DIGITAL INFRASTRUCTURE: DEFINING THE NEXT STEP

A FINANCIAL SERVICES PERSPECTIVE

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AT THE 2019 INFORMATION TECHNOLOGY (IT) PROFESSIONALS' ASSEMBLY

June 27, 2019

PROTOCOL AND PREAMBLE

1. I am honoured and delighted to be the Keynote Speaker at the 2019 Information Technology (IT) Professionals' Assembly. I want to express my profound gratitude to the Registrar/Secretary to the Council of Computer Professionals (Registration Council of Nigeria) – Allwell Achumba, fncs and the leadership of the Council for putting together this Assembly of Information Technology practitioners in Nigeria and the Diaspora.

2. I also want to commend the Council for its efforts to organise, standardise, control, supervise and establish professional ethics for the Computing Profession in Nigeria to eliminate quacks.

INTRODUCTION

3. The theme of the 2019 Information Technology Professionals' Assembly is "Digital Infrastructure: Defining the Next Step". I consider the theme to be very apt considering the speed and scale of innovation in the digital space.

4. My task today as Keynote Speaker is to share my thoughts on defining the next steps for digital infrastructure from a financial services perspective. I hope that the views I will share with this assembly will stimulate a conversation on what the Council and Information Technology practitioners should be doing to proffer solutions to some of the prevalent challenges and leverage the emerging opportunities.

5. The remainder of my Speech will cover the following:

- Digital Infrastructure within the Financial Services Sector;
- Technological Disruption and Financial Services;
- Service Challenges within the Payment System;
- Improved Financial Services: An Imperative for Leveraging Digital Infrastructure;
- Strategic Areas of Digital Infrastructure Investment; and
- Final Thoughts: Enhancing Digital Infrastructure for the Fourth Industrial Revolution

DIGITAL INFRASTRUCTURE WITHIN THE FINANCIAL SERVICES SECTOR

6. In the past three decades, the Nigerian financial services sector has transformed remarkably. This transformation was enabled by the adoption of technology by the "New Generation Banks".

7. Convenience, speed and security are now a reality and already taken for granted as a result of digital infrastructure and the use of smart devices, computers and platforms to serve customers.

8. Before now as older folks here may have experienced, engaging in basic banking transaction is nothing short of an ordeal. Enormous time was dissipated on simple banking transactions such as making deposits or cash withdrawal.

9. The remarkable progress the financial services sector has made was powered by the Third Industrial Revolution – also known as the digital revolution which heralded information technology and the development of computers, the rise of telecommunications and mobile devices.

10. The financial services sector leveraged on advances in computing technology, broadband digital access and connectivity.

11. Digital infrastructure simply refers to the existing technologies that make the delivery of digital services possible through the interconnectedness of systems and the exchange of data.

12. In other words, the transactions we process on our smartphones, Automated Teller Machines (ATMs), Point of Sale (PoS) terminals and web ride on the interconnection made possible by internet backbone, mobile telecommunications, data centres, cloud-based platforms as well as Application User Interfaces (APIs).

13. For the sake of convenience, we can apply the term "hard" digital infrastructure to near physical components like internet backbone, communications satellite, mobile telecommunications and data centres while "soft" digital infrastructure can be applied to components like cloud-based platforms, Application User Interfaces (APIs) and other systems.

14. At the payment system level in Nigeria, the web of interconnections between banks, switches, card schemes, Payment System Service Providers (PSSP), Payments Terminal Service Providers (PTSP), Third Party Processors (TPP), Mobile Money Operators (MMOs) and a host of others is a manifest expression of “soft” digital infrastructure.

TECHNOLOGICAL DISRUPTION AND FINANCIAL SERVICES

15. The financial services sector is undergoing significant structural and paradigm shift that is altering and redefining the financial landscape. This same movement is sweeping through all aspects of the global economy.

16. Advances in many of the technologies already highlighted along with ever-changing customer expectations are birthing innovative disruptions in the financial services landscape and ecosystem. This is evident in the range of digital financial services available to customers in the industry.

17. Banks and Financial Technology firms (Fintechs) are leading the charge in leveraging digital services made possible by digital infrastructure solutions to deepen customer experience and break new frontiers. They are creating demand and tapping into hitherto non-existent markets.

18. Bank-led Digital Financial Services is transforming banking from a physical place (brick and mortar) to the digital space. We now see as commonplace the ability to be in the comfort of our homes, or at work on an oil rig at sea or even thousands of miles away from where our banks are located and still be able to initiate and consummate banking transactions.

19. However, Fintechs have emerged as the new challengers to the dominance of traditional financial institutions.

20. They are taking advantage of ubiquitous connectivity, virtual reality, artificial intelligence, robotics, big data analytics and cloud computing which have combined to enable the “Internet of Things” to further extend the frontiers of financial service delivery in lending, payments, advisory, investment and wealth management.

21. They are using innovative solutions like artificial intelligence powered chatbots and embedding banking applications in wearable technologies to provide financial services, especially to the millennials.

22. According to The Pulse of Fintech 2017 report of KPMG, Fintechs are now looking to move beyond niche markets to offer adjacent services and, in some cases, full stack solutions. For example, Europe has seen a number of Fintechs apply for banking licenses in order to expand their product offerings.

23. Nigeria's first fully digital financial services platform – Lidya, launched in November 2016, with a focus on lending to small and medium businesses. The digital financial services platform promises to complete account opening in fifteen (15) minutes and grant loan in seventy-two (72) hours.

24. Since then, there has been an astronomical rise in the number of Fintechs and the size of Fintech funding in Nigeria, a replication of Fintech trends on the global stage. According to KPMG, global Fintech investment doubled in value to $111.8 billion in 2,196 deals in 2018 from $50.8 billion in 2,165 deals in 2017.

25. Blockchain technology is playing an immense role in the Fintech revolution as it allows digital information to be recorded and distributed across computer networks.

26. While Cryptocurrency has become the foremost expression of blockchain technology, there are many other applications of the underlining technology.

27. For clarity, Cryptocurrency (for example bitcoin) is a tradable digital asset that rides on blockchain technology. The Central Bank of Nigeria (CBN), just like many other central banks across the world, has not endorsed Cryptocurrency because of the potential risk to financial system stability.

28. But as Information Technology practitioners, we must remain open to explore all the benefits of blockchain technology for now and for the future.

SERVICE CHALLENGES WITHIN THE PAYMENT SYSTEM

29. The payment system is an indispensable component of digital financial services as the ability to exchange value enables individuals and businesses to participate in the economy. Without an efficient payment system, no one will be able to effectively tap available opportunities, no matter how abundant they are.

30. Despite the milestones achieved in respect of service options, convenience and speed of transactions processing, many problems persist as a result of integration challenges in the payment system.

31. The impact of infrastructure inadequacies or integration challenges manifest typically in the payment system and the financial services industry in the form of service disruption.

32. System downtime and the incidence of failed transactions have remained a major concern for customers, financial institutions and regulators since the advent of electronic banking in Nigeria.

33. According to a PoS analysis by the Nigerian Interbank Settlement System (NIBSS), the number of failed transactions arising from terminal and network issues stood at roughly 11 million in 2018. Though about 295 million transactions were successfully processed, the number of unsuccessful PoS transactions that resulted in debits to customers' accounts created some measure of unease between customers and their banks.

34. Issuer and switch challenges also led to failed ATM and web transactions just as they negatively impacted interbank transfers.

35. Since financial institutions and other players in the payment system depend on the complex web of connections to facilitate payments and transactions, challenges also exist when there is a failure and claims are to be initiated. Often, query resolution processes depend on reports that may take a couple of days for gateways and other third-party processors to generate.

36. Customers may have to wait for a period longer than the duration stipulated by regulators for resolution of logged claims.

37. Repeated incidence of downtime and failed transactions is a significant contributor to a dip in service levels for financial institutions.

IMPROVED FINANCIAL SERVICES: AN IMPERATIVE FOR LEVERAGING DIGITAL INFRASTRUCTURE

38. Overcoming the challenges inhibiting the optimal performance of the financial services industry is imperative. We have to build on the progress that we have made in the last few decades to open new vistas in providing improved financial services.

39. The key to enhancing the customer experience in the financial services sector, no doubt lies in creatively deploying the tools made available by digital infrastructure.

40. For Jeffery Gregoire, Dell's former Chief Information Officer, "customer experience is the next competitive battleground". The winners in this arena will be businesses that can upscale customer experience using big data analytics, artificial intelligence and other tools.

41. Beyond the enhancement of service levels, digital infrastructure has a huge role to play in helping the industry deepen financial inclusion efforts.

42. Easy access by adults to a broad range of formal financial services that meet their needs at an affordable cost, has remained a challenge in Nigeria.

- Over 36.6 million (36.8 per cent) of bankable adult Nigerians are still financially excluded – without any form of financial services, according to the last Access to Financial Services in Nigeria Survey by Enhancing Financial Innovation & Access (EFInA).
- Financial inclusion rate in Nigeria is still at 63.4 per cent and remains behind the target of 80 per cent by 2020, and low compared to South Africa and Kenya.
- According to the World Bank, financial inclusion has been broadly recognised as critical in reducing poverty and achieving inclusive economic growth.
- Access to formal financial services such as having bank accounts, being able to save, and access to payment mechanisms increase savings, empowers women, and boosts productive investment and consumption.
- According to the Access to Financial Services in Nigeria Survey by Enhancing Financial Innovation & Access (EFInA), physical proximity to a bank branch is the most significant barrier to accessing basic financial services. This is usually the case with most rural dwellers.
- Over 60 per cent of Nigeria's unbanked population desire to have a bank account, but there is no bank near enough to make these simple wishes a reality.

- Digital financial services, therefore, offer veritable alternatives to enhance financial inclusion in Nigeria. Financial services institutions, Fintechs and mobile money operators are already leveraging the proliferation of mobile phones to improve financial inclusion.
- With digital innovations such as Unstructured Supplementary Service Data (USSD) and mobile banking apps, the major challenge of financial inclusion – proximity to a bank, can be resolved as people do not need to visit a physical branch of a bank.
- USSD is arguably the best technology for the inclusion of financially excluded or unbanked population and low-income customers.
- The use of USSD channel for financial transactions is broadening rapidly and now includes account opening, balance and other enquiries, money transfer, airtime vending, and bill payment.
- The success of M-Pesa in the delivery of mobile banking services in Kenya and East Africa is largely due to the effective combination of digital services and agent network.
- The ability of financial institutions, Fintechs and mobile money operators to replicate same in Nigeria is being gradually enhanced by some of the regulatory frameworks the CBN has issued in recent times.

43. The Cash-less Nigeria Project of the CBN is another initiative whose fate lies heavily on a vibrant digital infrastructure and the digital financial services being offered by financial institutions and Fintechs.

- Through the adoption of electronic options, the dependence on the use of physical cash as the means of payment reduces. The CBN rolled out guidelines applying limits on cash deposits and cash withdrawals according to selected locations and account categories. Charges apply in some cases where customers exceed thresholds.
- The Project was designed to drive the development and modernisation of the payment system and enable economic growth.

- It was also initiated to reduce the cost of banking services as well as the provision of more efficient transaction options. Through the provision of services with greater reach, financial inclusion will be advanced.
- The services that are making the programme possible include electronic cards, ATM, PoS, USSD banking, mobile banking, internet banking and web channels.
- According to the CBN, over 875 million transactions were processed on ATMs in 2018 while the value of transactions processed stood at N6.4 trillion.
- Over 295 million PoS transactions were processed within the same period while the total value of transactions stood at N2.8 trillion.
- On the internet, over 50 million transactions were processed while the total value of transactions came to N404.6 billion.
- Mobile payments were over 87 million while the total value came to N1.8 trillion in 2018.
- The total number of transactions processed on NIBSS Electronic Funds Transfer (NEFT), NIBSS Instant Payment (NIP), NIBSS Automated Payment Services (NAPS) EbillsPay, Remita and CentralPay platforms were over 764 million. In total, the value of the transactions stood at N122 trillion.
- These figures demonstrate that electronic payments have become a part of the life of most individuals and businesses and that efforts to drive the Cash-less Project have recorded progress no matter how modest.
- More importantly, the drive is urging players in the industry to take advantage of the opportunities being created to build systems that support effective processing of payments and transactions.

STRATEGIC AREAS OF DIGITAL INFRASTRUCTURE INVESTMENT

44. Seeing how valuable digital infrastructure are to the financial services industry, it is appropriate to identify some components where investment will immediately translate into benefits for all players including customers.

45. Efficient gateways help to connect merchant terminals to the merchant acquiring banks for ease of processing of card transactions. They reduce transaction failures to the barest minimum paving the way for vibrant businesses and satisfied customers.

46. Networks connect individual devices and enterprise systems to the cloud to transmit data. The right investments in network infrastructure create expanded network capabilities as well as improved network compatibility with connected devices.

47. Cloud-based resources and services are critical to the survival of modern enterprises. To remain relevant in the economy of the future, we will require the capacity to provide cloud-based services that are cost-effective, fast, efficient and secure.

48. Interoperability and seamless integration are critical requirements for digital infrastructure to deliver desired benefits in the digital financial services and payment industry. Apart from industry collaboration, appropriate regulatory frameworks will be required to guide various segments of players within the digital infrastructure space to enhance integration.

FINAL THOUGHTS: ENHANCING DIGITAL INFRASTRUCTURE FOR THE FOURTH INDUSTRIAL REVOLUTION

49. Globally, the Fourth Industrial Revolution is well underway. The new age is typified by the speed of technological breakthroughs, the pervasiveness of scope and the tremendous impact of new systems. This is the Fourth Industrial Revolution, aptly described by Professor Klaus Schwab, Founder and Executive Chairman of the World Economic Forum.

50. This new era is going to witness shifts of monumental proportion, enabled by the convergence of the physical environment and digital space – driven by ubiquitous connectivity, virtual reality, artificial intelligence, robotics, and cloud computing, combining to enable the “Internet of Things”.

51. It may not be heavily prevalent in our local environment currently, but this wind of change is intensifying. It will bring massive disruptions to the traditional ways we have been doing things.

52. Making the appropriate investments and adjustments is key to our relevance in the global economy of the future. One major area to invest is in digital infrastructure both at the public and enterprise levels.

53. The enabling environment for entrepreneurship and development of start-ups should also be created through progressive regulation of sector players.

54. Access to finance will also spur the growth of digital infrastructure entrepreneurs.

55. Collaboration between the public sector and private sector players is paramount. While we may consider it appropriate for businesses to compete, we must also collaborate to collectively break new frontiers and maximise the opportunities that digitalisation offers.

56. As you continue with other activities and deliberations of this assembly, please accept my warmest regards and best wishes.

57. Thank you for your attention.