TRANSFORMING AN ECONOMY THROUGH DIGITALIZATION-
THE GHANA STORY

• Salutations …

Ladies and Gentlemen,

1. Thank you very much for the opportunity to speak at Ashesi University this evening. This is one of the leading and most sought-after universities in Ghana and Africa. Congratulations to the founder and President, Patrick Awuah, to the faculty, staff and students for such an accomplishment in under 2 decades with all its teething challenges.

2. Today, I will be speaking about our economy. Notwithstanding the impact of the COVID-19 pandemic on prices, government revenue and our debt levels, we have achieved so much over the last five years in areas such as:

   o Creation of jobs: more than any government in the 4th Republic
   o Reducing Inflation from 15% to near single digits
   o Achieving the lowest exchange rate depreciation for any first term government in the 4th Republic, and most likely, the lowest exchange rate depreciation in 30 years by the end of the year
   o Recorded positive trade balance in successive years; best in more than a decade
   o Lowest average bank lending rates in the 4th Republic
   o Safeguarding food security and fight against hunger through Planting for Food and Jobs
Stimulating industrialization from the ground up through One District One Factory. More factories have been set up than under any other government in the history of Ghana.

In addition to these indicators of the macroeconomy, we have

1. Development Authorities - IPEP
2. One Constituency One Ambulance
3. Zongo Development Fund
4. Initiated many social interventions to reduce hardships to the underprivileged in society.
5. Managed the COVID-19 Pandemic by world class standards
6. Introduced fundamental changes in building our human capital fit for our democracy and industrial development through Free SHS and Free TVET.

And much more

3. There is a lot to say about these but today, I want to focus my remarks on how we are transforming Ghana’s economy through digitization because it is important that we highlight the critical nature of digitizing the economy and how it underpins the reforms that the citizenry expect of government. We can only build a vibrant modern nation if we have strong systems and institutions that work. Otherwise we will be stuck in a vicious cycle of rhetoric and underdevelopment.
4. Under the leadership of President Nana Addo Dankwa Akufo-Addo, we have focused on pursuing digitization as part of our economic strategy because the Fourth Industrial Revolution is upon us and we must be part of the modern world. There is a growing body of empirical evidence that illustrates the capacity of digital technology to create jobs, significantly boost productivity, increase income and support wealth creation. The World Bank in a 2020 report observed that well-functioning digital economies are expected to achieve faster growth, offer more innovative services and create more jobs. The World Economic Forum’s Global Information Report estimates that “an increase of 10% in a country’s digitization score fuels a 0.75% growth in GDP per capita”. It is therefore clear that going forward, countries that fail to digitalize their economies are likely to be uncompetitive in the emerging global digital revolution.

5. Therefore, when President Akufo-Addo assumed office in 2017, we asked the following questions: How prepared is Ghana to compete in the emerging global digital revolution? Have we got in place the key pillars that would enable our economy participate in the emerging digital revolution? Is the “system” we have fit for purpose?

6. Ladies and gentlemen, the first thing to note in talking about the digital revolution is that it is a data revolution. The Economist Magazine put it this way in 2017; "The world's most valuable resource is no longer oil, but data." Data is as
important in this Fourth Industrial Revolution as oil discoveries were for countries decades ago. So what is data? Luckily for everyone, unlike oil, diamond, gold or many of the resources that had driven economies, which were either bestowed on a country by reason of its geographic positioning or which could be acquired through conquest, data can be available to all. A simple definition of data is information that has been gathered and stored for use. Data is the basic requirement for participation in the digital revolution but it was clear that the system underpinning the operation of Ghana’s economy was not designed for a data driven economy.

**NATURE OF THE SYSTEM**

7. Our “system” had major shortcomings and presented challenges for the digitalization of the economy. These challenges included the following:

**Citizens and Residents could not be uniquely Identified**

8. We were operating in a system where most of the population could not be uniquely identified. It is possible to be born in Ghana, live a full life, die and be buried and there would be no trace of you on any documentation that you ever lived and died in this country.
• The difficulty in obtaining identification documents by many created an industry for generating fake identities including drivers’ licenses and birth certificates.

• Difficulty in identifying accident victims at hospitals and contacting next of kin when they die. They are usually given mass burials without the knowledge of their relatives.

• Voter registration exercises are unnecessarily chaotic because people’s identities and ages are the subject of dispute.

Inefficiency and Corruption in the Delivery of Public Services

9. In spite of all the efforts at reforms and decentralization, Ghana has a legacy problem in our public administration. For far too long, the public administration system which was meant to be an instrument of development has instead been characterised by cumbersome structures and procedures. These might have been fairly adequate in a colonial state with a “sluggish” centralized bureaucracy, rigid, rules-based, hierarchical chains of command, and highly interpersonal in its delivery of public services.

10. In the day-to-day interactions of Ghanaians, whether in applying for driver’s license, passports and any form of
government permit or license, at the local or national level, corruption has been so ingrained that bribe giving and taking are often tolerated to the point of being considered as normal behavior.

11. The nature of our system is such that there is a built-in incentive for some public servants to make sure the system does not work. If the system does not work, these people will make money because people will find ways and means to get what they want.

Other Challenges include:

- **Lack of a functional National Property Address System**
  No modern economy can function without an address system.

- **The existence of a large Informal Sector and the dominance of cash payments**

- **Financial Exclusion**

- **Our databases are largely manual and not integrated**

- **The difficulty in collecting taxes for development**
  The vast majority of the population do not file to pay taxes and there is no way of finding out.
• **Inefficiency in the delivery of Health Services**

  o There is a predominance of manual records in the system.

  o When it comes to buying drugs from pharmacies, patients face several challenges with the existing system.

  o People in remote areas are not well-served

**BUILDING A NEW SYSTEM FOR DIGITAL TRANSFORMATION**

12. All the challenges I have described so far are symptomatic of the disconnect between our lives and government machinery.

13. **Question** – Why is it that after over sixty years of independence in Ghana and other African countries, after all the years of IMF and World Bank programs, after all the foreign aid, and development assistance, “The System” has remained basically the same or in some cases got worse.

14. In 2010, 7 years before we came into government, I addressed this issue in the conclusions of a book on Monetary Policy and Financial Sector Reform in Africa. I noted in this book that international development is a very competitive game. But unlike the game of football where the
rules are clearly defined for all participants, not all the rules of the international development game are written down.

15. Developing countries are able to compete on relatively more equal terms in sports like football. Who would forget that Senegal once beat France in a World Cup match? Ghana also went all the way to the quarter finals of the world cup in South Africa. In the game of international development, this would have been almost impossible. Because there are so many unwritten rules that countries have to figure out for themselves. The focus of economic management successive governments since independence in Ghana and Africa over the years has been on crisis management as a result of factors such as collapse in commodity prices, increase in oil prices, debt unsustainability, political instability, macroeconomic instability, etc. Governments have not focused on the underlying system.

16. Putting in place a unique identification number, having a unique address system, and a working property and broad-based income and consumption tax system are just some of the key unwritten rules for efficient economic development. They are part of “The System”.

17. I concluded in the book that digitization was the path to modernizing and transforming the Ghanaian economy. We reaffirmed this in our 2016 Manifesto.

18. The goal was to quickly transform our economy by leveraging on technological innovations as a means to leapfrog the development process, overcome legacy problems, and improve both economic and public sector governance.
This is why digitization has been a major area of focus for our government. Unfortunately, many people still do not appreciate the link between digitization and economic development. I have heard some people ask why I have abandoned economics for digitization. Far from abandoning economics, the reality is that in this era, if you don’t digitize you will not have much of an economy, PERIOD! Indeed, digital policy is economic policy!

19. The World Bank President, David Malpass, at the recently concluded G20 summit stated strongly just a few days ago that:

“Without digitalization, we wont be able to reap the full benefits of human progress. Digitalization is vital in transforming social services, finance, health, education, and agriculture”.

20. Also, the IMF’s March 2021 Annual Report notes that:

“COVID-19... provides an opportunity for African countries to innovate and go digital. African countries will have to rebuild their economies. They should not merely repair them; they should remake them, with digitization leading the way”.

21. In Africa, Ghana has been ahead of the curve on digitization. Our strategy since 2017, has been not just to repair the
“system” but to build a new “system” through digital transformation.

22. What are the elements of this new system for digital transformation? We want:

- A system with unique identification numbers for the population
- A system with addresses for all properties and locations
- A system that is transparent, and promotes accountability, discipline and trustworthiness.
- A system that is inclusive and not based on who you know
- A system that provides efficient public services delivery and tackles corruption
- A system that improves efficiency in the health sector
- A system that provides financial inclusion and a cash-lite economy
- A system that addresses high interest rates
- A system that enhances domestic revenue mobilization

HOW HAS DIGITIZATION ADDRESSED THE ISSUE OF PROVIDING UNIQUE IDENTITY TO THE POPULATION?
23. On coming into office, we moved quickly with the issuance of biometric national ID cards (The Ghanacard) to the population. The Ghanacard project was initiated by President Kufuor but abandoned for 8 years.

24. The card has world class features. It captures 10 fingerprints as well as the iris of individuals. It is also consistent with the ECOWAS standards and bears the ECOWAS logo. It is compatible with any reader which is compliant with EMV contactless communication protocol.

25. So far, 15.5 million people have been enrolled on the Ghanacard by the NIA and most of the population will be enrolled by 2022. NIA will open an additional 291 offices tomorrow across all districts and regions to complete the exercise. The issuance of the Ghanacard has provided Ghana with a database that will be the anchor for all transactions in the future, providing unique identity to all individuals.

26. With the Ghanacard:
   • the identity of people (even dead people) can be established using their fingerprints. Ghanaian and other embassies abroad will be able to establish the identity of Ghanaians using their fingerprints. Identity can be established even without the Ghanacard as long as you have been enrolled on the database.
   • Individuals are empowered to exercise their rights and responsibilities fairly and equitably in a modern society.
Digital inclusion provides access to government services. Institutions like DVLA, Police, Banks, NHIA, Passport office, GRA, SSNIT, Telecom companies, will be able to verify the identity of anyone they are doing business with. It will make the targeting of government programs to the vulnerable and disadvantaged more effective.

27. It is not widely known that the Ghanacard is also an electronic passport (e-passport) that contains the biometric information that can be used to authenticate the identity of travelers. We have been working with the International Civil Aviation Organization (ICAO) this year to globally activate the e-passport function of the Ghanacard and I am happy to announce that on 13th October 2021, Ghana officially became the 79th member of the International Civil Aviation Organization (ICAO) Public Key Directory (PKD) community. The ICAO Public Key Directory (PKD) is a central repository for exchanging the information required to authenticate e-passports.

28. The PKD allows border control authorities to confirm in less than ten seconds that the e-passport was issued by the right authority, has not been altered, and is not a copy or cloned document. Ghana’s Country Signing Certificate Authority would therefore soon be imported into the ICAO PKD System through what is known as a Key ceremony. The Key
Ceremony for Ghana will be held at the ICAO headquarters in Montreal Canada hopefully by the 1st quarter of 2022.

29. This means that the Ghanacard will be recognized as an e-passport and can be read and verified in all ICAO compliant borders (in 197 countries and 44,000 airports in the world). When this happens, holders of the Ghanacard will be allowed to board any flight to Ghana. Furthermore, the good news for diasporan Ghanaians is that when the Ghana Immigration Service is linked to the NIA architecture diasporan Ghanaians who hold the Ghanacard should not have to obtain visas to travel to Ghana. We expect this to be operational by the end of the first quarter of next year. Ghana is one of the few countries in the world where the national ID card is also an e-passport.

30. The Ghanacard is also being linked with existing passports so that travel history will be preserved. The Ghanacard is already valid for travel to all ECOWAS countries. I should note that the national ID project was executed by the NIA in collaboration with a world class Ghanaian private sector firm, (IMS) Margins. So proud of them.

HOW HAS DIGITIZATION SOLVED THE PROBLEM OF A PROPERTY ADDRESS SYSTEM FOR GHANA?
31. To solve the problem of a lack of working address system in the country we have leveraged on GPS technology to implement a digital address system for Ghana capturing every square inch of land. In the process, we have identified and provided unique addresses for all properties in Ghana (7.5 million properties). The Land Use and Spatial Planning Authority (LUSPA) has also provided street names and house numbers for every street in Ghana. Government will affix the address plates for every property in Ghana and we expect the process to be completed by the end of 2022. Ghana is the first country in Africa to implement a digital system in combination with house numbers and street names. It is a superior address system and leapfrogs the addressing systems that have been implemented and in use in many advanced countries.

32. With the digital property address system:

- Every Ghanaian has a digital address. Can provide such an address for job applications, visa applications, application for passports, etc.
- The Ghana Post GPS application comes with directions to every location
- Currently Ghana Post is achieving 98% delivery rates as they can identify every location using the digital address navigation system. Now Ghana Post delivers for several e-commerce companies like Jumia and majority of shipments sent to Ghana via Alibaba and Amazon are delivered through
Ghana Post. Ghana Post provides banks with data such as customers’ GPS address.

- The Ghanacard captures the digital address of the holder
- Ambulances and police can easily find locations to accidents and crime scenes.

33. Given the popularity of WhatsApp amongst people in finding and sharing locations, we engaged Google last year and they have agreed to integrate our digital address system (house number, street names and digital address) into Google Maps. We are hoping to complete the integration by the end of the year. This will be the first such integration of a country’s digital property address system into Google maps that I am aware of. The digital address system was executed by Ghanapost in collaboration with Vokacom, a leading Ghanaian IT firm.

HOW IS DIGITIZATION ADDRESSING FINANCIAL INCLUSION AND THE DOMINANCE OF CASH PAYMENTS?
34. One of the biggest problems impeding financial sector development in developing countries is the issue of financial exclusion. This means that most of the population is excluded from fully participating in the financial system because they are unable to open and operate bank and financial services accounts. This reinforces the dominance of cash payments.

35. When we assumed office in 2017, we decided to use digitization to solve this problem. The data showed that 70% of people in Ghana had no bank accounts but 80% of the adult population had mobile phones with 30 million mobile money accounts. It was also not possible to send money to customers of different telecom companies. So we asked the questions: why can’t we make it possible to send mobile money across different telecom companies and also why can’t the mobile money account function like a bank account ‘by making it interoperable with bank accounts? The answer to these questions was the implementation of the groundbreaking mobile money interoperability system.

36. Thanks to the Bank of Ghana and Ghana Interbank Payments and Settlement System (GhIPSS) the mobile money payments interoperability has made it possible to transfer money seamlessly across different mobile money providers and between bank accounts and mobile wallets. It has also solved the major problem of the over 70% of people not having
bank accounts. Today, because of mobile money interoperability (MMI), you can transfer money from a customer of one telco to a customer of a different telco and also make payments from your mobile money account into any bank account and you can receive payments from any bank account into your mobile money account. You can receive interest on savings, acquisition of loan (e.g. qwick loan) on your mobile wallets. As a result of MMI over 90% of the adult population now have access to a “bank account”.

37. Ghana is the the first country in Africa and one of the few in the world to achieve this type of interoperability between bank accounts and mobile wallets. I would like to note that even in the USA the Federal Reserve Bank does not have interoperability in its Real Time Payments Network. The American Bankers Association in a letter to the Fed in September 2021, called on the Fed to strive towards interoperability with the Real Time Payment Network.

38. Achieving mobile money interoperability (MMI) in Ghana is therefore no small feat, especially at the cost we did it. The data shows that because of MMI, Ghana is the fastest growing mobile money market in Africa. Total value of mobile money transactions in 2020 was GHC570 billion ($100 billion). Six years ago, it was GHC35 billion.

39. Banks are also responding to the competition for the unbanked from the mobile money service providers. Next
month, all banks in Ghana will launch a bankwide momo wallet which will be available to customers and non-customers through a mobile App. It is similar to other mobile money Apps from Vodafone, Airtel TiGo and MTN. You will be able to move money from any bank or momo account into this wallet and you can also generate your personal QR Code from this bankwide app. I think this will bring about a healthy competition between the mobile money service providers and the banks which should result in lower charges for money transfers.

40. Today, the new system we have put in place has made it easy to open a bank account. With a few banks for example, all prospective bank customers can open an account remotely through their mobile phones without visiting a branch or filling out forms. It is simple, fast, and easy to use, and clients need only a valid national ID card and no additional documentation to open an instant account. In addition, since the account opening process is USSD based (i.e. a service that allows people without a smart phone or data or internet connection to use mobile banking through a code).
41. As stated earlier, in the informal sector, which is dominated by cash payments, most merchants are reluctant to accept other forms of payment for three main reasons: first is the high cost of POS (point of Sale Devices), second is the high processing fees (1%-3%) for electronic payments; and third, the lag between when actual purchases are made and when merchants receive the actual payments.

42. To address these challenges, we have recently rolled out a Universal QR CODE payments system which allows all merchants and service providers as well as individuals to receive payments instantly on their phone as customers scan their QR CODE or dial a USSD code for “yam” phones. The Universal QR CODE is the way to go for most merchants because all they need is a mobile phone. Ghana is the first country that I know of in Africa to implement a Universal QR Code payment system that accommodates both bank accounts and mobile wallets.

43. With the launch of the bankwide mobile wallet next month, every user will be able to generate a personal QR Code which can be used to transfer or receive money to or from individuals or merchants. If every merchant and every individual generates their own QR Code, then Ghana will truly enter a world of cashless payments. This functionality would be available from December this year.
44. The Bank of Ghana has completed the technical work and started the process to launch a central bank digital currency (CBDC), the e-cedi, next year. The e-cedi is simply the digital form of the physical cedi in circulation. It is legal tender issued and backed by the central bank. With the digital currency, citizens and residents both the banked and unbanked will hold currency in the form of a digital wallet. Cash transactions will therefore be drastically reduced. The e-cedi will bring transparency to all transactions within the economy which hitherto used to be by cash. When implemented, the incidence of fake or counterfeit currencies and bullion van robberies will be drastically reduced.

45. Today, thanks to the hard work of the Bank of Ghana, GhIPSS, the Telcom companies and Fintechs, I can confidently say that Ghana has one of the most advanced and most inclusive payment system architectures not only in Africa, but in the world. Digitization is bringing transparency to the domestic financial system and convenience to citizens.

46. The digital payments infrastructure is boosting e-commerce in Ghana. Business is now taking place over Instagram, Facebook, Twitter, etc. Many people who cannot afford to rent or build shops are able to do business on the internet at little cost with deliveries helped by digital address and payments using mobile money interoperability. Ghana has therefore put itself in a position to grow e-commerce and create jobs. I am told by industry players that thanks to the reforms we
have implemented, by next year, Ghanaians will be able to shop online with global online giants like Amazon using mobile money.

47. The Mobile money interoperability, Universal QR CODE and other payment system reforms were implemented by the Bank of Ghana and the Ghana Interbank Payment and Settlement Service (GHIPSS) in collaboration with the banks and Telecom companies.

HOW IS DIGITIZATION ADDRESSING THE ISSUE OF EFFICIENT PUBLIC SERVICE DELIVERY AND CORRUPTION?

48. Our approach to improving the delivery of public services is to minimize human contact as much as possible. Therefore we embarked on an aggressive digitization of the processes of service delivery across many public institutions:

49. **Digitization of the passport office:** Before 2017, applications for passports required the applicant to complete
a paper form in pen and submit it to the passport office either personally or upload it online in PDF format to begin the process. It was therefore still a manual process. Following digitization, passport applications are now online and there is no need for middlemen or for the payment of bribes to obtain a passport. The average turnaround time for the acquisition of passports has been significantly reduced.

50. **Digitization of the ports:** Previously, the bureaucracy in the clearing of goods at Ghana’s ports involved a lot of paperwork and used to be largely manual. This caused delays, corruption, inefficiencies, frustration and loss of revenue to government. Many citizens who had cleared goods at the country’s ports had horror stories about their experiences with the processes of Ghana Ports and Harbours Authority (GPHA). The introduction of a paperless port system has reduced the layers and simplified the process, reduced the time needed to clear goods and the avenues for corruption and increased efficiencies and revenue mobilization at the ports. There is now no room for negotiation of import duty as it is automatically calculated by the system. This is saving government a lot of money and citizens a lot of frustration.
51. The Driver and Vehicle Licensing Authority (DVLA) is known for two traditional services: Driver Licensing and Vehicle Registration related services. All these services of the Authority have been fully digitized. With the digitization of the drivers licenses in 2019, the Authority experienced an increase in service by 109% in 2020. As at August 2021, service performance has exceeded the peak performance of 2020 by about 16%. No middlemen (goro boys) and bribes are needed to obtain these services.

52. The Authority generated average revenue of approximately GHc 71.5 million in the four years (2013-2016) prior to digitisation as compared to the average revenue of GHc 168.4 million in the four years (2017-2020) after digitisation (a 136% increase).

53. Due to digitization, a client no longer waits for several months to receive his/her license but can now get their license in a day once all the requirements are met.

54. Motor Insurance Database: The National Insurance Commission has also implemented the Motor Insurance Database. The objective of the introduction of the Motor Insurance Database is to curb the menace of vehicles with fake motor insurance stickers plying our roads, thus endangering lives and property.
55. With the digitization of motor insurance in Ghana, all insurance policies, which now have key security features, have been synchronized to a national database, which can be accessed simply with any mobile phone by the insured, the police, and the general public.

56. Members of the public can also self-check the authenticity of their insurance policy by dialling a USSD code *920*57# and follow the instructions thereafter to know the insurance status of the vehicle. Therefore our police and general public can easily check from their phones and devices on the road which vehicles have insurance or not.

57. Registrar-General’s Department (RGD): It used to take weeks and months to register a business resulting in frustration for businesses and loss of revenue for the government. The automation of the application for Business Operating Permits has removed the complexities of the process. The process is currently, simple, transparent, and efficient. However, it is important to note that the IT system currently in operation at the RGD is very limited and does not cover all the services. A new open source system is therefore being put in place to address the existing challenges and cover all the RGD services. All the services offered at the RGD will be automated under the new system for example there will be online registration of marriages at churches and district assemblies. I assure you the marriage ceremonies
won’t be any less solemn or legal. We expect this new system to be operational within a year.

58. **Births and Deaths Digitization**: Easily one of the most depressing visits I have paid to a government office during my time as Vice President was to the Births and Deaths Registry headquarters. It was chaotic, it was messy and it was sad. It turned out that the Births and Deaths Registry had three separate databases as registers for births and deaths and these databases were in silos. It is not surprising therefore that corruption and fake birth certificates thrived in this environment.

59. Thankfully, the process of digitization of the records is almost complete and the three databases have been cleaned up and integrated. Furthermore, we are integrating the births and deaths register with the databases of Ghana Health Service, National Identification Authority, Ghana Statistical Service, Immigration and the Police so that the record of births and deaths should be consistent across all these databases.

60. In linking the births and deaths registry to the NIA database, there will be a tracking of pregnant women at antenatal clinics. To support the GHS in this exercise, 13,000 tablets (which were recently used in the population census) are being provided by the GSS to the GHS. Starting next year, it is envisaged that every new born child will within a year get
a Ghanacard number but the actual card will be issued when the child is grown and the biometrics are fully formed.

61. **SSNIT:** All SSNIT offices across Ghana have been networked and processes have been digitized. So today, pensioners do not need to travel to Accra to process their pensions. They can apply online from Lawra or Benchimankwanta and their pensions will be processed. Thanks to digitization it only takes a maximum of 10 days after application for pensions to be processed.

62. **Scholarship Secretariat Applications:** In the past, candidates applying for scholarship usually had to travel from all parts of Ghana to Accra to take part in the application process. This caused a great deal of inconvenience for applicants seeking government sponsorships. The manual processes of the Scholarship Secretariat resulted in an inefficient administration of scholarships in the country.

63. From 2020/21 academic year, candidates can apply for scholarship from the comfort of their homes, take an aptitude test and be interviewed in their own districts. The launch of the Online portal is in line with Government’s vision to digitize and formalize government service delivery processes for applicants seeking government sponsorships and also
help the Secretariat in proper and efficient administration of scholarships in the country.

64. **Ghana.Gov Platform:** To make it easy to access government services, Government has launched the Ghana.gov portal, a one-stop shop for accessing government services. All government institutions are expected to be on the Ghana.Gov platform by the end of the year. The mobile Ghana.Gov App is now available on Google Playstore and on Apple App Store.

65. On the Ghana.Gov website you can apply for and obtain various government services like passports, GRA, birth certificates, etc. It will provide services more conveniently to citizens, residents, businesses and increase government revenue and minimize corruption. It also provides a feedback feature to enable users report problems with public services to the relevant authorities. I encourage everyone to download the Ghana.Gov mobile app because it will make life easier for you in engagement with public institutions. The Ghana.Gov platform was implemented by the Ghana Revenue Authority in collaboration with a consortium of Ghanaian IT firms.

66. **Integration of Databases:** The key to building a data based economy is not only in generating data but it is even more important that the data does not sit in silos. The data should be integrated. This is a problem that currently exists in many
advanced economies. Ghana however has the opportunity, in coming late to the game, to integrate the databases that we have generated from our ongoing digitization process.

67. In this regard, we are integrating the National ID card database with other databases such as Passports, SSNIT, NHIS, Ghana Revenue Authority, Bank Accounts, DVLA, SIM cards, Mobile money accounts, Controller and Accountant Generals Department, Registrar Generals Department, Births and Deaths Registry and the Police CID, Ghana.Gov etc. to create a centralized integrated database.

68. The integration of the databases will bring transparency, discipline and efficiency into our economy and society and also help law enforcement track down criminals. With a proper protection of privacy as provided by the Data Protection Act, employers should be able to do an online background check on prospective employees. It will also be much more difficult for people to avoid paying tax as the GRA will have a broad overview of transactions across a broad spectrum of activities. Police can easily tell a fake vehicle registration, drivers’ licence or insurance, etc.

69. Let me tell you a story that illustrates what I am talking about. Last month, a celebrity was indicted for fraud in an industrialized country. The individual opened three bank accounts under three different business names using fake identity documents, deposited fraudulent cheques into them
and quickly withdrew the cash before the bank caught on. This was possible because the databases between the bank account and the identity systems were not integrated. In Ghana we are doing precisely that integration between the NIA and the banks to protect banks and customers from such fraud, and by 1st quarter of 2022 we expect all banks to be in a position to verify all Ghanacards.

70. With the integration of the NIA database and the government payroll, ghost workers and double salaries on government payroll should be history. Furthermore, once completed, there should be no need for workers to go and provide their biometrics for payroll or pension either at CAGD or SSNIT. The TIN and SSNIT number are now the Ghanacard number so it makes sense that we have one unique identifier for workers at the CAGD. There is no burden on workers with this synchronization of the data.

71. By integrating the National ID with the GRA database and making the Ghanacard number the Tax Identification Number for individuals, we have increased the proportion of adult Ghanaians with Tax Identification numbers from 4% to 86%!

72. The Ghanacard can be used as the identification document for virtually all institutions in Ghana. With integration of the databases, the Ghanacard will replace the NHIS card by the end of December 2021. The NHIS card will be phased out and
the function will be transferred to the Ghanacard. In the process, the NHIS will save some $30 million annually. Similarly, the Ghanacard will replace the SSNIT card and others will follow.

73. The SIM cards database will also be integrated. Apart from the demands of law enforcement, it also makes sense to register and link our SIM cards with the Ghanacard because most people who operate in the informal sector have mobile phones and use mobile money. Mobile money is susceptible to money laundering and therefore we need a higher Know Your Customer (KYC) requirement since the mobile money account now functions like a bank account. Also, digital lending through mobile phones is susceptible to high default if people can just throw away their SIM card after obtaining a loan. Additionally, given the linkage of the National ID card with Passport, DVLA, SSNIT, GRA, NHIS, Births and Deaths, CAGD etc., SIM card re-registration using the Ghanacard will help in the formalization of the economy by encouraging people in the informal sector to get a Ghanacard.

**HOW IS DIGITIZATION ADDRESSING THE ISSUE OF DOMESTIC REVENUE MOBILIZATION?**

74. Ghana has a major challenge in the area of domestic revenue mobilization. The tax/GDP ratio is 14.3% compared
to 27% for South Africa and 34% for the advanced (OECD) countries. Most adults are outside the tax net and compliance is very low. At the beginning of 2017, only 4% of the adult population of Ghana had Tax Identification Numbers (TIN). Indeed, a recent study by the World Bank (November 2020) estimates inter alia that potential tax revenues from sole proprietors, who usually operate in the informal sector, amounted to 12.6 percent of GDP.

75. Broadening the tax net is therefore imperative. In this regard, a number of digital initiatives have been implemented to broaden the tax base and create a vehicle for enhanced domestic revenue mobilization. These include:

- **Ghanacard** – With the designation of the Ghanacard number as the TIN number we have increased the percentage of adults with TIN numbers from 4% to 86%
- From the **TIN database**, we can tell who has filed their taxes and who has not filed at the end of each year.
- **Digital Address System**
- **Financial Inclusion** and the move towards electronic payments (and away from cash) as well as the integration of databases provides more transparency and accountability.
- The **formalization** of the informal sector through digitalization will expand the tax base.
76. **Digitization of the tax filing process:** Many people, including highly educated people, find the process of filing taxes complex. To make it easier and less cumbersome to file taxes, I challenged the GRA last year to come up with a simple to use mobile App to enable ordinary people file and pay taxes using their mobile phones. I am happy to announce that the GRA has completed the just completed that mobile App. The mobile tax filing application is available on the Ghana.Gov Mobile App (which is available on Google Playstore or Apple App Store). The tax filing Mobile App has been designed specifically to make the filing of taxes very simple. Once you sign on, you will be asked to answer a number of simple questions. Once completed, you can hit the send button and your tax liability or refund will be calculated. You can then proceed to pay using momo, GhQR Code, Gh-Link, etc. You will receive an electronic receipt of your tax payment. You can also apply for and obtain an electronic tax clearance certificate.

77. **National Common Platform for Property Tax Administration:** Tax is paid on only 9% of properties in Ghana. An average of GH¢ 38.2 million is collected annually for property taxes in Ghana. An effective property tax regime requires that we are able to:

- Identify all properties
- Assess the value of all properties
- Identify and maintain a property owners database
• Send Bill to Owners
• Enforce payment of taxes

78. Over the last two years, Government has been working on providing a solution to this problem through digitization.

79. Thanks to the hard work of the Ministers for Local Government and Rural Development as well as Lands and Natural Resources with support from the Minister for Finance, we have developed a National Common Platform for Property Tax Administration for Ghana which will operate across all MMDAs. The Platform is integrated with the NIA database, Digital Property Address System and the Ghana.Gov. Platform. The Platform can:

• Generate and monitor the distribution of bills (digitally and via hand delivery)
• Provide Real Time Returns information (revenue performance and data collection returns)
• Provide MLGRD (full) and the MMDAs (limited) real time access and visibility to performance data (valuation rolls updates, billing, collections etc).
• Provide Real Time Information to General Public/Rate Payers
• Any homeowner can pay property taxes using their mobile phone.

80. The Platform is ready and is expected to be implemented by the Ministry of Local Government in 2022.
How is Digitilization Addressing the Issue of High Interest Rates?

81. A significant driver of high interest rates in Ghana is the level of risk associated with lending. The issues that pertain to risk include the absence of a unique identity for the population and the lack of an address system.

82. Ghana’s digitization program, by achieving unique identity and providing unique addresses for properties should result in lower interest rates as the risk associated with bank lending would have been reduced.

83. Thanks to the excellent monetary policy stance of the Bank of Ghana, bank lending rates have been on the decline from an average of 32% in 2016 to an average of 21% currently. One can expect further reductions as the full impact of digitization kicks in.

84. Furthermore, starting October 1, 2021, the Bank of Ghana has directed banks, telecommunications companies, Fintechs, mobile money operators, utility providers, retailers, government institutions that offer credit to MSMEs,
institutions that provide identification documents, entities that supply goods and services on a post-paid or installment basis, student loan schemes, etc. to provide information on credit behaviour of their clients to the Credit Reporting System. This is critical for assessing risk by lenders and will help drive down interest rates and enhance repayments by borrowers.

**HOW IS DIGITIZATION IMPROVING THE EFFICIENCY OF HEALTHCARE DELIVERY?**

**85. Digitization of Hospitals and Medical Records:** Before Government commenced its systematic digitization of medical records at the public health facilities, all records and documents were paper-based. The process of locating patients’ files was cumbersome and documents sometimes were misplaced or misfiled. This caused delays and inefficiencies in the delivery of health services and reluctance of some sick people to visit public health facilities.

**86.** This effort has increased efficiency, effectiveness and productivity in service delivery by our health facilities, eliminating the need for queues and delays and also increasing access to health care by those who need the services most. Henceforth, the medical records and history of patients will be gathered under a single digital database
which can be accessed by any networked hospital when patients visit.

87. We have also embarked on the connection of health facilities under the Ghana Health Service (GHS) on to one digital platform. So far, all teaching hospitals and all regional hospitals have been connected and can talk to each other. Thirty-six health facilities in the Central region have also been connected to the digital platform in a pilot scheme.

88. So now if you are referred from a hospital like Tamale Teaching Hospital to Korle-bu Teaching Hospital in Accra, you do not need to carry a folder... all your records will be seen and monitored by the doctor in Korle Bu when you arrive. Patients will have only one digital folder wherever they go.

89. National Health Insurance Authority (NHIA):

Additionally, digitizing the operations of the NHIA has helped reduce fraudulent claims. The renewal of all national health insurance registrations used to take place at the various NHIA district offices. This led to backlogs and long queues. In some instances people slept for days at some district offices. These delays hampered the operations and limited the revenue streams of the NHIA.

90. Following digitization, renewal of health insurance registration via mobile phone (*929#) has eliminated these
bottlenecks and also increased access to health care by those who need the services most. This has led to an increase in renewals by 70% while new registrations have increased by 41.4% per annum.

**Medical Drones**

91. Hospitals and clinics in remote and largely rural communities have a difficult time getting medical supplies especially in times of emergencies involving, for example snake bites, child-birth, blood supplies, floods, etc. Many lives are needlessly lost because the hospitals are unable to access critically needed supplies on time. To address this problem, Ghana opted to partner Zipline, the world’s largest automated on-demand delivery service for medical supplies.

92. Ghana was the second country in Africa (after Rwanda) to implement the delivery of medical supplies to remote areas through drones, with four Distribution Centres (DC) in Omenako, Mpanya, Vobsi, and Sefwi Wiawso. Two additional centers will become operational in December this year at Anum in the Eastern region (to cover all of the Afram Plains and 90% of the Volta region) and Kete-Krachi in the Oti region to cover all districts in the Oti Region, 3 districts in the Bono East Region (Pru East District, Sene East District, Sene West District) and North East Gonja District of the Savannah Region. The next two distribution centers will be located in
Funi (Upper West) and Kintampo (Bono) in 2022. This will bring Zipline coverage to virtually the whole of Ghana.

93. It is important to note that Ghana currently has the largest medical drone delivery service in the world! What is even more impressive is that the drone centers are 100% manned by young talented Ghanaians.

94. As at September 2021,
   - Each drone center has an average of 100 flights a day to deliver medicines and blood.
   - Drones have delivered 3 million doses of routine vaccines to rural areas since 2020
   - 130,000 doses of COVID-19 vaccines were delivered to rural Ghana
   - Delivery of Covid samples for testing.

95. Many lives have been saved as a result of the medical drones. In addition, the Ghana Health Service has made significant financial savings as a result of the Zipline drone delivery program which has reduced theft in medical stores. Interestingly, the US government has only recently contracted Zipline to also start the delivery of medical supplies by drones in the United States after Rwanda and Ghana took the lead.

96. Leveraging on the National Digital Property Address System, Zipline is also set to begin the delivery of medicines to homes
by the end of the year for bedridden patients who may be unable to leave home or to homes that may be cut-off by floods for example or in emergencies. This will be the first such home delivery by drones of medical supplies in the world.

97. E-Pharmacy-Digitization of Pharmacies in Ghana:
Patients or people generally face difficulties when trying to find medicines in pharmacies. They have no way of knowing which pharmacies have the medicines. They could go to five pharmacies before getting lucky. Sometimes patients are directed to go to specific pharmacies to buy the drug, denying them any advantage there might be of choosing from a lower priced shop. People also don’t know what the prices of the drugs are at different pharmacies and tend in their time of vulnerability to just buy at the prices offered when they find the drug. It is also difficult to tell whether the drugs are genuine or fake. There is also the problem of drug abuse with prescription drugs like Tramadol.

98. To address these problems, in 2019, I challenged the Pharmaceutical Society of Ghana to digitize the operations of pharmacies in Ghana. Following this and working with my office, the Pharmacy Council in collaboration with the private
sector has completed work on a digital platform for all pharmacies in Ghana and a pilot of 45 pharmacies is currently ongoing.

99. Basically, the digital E-Pharmacy platform will offer the opportunity to everyone through a mobile phone to upload your prescriptions and find out which pharmacies near you have the drugs. Secondly you can compare the prices for the same drug offered by different prices so that you can buy from the lowest priced pharmacies.

100. You will also be able to order the drug and pay for it on the phone through mobile money or GhQR (Scan and Pay), etc. The medicines are then delivered to the customers at home through a courier service.

101. The E-Pharmacy will enable Ghana address the issue of drug abuse. Those prescribed controlled drugs like Tramadol for example will only be given a one-time CODE sent via SMS (once the prescription is uploaded) to use at the pharmacy. The e-pharmacy platform will also check fake or counterfeit drugs because the platform will be linked to the FDA which will monitor the batch numbers of all products real time. Any drug for which the FDA does not have a batch number will be classified as fake.

102. The E-Pharmacy is scheduled to be launched before the end of the year. This will make Ghana the first country in
sub-Saharan Africa to have a national scale E-Pharmacy and one of only a few countries in the world with a national scale E-pharmacy. I would like to thank the Pharmacy Council and the Ghanaian private partners for being very proactive and for tolerating my hounding.

HOW IS DIGITIZATION ADDRESSING PUBLIC SECURITY AND SAFETY?

103. In many advanced countries, the pervasiveness of CCTV cameras imposes some restraint on potential criminals. You are likely to be caught if you break the law. This is why we have installed 10,000 CCTV cameras since 2017. The cameras have helped the police to solve a number of crimes such as the arrest of suspects in a recent bullion van robbery. At the beginning of 2017 we only had 800 CCTV cameras in operation.

104. Going forward, we are on schedule to digitize the operations of the Lands Commission to make it easy to acquire, transfer and register title to land. We are also going to formalize the agricultural sector by registering all cocoa farmers and their farms as well as labelling the cocoa from each farm to enable tracing. The work is about 40% complete. We will do same for food crop farmers and digitize fertilizer distribution by the middle of next year. We are also going to formalize the fisheries sector by registering all fishermen and
digitize pre-mix fuel distribution to our fishermen. The operations of the school feeding program are also being digitized to enhance its efficiency as well as facilitate monitoring. It is expected that the work on this will be completed by the end of this year.

**105.** Ladies and Gentlemen, we are also acutely aware that we must pay attention to cybersecurity. Ghana’s Cybersecurity Act, 2020 (Act 1038) has become necessary because of the rapid digitization of the economy, coupled with the high rate of cyber-crimes and other cybersecurity incidents in the country. The act will promote the development of cybersecurity and regulate cybersecurity activities in Ghana. It focuses on the protection of Ghana’s Critical Information Infrastructure. Given the efforts of Government through the Ministry of Communications and Digitization, Ghana’s cybersecurity ranking is now 89.6% compared to 32% in 2017.

**CONCLUSIONS**

**106.** Ladies and Gentlemen, in conclusion, my presentation tonight clearly establishes that we are implementing a new system as a foundation to drive digital transformation in
Ghana. It positions us to be globally competitive in the emerging digital revolution. It is:

- A system based on integrated (centralized) data
- A system with unique identification numbers for the population
- A system with addresses for all properties and locations
- A system that is transparent, and promotes accountability, discipline and trustworthiness.
- A system that is inclusive.
- A system that minimizes corruption in the delivery of public services
- A system where the operations of government institutions are digitized for efficient service delivery
- A system that is formalizing the informal sector
- A system that is reducing the cash dominance in economic transactions
- A system that has broadened the tax base and built the vehicle for domestic revenue mobilization
- A system where the credit reference agencies will be effective
- A system that supports law enforcement
- A system where healthcare is accessible to people in remote areas.

This will generate significant time savings for citizens in obtaining government services like acquiring passport, driver’s licence, NHIS
card, and the savings in time can be used for other productive activities.

107. Ladies and Gentlemen, the reason why things appear to work in the developed countries is because many of these systems are in place. There is no reason to think that they are more honest and disciplined than we are. They are not. Rather, they have systems that elicit honesty, discipline transparency and accountability. These are the systems we are also putting in place in Ghana.

108. It has taken political will on the part of Government to put these new systems in place because of the resistance by beneficiaries of the status quo. Furthermore, there is little immediate political benefit from implementing these new systems. It takes some time for the full benefits of digitalization to manifest, however politicians generally cannot afford to wait. The infrastructure we have put in place for digitalization is soft infrastructure. It is not like a road or a bridge you can point to.

109. It is easier for a politician to say to people that they should vote for him or her because of the road or bridge but it is difficult to make that same argument for say the National ID card or digital address system, or MMI. The people will just stare at you. It therefore takes courage to focus valuable time and money on putting this soft infrastructure in place because even though there is no immediate political benefit,
these are the most important reforms for the country in terms of long-term impact. President Akufo-Addo has put the long term interest of the country first.

110. It is important to note that Ghana’s digital transformation has largely been undertaken without foreign aid. Rather we have partnered with the Ghanaian IT private sector to finance the various initiatives rather than a wholly public sector exercise. It was a deliberate decision to do so because the private sector and the public sector have different incentives. The private sector makes money when systems they manage work otherwise they will go out of business. This is why we have deliberately partnered with the private sector to undertake all the major digitization projects such as:
   o National ID Card
   o Digital Address System
   o Mobile Money Interoperability
   o Ghana.Gov
   o Mobile Tax Filing Application
   o Common Platform for Property Tax Administration
   o Digitization of the Hospitals, Medical Records, Passport Office, Paperless Ports, etc
   o Drone delivery system

111. We are leapfrogging in many areas (because we do not have legacy systems like the advanced countries) but unfortunately, sometimes our mindset does not allow us to believe that we can be among the best in the world at
anything. We don’t believe in ourselves. We don’t believe we can do anything better than what the advanced nations have been able to do and yet the evidence of our progress is staring us in the face in areas such as digital address systems, payments systems, and medical drone deliveries.

112. Having put together these large databases as a result of digitization, our focus would now turn inter alia to data analytics through big data, artificial intelligence, machine learning to provide solutions to many challenges we face. We will leverage on the progress we have made with digitalization to drive innovation for the youth.

113. We also have to enhance access to the internet and lower the cost of internet across the country. In this regard, we are making progress. Internet Penetration currently stands at 50% compared to 26% in 2017. We are working to further increase internet access especially in rural areas.

114. Our progress in digital transformation justifies the vision of President Nana Addo Dankwa Akufo-Addo that Ghana should benchmark itself against the best in the world and move away from the “dependency mentality” to a “can do” attitude. Thanks to the vision of the President and the cooperation and hard work of our ministers and heads of agencies across many sectors, we have done in 5 years what Ghana was not able to do after 60 years of independence!
115. We are not yet where we want to be, but we have made a great start and there is a lot more to come. There is also more to be done to embed these major digital reforms in the everyday lives of Ghanaians as adoption and usage of digital technology increases. We have put in place new systems and we should all commit to adopt them and utilize them for maximum impact in the coming years.

116. I am excited about the prospects of the nation we are building, the brilliant minds being nurtured who are contributing towards this vision and I look forward to all of you playing a role in making our nation great and strong. The digital revolution is a youth driven revolution. It is your revolution.

Thank you for your attention

God bless you and

God bless our homeland Ghana