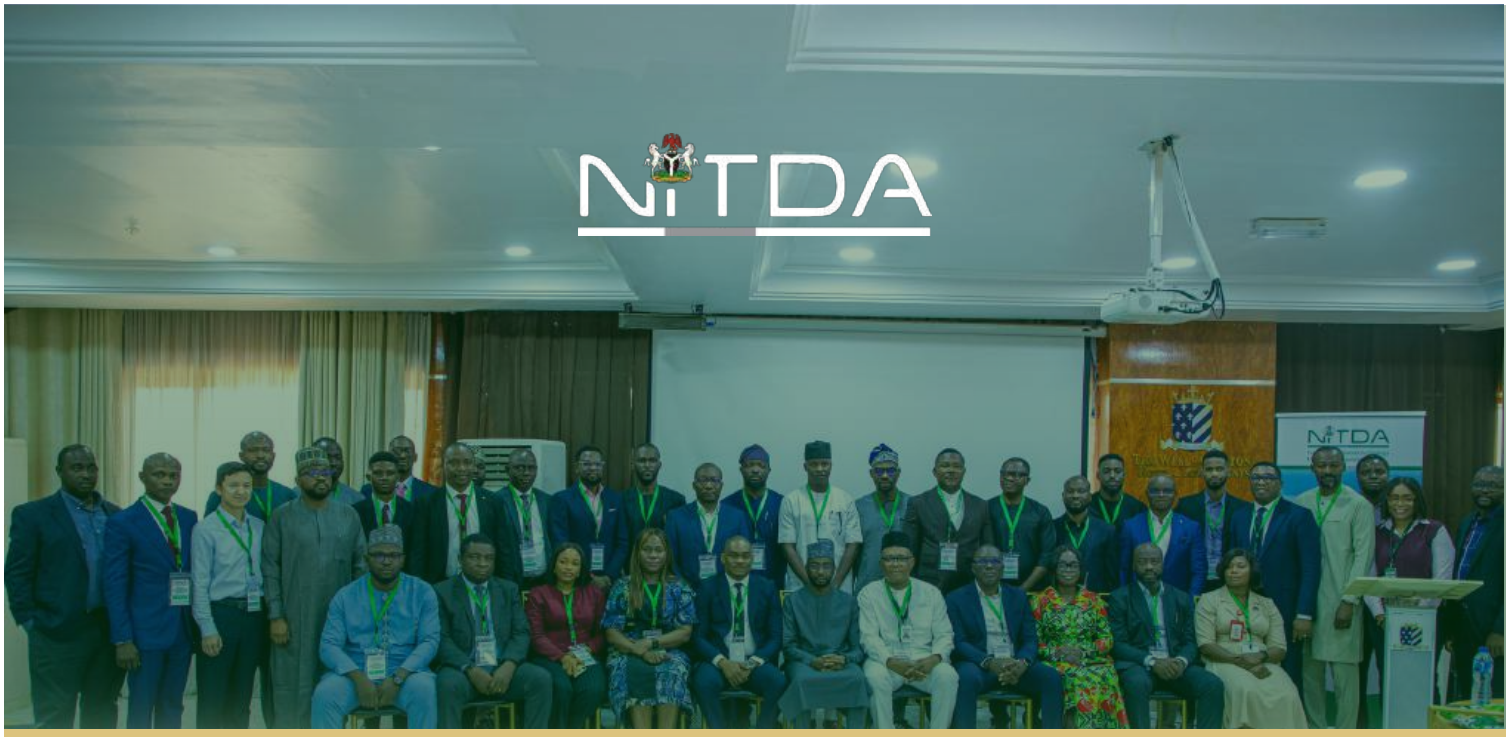
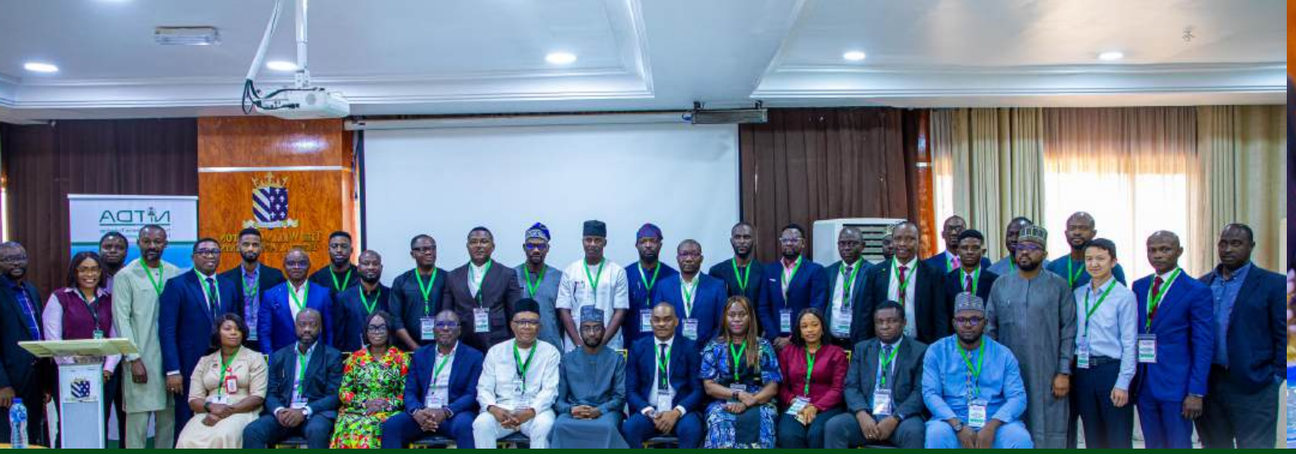


National Sovereign Cloud Infrastructure Workshop

Held at

Wells Carlton Hotel And Apartments, Asokoro Abuja

December 2024



1.0 Introduction

1.1 The National Information Technology Development Agency (NITDA) organised a 2-Day National Sovereign Cloud Infrastructure Workshop held at the Wells Carlton Hotel & Apartments, Asokoro, Abuja, on Thursday 7th and Friday 8th November 2024. The workshop was part of the strategies to accelerate the adoption of cloud technology and ensuring data sovereignty in Nigeria, by reviewing existing policies and laws to help unlock greater economic benefits, boost Foreign Direct Investment, stimulate job growth while protecting Nigeria's digital economy and national security.

1.2 **Workshop Objectives:** The workshop's main objective focuses on knowledge sharing and discussion of the ongoing research by Deloitte on cloud adoption and sovereignty in Nigeria which aims to identify gaps, analyse regulatory policies, assess industry best practices, and share strategic recommendations. The workshop's specific objectives among other things were to:

1.3
i. Create a platform for dialogue among key stakeholders, including hyperscalers, local data centre providers, cloud service providers, policymakers, and industry experts.
ii. Enhance understanding of cloud computing benefits, challenges, and best practices for adoption in the Nigerian context.
iii. Foster discussions on data localisation policies, regulations, and their implications for businesses and government.
iv. Creating awareness for data sovereignty, Artificial Intelligence, their potential applications, and the necessary ethical and regulatory frameworks.
v. Identify opportunities for collaboration and partnerships to drive Nigeria's digital transformation.

Workshop Expected Outcomes: The workshop was intended to achieve the following outcomes:

i. Increase awareness of cloud computing, data sovereignty, and AI adoption among key stakeholders in Nigeria;
ii. Foster collaboration among industry players, government officials, and academia;
iii. Identify opportunities and challenges related to cloud adoption, data localisation, and AI implementation in Nigeria;
iv. Develop actionable recommendations for promoting cloud adoption, data localisation; and
v. Develop a roadmap for hyperscaler Investment Opportunities in Nigeria.

2.0 Opening Session

2.1 **Participation:** The workshop declared open by the Director-General, NITDA, Kashifu Inuwa Abdullahi, CCIE had in attendance 43 participants drawn from Nigeria's Digital Ecosystem. See workshop
2.2 participant list attached as Annexure I.

2.3 **Commencement:** The opening session commenced at about 11.00 am with recitation of the 1st Stanza of the National Anthem as the opening prayer.

Welcome Address: The Director, Stakeholders Management & Partnerships, NITDA, Dr. Aristotle Onumo welcomed distinguished participants to the National Sovereign Cloud Infrastructure Workshop which according to him was aimed at unlocking Hyperscalers Investment Opportunities in Nigeria. He affirmed that the programme was not only a testament to the significant strides Nigeria has taken in the digital and technological space but also an acknowledgment of the immense potential our country holds as a hub for hyperscaler investment in Africa.

He further said that currently in the global digital economy, hyperscalers—cloud providers and data center giants—are the engines powering global growth and innovation, ranging from artificial intelligence and big data analytics to IoT and digital transformation. He particularly noted that the opportunity to attract hyperscaler investment is more compelling than ever, because of Nigeria's large youthful population, tech-savvy population and an expanding digital economy as well as its strategic position in Africa.

The Director further disclosed that the roadmap that will be developed at the end of the workshop would not only attract hyperscaler investments but also foster an environment where technology-driven solutions can flourish in Nigeria. He added that the roadmap would leverage our strengths, address potential challenges, and align with both national priorities and global standards.

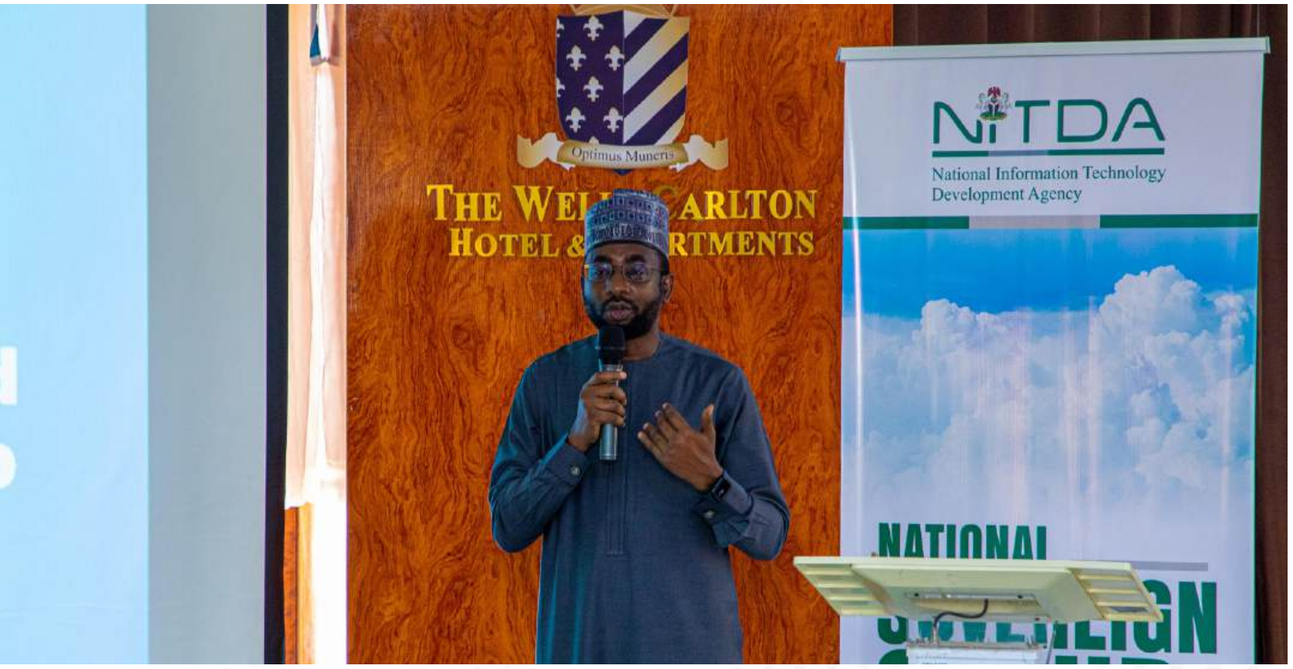
Concluding, Dr. Onumo stated that the workshop had its participants drawn from technology firms in both public and private sectors, whose contributions would be invaluable in shaping Nigeria's future in this dynamic space. He expressed confidence that at the end of the workshop, there would have been synthesis of a reliable foundation for actionable insights and partnerships that will accelerate our nation's journey toward becoming a leading digital powerhouse. He thanked the distinguished participants for making out time to attend the programme, and therefore looked forward to the productive discussions, insights, and innovations that will emerge over the next two days.

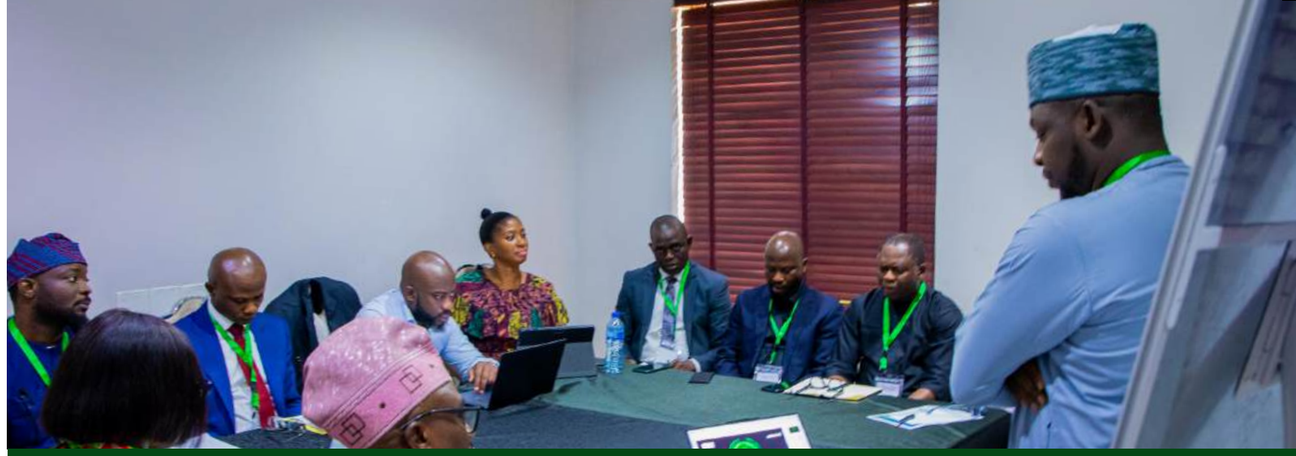
2.3 **Opening Remarks By The Director-General, National Information Technology Development Agency, Kashifu Inuwa Abdullahi, CCIE**

The Director General, NITDA emphasized that having our data sovereignty would further assert our strategic autonomy as a country with attendant benefits such as controlling our data to improve governance, protect national security, drive innovation, build trust, create jobs, and reduce reliance on foreign entities, for overarching development of the country. He expressed confidence that the recommendations that will emanate from the workshop would no doubt position Nigeria for economic prosperity and global competitiveness.

The DG stressed the need to build the required infrastructure to harness the potential of Nigeria's digital sector for sustainable economic growth and development. He also called for the decentralization of data governance which offers several benefits, including Greater flexibility and autonomy for data owners; Improved data management and optimization; Enhanced accountability and transparency; Strengthened compliance with data protection regulations; Reduced risk of data sprawl and centralized control.

Concluding, the DG gave assurance that provision of cloud infrastructure would indeed help the Federal Government achieve full scale digitization of the Federal Public Service for improved service delivery. He noted that creating cloud infrastructure that will support strategic sectors like banking, military, health, transport, SMEs, etc would rejig our economy. He therefore called for the need to put in place policy framework to regulate Nigeria's Cloud Sector to allay the fears of both local and foreign investors.





3.0 Technical Session

The Technical session featured paper presentations from two resource persons before the break out session (working groups).

3.1 **Overview of the Landscape in Nigeria towards Cloud Adoption: The Roadmap Ahead**

Presented by Adesoji Odugbose, Manager, Deloitte. The following were the highlights of his Presentation:

He began with introduction by stating that:

i. According to Gartner, the public cloud services market is projected to reach $1.26 trillion by 2028 at a Compound Annual Growth Rate CAGR of 19.7% as organizations continue to invest in cloud infrastructure and applications globally, while SSA is projected to account for $5.398 billion i.e. 0.42% of the global market share.

ii. NITDA recognizes a huge market potential and seeks to accelerate cloud and AI adoption in Nigeria, by reviewing existing policies and laws to help unlock greater economic benefits, boost Foreign Direct Investment (FDI), stimulate job growth while protecting Nigeria's data sovereignty and national security.

iii. To support this initiative, Deloitte is currently conducting research on cloud adoption and adaption in Nigeria which aims to identify gaps, analyze regulatory policies, assess industry best practices, and share strategic recommendations.

Infrastructure in Nigeria at a glance

i. A glance of Nigeria's cloud infrastructure status which include 8 Submarine Cables; 15 Local Data Centres; 242 ISPs; 55% Internet penetration; None (0) Hyperscaler Data Centres; 4.4GW Power Generation; 132m Internet users; 85% Organizations using Cloud; 7th in global internet user ranking; 850PB Data consumed; 40+ Tbps Submarine Capacity; and 35k Km Terrestrial Fibre coverage.

ii. Identification of Cloud Service Providers with corresponding degree of their respective operations vis-à-vis region, local zone, edge location and dedicated network in the country as being captured below:

Cloud Providers	Region	Local Zone	Edge location	Dedicated Network
aws	None	Present	Present	Present
	None	None	Present	Present
	None	None	Present	Present
HUAWEI	Planned	None	Planned	Planned
ORACLE	None	None	None	None

Research Summary
Deloitte's Research Summary Cycle which includes the following:

i. Objectives: Identification of infrastructure gaps; Analysis of regulatory policies; Assessment of industry best practices; Recommendation of strategic approaches and framework; Development of a collaborative ecosystem to foster partnerships among stakeholders.

ii. Opportunities: Investment in local cloud infrastructure by hyperscalers; PPPs to address shortages in power, infrastructure and opportunities to utilize renewable energy; Investment in Academia and cloud learning initiatives; Review regulatory policies to meet industry needs

iii. Challenges: Power infrastructure; Limited Data centers; Insufficient internet connectivity in remote regions; Brain drain and skill shortages; Forex exposures

iv. Key Findings: Nigeria has experienced significant growth in Cloud and AI in the last 3 years; the existing regulatory policies addresses most industry needs; the cloud has been a key enabler for startups; Nigeria has an adequate submarine cable landing capacity.

v. Methodology: Literature Review; Data Analysis including Regulatory and Policy Analysis; Benchmark with leading countries and African countries; Framework development; Recommendations and Best practices

Regulatory Framework

i. Nigeria's current regulatory framework addresses most concerns regarding cloud adoption, while there are gaps that still need to be addressed to drive cloud adoption'

ii. Each of the three identified key stakeholder groups (Government- Regulatory Oversight, Policy Framework and Infrastructure; Private sector - CSPs, Technology companies, Startups; Academia- Research, Talent development and Innovation hubs, has an important role to play.

Government Incentives and Initiative

i. Clear government policies, guidelines, strategies and incentives have potential to greatly facilitate cloud adoption within the country; incentives are critical to bringing in new technology and knowledge to the country and have successfully accelerated growth in other industries.

ii. Incentive programs should be tied to specific and measurable objectives which should be directly linked to the type of incentive program.

Human Capacity Assessment and Development

i. In recent years, Nigeria has experienced rapid development and digital growth through both Private and public initiatives that currently exists.

ii. Existing strategies and infrastructure have helped to facilitate progress and significantly improved skillsets, resulting in a large pool of skilled professionals in cloud computing services, despite the prevailing migration of talent to other countries. For instance, Developers 45.6% Growth in 2023 according to Tech Cabal; 10+ Tech Ed Schools/Startups e.g. Utiva, AltSchool, ALX, Decagon, Udacity; and 300,000 People Trained in Phase 1 & 2 3MTT

iii. Considering the continuous increase in job opportunities and need for more professionals as the nation is expanding digitally, there are opportunities to boost the workforce and retain talents in Nigeria while adopting the roadmap strategy to mitigate brain drain

iv. The roadmap strategy could be effectively and efficiently implemented through the following: More Collaborations with Tech Ed Schools; Adopt NYSC discounts for training and tech certifications; Expand development centre across the country; and Establish cloud tech awareness in universities.

High Level Adaptation and Adoption Roadmap
In efforts to guide the structured adoption and implementation of Cloud and AI technologies in Nigeria, three phase strategy was proposed, namely:

i. Monitoring and Evaluation:
   - Ensure compliance with relevant Cloud and AI policies such as data protection regulations, by performing regular audits, physical inspection etc.
   - Track cloud service providers' adherence to SLAs, conduct regular reviews and security audits.

ii. scaler Investments and PPPs
   - Hyperscalers; i.e. AWS, Azure, GCP etc to Invest in building data centers and infrastructures in Nigeria.
   - Strategic partnerships with local and foreign industries to address gaps in power, infrastructure, skilled workforce deficit.

iii. Review Regulatory Polices and Foster Skill Acquisition
   - Review existing policies and new strategies to encourage cloud and AI adoption.
   - Invest and promote skills acquisition in cloud computing and AI across various sectors.
   - Introducing tax and licensing incentives for providers

3.2 **Overview of NITDA's Regulatory mandates by the Acting Director, Regulation & Compliance, Barrister Emmanuel Edet**
The presentation focused on:

i. **Historical background of NITDA:** National Information Technology Development Agency (NITDA) was created in April 2001 to implement the Nigerian Information Technology Policy and co-ordinate general IT development in the country

ii. **NITDA's vision** which is to proactively facilitate the development of Nigeria into a sustainable digital economy

iii. **NITDA's mission** which is to create an enabling environment where Nigerians develop, adopt and derive value from digital technology

iv. **NITDA Act 2007** which stipulated the development of a framework for the planning, research, development, standardization, application, coordination, monitoring, evaluation and regulation of Information Technology practices, activities and systems in Nigeria and all matters related thereto and for that purpose.

v. **NITDA's Roles** as stipulated by the Act: power of NITDA to perform the following roles:
- Guidelines
  - Information technology and systems application for public and private sectors.
  - For electronic governance and monitor the use of electronic data interchange.
  - For the networking of public and private sector establishment.
  - The standardization and certification of software

- Create Incentives
  - to promote the use of information technology in all spheres of life in Nigeria.
  - to encourage private sector investment in the information technology industry.

- Advisory Services
  - In all information technology matters to the public and private sectors.
  - On ways of promoting the development of information technology in Nigeria, including appropriate legislation

- Others include:
  - Introduce appropriate regulatory policies.
  - Collaborate with any person in attaining the objectives of the Act.
  - Determine critical areas in Information Technology requiring research intervention and facilitate research in those areas.
  - Perform such other duties, which in the Agency's opinion are necessary or expedient to ensure the efficient performance of the functions of the Agency under this act.

vi. **Nigeria's Regulatory Ecosystem** consisting of NITDA, NCC, SEC, NBC, FCCPC, NAICOM, CBN, FMITI

vii. **NITDA's Strategic objectives and plan** (i.e. knowledge, policy, infrastructure, innovation, entrepreneurship & capital, and trade) align with the Present Administration's Renewed Hope Agenda which has been encapsulated as Eight (8) Priorities Areas

viii. **NITDA's efforts** that led to the establishment of a Regulatory Body called Nigerian Data Protection Commission with attendant benefits of job creation and generation of revenue worth of billions of naira

ix. **Code of Practice** for Nigeria's Digital sector detailing out:
- Objective
  - The Code sets out best practices that will make the digital ecosystem safer for Nigerians and non-Nigerians in Nigeria.

- Scope and Application
  - The Code applies to all Interactive Computer Service Platforms/ Internet Intermediaries, including entities that are their subsidiaries, affiliates, and agents in Nigeria.

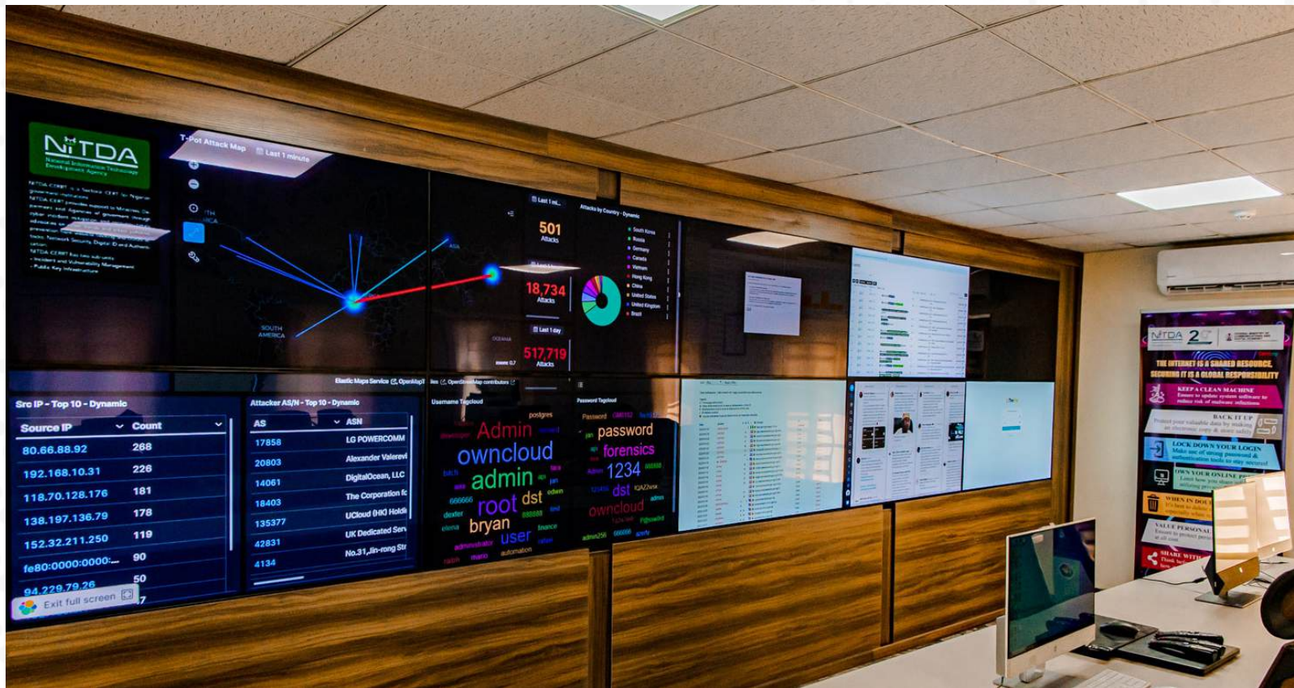
- Obligations on Service Providers:
  - Abide by the laws of Nigeria.
  - Act expeditiously upon receiving an order from a Court of Record to render assistance or disclose information.
  - Takedown unlawful content within 48 hours of receiving a notice.
  - Platforms are exempted from liability where they act based on a substantiated notice in taking down unlawful content.

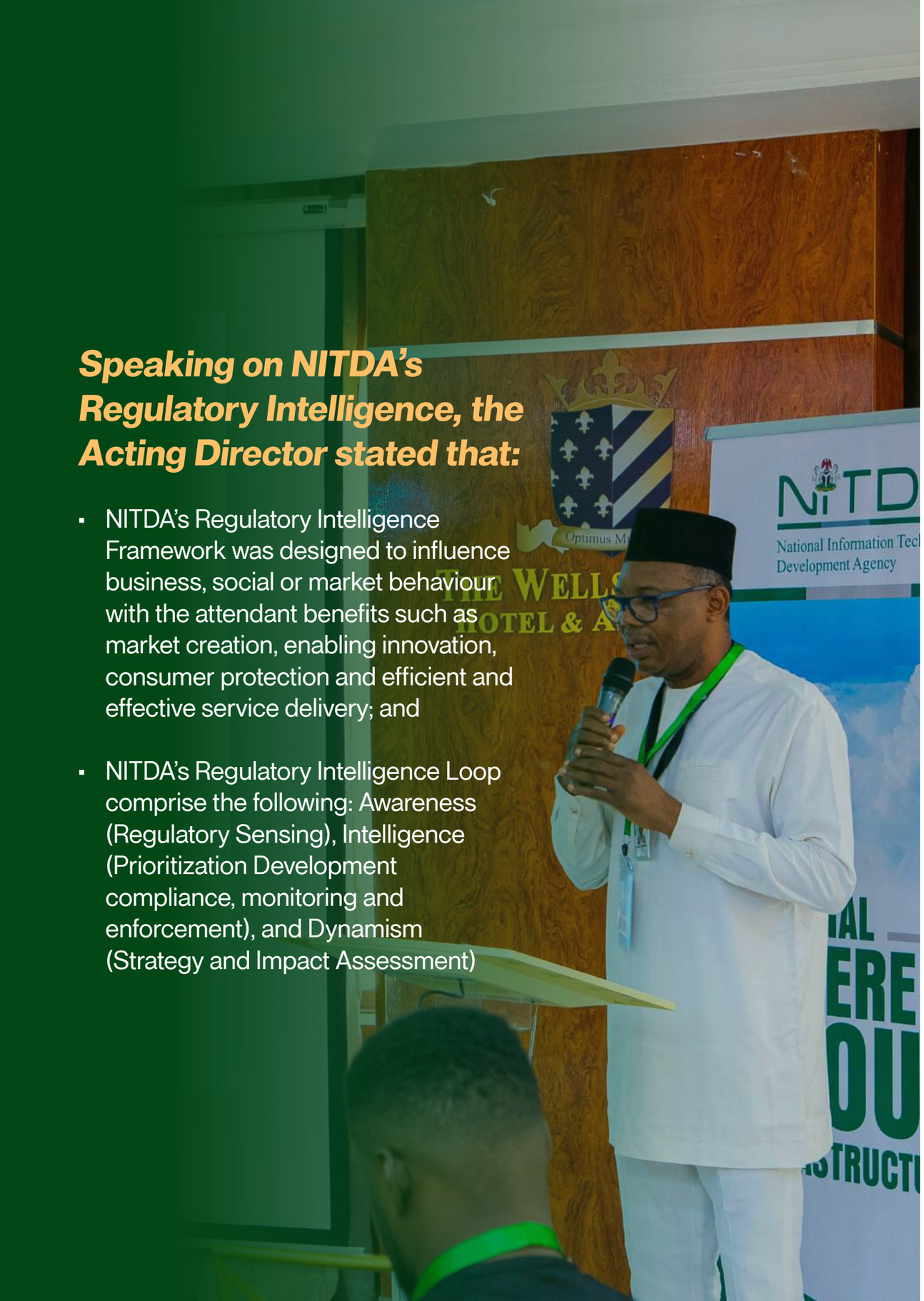
- Risk Assessment:
  - CSPs to examine content to determine potential harms or risks on receipt of takedown notices having regard to socio-cultural peculiarities, nature of content, etc.

- Content Management:
  - label removed content and state ground(s) for the removal.

- Report :
  - Annual report to NIDTA on metrics such as removed content, registered users, closed accounts, etc.

- Other regulations including:
  - Guidelines for Nigerian Content Development in Information and Communication Technology.
  - Guidelines for Clearance of Information Technology (IT) Project by Public Institutions
  - Guidelines for Registration of ICT Service Providers/Contractors for Delivery of It Services to MDAs.
  - Framework and Guidelines for the Use of Social Media Platforms in Public Institutions





Speaking on NITDA's Regulatory Intelligence, the Acting Director stated that:

- NITDA's Regulatory Intelligence Framework was designed to influence business, social or market behaviour with the attendant benefits such as market creation, enabling innovation, consumer protection and efficient and effective service delivery; and

- NITDA's Regulatory Intelligence Loop comprise the following: Awareness (Regulatory Sensing), Intelligence (Prioritization Development compliance, monitoring and enforcement), and Dynamism (Strategy and Impact Assessment)

3.3 **Breakout session**

The participants were grouped into three working groups based on their interest areas, namely: Group A - Government Incentives; Group B - Infrastructure Assessment and Development; and Group C - Human Capacity Assessment and Development.

i. **Group A (Government Incentives)** The Group's discussions led to the identification of the following opportunities, challenges and key actions/recommendations.

- **Opportunities:**
  - Availability of relevant policies and guidelines
  - Availability of large market in the country
  - There are economic opportunities for people to innovate
  - Cloud availability zone.

- **Challenges:**
  - Lack of proper strategy classification and definition
  - Lack of incentives in digital economy
  - Regulation not encouraging local innovations and business such as tax laws (i.e policy limitations)
  - Cloud policy not progressive
  - Inconsistencies between the cloud policy and local content guideline
  - Our businesses in Nigeria not being digital

- **Key Actions/Recommendations:**
  - There is need for policy/regulation that will properly state the strategy classifications & Definitions of terms such as Cloud Sovereignty;
  - There is need to build a business case for hyper scalars to invest in the country (i.e on cloud data);
  - There should be regulations/ policies that will not stifle innovators/ businesses; i.e, investment friendly laws;
  - There is need to reposition Nigeria to be regional hub in technology; continuous conversation in the sub regions, i.e. ECOWAS is pertinent;
  - Creation of Cloud availability zone should be vigorously pursued.
  - The Cloud Policy should be re-visited to provide opportunities to create a market that shows Nigeria as a strong cloud provider;
  - There is need to take risk-based approach as well as control measures that protect data such as military data, financial data and a host of others;
  - NITDA should create awareness on the Cloud Policy using various means such as road show, media, etc;
  - There is need for more data centres & internet exchanging as well as two (2) phase/ hybrid approach; and
  - There is need for standard and compliance system to be setup and strengthened

However, at the plenary session the key actions were amended as follows:

i. Development of a Data Classification Guideline, with clear definitions of sovereign data and data residency to enable the adoption of the cloud first policy;Review Cloud first Policy should take into consideration the following: Ensure alignment with local content guideline; Develop data classification; Collaborate with relevant stakeholders on policy review and drafting; Create awareness, etc;
ii. Development of strategies for Cloud Adoption in Government;
iii. Development of clear standards for Cloud deployment;
iv. Development of collaboration framework with other regulators;
v. Support Government Policies that will create a fair competitive business environment;
vi. Development of policies that will catalyze digitalization's of MSMEs and cloud adoption;
vii. Development of strategies for more effective policy communication and engagements;
viii. NITDA should collaborate with sister Agencies on review of Labour laws, tax and incentives (pioneer status for investment in the Cloud space),

particularly with regards to providing a one stop shop on investment incentives;

ix. NITDA should constitute a working committee drawn from both the public and private sectors to fine-tune/ breakdown/finalize/work out the details of the implementation of the key actions areas of the roadmap of hyperscaler investment opportunities in the country;

x. Development of progressive policies on adopting digital technologies to position Nigeria as a digital leader and regional hub in Africa.

ii. **Group B (Infrastructure Assessment and Development)** Group B had an engaging and a robust discussion that elicited the identification of the following:Availability of relevant policies and guidelines

- **Opportunities:**
  - Rapid digitization of processes in industries, health, transport.
  - Nigeria has the viable market for cloud services.
  - Accessibility to big tech and innovation.
  - IT ecosystem expansion.
  - Smarter government services.
  - Position Nigeria as West Africa regional hub for hyperscalers.
  - GDP Growth /FDI inflow.
  - Environmental sustainability due to clean energy sources.
  - Investment by Google and META in Submarine cables Equiano and 2 Africa respectively which landed in Nigeria with 144Tbits and 180 Tbits capacity (these investments engender movement of several hyperscalers to bring their assets into Nigeria).
  - Construction of several core data centers in Nigeria; OADC, ADC, Mainone, Digital Reality (medallion), Rack Center, etc. these create market for IPPs (Independent Power Providers), construction companies, equipment manufacturers and service providers.
  - Standardized data transfer regulation access.
  - More efficient/effective AI training models for and by Nigerians.
  - Significant revenue for government and private sector.
  - Local Data centers providers partnering with global hyperscalers to deliver services.
  - Hybrid cloud architectures/multi-cloud.
  - Running cloud services within customers & government data centres (full services).
  - Local Data Center providers partnering with glogbal hyperscalers to deliver services.
  - Government & AI solutions in partnership with global players in the country.
  - Expanded markets- collaboration with already established hyperscalers.
  - Local cloud services providers could be tailored to meet national needs and regulatory requirements including language, security, protocols, and compliance standards.
  - Community clouds for financial services, small businesses in agriculture and education.
  - GPU as a service offering to support AI deployment and adoption in Nigeria.
  - Demand exists for service uptake due to digitization of the economy; this will lead to inflow of FDI and employment creation.
  - Enforcement of data localization resulting to huge revenue generation for data centre operators and cloud service providers in the country.
  - Social media infrastructure residence in Nigeria.
  - All public cloud /primary DC or Designated Availability Zone must be resident in Nigeria.
  - Extensive growth of ecosystem and adjacent industries.

- **Challenges:**
  - Policy inconsistencies.
  - Instability of the exchange rate.
  - lack of stable power.
  - multiple taxations.
  - high capital investment requirements.
  - shortage of skilled power.
  - cybersecurity and data privacy concerns.
  - adoption and trust barriers.
  - data migration and legacy system challenges.
  - lack of incentives to attract investments in digital infrastructure.
  - Insecurity.
  - Low usage of cloud services due to the state of Nigeria's Digital Economy.
  - Frequent transmission link failure due to fibre cut.
  - Government hosting most of its workloads offshore.
  - High cost of operating & maintaining alternative power supply,
  - Bureaucracy cumbersome.
  - Regulatory uncertainties.
  - Lack of alignment with hyperscalers sustainability strategy

- **Key Actions/Recommendations:**
  - Review of existing policies to address local and regional cloud market, empowerment of local cloud providers, among others;
  - Strengthen laws to ensure data sovereignty, provide incentives, and ensure the protection of public hyperscalers that have their data centres already in Nigeria;
  - Continuous engagement with cloud providers to engender sustainable national economic growth and development;
  - Strong collaboration between existing local data centre providers and Hyperscalers, particularly those without infrastructure in Nigeria;
  - Provision of adequate security measures to protect digital infrastructure in the country;
  - The government should play a leading role in the deployment of technology to solve societal problems, including traffic control, record digitization, monitoring, etc, in a bid to grow the demand for cloud services; and
  - That Nigerian leaders should deploy diplomacy in engaging world leaders to drive local investments.

However, at the plenary session the key actions were amended as follows:

i. Strengthen laws to ensure data sovereignty;

ii. Explore partnership opportunities for collaboration between existing local data Centre providers and Cloud Service Providers (CSPs), particularly that those do not have their infrastructure in Nigeria;

iii. Interface with relevant agencies for the provision of adequate security measures to protect digital infrastructure in the country;

iv. The government should play a leading role in the deployment of technology to solve societal problems, including traffic control, record digitization, monitoring, etc., in a bid to grow the demand for cloud services;

v. Nigerian leaders through key stakeholders with relevant experience in diplomacy should engage in roundtable discussions to drive local investments; and

vi. NITDA should collaborate with NCC and other relevant stakeholders unlock potential of under-deserved states (e,g Jigawa, Katsina, Borno, etc) sharing border with land gridlock neighbouring countries like Niger. Chad, etc for strategic cloud market.

iii. **Group C (Human Capacity Assessment and Development)** The Group had exhaustive deliberations during which the following opportunities, challenges, and key actions/recommendations emerged:

- **Opportunities:**
  - High demand for cloud skills
  - Creation of awareness
  - FDI opportunities
  - Opportunities to improve global digital literacy ranking
  - Re-Skilling of IT Players in Emerging technologies such as Cloud Computing and AI
  - Existence of a National Cloud Computing Skills Framework
  - International opportunities for outsourcing cloud skills
  - Support for SMEs cloud computing innovation and entrepreneurship
  - Establishment of an ecosystem for Cloud Computing and AI
  - Opportunities for submarine connection and capacity

- **Challenges:**
  - Policy inconsistencies
  - Skill gap and workforce readiness
  - Limited awareness of the potential of cloud computing
  - Inadequate International Collaboration/Partnership
  - No database for government recognized / approved certification in cloud computing and AI
  - Inadequate utilization of platforms of Hyperscalers which serve as knowledge hub for capacity development
  - Resistance to adoption of Cloud computing due to perceived complexities
  - Lack of National Cloud Computing Skills Framework
  - Inadequate indigenous support / solution providers centres for Hyperscalers
  - Limited awareness of the potential of cloud computing among Nigerian businesses, especially small and medium-sized enterprises (SMEs)
  - Non-existence of an advisory board or council specific to Cloud Computing and AI.

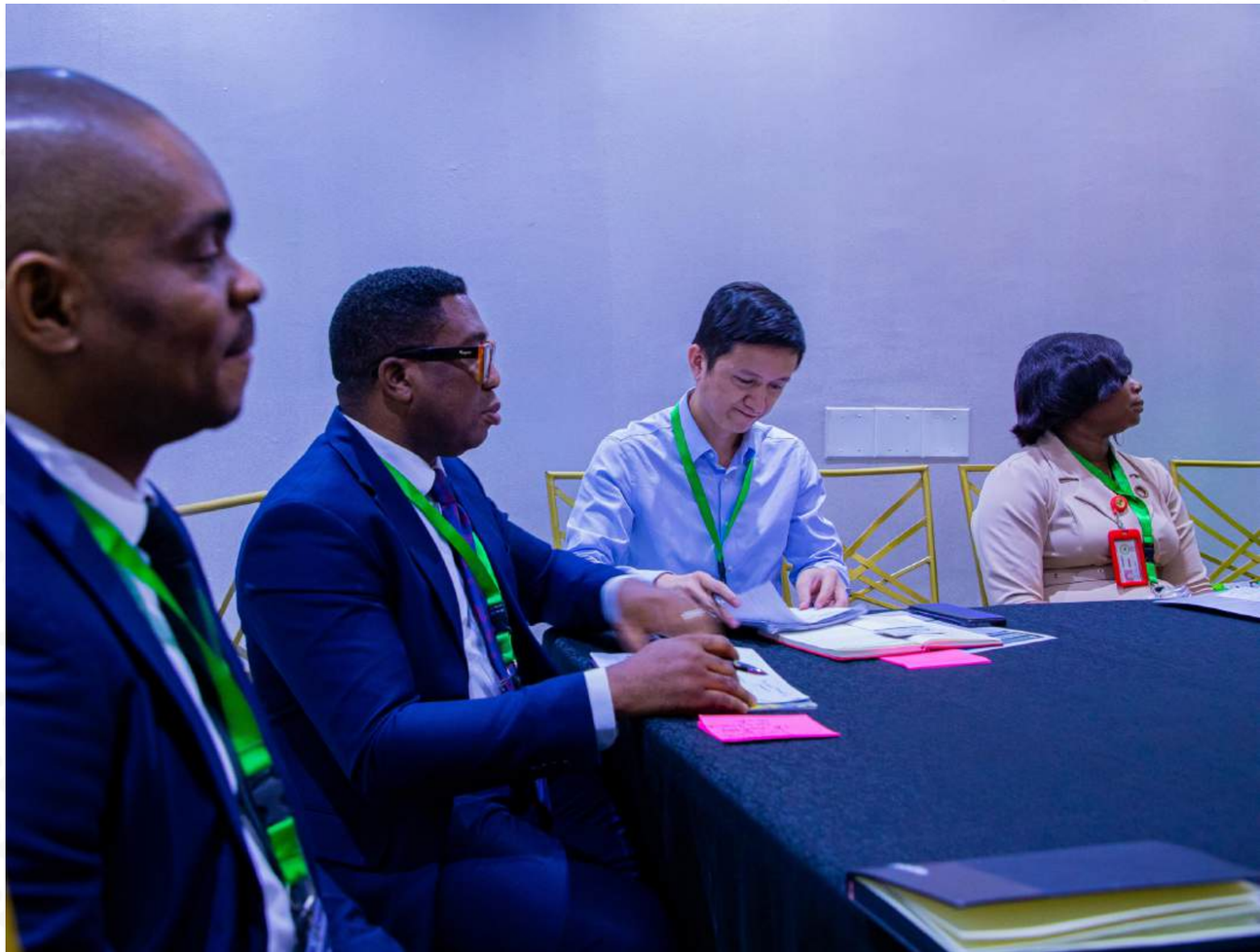
- **Key Actions/Recommendations:**
  - NITDA should constitute a working committee drawn from both the public and private sectors to fine-tune/breakdown/finalize/work out the details of the implementation of the key actions areas of the roadmap of hyperscaler investment opportunities in the country
  - Partnership with Educational Policy Bodies to incorporate Knowledge base of Cloud Computing and AI into Curriculum;
  - Certification from global cloud providers as criteria for graduation from tertiary institutions offering Cloud computing as courses;
  - Hyper Scalers should be encouraged to conduct practical trainings internship programmes on cloud computing and AI as part of their respective Corporate Social Responsibility (CRS);
  - Stakeholders should carry out national awareness campaigns about the benefits of cloud computing;
  - Organization of yearly cloud and AI conference should be strongly pursued;
  - Capacity building for players including government agencies, SMEs, Academia and security outfits;
  - Development of a National Cloud Computing Skills Framework;
  - Establishment of Stakeholders Policy Advisory Board or Council with membership from government, Industry and Academia including Hyperscalers and Security Agencies;
  - Encourage the establishment of support centres certified by hyperscalers.

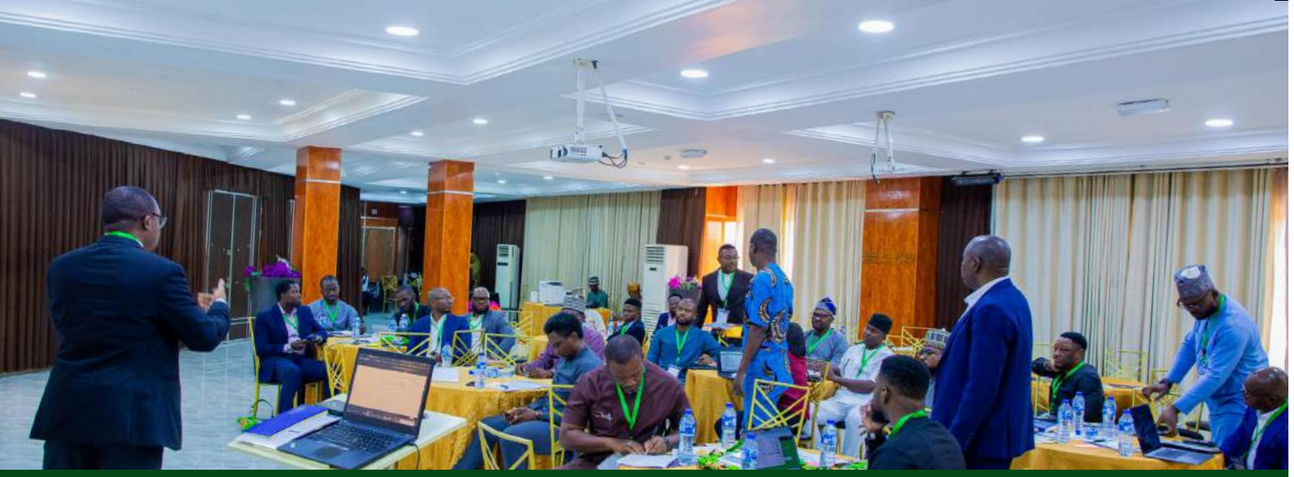
However, at the plenary session the key actions were amended as follows:

i. Partnership with Educational Policy Bodies to incorporate Knowledge base of Cloud Computing and AI into Curriculum;
ii. Promotion of certification from global cloud providers as criteria for graduation from tertiary institutions offering Cloud computing as courses;
iii. Hyper Scalers should be encouraged to conduct practical trainings internship programmes on cloud computing and AI as part of their respective Corporate Social Responsibility (CRS);
iv. Stakeholders should carry out continuous national awareness campaigns about the benefits of cloud computing;
v. Organization of yearly cloud and AI conference should be strongly encouraged.
vi. Capacity building for players including government agencies, SMEs, Academia and security outfits;
vii. Development of a National Cloud Computing Skills Framework; and
viii. Establishment of Stakeholders Policy Advisory Board or Council with membership from government, Industry and Academia including Hyperscalers and Security Agencies.

3.4 Development of a Roadmap Towards Hyperscaler Investment Opportunities in Nigeria

It is pertinent to note that all key actions arising from the discussions of the various Groups (i.e. Groups A, B & C) were articulated towards the development of a Roadmap for hyperscaler investment opportunities in the country, containing detailed activities with corresponding timelines of implementation. The draft plan of actions for the roadmap is attached as Annexure II.





4.0 **Observations/Notes**

4.1 During the deliberations, participants noted the need:

i. for partnership with Educational Policy Bodies to incorporate Knowledge base of Cloud Computing and AI into Curriculum;

ii. to promote certification from global cloud providers as criteria for graduation from tertiary institutions offering Cloud computing as courses;

iii. for hyper Scalers to be encouraged to conduct practical trainings internship programmes on cloud computing and AI as part of their respective Corporate Social Responsibility (CRS);

iv. for stakeholders to carry out national awareness campaigns about the benefits of cloud computing;

v. for organization of yearly cloud and AI conference to be strongly pursued;

vi. for capacity building for players including government agencies, SMEs, Academia and security outfits;

vii. for development of a National Cloud Computing Skills Framework;

viii. for establishment of Stakeholders Policy Advisory Board or Council with membership drawn from government, Industry and Academia including Hyperscalers and Security Agencies;

ix. for development of a Data Classification Guideline, with clear definitions of sovereign data and data residency to enable the adoption of the cloud first policy;

x. to review Cloud first Policy to ensure alignment with local content guideline; Develop data classification; Collaborate with relevant stakeholders on policy review and drafting; Create awareness, etc;

xi. for development of strategies for Cloud Adoption in Government;

xii. for development of clear standards for Cloud deployment;

xiii. for development of collaboration framework with other regulators;

xiv. to Support Government Policies that will create a fair competitive business environment;

xv. for development of policies that will catalyze digitalization's of MSMEs and cloud adoption;

xvi. for development of strategies for more effective policy communication and engagements;

xvii. for NITDA to collaborate with sister Agencies on review of Labour laws, tax and incentives (pioneer status for investment in the Cloud space), particularly with regards to providing a one stop shop on investment incentives;

xviii. for NITDA to constitute a working committee drawn from both the public and private sectors to fine-tune/breakdown/finalize/work out the details of the implementation of the key actions areas of the roadmap of hyperscaler investment opportunities in the country;

xix. for development of progressive policies on adopting digital technologies to position Nigeria as a digital leader and regional hub in Africa;

xx. to strengthen laws to ensure data sovereignty;

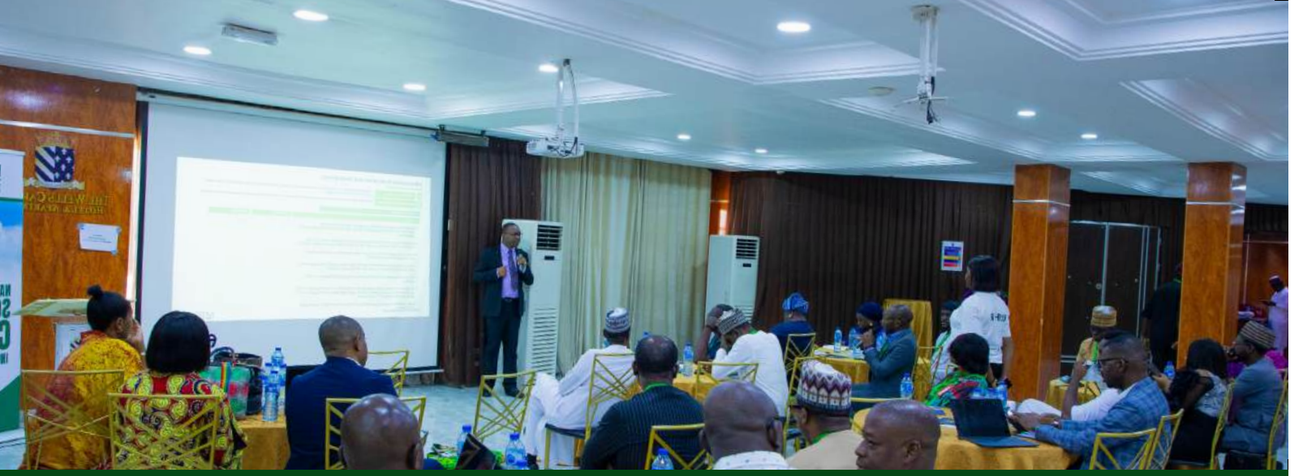
xxi. xxi. to explore partnership opportunities for collaboration between existing local data Centre providers and Cloud Service Providers (CSPs), particularly those that do not have their infrastructure in Nigeria;

xxii. xxii. to interface with relevant agencies for the provision of adequate security measures to protect digital infrastructure in the country;

xxiii. xxiii. for the government to play a leading role in the deployment of technology to solve societal problems, including traffic control, record digitization, monitoring, etc., in a bid to grow the demand for cloud services;

xxiv. for Nigerian leaders through key stakeholders with relevant experience in diplomacy to engage in roundtable discussions to drive local investments; and

xxv. for NITDA to collaborate with NCC and other relevant stakeholders to unlock potential of under-deserved states (e,g Jigawa, Katsina, Borno, etc) sharing border with land gridlock neighbouring countries like Niger. Chad, etc for strategic cloud market.



5.0 **Summary of Key Recommendations**

5.1 Below are summary of recommendations from the three worskstreams

i. NITDA should review the Cloud First Policy and local content guidelines to ensure alignment of both instruments;

ii. NITDA should develop a data classification Guideline with clear definitions of terms such as sovereign data and data residency;

iii. The Government should develop laws to ensure data sovereignty;

iv. NITDA should develop guidelines for Cloud adoption in Government;

v. NITDA should develop clear standards for Cloud deployment for cloud service providers;

vi. NITDA should encourage partnerships between hyperscalers and local data centres to provide soveriegn services;

vii. NITDA should work closely with other regulators in providing an enabling environment for cloud adoption in Nigeria;

viii. The Government should develop progressive policies that will create a fair competitive business environment;

ix. NITDA should partner with relevant Agencies to drive cloud adoption for MSMEs;

x. NITDA should collaborate with Federal Ministry of Education to incorporate Cloud Computing and AI into educational curriculum;

xi. Hyperscalers should provide knowledge transfer initiatives to grow local capabilities in cloud computing;

xii. NITDA should collaborate with stakeholders to carry out awareness campaigns on the benefits of cloud adoption;

xiii. NITDA in collaboration with stakeholders should organise yearly conference on cloud and AI;

xiv. NITDA and other relevant stakeholders should conduct continuous capacity building programmes on cloud computing;

xv. Establishment of Stakeholders Policy Advisory Board or Council on cloud sovereignty with membership drawn from government, Industry and Academia including Hyperscalers and Security Agencies;

xvi. NITDA in collaboration with stakeholders should develop strategies for more effective policy communication and engagements;

xvii. NITDA should collaborate with relevant stakeholders to review existing Labour laws

xviii. NITDA should collaborate with relevant stakeholders to review tax and incentives (pioneer status for investment in the Cloud space), particularly with regards to providing a one stop shop on investment incentives;

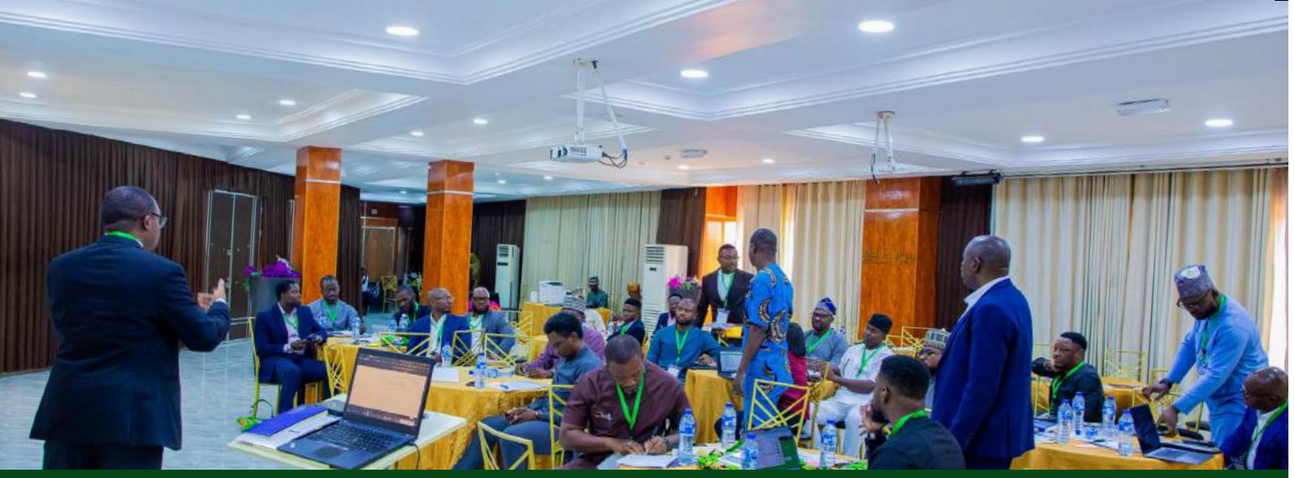
xix. NITDA should constitute a working committee drawn from both the public and private sectors to develop and fine-tune/ work out the details of the implementation of the key action areas of these recommendations;

xx. NITDA in conjunction with other stakeholders should develop progressive policies that will position Nigeria as a digital leader and regional hub in Africa;

xxi. The Government should provide interface with relevant agencies for the provision of adequate security measures to protect digital infrastructure in the country;

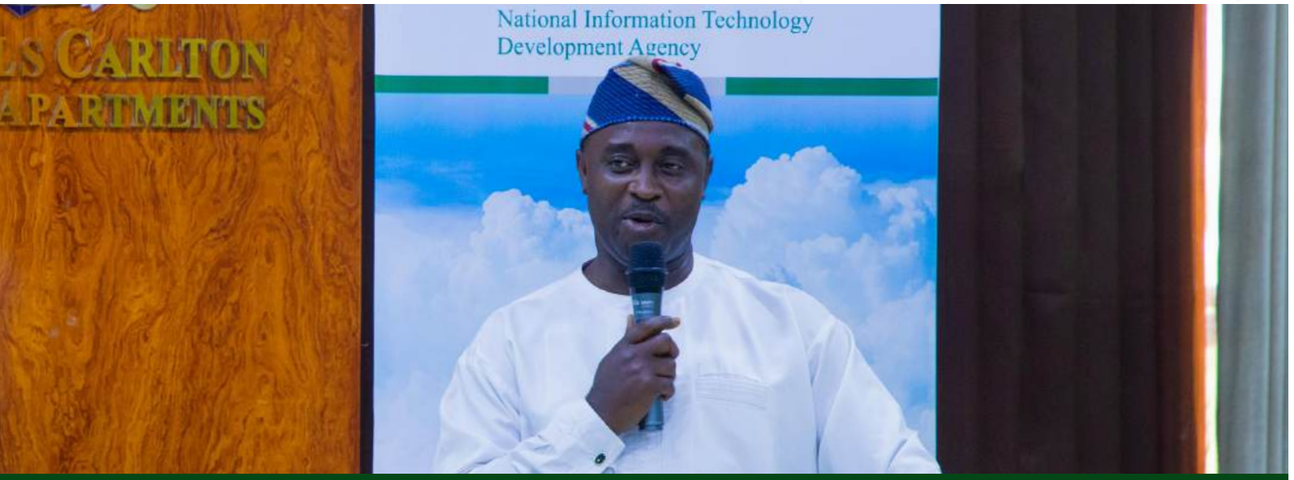
xxii. Nigerian leaders through key stakeholders with relevant experience in diplomacy should engage in roundtable discussions to drive local investments; and

xxiii. NITDA should collaborate with NCC and other relevant stakeholders to unlock potentials of under-served areas sharing border with land gridlock neighbouring countries for strategic cloud market.



6.0 **Adoption Of The Recommendations**

Participants unanimously adopted the recommendations of the workshop for implementation over periods ranging from short term, medium term to long term.



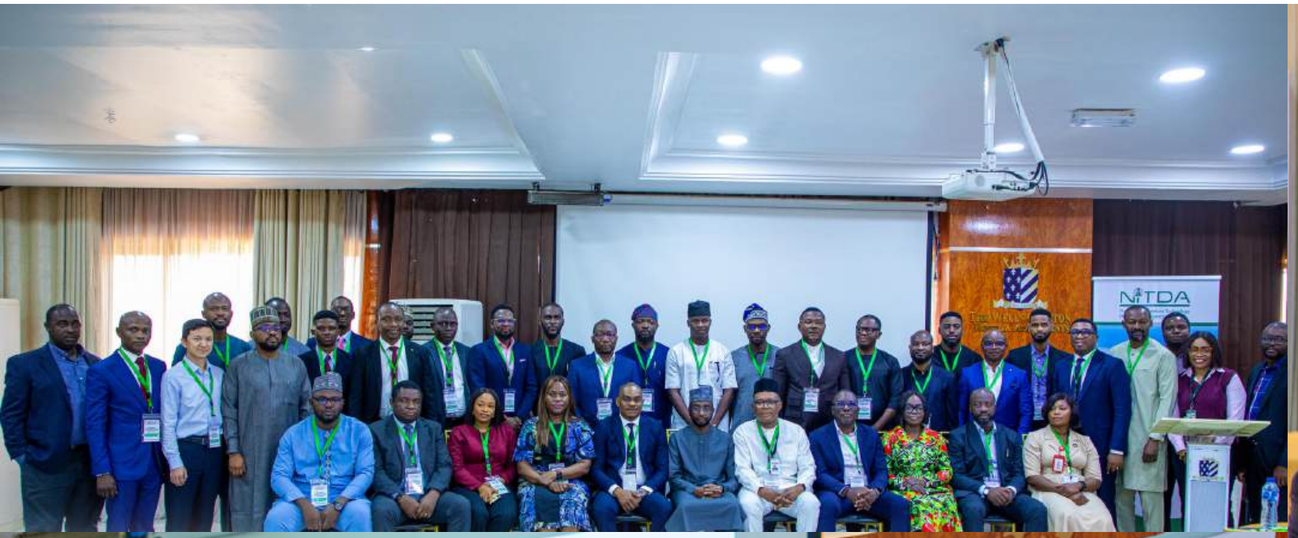
7.0 **Vote Of Thanks**

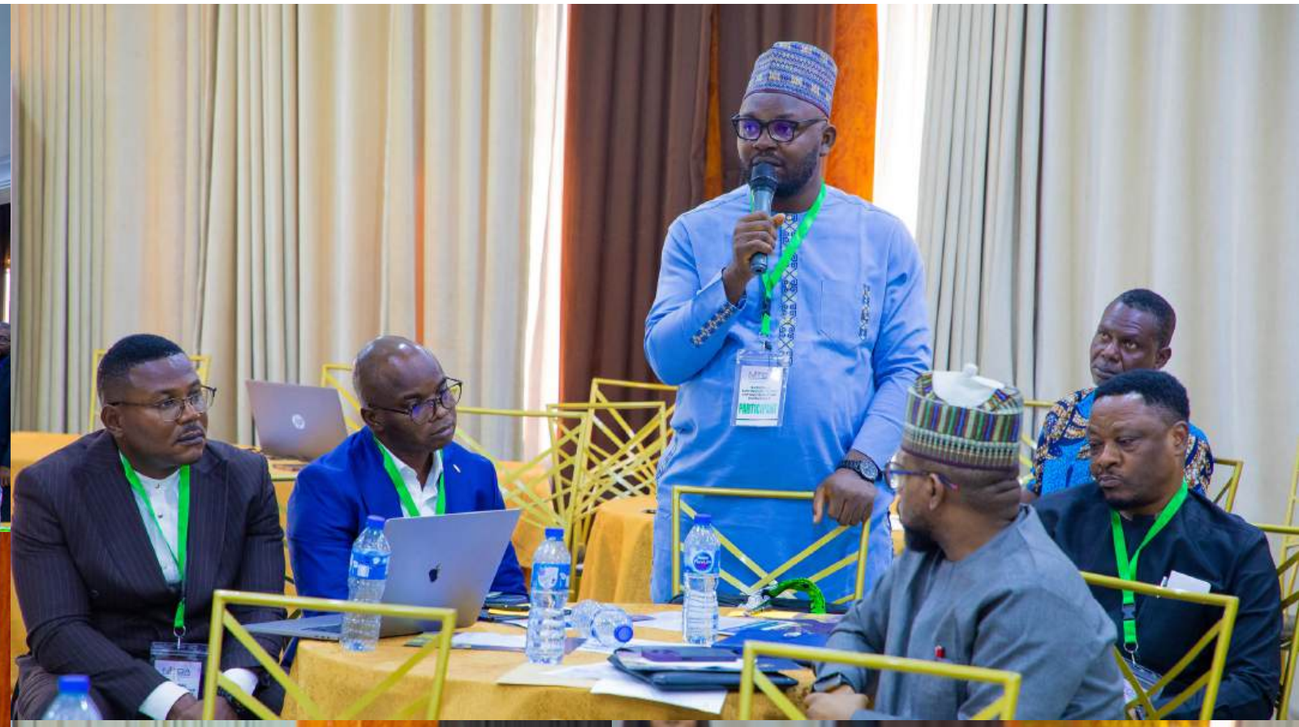
By the Deputy Director, IT Infrastructure Solutions, Mr. Preye Itonyo
Mr. Itonyo thanked the participants for their invaluable contributions which according to him will undoubtedly re-position Nigeria's digital economy sector for economic diversification and prosperity. He appreciated the Honourable Minister and Permanent Secretary, Federal Ministry of Innovation, Communication and Digital Economy as well as DG-NITDA for the purposeful leadership and needed support provided which led to the success of the programme. He also commended the tireless efforts of the entire NITDA staff, that in no small way contributed to the huge success of the programme. He expressed hope that NITDA would continue further engagement with relevant stakeholders for effective implementation of the contents explicitly stated in the recommendations. He wished the distinguished participants safe journey back to their respective destinations.

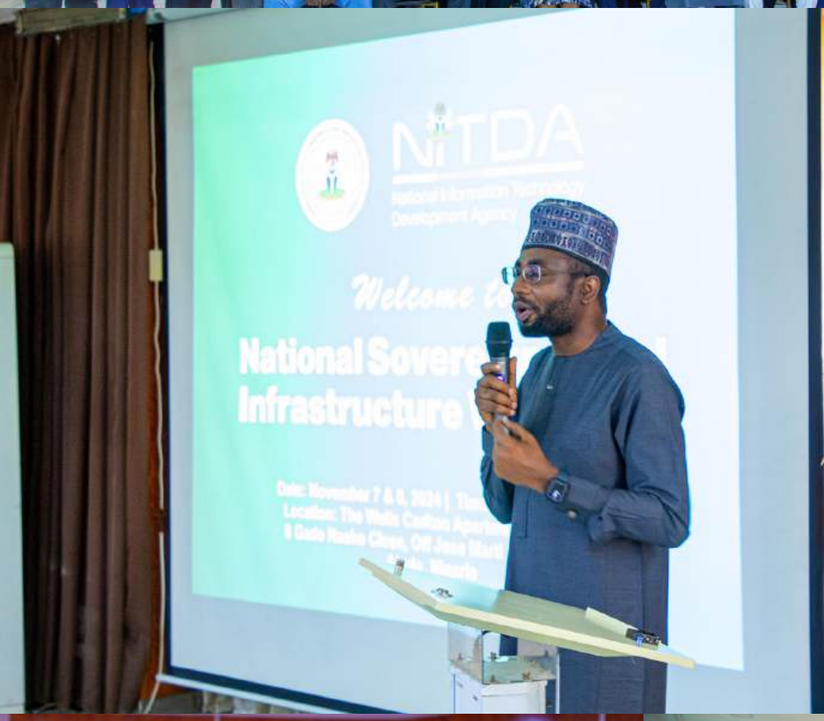
8.0 **Annexture**

1. Draft Roadmap Action Plan with opportunities, challenges and actionable recommendations for hyperscaler investment opportunities in Nigeria

2. Participants Attendance



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Welcome
National Sovereign
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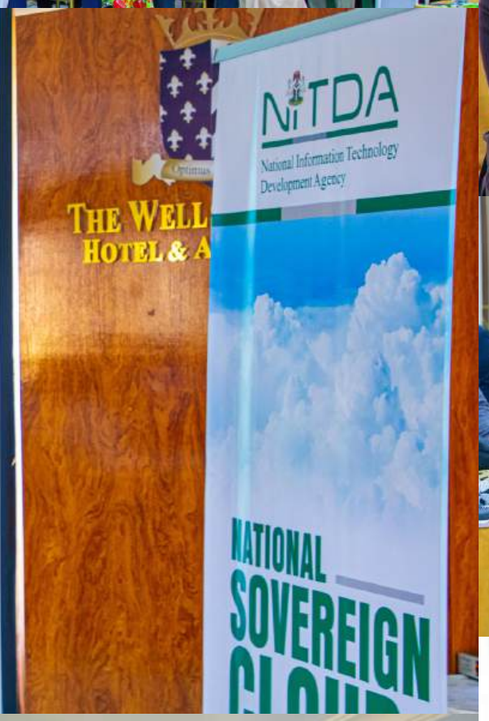
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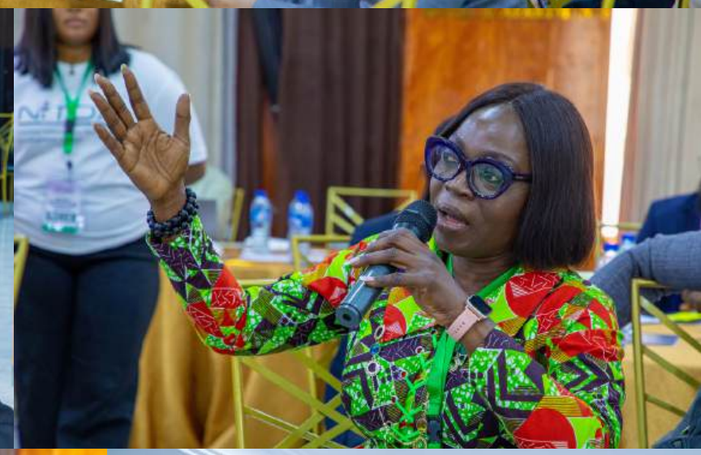

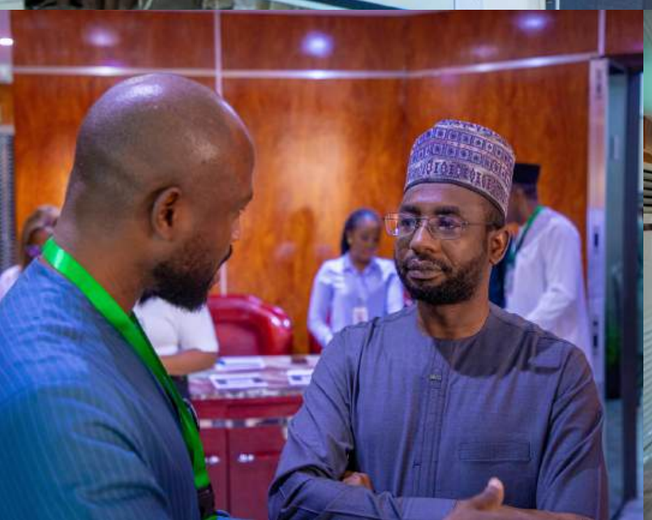

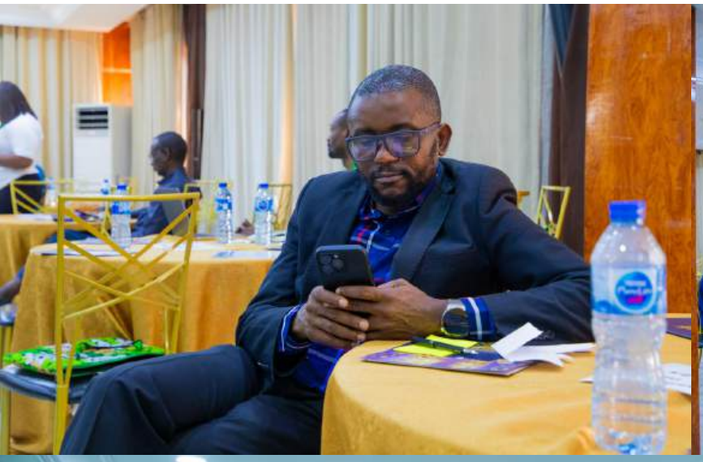

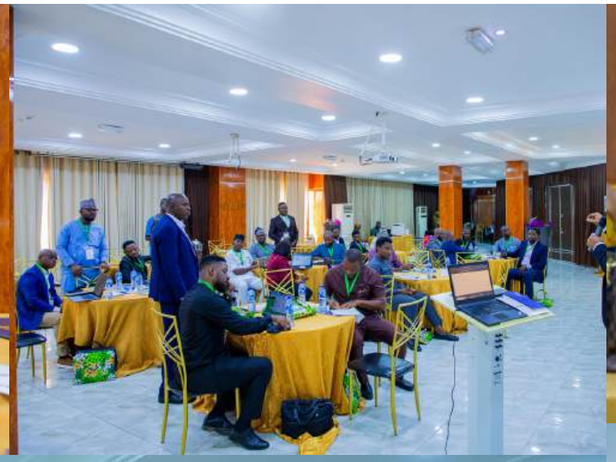

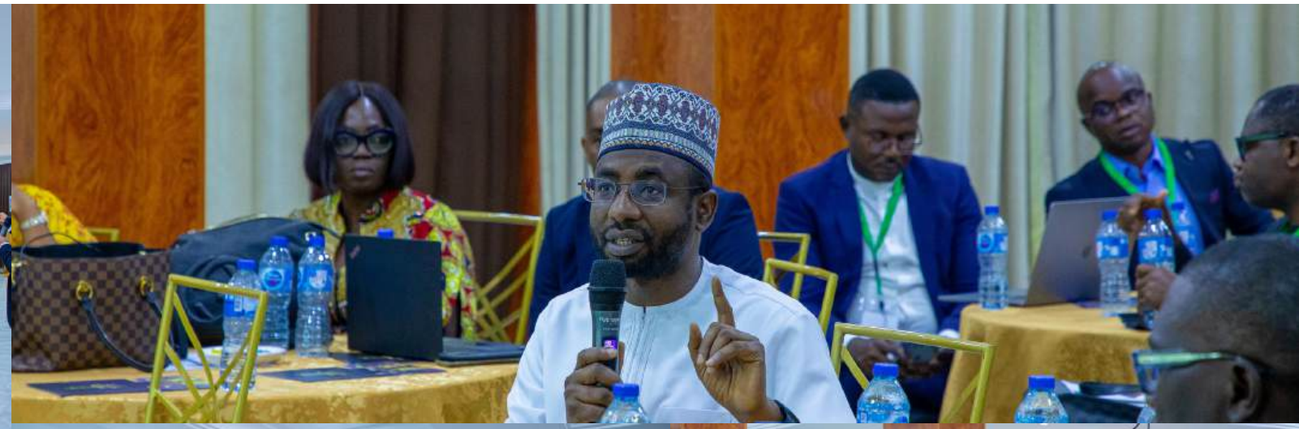

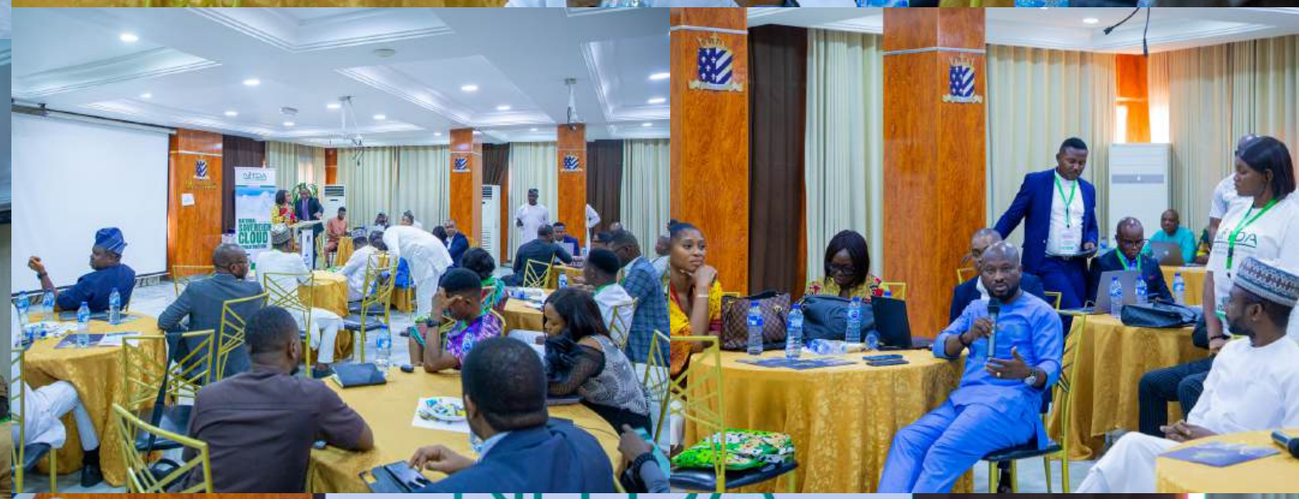


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