

Success Stories of ICT Adoption by Nigerian SMES During the Covid-19 Pandemic

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COVID-19, ICT, SMEs, Nigeria.

ABSTRACT

The preventive measures implemented to combat the spread of deadly coronavirus around the world have caused significant business disruptions. Many businesses that had, before the pandemic, thought that the use of Information and Communication Technology was a luxury realised that it is a necessity; especially with the lockdown implemented. This research investigated the success stories of the use of technological tools by Small and Medium Scale Enterprises in Nigeria during the pandemic and presented policy recommendations to improve further use of technological tools in the Nigerian business sphere for national development. Five SMEs were purposively selected and used as case studies to determine the success stories of ICT utilisation during the pandemic. SMEs owner/managers were interviewed to get qualitative data, and lessons learnt from the stories were presented. Success factors were extracted, and policy suggestions were made based on them. Based on the findings, this study recommends that the government collaborates with the private sector which is the umbrella body for most SMEs, to advance major investments in infrastructures that will make the use of ICT accessible, affordable and secure.

INTRODUCTION

The coronavirus 2019 (COVID-19) disease was characterized as a pandemic by the World Health Organization (WHO) in March of 2020. In addition to the disturbing human impact of the COVID-19 pandemic, the significant economic, business, and commercial impact has and is still being felt globally (Nseobot et al., 2020). In response to the COVID-19 pandemic, many countries have resorted to a complete lockdown, travel restrictions, etc., to control the

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virus spread. Control and preventive measures implemented have resulted in significant business disruptions worldwide, especially for those who must contact customers or fellow workers. The Nigerian government issued various directives and orders to help contain the spread of the virus as contained in the COVID-19 Regulation 2020 (Adekilekun et al., 2020). The regulation, among others, imposed significant restrictions on the movement of persons and goods nationwide, especially in 3 states of Lagos state, Ogun state, and the Federal Capital Territory (Chukwuorji & Iorfa, 2020). The lockdown directives, announced on 30th March 2020, led to the shutdown of many businesses, especially those that cannot be performed from homes, as only those businesses proffering essential services were exempted from the lockdown directive, leading to the nation's economy being adversely affected (R. Nseobot et al., 2020; Anthony, 2020). In fact, Hakeem, Grossman and Meredith (2021) attested to the fact that one in every ten businesses closed down during the lockdown.

Despite the negative impacts, the pandemic opened up innovative strategies and opportunities, especially regarding technology adoption. A characteristic of the pandemic has been the switch to digital connection for schooling, business meetings, health consultations, shopping, and cultural events, thereby accelerating the utilization of Information and Communication Technology (ICT) globally (Aladejebi, 2020). Digital technologies, such as mobile phones, online databases, connected devices and so on, are being harnessed to support the public-health response to COVID-19 (Budd et al., 2020). In Nigeria, government services were accessed electronically, thereby increasing the delivery of electronic governance (Njoku et al., 2020).

Entrepreneurship plays a remarkable role in the growth and development of any nation, as it can generate employment, innovation, increase production, and diversify the economic source of revenue, thereby fostering the development of a nation (Stoica et al., 2020). The significant contributions made by the Small and Medium Enterprise (SME) community worldwide to employment, innovation and entrepreneurship, as well as local, regional and national development, have well been established. In Nigeria, SMEs contribute 48% of the national GDP, account for 96% of businesses and 84% of employment (SMEDAN, 2017). As entrepreneurial entities, they are also subjected to lofty failure rates, which may be exacerbated, unfortunately, by the COVID-19 pandemic. Therefore; Chinedu, Dennis and Onuzulike (2020) advised businesses to automate their operational processes using ICT to survive during the pandemic.

ICT adoption in Nigeria is encouragingly widespread among companies of different sizes and various sectors of the economy (Apulu & Ige, 2011; Gbadegeshin et al., 2019). Various initiatives have been rolled out to achieve government objectives regarding the use of technology in the SME sector (SMEDAN, 2015). Investigating and sharing success stories can be an excellent tool for planning, growing support and change management as storytelling can create awareness, change perceptions and help in documenting impacts of the policies and progress of vision achievement (Lavinghouze et al., 2007). The importance of ICT during the pandemic was also assessed by Inegbedion (2021). Therefore, this study presented the success stories of ICT adoption by Nigerian SMEs during the pandemic by using five Nigerian SMEs as a case study.

Previous researches covered the use of ICT by SMEs in Nigeria and issues ranging from limiting factors to impact of use, however, this research presents success stories of ICT use by SMEs during the lockdown in Nigeria. This study aimed to document success stories of ICT adoption by SMEs in Nigeria; however, the location of the study was Abuja, the federal capital territory of Nigeria. The findings of this study exposed the efforts of Nigerian SMEs regarding the utilization of ICT and also, identified success factors that can aid SMEs to adopt ICT while surmounting limiting challenges in Nigeria. In addition, this study highlighted some necessary government intervention on ICT adoption in the SME sector which can lead to an improved enabling environment and the effective use of ICT for the sector and national development. The study will also add to the body of knowledge as COVID-19 pandemic prevention measures underscore the importance of ICT use for development and the need for businesses to create a competitive advantage with technological tools.

LITERATURE REVIEW

The Adoption of ICT by SMEs in Nigeria

SMEs are recognized as the primary source and critical driver for economic growth in developed and developing countries and a great contributor in promoting private sector development and partnership (Apulu & Ige, 2011). This implies that SMEs are strategic and essential for Nigeria's economic growth acceleration. The definition of SMEs varies from country to country, but it is often based on employment, assets or both. For this study, SMEs represents micro, small and medium enterprises and are defined by the employment category in line with the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN)'s definition.

[Table 1]: SME employment category

Size category	Employment
Micro enterprise	Less than 10
Small enterprise	10-49
Medium enterprise	50-199

Considering the contribution of SMEs to the Nigerian economy, there have been many discussions on the importance of ICT adoption by the Nigerian SME sector. To begin with, Apulu & Latham (2010) highlighted that the use of ICT in SMEs could assist in promoting SMEs' competitiveness and business growth and influence the eradication of poverty and drastically reduce unemployment in Nigeria. Afolayan et al. (2015) described the use of ICT in supply chain management as quite helpful to organizations in achieving greater coordination, chiefly as SMEs play various roles in the supply chain. Kuyoro et al.(2013) stated that ICT used suitably would benefit SMEs in cost reduction and core business process improvement. ICT improves access to valuable information since it can remove distance and time constraints, thereby enabling the diffusion of valuable organizational data crucial in decision making and control at all management levels (Apulu et al., 2013; Apulu & Latham, 2010). ICT solutions enhance customer-centricity in the business environment, thereby boosting customer satisfaction and adding value to businesses.

SMEs can benefit from ICT either by being producers of ICT or users. The decision on the type of ICT to adopt is dependent on factors like perceived benefits, ICT capacity possessed, access to ICT resources and financial power (Irefin et al., 2012). In their research on drivers for ICT adoption, Apulu and Latham(2011) reported competitive advantage, global reach, efficiency/speed, current trends, communication, information storage, automation of records, customer satisfaction, cost reduction, nature of business and advertisement as reasons and drivers for the adoption of ICT by Nigerian SMEs. In understanding the reasons why organizations tend to use ICT, Oyediran and Omoshule (2016) revealed that the nature and type of business; availability of adequate ICT staff, available ICT infrastructure, customers' demand for ICT-enabled service delivery, business process efficiency and increased productivity also significantly affect and stimulates a company's decision to adopt and use ICT. Nigerian SMEs usually adopt basic communication tools like a mobile phone first to communicate and reduce personal visiting (Irefin et al., 2012). Other essential tools adopted includes a personal computer for basic word processing, accounting, and other business practices, printers, and more (Kuyoro et al., 2013). With connectivity and other resources made available by the Internet, SMEs can use more advanced communications tools such as

email, file sharing, websites, social media networks, voice and video conferencing, and e-commerce and some enterprise solutions (Apulu & Ige, 2011).

The use of ICT tools like computers embedded with different managerial tools and techniques avail SMEs and their staff with critical professional skills and administrative benefits that will ostensibly improve business (Nyakuma et al., 2016). Ameji, Taiga and Amade (2020) suggested that SMEs could enhance their performance by participating in online-based platforms to advertise and sell their products during the pandemic. Considering the transformative roles ICT plays in expanding the scale of operation and enhancing the income of businesses, it has become a significant contributor to the successful life of any business (big or small). The adoption of ICT tools can increase firms' ability to do more, perform more, bring in innovations and open vistas to a more efficient way of doing business. The ever-changing nature of the business environment in today's modern society has expedited the adoption of ICT, and possession of ICT capability is now essential to participate and engage in this modern society (Otache, 2020). The benefits of ICT span across different sectors of a nation's economy and all other fields of human activities (Oyediran & Omoshule, 2016). It can be concluded that vast possibilities for development exist for SMEs with the adoption and utilization of ICT.

Government Policy Issue on ICT Adoption by Nigerian SMEs

The benefits of ICT in terms of innovation, productivity, internationalization and growth have been well recorded in SMEs. However, the decisions and processes concerning ICT adoption are not simple and depend on a great variety of factors related to firms' resources, strategic orientation, organization, business environment, and government policies (Giotopoulos et al., 2017). Radda, Akanno, Abba, Isa and Mangal (2016) strongly agree that government policies (if not well furnished or implemented) can jeopardize the performance and progress of most SMEs in Nigeria. Irefin et al. (2012) also believed that ICT adoption and utilisation is predicated upon the availability of physical infrastructure, enabling legal and regulatory frameworks, adequate research and development, and sustainable policies. The preceding clearly showed the critical role of government in promoting ICT adoption by Nigerian SMEs, as most requirements can be provided and put in place by good governance, support and leadership of the government.

Even though entrepreneurs are high achievers, government policies affect them directly or indirectly (Akinyemi & Adejumo, 2018). This dependant relationship has necessitated the need for policies that promote entrepreneurial activities and growth. SMEDAN was established by the SMEDAN Act of 2003 to promote the development of the Micro Small

and Medium Enterprises (MSME, hereafter referred to as SMEs) sector of the Nigeria Economy (SMEDAN, 2015) formulated the National Policy on SMEs, to foster the growth and development of the industry. The policy recognizes the use of ICT in improving efficiency, effectiveness and service delivery to SMEs. For instance, to enable a regulatory environment that supports SMEs, SMEDAN established a one-stop business registration point accessible in SME clusters, Federal institutions and some select post offices. This initiative is similar to the South Korean “Start Biz Online”, an online system managed by the Small & Medium Business Administration to simplify business incorporation processes and facilitate an easy, efficient and cost-effective start-up environment (Agusto & Co., 2015). The government aims to take advantage of digital technologies' many opportunities and create value and prosperity for all Nigerians (FMCDE, 2020). The National ICT policy, Nigeria ICT innovation and entrepreneurship policy, and National Policy on MSMEs are other significant policies bordering on ICT use by SMEs in Nigeria.

Despite the laudable goals, there exist inherent challenges with the use of ICTs in SMEs. In developing countries like Nigeria, Gbandi & Amissah (2014) state that SMEs have lower ICT adoption rates and different challenges compared to their counterparts in developing countries considering the setting where informality is high. Though some businesses have been interested in new business strategies such as the use of ICTs, e-commerce, and improved delivery logistics, their use of such strategies has been limited thus far, suggesting that they have faced barriers to take-up. This shows that there is significantly low technological enhancement by SMEs. Leaders of SMEs are not fully taking advantage of the potential benefit of deploying ICT in their businesses partly because of limited resources, technology and capabilities of these SMEs, as well as, other limiting factors as outlined by previous research on the issues of ICT adoption by Nigerian SMEs. Therefore, to eliminate any gap between the ICT adoption needs of SMEs and the support government is providing, government leaders must understand precisely what support SMEs need to implement ICT successfully (Agwu & Murray, 2015). Therefore, even though SMEs in developing countries like Nigeria have learnt to innovate they face a lot of obstacles, the government can help SMEs connect and collaborate with independent inventors to jumpstart innovation practices. Even though more work is needed to understand how policy approaches could improve access to and take-up of these technologies, this research is an effort to share success stories on the use of ICTs by SMEs, especially during the COVID-19 pandemic.

RESEARCH METHODOLOGY

This study deploys a qualitative research method that involved collecting and analysing qualitative data from purposively selected businesses owners. This study adopts the qualitative method because it gives a better understanding of the problem and can further strengthen the findings of the study given the exploratory nature of the research. Purposive sampling is typically used in a study to identify and select the information-rich cases for the most proper utilisation of available resources (Etikan, 2016). Morse (2000: 4) posits that the more useable data are collected from the play, the fewer participants are needed. As such, the sample size for this study comprised five SMEs in Abuja. The SMEDAN officials provided access to members who fulfil the selection criteria since they had contact with them despite the disruptions. For this research, SMEs were included in the sample according to the following criteria:

- Businesses must conform to Nigeria’s definition of SMEs
- Must be located in Abuja
- Must be utilizing ICT in business.
- Participant must be executive-level SME leader

The table below describes the participants for the interview:

Table 2
Interview Participants

Case number	SME category	Position	Sex
Case study 1	Micro	Owner	Female
Case study 2	Small	Owner/manager	Male
Case study 3	Medium	Manager	Male
Case study 4	Micro	Owner/manager	Female
Case study 5	Small	Owner	Male

For this study, an in-depth interview was used to elicit information from the respondents. In-depth interviews allow the respondents to dispense information. The primary tool used for data collection in this case study was a semi-structured interview conducted with owner-managers. The objective behind data collection is to capture quality evidence that allows analysis to lead to the formulation of convincing and credible answers to the questions that were posed (Saunders & Bezzina, 2015). For anonymity, the names of the cases have been cloaked as CS1, CS2, CS3, CS4 and CS5. The Semi-structured interviews were conducted online, with the owner-manager of the SMEs. Questions for the discussion were designed and

peer-reviewed for appropriateness. Questions related to the company's business aspects, use of ICT, company ICT policy, success factors for ICT adoption, challenges faced during the process of ICT adoption, benefits of ICT use during the pandemic and future ICT utilization plan were asked at some point in the interviews. A copy of the success story was given to the respective participants to go through for correct interpretation and accurate reflection. The data were analysed using narratives to present the success stories of SMEs adopting ICT and the impact during the COVID-19 pandemic. Success factors were extracted and used to shape recommendations that could be useful in promoting the utilisation of ICT tools by SMEs.

ANALYSIS

This section narrates the success stories of the experiences of the selected SMEs concerning their adoption and utilisation of ICT in their companies.

Case Study I (CS1)

CS1 is an interior design and furniture manufacturing company based in Abuja. With a staff strength of eight (8), it is classified as a micro business. Having been operating for fifteen (15) years, it prides itself as a company with great adaptability and resilience skills, especially in a business environment like Nigeria. The owner noted that even though the SME pre-pandemic used some ICT tools, the advent of COVID-19 and associated disruptions has pushed them to rethink their strategy on the inclusion and use of ICT. While relating many incidences where potential customers would request the company's social media handles, she noted that she was reluctant in adopting the ICT due to factors like skills and cost. Before the pandemic, CS1 uses some basic and advanced ICTs such as mobile technology and the Internet, but it became evident from the trend and clients' request that the adopted ICTs were not enough to stay afloat with the NPIs implemented in the territory.

The decision to adopt social media (ICT tool) during the COVID-19 was driven by customer satisfaction, information availability, communication and current trends. The strategy of adopting social media ICT involved acquiring relevant ICT knowledge and skills, creating and maintaining the platform, creating content to engage customers, and making necessary information readily available. Since using social media, CS1 confessed that he has seen a high customer satisfaction rate, efficient feedback, and more referrals based on content on platforms and many more benefits. For this owner, ICT has been a beam of hope for the business, mainly as the lockdown directives have kept the doors of her company closed. However, CS1 lamented the challenges experienced. She states that *"the cost of acquiring training on ICT, the cost of setting up a business social media platform and credibility/trust*

issues associated with social media. To manage the training challenge, the company's values on professional development gave a solid motivation to dot out the funds for training. The desire to adapt to current trends and add business value made it possible to overcome the cost of ICT."

For CS1, achieving a long-time dream of incorporating virtual showrooms into the business module can be made possible by emerging ICTs like virtual reality.

Case Study II (CS2)

CS2 is a software company, established in 2011. The company provides enterprise software solutions to private and public organizations in Nigeria. As an ICT business with a staff strength ranging from 25 to 40 (in-house and outsourced employees), the utilisation of ICT is expected at a very high level. Thus, despite using ICT extensively, the COVID-19 pandemic pushed the company to review its' ICT strategy incorporated into the company business profile and policy.

Accordingly, one of the elements of ICT utilisation during the pandemic was remote working or telecommuting. CS2 attested to the fact that the company has been using telecommuting even before the pandemic, mainly for the staff working remotely. With the NPIs being actuated, all teams were mandated to employ remote working in compliance with the company culture of delivering fast and well. Reviewing this strategy to include all staff required the manager to innovate, particularly with the various challenges it brought. One of the main challenges was the capacity of staff to use the new platforms in doing their work; hence, staff training was carried out to update their ICT skills. Another challenge faced was staff productivity; the manager categorically stated thus; *"I discovered that many staff members were not as productive as assumed and attributed it to inadequate monitoring. With ICT, the company was able to monitor employees' productivity by assigning tasks and period of completion, increasing the productivity of the workers, thereby adding value to the business."*

Despite all these innovative solutions, the company that valued staff welfare was faced with some welfare-related issues like health and cost of ICT resources and power supply that staffs have to shoulder. Alternative power sources were provided for staff, and sensitisation was carried out to create a working-from-home balanced culture.

From a reduction in the cost of running the company before the stay-at-home directives, improved ICT capacity for staff to add value to customers, the company has benefited from their adoption of telecommuting (ICT) for staff operations. The respondent attributed the success to the company vision, staff welfare, and capacity development strategy. He, further,

expressed the desire to incorporate machine learning and blockchain technology into their working platform. In conclusion, the manager noted that businesses should adopt teleworking even after the pandemic to reduce cost, improve productivity and add value to the company as a whole.

Case Study III (CS3)

CS3 is an indigenous company incorporated in 2016 as a firm offering professional engineering and allied services in the construction industry of Nigeria. To achieve excellence in carrying out projects and services, the company's policy stands on its unflinching commitment coupled with skilled human and technological resources. As a medium enterprise with more than 57 staff, the company uses various ICT tools as ICT offers many benefits; such as efficiency, communication, automation, modelling, virtual prototyping, and so on, to the company's core business process. ICT used includes computer hardware, design and engineering software, social media platforms, mobile and web technological resources. In the manager's words, *"ICT helps save cost, time and make design easier and robust with precision. It also makes work more flexible and communicates ideas with other designers and clients and allows for free choice."*

With an ICT strategy of digitisation and full automation by 2022, the company strives to use ICT to increase efficiency, productivity and further reduce cost. In pursuit of this ICT vision, the company has embarked on training some of the staff on ICT and encouraging digital skills acquisition by all members. The firm intends to carry out its activities using technology with an eye on increased efficiency, saving cost by eliminating paperwork and getting full automation by 2022. The company has embarked on training some of the staff on ICT to achieve the set goals.

As with every venture, the adoption of ICT bears some challenges, and for CS3, the challenges were the cost of ICT tools, shortage of power supply, fake and sub-standard ICT products, training cost and cyber-security threats. The company espoused strategic solutions to conquer and survive through the difficulties; namely, getting ICT tools from an accredited source, targeting clearance sales, use of alternative power source, training and retraining of staff on ICT skills, sensitisation of staff on cybercrime and security and established guidelines to prevent cyber-attacks.

Although the incidence of COVID-19 has limited human contact, the use of ICT tools has enabled the company to continue its operations as staff were able to work from home. The company diverted the operational budget for staff training and welfare, which boosted productivity. Using communications tools, sharing ideas and feedback was strengthened,

thereby adding value to the business and increasing customer-centric satisfaction. The manager expressed that the business disruptions caused by the pandemic have pushed the company to improve and consolidate the utilisation of ICT into their business process.

Case Study IV (CS4)

CS4 is a micro-enterprise offering food (confectionery and catering) and event management services. It was established in 2013 as a family catering service, comprising five (5) staff. As a food service company, it was able to continue some services despite the lockdown since food is an essential service. However; with customers staying at home and other measures taken to prevent the spread of the COVID-19 disease; the business suffered as well. Some of the challenges encountered include; how to communicate and manage customers' required service or orders, as well as how to deliver food orders to customers? The questions mentioned earlier and more propelled the owner to employ ICT tools.

Mobile and social media were employed by this business to achieve business goals and satisfy hungry customers. Customers were able to check the menu on social media and place their orders. As a family business, the enterprise was doing business from home; therefore, there was a need to deliver orders accordingly and on time since products were perishable. To solve logistics, the manager used social media platforms and collaborated with other logistics SMEs. With mobile money transfer services, payment for goods and services was not a problem for both company and customers.

The pandemic drove the enterprise to adopt and deploy ICT; which opened doors of collaboration and new business opportunities. It further made the company realise the vast benefits of ICT tools, as well as, the outcomes on business development. Challenges like poor knowledge on using ICT, power supply, cost of purchasing ICT services and poor quality of ICT services inhibited the company's adoption of ICT. Accordingly, the owner stated that *"we could achieve wider coverage and success if we had high-level knowledge of using social media for business. From the adverts, customer supports, loyalty/referral programs to communication and services, ICT can make us grow and give us global reach. As an entrepreneur, you always have to find a way to survive and add value to your business. However, we are limited in our capabilities, especially where the enabling environment is not favourable."*

For this micro-enterprise, the adoption of ICT presented business opportunities and avenues for customer relationship, satisfaction and collaboration with other businesses, relevant in a changing environment, and improved productivity and capacity. As a strategy, the company

intends to acquire relevant ICT skills and tools to drive productivity, communication, efficiency, and add business value.

Case Study V (CS5)

CS5 is a retail e-commerce business with fifteen (15) full-time employees, offering products in more than 18 different categories nationwide. As a small enterprise, established in 2015, the vision to use ICT started from inception. With knowledge of the futuristic world of technology, the owner saw that brick and mortar stores would be ageing out, and businesses would be pushed to adopt ICT to scale up or grow the business to attract more clientele and reduce cost. The retail company has a website that incorporates communications systems, enterprise management applications, payment systems, AI chatbox and other ICTs used for e-commerce. As an online retail shop, most of their business processes were not affected; since customers could shop directly, pay online and get their orders delivered. Thus, rather than encountering challenges during the pandemic, his was a boost, especially in the customer relationship management strategy. Social media was adopted and deployed to improve communications with customers and advertising for new customers. Accordingly, the proprietor states that *“being online provided us with many benefits during this pandemic as we have improved on our communications and service delivery, we have made more sales, and our customers have also increased. Furthermore, with the restrictions making people shop online, we have been able to build brand trust and improve our business generally.”*

The company implemented measures such as staff training, awareness campaign, ensuring transparency, changing service providers and having alternative power sources. These measures were in response to the challenges faced, including low ICT professionals, lack of trust by customers on payment platforms, high cost of internet access, poor service quality, and power supply shortage, the response includes. The owner highlighted that the importance of having skilled professionals in ICT. Thus, he urged businesses to adopt and use ICT. It offers many benefits to business, ranging from cost reduction, wider audience, and communications to improved productivity.

The pandemic and disruptions caused have widened the vision of leveraging ICT for commerce for the company; it hopes to procure and utilise drones and other innovative logistics and payment options to serve customers better. The table below presents the lessons learnt by the researcher from the success stories of ICT use during the pandemic by Nigerian SMEs.

As stated by Afolayan et al. (2015) and Apulu et al. (2011), internal factors like staff training, available ICT infrastructure, innovation, and so on can be resolved within the organization or

enterprise. The above success stories further validate and exemplify the ability of SMEs to overcome most challenges limiting their ICT adoption. The following table shows the lessons extracted from the success stories:

Table 3

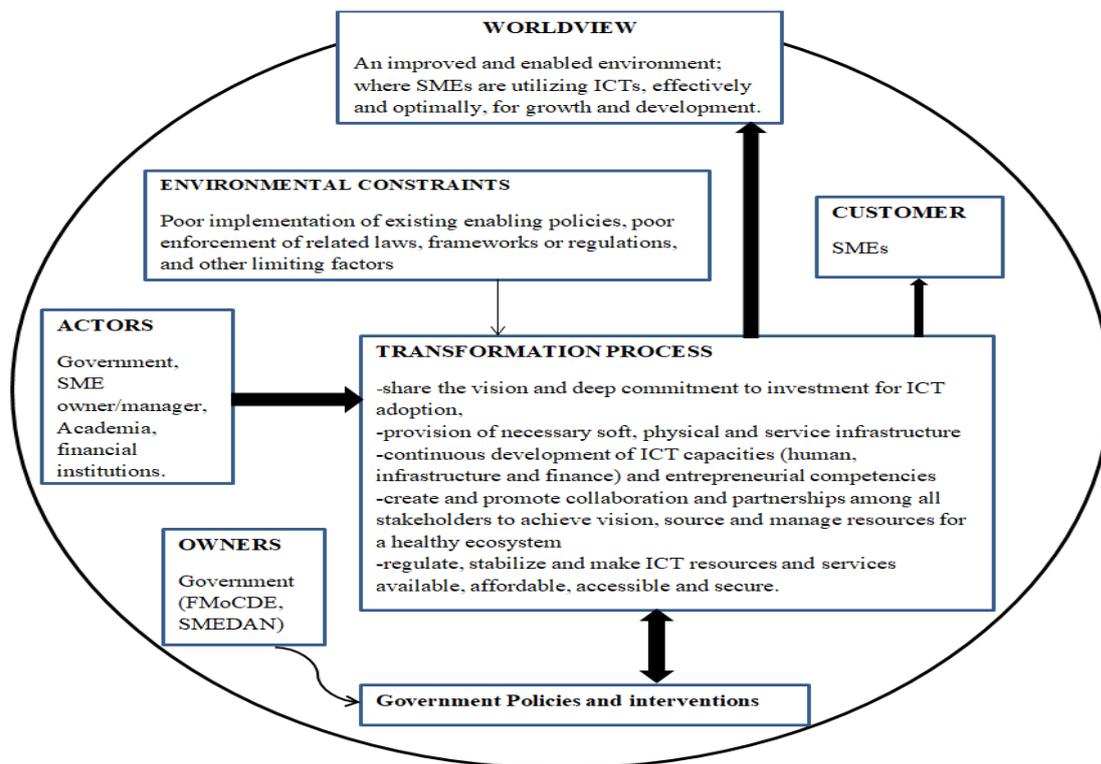
Lessons Learnt from Success Stories

Case	Lessons learnt	Success Factor
CS1	<ol style="list-style-type: none"> 1. Businesses must be ready to adapt, principally, to remain relevant and achieve business goals as technological advancements are changing the business environment. 2. ICT skills acquisition is now becoming a necessity; therefore, businesses should make a strategy to possess some level of digital skills and build their capacity. 	Adaptability and Skills acquisition
CS2	<ol style="list-style-type: none"> 1. The training and retraining of staff members are crucial in the successful adoption of ICT. 2. Adding business value with the utilization of ICT requires innovation and valuable decision-making, especially regarding the type and way to use the adopted ICT tool 3. As ICTs are advancing rapidly, SMEs must be determined to take the opportunity presented by the ICTs and actively make efforts to solve associated challenges 	Capacity building (human and infrastructure), innovative decision making and creativity
CS3	<ol style="list-style-type: none"> 1. ICT impacts all facets of the economy, and appropriate use brings about many benefits to the business adopting it, particularly when faced with disruptions accompanying events like the COVID19 pandemic. 2. Human capacity building is fundamental for the beneficial utilization of ICT and in solving some challenges with technology adoption. 3. The COVID19 pandemic has pushed businesses to use 	Capacity building, commitment to ICT adoption and resilience.

	<p>ICT tools and has helped achieve visions of leveraging technology for business advantage by SMEs.</p> <p>4. Most challenges faced in deploying ICTs are surmountable by the businesses, having a strong vision and commitment to ICT usage and implementation.</p>	
CS4	<p>1. ICT deployment presents opportunities for collaboration between SMEs in the ecosystem</p> <p>2. Entrepreneurs are achievers and can drive growth and development with good support and an adequate enabling environment.</p>	<p>Entrepreneurial spirit and Collaboration/partnership</p>
CS5	<p>1. Businesses must invest in acquiring ICT skilled professionals to maximize the impacts of ICT use.</p>	<p>Vision and Professionalism</p>

From Table 3, the researchers categorised the success factors into four themes namely: vision, capacity development, entrepreneurial competence, and partnership. Also, in line with the view of Utomo & Yulia (2018), CATWOE, a stage 3 framework of soft systems methodology (SSM), was utilised to analyse the activities of all parties involved to find solutions to the current difficulties.

[Figure 1] CATWOE analysis for government policies; to improve the adoption of ICT by Nigerian SMEs construed by the authors



CONCLUSION

This study investigated the success stories of ICT adoption by SMEs in Nigeria during the COVID-19 Pandemic using five SMEs as case studies. SME owners/managers were interviewed and their stories were narrated and examined for success factors. The study found out that despite the many challenges faced, SMEs were adopting ICTs, such as social media, e-Commerce, AI chat, mobile technology, telecommuting, etc. This study also discovered that the use of ICT by SMEs helped improve communications and increase efficiency and product, leading to added business value and customer satisfaction during the COVID-19 pandemic. Despite the success stories recorded, the study found out that some SMEs encountered several challenges during the pandemic, however; they were disposed to adopt ICT components which helped to enhance the growth of their businesses. The accounts show that despite the existing factors hindering SMEs from adopting ICT well, some overcame the hurdles and successfully deployed the ICTs. This shows that SMEs can be innovative and motivated to surmount present challenges and maximize their potential and benefits presented by the use of ICT (Irefin et al., 2012).

Policy suggestions and recommendations themed on collaboration, infrastructure, capacity building, effective policy implementation and improvement of the enabling environment were presented. The study strengthens the empirical knowledge on the use of ICT among SMEs and further establishes the role of the government in promoting ICT adoption by SMEs in Nigeria.

Although this research used multiple case studies for successful storytelling, more stories need to be explored for the different SME categories. Thus future research should bother on expanding the geographical coverage because the number of SMEs leveraging ICT to boost their business performance is significant and increasing. Also, statistical procedures for data analysis provides more evidence, therefore, the study could be further strengthened by using a more statistical procedure.

Recommendations

Policy Suggestions

As indicated by Irefin et al. (2012), most of the challenges faced are within the purview of government. Thus if eradicated, SMEs can be innovative and motivated to surmount present challenges and further maximise their potential and benefits presented by ICT use. Therefore, the following are policy recommendations that are drawn from the key findings of this research. Firstly, the government should:

- i. collaborate with SMEs through initiatives geared towards vision sharing, training, policy-making inclusion, experiential skills acquisition, and sponsorship;
- ii. commit deeply and invest in both human, institutional, and capital resources required for effective implementation of ICT policies to regulate, stabilise and make ICT resources and services available, affordable, accessible and secure for SMEs;
- iii. provide necessary infrastructures such as constant, renewable and affordable energy; provision and improvement of ICT infrastructures; security infrastructure; and the downward cost review of ICT related equipment and services;
- iv. continuously develop human ICT capacities and entrepreneurial competencies through extensive programmes like internship, formal and informal education, training, research and development support, to accelerate success in the adoption of ICT;
- v. design initiatives and collaborative mediums necessary to improve enabling environment, especially in terms of funding, like tax rebates, access to seed funding, special grants, and reduced interest loans for SMEs adopting ICT;

- vi. Partner with SMEs to share the vision for ICT through programmes that provide awareness and training on ICT for businesses, financial support for SMEs using ICT, and localization of ICT resources;
- vii. It also needs to ensure affordable, reliable, secure and sustainable access to ICT infrastructure, power infrastructure, and ICT resources and services; and
- viii. Improve the enabling environment required for the effective adoption of ICT.

Recommendation for SMEs

In addition to the policy suggestions given, the following are recommendations for SME owners/managers in Nigeria to aid in the effective usage of ICT. SME owners/managers should:

- i. Embrace an ICT strategy and be committed to the vision of leveraging ICT for business value deeply;
- ii. Commit to developing their capacity in terms of human, infrastructure and finance for the effective usage of ICT, continuously;
- iii. Strive to build entrepreneurial competencies as entrepreneurship and innovation are core competencies in today's changing business environment;
- iv. Leverage on Public-Private Partnership (PPP) to collaborate with government, other SMEs and stakeholders in the ecosystem to ensure enabling environment;
- v. Government should enact laws that will prioritize the operations and sustainability of SMEs as they are the lifeline of the economy;
- vi. Start-ups and firms that are yet to incorporate ICT into their daily operations can also take up the challenge to revolutionize their business and serve more clients through the use of ICT.

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