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Examining the Challenges of the Effective Implementation of ICT in Kogi State Ministry of Finance Lokoja, Nigeria

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Abstract
This study investigated the intricacies surrounding the effective implementation of Information and Communication Technology (ICT) within the Kogi State Ministry of Finance, budget and economic planning. As technological advancements continue to reshape administrative processes globally, understanding the challenges hindering the successful integration of ICT tools becomes imperative. Through an exhaustive examination of the state's financial administration landscape, this study aims to identify, analyze, and propose solutions to the barriers impeding the seamless adoption and utilization of ICT infrastructure within the Ministry of Finance. By employing qualitative research methodologies, including interviews, surveys, and case studies, the research sheds light on various factors influencing ICT implementation, such as Access and affordability, digital divide, policy and regulation, content localization, poor telecommunication and power infrastructure, High Cost of Connectivity in the Face of Rising Poverty Level, High Rate of Fraud and Poor Cyber Security, Low level of investment in ICTs, Poor Culture of Information Sharing. The findings of this study offer valuable insights for policymakers, administrators, and ICT practitioners seeking to optimize the efficacy of ICT initiatives within governmental financial institutions, not only in Kogi State but also in similar contexts globally.

Keywords: *Information and Communication Technology, Finance*

Introduction

Information and Communication Technology (ICT) is a concept that is increasingly accepted by practitioners and academicians. Governments around the world are embracing ICT at local, state, and federal levels, which explains its importance and fast-spreading nature. Some of its benefits include enhancing transparency and increasing efficiency. E-government is also essential for increasing revenue, promoting competitiveness, and enhancing marketing in the public sector. As a result, numerous processes and applications have been developed over time. Although, there is no standard definition of ICT, academicians and researchers have attempted to explain the concept in various contexts. For instance, According to Owusu-Ansah (2014: 56) ICT refers to all forms of technologies that are used to create, store, share or transmit, and exchange information. ICT is an acronym for Information and Communication Technology, serves as an umbrella term encompassing a wide array of communication devices and applications. This includes radio, television, cellular phones, computer and network hardware and software, satellite systems, and various associated services and applications like videoconferencing and distance learning. ICTs find application in specific contexts such as education, healthcare, finance and libraries (Techtarget, 2020). The evolving change in the global world and the need for developing countries to meet up with technological advancement, call for transformation. Like many other

projects or programmes, there are always risks in the implementation process that need to be identified and carefully managed, in order to ensure successful application and to promote good practice. These risks stem around service quality, data sharing, security and privacy, and misinterpretation of the services.

Without question, Information and Communication Technology is a reality. Governments are using the Internet to deliver services, disseminate information, and facilitate a more open dialogue between citizens and government. Internet-based applications show great potential for democratic renewal, especially with regard to reconnecting citizens to government. The Internet ideally broadens participation in the policy process, and citizens and public agencies save time and paperwork through electronic service delivery. However, there are some barriers that potentially impede Information and Communication Technology adoption. By barriers we mean any factor that creates a disincentive for governments to develop new or further develop existing ICT applications (Amanortsu, 2013).

The pervasive impact of Information and Communication Technology (ICT) is evident across various industries, spanning from small-scale enterprises to large corporations. In the context of urbanization, particularly in developing regions, cities are witnessing substantial population growth as people migrate towards urban centers. This demographic shift places significant strain on municipal and public services, resulting in an overwhelming workload for government employees.

The burgeoning urban populations and the consequent increase in administrative demands have prompted a reevaluation of traditional approaches to governance. Recognizing the need for greater efficiency and effectiveness, government institutions are turning to ICT solutions to address these challenges. ICT offers a suite of tools and technologies that can streamline bureaucratic processes, enhance service delivery, and foster modernization in public administration. By leveraging ICT, governments can automate routine tasks, digitize paperwork, and implement digital platforms for citizen engagement and service delivery. This shift towards digitalization enables government agencies to manage their workload more efficiently, reduce bureaucratic bottlenecks, and improve overall productivity. Moreover, ICT facilitates data-driven decision-making, allowing policymakers to access real-time insights and analytics for more informed governance.

The adoption of ICT in public administration promotes transparency, accountability, and citizen-centric service delivery. Through digital platforms and online portals, citizens can access government services, submit requests, and provide feedback more conveniently. This enhances the responsiveness of government agencies to citizen needs and fosters greater trust and engagement between government and the public. The introduction of ICT in public offices represents a paradigm shift towards more agile, responsive, and efficient governance. By embracing digital technologies, governments can adapt to the evolving demands of urbanization, improve service delivery, and ultimately enhance the quality of life for citizens (Richard 2021)

The Concept of Information and Communication Technology (ICT)

Information and Communication Technology, is a term that encompasses the integration of information technology (IT) and communication technology (CT). It represents the convergence of computing and communication technologies to facilitate the creation, storage, retrieval, transmission, and manipulation of information.

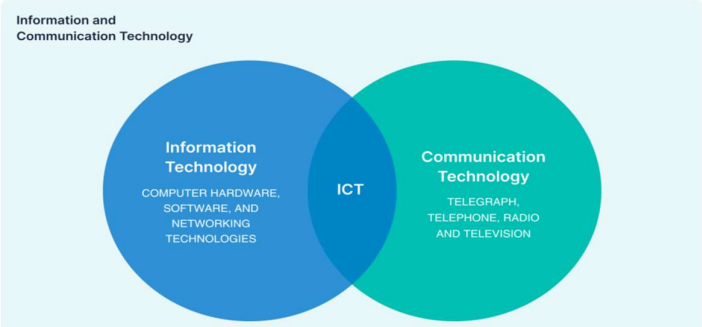
Information Technology

Information Technology, as the name implies, encompasses all aspects of computing technology utilized by businesses to facilitate the smooth operation of their departments. It enables organizations to enhance efficiency, effectiveness, and productivity. Information Technology involves the development, maintenance, and utilization of computer systems, networks, and related technologies. Telephones, radio equipment, switches, and television systems are all examples of Information technologies that have been widely used for transmitting information

and facilitating communication over long distances. Computer hardware, software and networking technologies.

Communication Technology

Communication Technology, as the name implies, encompasses tools and processes used to process and transmit information, facilitating modern computing. It involves the transfer of messages between individuals or machines using technology, providing increased opportunities for communication and collaboration. Blogs, tablet computers, social media platforms, and live streaming services are all examples of modern communication technologies that facilitate information sharing and interaction in various contexts. Eg: Telegram, telephone, radio and television.



While the term "information and communication technology" (ICT) lacks a universally accepted definition, scholars have endeavored to conceptualize it in various ways. For instance, van Ark (2011) describe ICT as an overarching term encompassing communication devices and applications such as radio, television, cellular phones, computer and network hardware and software, and satellite systems. Additionally, it includes a range of services and applications associated with these technologies, such as videoconferencing and distance learning. Ogbuabor (2017), offers a broader perspective, defining ICT to include communication media (e.g., radio, television, tapes, CDs), information machines (e.g., computers, tablets), and telecommunication technologies and equipment (e.g., GPRS, satellite systems, phones, and mobiles). Similarly, Oguche (2015) characterizes ICT as a diverse array of stand-alone media, including telephones, mobile telephony, radio, television, video, tele-text, voice information systems, and fax machines, as well as computer-mediated networks connecting personal computers to the internet.

These definitions converge on several key points. Firstly, they all underscore the importance of generating and disseminating information. Secondly, they highlight the digital or electronic nature of the information involved. Thirdly, while ICT is often associated with computers and computer networks, these definitions extend beyond computing devices to encompass a wide range of telecommunications equipment such as mobile phones, printers, scanners, and televisions. Thus, in a narrower sense, ICT may be defined as the digital processing and utilization of information facilitated by electronic computers. However, in a broader sense, ICT can be understood as an integrated system that includes the technology and infrastructure necessary for storing, manipulating, delivering, and transmitting information. It also encompasses the legal and economic frameworks required to regulate ICT access and usage, as well as the social and interpersonal structures that facilitate information sharing, access to ICT infrastructure, and innovation.

In essence, ICT serves as a versatile technology that enables individuals to generate, access, analyze, share, and utilize data, information, and knowledge in ways that were previously unimaginable. As a result, the applications and impacts of ICT on the overall economy are extensive and far-reaching. Much of the current wave of globalization observed globally has been

attributed to the rapid advancements in ICT. In Nigeria, ICT has brought about significant changes to the economy over the past three decades. While the exact nature and trajectory of these changes are challenging to predict due to the widespread influence of ICT, it is evident that these transformations will persist into the foreseeable future. This is because ICT has become an integral aspect of modern life in Nigeria, where individuals communicate, work, learn, shop, and entertain themselves through various ICT platforms such as cell phones and the internet. As such, there is anticipation for further innovations in the field of ICT that will continue to shape and redefine various aspects of life in Nigeria.

Ogbuabor (2017) outlined the evolution of ICTs in Nigeria, which initially began with basic tools like radios and telecommunications, primarily delivered via copper wires. These early ICTs provided essential social services such as news broadcasts, information dissemination, and entertainment. However, advancements in technology have led to the development of more sophisticated ICT tools and systems with broader applications and coverage. Today, Nigeria boasts a wide array of ICT tools and platforms, including mobile phones, television, computers (ranging from PCs to laptops to handheld devices like iPads), email, video conferencing, the internet, and expert systems. Additionally, various ICT-enabled applications have gained widespread popularity among Nigerians, such as Facebook, Twitter, Instagram, Blackberry Messenger, Skype, WhatsApp, YouTube, and numerous mobile applications.

An interesting trend is the adoption of mobile banking applications by banks in Nigeria, particularly deposit money banks. These applications allow customers to conduct banking transactions conveniently through personal computers, mobile phones, and other handheld devices. Customers can perform tasks like instant funds transfer, bill payments, purchasing mobile phone airtime, booking hotels and air tickets, among others. Given these developments, it becomes crucial to reassess the role of ICT in driving financial inclusion in Nigeria. This necessitates a review of existing policies to ensure they are informed and effective in leveraging ICT to promote financial inclusion across the country. This study aims to delve into this topic and explore ways to enhance the use of ICT for fostering financial inclusion in Nigeria.

Challenges facing the implementation of ICT in Nigeria

While Nigerians increasingly acknowledge the significant benefits and potential of ICT, they encounter various challenges in their endeavors to utilize ICT for achieving comprehensive everyday needs. These challenges range from pervasive and critical obstacles to reflections of structural deficiencies within the Nigerian economy. It is imperative to address these challenges diligently, as the realization of full financial inclusion in the country hinges upon overcoming them.

i. **Infrastructure:** Nigeria's ICT infrastructure faces various shortcomings, particularly in rural and underserved areas. Limited access to reliable electricity and internet connectivity hampers the deployment of ICT services and inhibits economic growth and social development. Insufficient investment in infrastructure development, including broadband networks, cellular towers, and power generation facilities, exacerbates the digital divide between urban and rural areas.
ii. **Access and Affordability:** While ICT devices and services are increasingly prevalent in Nigeria, many individuals and communities still lack access due to affordability constraints. High costs of ICT hardware, software, and internet subscriptions make them inaccessible to a significant portion of the population, particularly those in low-income brackets. Addressing affordability issues is crucial to ensure equitable access to ICT and bridge the digital divide.
iii. **Digital Divide:** Disparities in ICT access and usage persist between urban and rural areas, as well as among different socioeconomic groups. Urban centers typically have better ICT infrastructure and higher levels of digital literacy, resulting in greater access to opportunities such as online education, e-commerce, and telemedicine.

Rural and marginalized communities, on the other hand, face limited access to ICT resources, perpetuating inequalities in education, employment, and social inclusion.

iv. **Policy and Regulation:** Nigeria's ICT sector faces challenges related to inadequate policies and regulatory frameworks, which can impede innovation, investment, and growth. Inconsistent regulations, bureaucratic red tape, and outdated laws create barriers to ICT development and hinder the emergence of a thriving digital economy. Reforming policies, streamlining regulations, and fostering a conducive regulatory environment are necessary to stimulate investment, innovation, and competition in the ICT sector.

v. **Content Localization:** Despite the growing availability of digital content and services, there is a lack of locally relevant content in Nigeria. Limited availability of content in local languages and inadequate representation of Nigerian culture and perspectives restrict the accessibility and relevance of ICT applications for Nigerian users. Promoting content localization initiatives, supporting local content creators and developers, and fostering cultural diversity in digital spaces are essential to enhance user engagement and satisfaction.

vi. **Poor Telecommunication and Power Infrastructure:** The prevailing situation in many rural communities across Nigeria is marked by the absence of essential telecommunication and electricity services. Even within urban areas, challenges such as frequent power outages and unreliable telecommunication networks persist. As a result, many businesses and individuals resort to generating their own power supply. Nigeria's unreliable power supply infrastructure poses a significant challenge to ICT operations and service delivery. Frequent power outages, voltage fluctuations, and infrastructure deficiencies disrupt ICT services, leading to downtime, loss of productivity, and increased operating costs for businesses and individuals. Investing in reliable power generation and distribution infrastructure, promoting renewable energy sources, and adopting energy-efficient ICT solutions can help address power supply challenges and improve ICT reliability. These formidable challenges are expected to impede effective implementation of information and communication technology, particularly in the foreseeable future (Yun & Opheim, 2010; Arugu & Chigozie, 2016).

vii. **High Cost of Connectivity in the Face of Rising Poverty Level:** The well-documented reality is that Nigeria has earned the unfortunate distinction of being the poverty capital of the world. This stark circumstance has left many Nigerians struggling to meet even their most basic needs, including food, shelter, healthcare, and clothing. Given this precarious situation, the prospect of acquiring expensive smart mobile phones, let alone bearing the recurring costs of internet subscriptions, becomes a luxury beyond reach for many. It is widely acknowledged that internet connectivity in Nigeria comes at a considerable cost. Consequently, the ongoing trend of increasing poverty rates in Nigeria, coupled with the high expenses associated with internet access, suggests that a significant portion of the population will likely continue to be excluded from financial services due to their inability to afford web connectivity (Yun & Opheim, 2010; Arugu & Chigozie, 2016).

viii. **High Rate of Fraud and Poor Cyber Security:** The rapid digitization of services and information in Nigeria has led to an increase in Cyber Security threats, including hacking, malware attacks, and data breaches. Weak Cyber Security measures and a lack of awareness among users make individuals, businesses, and government agencies vulnerable to Cyber threats. Many Nigerians are afraid of embracing ICT platforms due to the high rate of fraud (commonly referred to as 'scam') and poor state of Cyber security prevalent in the country. This attitude of such Nigerians is further underlined by the huge amount of money lost to fraud by Nigerian banks and other financial institutions every financial year. The more unfortunate aspect of this

situation is that the victims of fraud perpetrated in the Nigerian financial system hardly receive any compensation. Thus, the vast majority of the populace who are also predominantly ICT-illiterates would prefer to stay underground rather than embrace the ICT-powered financial system. This challenge means that a large chunk of the Nigerian population will likely remain financially excluded for the foreseeable future.

ix. **Low level of investment in ICTs:** In Nigeria, the level of investment in Information and Communication Technologies (ICTs) still lags behind that of highly industrialized economies. As highlighted by Chetley (2006), one of the major challenges facing developing economies like Nigeria is finding the right balance of private and public resources to bolster publicly accessible knowledge bases. Unfortunately, many public and private institutions in Nigeria lack properly functioning ICT infrastructure. For instance, the provision and maintenance of adequate automated teller machines (ATMs) to serve the banking public consistently pose significant challenges for the Nigerian banking system. Additionally, there is a noticeable scarcity of e-learning facilities in most Nigerian schools, particularly at the basic and senior secondary school levels. The realization of using ICTs to drive financial inclusion in Nigeria remains a daunting task until a clear roadmap is established to bolster investments in the ICT sector**.**

x. **Poor Culture of Information Sharing:** Encouraging a culture of information sharing is imperative for effective utilization of Information and Communication Technologies (ICTs) in Nigeria. This requires political commitment to updating laws that regulate the operations of the telecom and broadcast sectors, with the aim of dismantling cultural barriers that hinder effective ICT use in the country. Establishing clear communities of ICT users is essential to promote sustainable information sharing, while efforts should also be made to encourage and support non-users to join these communities. Moreover, fostering synergy and collaboration among industry players, particularly among like-minded organizations such as telecommunication firms, is crucial. Such collaboration can facilitate discussions and streamline procedures aimed at driving financial inclusion using ICT platforms.

The Activities of Kogi State Ministry of Finance, Budget and Economic Planning

The Ministry of Finance in Kogi State serves as a pivotal institution responsible for overseeing the management and utilization of the state's financial resources. Its primary mandate revolves around maintaining fiscal discipline, promoting transparency, and facilitating efficient allocation of funds to support government programs and initiatives. Here's an in-depth exploration of the key functions and responsibilities of the Ministry of Finance in Kogi State:

i. Financial Planning and Budgeting: One of the core functions of the Ministry of Finance is to develop and coordinate the state's financial planning and budgeting process. This involves working closely with other government agencies to formulate the state's annual budget, ensuring that financial resources are allocated strategically to address priority areas and development needs.

ii. Revenue Generation and Management: The ministry is tasked with devising strategies to enhance revenue generation for the state government. This includes implementing policies and measures to optimize internally generated revenue (IGR), as well as coordinating efforts to harness other sources of funding such as grants, loans, and investments. Additionally, the ministry oversees the collection, accounting, and management of revenue streams to ensure transparency and accountability.

iii. Financial Reporting and Accountability: Ensuring transparency and accountability in financial management is a key priority for the Ministry of Finance. It is responsible for preparing comprehensive financial reports and statements that accurately reflect the state's financial

position and performance. These reports are critical for stakeholders, including government officials, citizens, and external partners, to assess the state's fiscal health and compliance with financial regulations.

iv. Debt Management: Managing the state's debt portfolio is another important responsibility of the Ministry of Finance. This involves prudent borrowing practices, debt servicing, and monitoring debt levels to prevent excessive indebtedness that could strain the state's finances. The ministry also explores opportunities for debt restructuring and refinancing to optimize debt repayment terms and minimize financial risks.

v. Financial Regulation and Compliance: The Ministry of Finance plays a regulatory role in overseeing financial transactions and operations within the state government. It establishes and enforces financial policies, procedures, and controls to safeguard public funds and ensure compliance with legal and regulatory frameworks. This includes conducting audits, inspections, and reviews to identify and address any irregularities or discrepancies in financial management practices.

vi. Strategic Financial Management: Beyond day-to-day financial operations, the Ministry of Finance engages in strategic financial management to support the state's long-term development objectives. This involves conducting financial analysis, forecasting, and planning to identify emerging challenges and opportunities, as well as recommending measures to enhance financial sustainability and resilience. In essence, the Ministry of Finance in Kogi State serves as the custodian of the state's financial resources, playing a critical role in driving economic growth, promoting good governance, and ensuring the effective delivery of public services to the citizens of the state.

Findings

Based on the examination of the challenges surrounding the effective implementation of ICT in the Kogi State Ministry of Finance, several key findings emerge:

Infrastructure Limitations: The study reveals that inadequate ICT infrastructure, including unreliable internet connectivity, outdated hardware, and inadequate software systems, poses a significant barrier to effective ICT implementation within the ministry.

i. Organizational Culture: Resistance to change and a lack of readiness to embrace ICT innovations are prevalent within the ministry's organizational culture. This resistance stems from factors such as entrenched bureaucratic processes, fear of job displacement, and skepticism about the benefits of ICT.

ii. Human Resource Capacity: The study identifies a lack of ICT skills and competencies among ministry staff as a major impediment to successful ICT integration. Insufficient training opportunities and a dearth of skilled personnel contribute to this capacity gap.

iii. Policy Frameworks: Inadequate policy support and guidance for ICT implementation within the ministry hinder progress. The absence of clear and comprehensive ICT policies and guidelines leaves room for ambiguity and inconsistency in decision-making processes.

iv. Financial Constraints: Limited budgetary allocations for ICT initiatives restrict the ministry's ability to invest in essential infrastructure upgrades, training programs, and technology acquisition, thereby hampering effective ICT implementation.

v. Dependency on Manual Processes: Despite the potential benefits of ICT in streamlining financial management processes, the ministry continues to rely heavily on manual, paper-based procedures, leading to inefficiencies, errors, and delays.

vi. Communication and Coordination Challenges: Inadequate communication channels and coordination mechanisms between different departments within the ministry exacerbate implementation challenges and impede the seamless integration of ICT solutions.

These findings underscore the multifaceted nature of the challenges facing ICT implementation in the Kogi State Ministry of Finance and highlight the need for comprehensive strategies addressing infrastructure, human resource capacity, organizational culture, policy frameworks, financial constraints, and communication barriers.

Conclusion and Recommendations

In conclusion, this study has provided a comprehensive analysis of the challenges associated with the effective implementation of Information and Communication Technology (ICT) in the Kogi State Ministry of Finance. Through an exploration of various factors such as infrastructural limitations, organizational culture, human resource capacity, and policy frameworks, it has become evident that successful ICT integration faces significant hurdles within the ministry.

Despite the potential benefits ICT offers in enhancing efficiency, transparency, and accountability in financial administration, these advantages are often hindered by inadequate infrastructure, resistance to change, insufficient training, and inadequate policy support. Consequently, the full realization of ICT's potential to transform financial management processes remains elusive.

Based on the findings of this study, the following recommendations are proposed to address the challenges identified and facilitate the effective implementation of ICT in the Kogi State Ministry of Finance:

1. Infrastructural Development: The state government should prioritize investment in ICT infrastructure, including reliable internet connectivity, hardware upgrades, and software systems, to support the seamless functioning of ICT tools within the ministry.
2. Capacity Building: Comprehensive training programs should be designed and implemented to enhance the ICT skills and competencies of ministry staff. Training should cover both technical aspects of ICT systems and their practical application in financial management processes.
3. Change Management: Efforts should be made to foster a culture of innovation and openness to change within the ministry. Leadership should actively promote the benefits of ICT adoption and engage staff in the decision-making process to mitigate resistance and facilitate smooth transitions.
4. Policy Support: The state government should formulate clear and comprehensive ICT policies and guidelines tailored to the specific needs of the Ministry of Finance. These policies should outline objectives, standards, and protocols for ICT implementation, ensuring alignment with broader government initiatives and objectives.
5. Monitoring and Evaluation: Regular monitoring and evaluation mechanisms should be established to assess the effectiveness of ICT initiatives and identify areas for improvement. Feedback from users should be solicited and integrated into ongoing efforts to refine ICT systems and processes.
6. Customized Training Initiatives: The Ministry of Finance should Craft personalized ICT training programs tailored to meet the specific needs and demands of Ministry of Finance personnel. These initiatives should encompass a diverse array of subjects, spanning from fundamental computer literacy to advanced ICT proficiencies essential for financial management tasks.

By implementing these recommendations, the Kogi State Ministry of Finance can overcome the challenges hindering the effective implementation of ICT and unlock the full potentials of technology to improve financial management practices, enhance transparency, and promote sustainable development.

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