, online Quick-Teller, ATM payment, Quick-Teller mobile application, and Bank branch. Aside from curbing fraudulent practices occasioned by Scratch Card racketing, the e-transactions have also saved the 30% (of sale) which use to be paid as commission to service providers that generate the PINS and print the scratch cards (Owolabi, 2018).

Besides, innovation is a factor that makes the institution distinctive today. Rather than be complaining of what is available or not available, JAMB has taken several innovative measures and novel initiatives driven by exponential technology to forestall arbitrariness in the admission process through the Central Admissions Processing System (CAPS) and generally make the Board accountable and responsible (Mahmood, 2019).

Below are the analyses of revenue remitted into the government coffers from 2010 - 2019 depicting how exponential technology has aided JAMB activities in revenue generation and accountability.

Table 1.

Year	Amount Remitted
2010	No remittance
2011	11, 522, 808
2012	No remittance
2013	25, 303, 274
2014	13, 926, 462
2015	No remittance
2016	No remittance
2017	5, 177, 580, 297.08
2018	7, 800, 000, 000
2019	2, 000, 000, 000

Source: Premium Times, 2019

The Challenges of Exponential Technology to Public Service Delivery in Nigeria Institutions

Despite the large opportunities of exponential technology as a technique for efficient and effective public service delivery, the situations on the ground in Nigeria public institutions are not quite rosy. There is no doubt that exponential technology initiative as a means for administrative reform which is heralded as the new way for improving public service delivery is threatened. They are challenges of leadership and absence of political will; lack of technology infrastructure; attitudinal change for technological adoption by the bureaucrats; epileptic power supply; problem of digital divide; lack of comprehensive institutional policy on digitization; Nigeria's low technology literacy and usage; limited, slow or non-existent internet connectivity; inadequate technology funding by the institution and; poor institutional governance structure to drive exponential technology (Adeyemo, 2011).

Indeed, the following are some of the challenges confronting our government institutions effort to utilize exponential technology for the delivery effective and efficient services to the citizens.

a. **Lack of Political and Leadership Problem:** Challenges of leadership and lack of political will are indeed major factors affecting exponential technology initiative and application in the Nigerian institutions when it comes to effective public service delivery. Political interference, administrative malady, absence of transparency and accountability, corruption, etc, are menaces facing the management of government establishments.

According to Obasanya (2018), political and social reforms are required alongside the implementation of exponential technology in any institution that determines to provide social services. He further stated that the absence of leadership and political will have resulted in the breakdown in governance leading to corruption, rent-seeking patronage and low democratic dividends. More so, considering the complex process, risks and challenges government institutions have prompt the leaders to have resisted exponential technology initiatives due to ignorance, policy issues and obsolete rules and regulations that is why leadership is the necessary concomitant before, during and after implementation of exponential activities.

One can see from all the foregoing that the government has indeed taken some concrete steps to enhance the development and utilization of technology in the Nigeria institutions. The point however remains that Nigerian leaders have not demonstrated sufficient commitment towards the development and utilization of exponential technology in the country's institution. This is all undeniable because the government is still faced with insufficient allocation of financial resources and mixed or overlapping government policies that have all slowed down the development and utilization of technology in our various institutions. Despite the fact that these challenges could be considered as part of Nigeria's poor readiness, it is a significant issue in its own privilege

as nothing can be meaningfully achieved without financial resources (Owolabi, 2018). It is obvious that leadership continues to bea major challenge confronting the use of exponential technology in most of government institutions.

b. **The Issue of the Digital Divide:** The digital divide refers to the lacuna or inequalities between people who have the resources and access to technology and people who do not have the resources and access to technology. The term also describes the discrepancy or gap between those who have the skills, knowledge, and abilities to use technology and those who do not (Mahmood, 2019). In Nigeria today, the digital divide is experienced between the urban rich and poor; between the rural and urban citizens; and between the ICT literate and the ICT illiterate. This manifests also in the language in which ICT content is delivered which can only be understood by a minority few (Chidozie, 2015). Numerous Nigerians are poor as they reside in rural areas and as such, they lack access to technologies. This implies that these set of Nigerians might not be able to have essential government information and services, or even take part in online interactions with the government. There is no doubt that the poor and disadvantaged groups usually have problems in accessing ICTs and using them for their specific needs. Thus, unequal access tends to worsen existing inequalities (Anele, 2012; Akinwotu, 2017).

c. **Low Technological Skill, Literacy, and Usage:** Besides the challenges of leadership, digital divide, and the dearth of technology infrastructure in the country, exponential technology initiatives in government establishment lacked the required personnel with the requisite digital technology skills needed for public service delivery (Eme, 2017). Regardless of the advancement of technology, human beings remain the most critical factor as they are the users and creators of data as well as the managers of the technology. The challenge range from lack of qualified staff and inadequate human resources training as hinges on the unavailability of human capacities that have the technical skills for installation, maintenance, design, and implementation of technology infrastructure in our institution (Martins, 2019).

Apart from lack of technical digitalization skills in the Nigeria public sector, the institution does not have the requisite in-house managerial digital skills. Besides, it lacks the training programs to create a sustainable pool of staff with basic digital literacy, technical and managerial skills. The main consequence of this challenge is the tendency to use external consultants which makes technology application very expensive in our government establishment (Adeyemo, 2011).

One can see from the foregoing that human capital development is an essential for exponential technology application in the government establishment as this has become even more necessary considering the low qualification of ICT personnel and professionals in Nigeria. To get out of these low ICTs skills, literacy and usage in our institution, Chidozie (2015), opines that addressing human capital development issues with those in charge of managing the affairs of the institution should therefore, focus attention on staff training and development to help bureaucrats acquire the requisite skills and knowledge needed in discharging public service delivery.

d. **The Challenge of Adapting to Change:** The problem of adapting to change is another key challenge to technology application in our government establishments. Change is one phenomenon that is permanent but always difficult to be followed due to resistance. Resistance to change associated with exponential technology in our institution arises to factors such as culture, labour, ideological issues and inertia of the options and habits (Mahmood, 2019). In the above listed factors, culture is the most challenging and the most evident cause of resistance to digital innovation as it is applicable among bureaucrats who do everything possible to oppose the amendment of processes or practices that have existed for time immemorial (Enclopedia.com, 2020). It is based on this resistance to reform that makes bureaucrats in Nigeria to be reluctant to share information thereby resulting in policies that deny access to information and the creation of empty government websites with information of little worthwhile (Agboola, 2016).

To make exponential technology understand its potentials in Nigeria, the citizens that serve as the prospective users of the technological infrastructure should be re-oriented in line with new technological development in the public service. Equally, due to the difficulty in turning off old ways of life, incentives and benefits are recommended for the transiting employees to learn and accordingly change to attributes that would enhance e-government ideals in the public sector. As Akunyili (2010), stated the way of tackling the problem of resistance to change in the Nigeria institution is for the government to continue emphasizing cultural change to ensure bureaucrats buy into the new technology-driven processes, rather than manual ones that have been in place for many years .

Benefits of Adoption of Exponential Technology in Nigeria Institutions
The application of exponential technology in government establishment prompts the following outcomes: saving costs while improving quality; response times and access to services; improving the efficiency and effectiveness of public administration; increasing transparency in administration, reducing corruption and increasing political participation and making governments more competitive (Owolabi, 2018). More specifically, the benefits include:

a. **Reduced Cost of Administration:** The adoption of exponential technology in our government establishment allow for an essential reduction in information handling cost. This procedure enables faster sharing of information thereby decreasing the frequency with which data is collected when it is handled manually. Data collected manually costs more due to travel costs and other allowances and expenses (Mahmood, 2019).

Chidozie (2015) asserts that if institution applies exponential technology initiatives, it will reduce the number of inefficiencies in processes by allowing file and data sharing across government departments, thereby contributing to the elimination of mistakes from manual procedures and reducing the required time for transactions. It is painful to observe that the cost of running governmental affairs in Nigeria has been on the rise

hence the application of exponential technology initiatives in our institutions has the capacity of providing cheaper administrative cost due to the digitalization of public service delivery . More so, Nigeria with a population of 200 million occupying a territory of 923,768 square kilometers. It is therefore easy to imagine the logistic challenge and cost that goes with service provisioning by the various institutions in the country. The utilization of digital solutions will enable the concerned establishment to deliver her mandates with greater proficiency and less cost to the ministry and the recipients (Akunyili, 2010).

b. **Improved, Fast and Accurate Service Delivery:** The conventional style of service delivery in Nigerian institutions is tedious and time consuming because of the bureaucratic nature of the Nigeria MDA's. The application of exponential technology assists in reduction of time waiting and red-tapism, thereby bringing about quick and accurate service delivery (Alowonle, 2017). Public sector establishments in Nigeria like the Joint Admissions and Matriculation Board (JAMB), National Open University (NOUN), National Youth Service Corps (NYSC) and a large group of others have made service delivery to the citizens more convenient, faster and accurate through the digitalization of their activities and services. For example, JAMB presently uses exponential initiatives to coordinate, monitoring and conduct UTME for admission seekers into Nigerian higher institutions of learning. This yearly examination that usually involves over one million candidates adopted CBT and the results will be uploaded and released to their website within seven working days (Mahmood, 2019).

c. **Creates Access to Transparent, Accountable and Participatory Governance:** Exponential technology initiatives have already exhibited an essential capacity for citizens to have greater access to information from public authorities in Nigeria. Public service delivery improves citizens' participation in public sector management. The opportunity generated in this perspective helps increase the transparency of decisions as citizens and the public servants interact through digital process. It also affords the citizens and other service beneficiaries to share ideas and offer solutions through electronic forums and websites (Martins, 2019).

Digital reform which is presently been experienced through exponential technology initiatives in Nigeria's public administration has created opportunity for public servants and citizens to have access to official information and transaction which were formerly classified have become open through the FOI Act (Adeyemo, 2011). This invariably empowers the government establishment to harvest more data from operational systems through increment in the quality of feedback. Hence, it is obvious that government to citizens kind of relationships enabled by digital application, which before now created suspicion have now reduced as more information is made available through different kinds of on-line channels between the institutions and the citizens. Therefore, the framework has improved transparency, accountability, and participatory governance as it also reduces corrupt practices (Eme, 2017).

d. **Enhances Networking and Inter-Governmental Relations:** Exponential technology enhances interconnectivity among governments, customers, businesses, employees and other organizations. The successful utilization and diffusion of digital networking in the public sector involves a collective, multi-disciplinary and dynamic learning process (Maxwell, 2019). This is applicable in Nigerian public agencies like WAEC, NOUN, NECO, NYSC, JAMB etc, that have fully accepted exponential initiatives in the delivery of services to the public.

Mahmood (2019) argues that the very nature and attributes of the digital government require cluster and network approach to put together skills, technologies, information, and knowledge that span the boundaries of different governmental agencies. The application of exponential technology enhances the practice of Enterprise Resource Planning (ERP), which is an integrated business system that ties all the various functions of an enterprise like budget, policy process, human resource management, etc, into a cohesive system on a common database. Chidozie (2015) also observes that the ERP system may be integrated with the internet and workflow as it represents opportunities to our institutions in the areas of public procurement, financial management, human resources management, records management, material management, etc.

In addition to the foregoing, the establishment of integrated online network in the MDA's therefore cluster and enhances data sharing that facilitates feedback that will allow government taps wider sources of information, perspectives and solution to meet the challenges of policymaking process under conditions of increased complexity (Martins, 2019). In order to promote high level of efficiency and effectiveness in service delivery, it is germane to direct the utilization of exponential tools, techniques and applications in Nigerian public sector.

Conclusion
This paper is expected to guide and engage government at all levels, policymakers, head of MDA's, experts and also frame citizen's mindset on how to maximise effective public service delivery and also to proffer solutions to the underperforming institutions by using exponential technology model in promoting democratic dividends. There is no doubt that training is a necessary concomitant of exponential technology in the Nigerian public sector and also various MDA's must find an avenue to maximize its great potentials and also minimize and manage effectively the imperfection and problems of exponential technology initiatives.

The Way forward
The paper suggests the following as the way forward.
1. Other government ministries, departments, agencies, and parastatals should imbibe exponential technology models at all levels in Nigeria to enhance their efficiency.
2. There should be capacity building for leadership in various government institutions and agencies to enhance their efficiency.

3. The consolidation of information and cross-sectoral collaboration which must come in form of a cluster so that other government agencies can share information and resources to ensure that policy design and implementation are driven by holistic perspectives is also crucial.

4. Key performance indicators that will evaluate results should be enhanced and this can lead to institutional reforms where citizen rights can be guaranteed and protected in terms of questioning the inefficiency of government institutions any time they failed in service delivery.

5. The government should invest in purposeful exponential technology programs such as staff development and ICT training. This program should be conducted from time to time and made compulsory to improve the abilities and skills of the bureaucrats. Hence, this program must be accompanied by an opportunity of owning a laptop and other technological devices that will aid in efficient and effective performance inservice delivery to the public.

6. Policies should be initiated by the government that will ensure that technological infrastructures, laptops, and other communication equipment are manufactured in Nigeria. Such policies will enable citizens to have quick access at affordable prices. Also, computer education should be incorporated into the curriculum of all educational institutions at all levels so that people coming into the government institutions will have what it takes to discharge public services.

7. The professional bodies in the public sector and other institutes like Administrative Staff College of Nigeria (ASCON), Chartered Institute of Local Government and Public Administration, Institute of Public Administration of Nigeria (IPAN)etc should incorporate Computer and Information Technology in their professional examinations syllabus in order to expose bureaucrats to computer technology and consequently facilitate efficient service delivery in the public sector.

Future Research Direction
Future research should be conducted on how exponential technology platforms can be incorporated into our security institutional framework to remedy the insecurity imbroglio that is being faced at national and sub-national levels in Nigeria. Besides, exponential technology should be used to engage citizens in information; service delivery needs and handles complaints. This no doubt will boost citizens' satisfaction and build citizen-oriented quality public service delivery in Nigeria.

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