ITU Regional Development Forum for Africa (RDF-AFR)

'Digital transformation for a sustainable and equitable digital future: Accelerating the implementation of the SDGs in Africa"

organized by the International Telecommunication Union in collaboration with the Ministry of Innovation and Technology, Ethiopia

3-5 October 2023
Addis Ababa, Ethiopia

Please note that submitted information will be presented during the RDF-AFR P2C Roundtables and it will also be reflected on the pledging platform of the Partner2Connect Digital Coalition.

CONTRIBUTION FORM

ORGANIZATION: Digital Bridge Institute, Nigeria

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TITLE: Capacity development in telecommunication infrastructure and emerging technologies

DESCRIPTION OF ACTION:

(A) How capacity development in telecommunication infrastructure and emerging technologies can have a significant impact on Africa.

Capacity development in telecommunication infrastructure and emerging technologies is a key enabler of Africa's socio-economic development and technological advancement. By investing in training and skill development, African nations can harness the transformative power of technology to address pressing challenges and unlock new opportunities for growth and prosperity.

Capacity development in telecommunication infrastructure and emerging technologies can have a profound and positive impact on Africa in various ways. Here are some of the key ways in which such initiatives can make a difference:

1. Enhanced Digital Connectivity: Capacity development programs can train a skilled workforce capable of designing, building, and maintaining robust telecommunication infrastructure. This leads to improved internet access, better network reliability, and increased connectivity across the continent. Enhanced connectivity can boost economic growth, bridge the digital divide, and empower individuals and communities.

2. Job Creation: Training programs can produce a pool of skilled professionals who can work in various sectors related to telecommunications and emerging technologies. This, in turn, can create jobs, reduce unemployment, and stimulate economic development.

3. Innovation and Entrepreneurship: Capacity development can foster a culture of innovation and entrepreneurship. Africans trained in emerging technologies are better equipped to develop locally relevant solutions, launch startups, and contribute to technological advancements. This can result in a more vibrant tech ecosystem and attract investment.

4. Improved Education and Research: Trained professionals can strengthen educational institutions and research centers in Africa. This can lead to higher-quality education, increased research output, and collaboration with international institutions, ultimately benefiting society through advancements in knowledge and technology.

5. Digital Inclusion: Capacity development efforts can focus on reaching underserved and remote areas, ensuring that the benefits of emerging technologies are not limited to urban centers. This can include training community leaders, educators, and local entrepreneurs to leverage technology for development.

6. Healthcare and Telemedicine: Capacity building can enable healthcare professionals to leverage telemedicine and health information systems, improving healthcare delivery in remote and underserved regions. This can lead to better health outcomes and reduced mortality rates.

7. Agricultural Development: Trained individuals can assist farmers in adopting technology-driven practices and precision agriculture, leading to increased crop yields, reduced resource wastage, and improved food security.
8. Smart Infrastructure: Capacity development can empower cities and municipalities to implement smart city initiatives, making urban areas more efficient, sustainable, and livable. This can result in improved transportation systems, energy efficiency, and public services.
9. Environmental Conservation: Emerging technologies such as remote sensing, data analytics, and IoT can be used for environmental monitoring and conservation efforts. Trained professionals can play a crucial role in protecting natural resources and addressing climate change challenges.
10. Cybersecurity: As digital infrastructure expands, the need for cybersecurity expertise grows. Capacity development in this area can help protect critical infrastructure, sensitive data, and personal information, enhancing the overall security of digital ecosystems.
11. Global Competitiveness: A workforce skilled in telecommunication infrastructure and emerging technologies can position African countries competitively in the global economy. It can attract foreign investment, promote international collaborations, and enable African companies to offer innovative products and services worldwide.

(B) Challenges of capacity development in telecommunication infrastructure and emerging technologies in Africa

While capacity development in telecommunication infrastructure and emerging technologies in Africa holds immense potential, it also faces several significant challenges. These challenges can hinder progress and need to be addressed to ensure effective capacity building in this critical sector. To address these challenges, African governments, international organizations, and private sector partners can take proactive measures. This includes investing in education infrastructure, fostering digital literacy, promoting research and innovation, enacting supportive policies, and ensuring long-term funding commitments for capacity development initiatives. Collaboration among stakeholders is key to overcoming these obstacles and realizing the potential benefits of telecommunication infrastructure and emerging technologies in Africa.
The following are some of the identified challenges:
1. Lack of Access to Quality Education: Many African countries face challenges in providing quality education, particularly in rural and underserved areas. Limited access to educational resources, including schools, qualified teachers, and relevant curricula, can impede the development of a skilled workforce.
2. Digital Divide: Disparities in internet access and digital literacy persist across the continent. Capacity development efforts must consider the digital divide, which can exclude marginalized communities from participating in training programs and benefiting from emerging technologies.
3. Infrastructure Gaps: Inadequate physical infrastructure, such as reliable electricity and internet connectivity, can hinder effective training and education delivery. Additionally, outdated or poorly maintained telecommunication infrastructure can limit the adoption of emerging technologies.
4. Financial Constraints: Investment in capacity development programs requires financial resources. African governments and institutions may struggle to allocate sufficient funding for training initiatives, which can slow down progress.
5. Shortage of Skilled Instructors: A shortage of qualified instructors and trainers in emerging technology fields can limit the scalability and effectiveness of capacity development programs. Recruiting and retaining skilled educators is a persistent challenge.
6. Brain Drain: Skilled individuals in the telecommunication and technology sectors may seek better opportunities abroad due to higher salaries and more advanced infrastructure in other regions. This brain drain can deplete the local talent pool.
7. Language and Cultural Barriers: Language diversity in Africa can pose challenges for capacity development programs, particularly when instructional materials and resources are not available in local languages. Additionally, cultural factors can affect the receptiveness of certain communities to technology-related training.
8. Policy and Regulatory Challenges: Inconsistent or outdated policies and regulations related to telecommunications and technology can create uncertainty and hinder investment. Harmonized and conducive regulatory environments are essential for attracting investment and fostering innovation.

9. Inadequate Research and Development: Limited investment in research and development can hinder innovation in emerging technologies. African countries may struggle to compete with global tech hubs in terms of research output and innovation.
10. Security Concerns: Cybersecurity threats and vulnerabilities can undermine the trust and stability of telecommunication infrastructure and emerging technologies. Adequate training in cybersecurity is crucial to mitigate these risks.
11. Sustainability: The sustainability of capacity development programs is often overlooked. Programs may lack long-term planning and funding commitments, making them vulnerable to discontinuation or inefficiency.
12. Lack of Coordination: Fragmented efforts among government agencies, educational institutions, and private sector stakeholders can lead to duplication of efforts and inefficient use of resources. Effective coordination and collaboration are essential for successful capacity development.

(C) ITU Academy Training Centres (ATCs) and Courses

In order to address some issues of capacity development in telecommunication and ICT more especially in the developing Countries, ITU in 2023, partnered with some recognized ICT training and research organization across the globe to establish ITU Academy Training Centres (ATCs) in different regions of the world. ITU ATCs are internationally recognized institutions offering high-quality trainings to intermediate and senior personnel, with a focus on the needs of developing countries. ATCs are the core capacity development partners of the ITU, delivering high-quality courses addressing the most important training topics identified by ITU's membership, including on topics such as policy and regulation, network infrastructure, spectrum management, cybersecurity, digital inclusion, and digital services. The courses are conducted online through ITU's e-learning platform, the ITU Academy. Hybrid and face-toface courses are also offered.

The Digital Bridge Institute (DBI) is one of the ITU ATCs located in sub-Saharan Africa, Nigeria. The priority or thematic area of training that DBI covers in the Telecommunications and ICT space is Telecommunication infrastructure and Emerging technologies. Registration for the courses is available online through the ITU Academy platform. The list of courses that DBI rolled out in the year 2023 under ITU ATC are as listed below:

S/NO	DBI-ITU ATC COURSES 2023	DELIVERY MODE	DATES
1.	Pathways to 5G: Evolution of Mobile Networks from 3G to 5G Non-Standalone	**Online**	6-17 November, 2023
2.	5G Systems: Technologies, Implementation & Application	**Online**	6-17 November, 2023
3.	Fiber Optics Infrastructure & Project Management	**Online**	16-27 October, 2023
4.	Fiber Optics Planning, Design & Development	**Blended**	6 -17 November, 2023
5.	Fiber Optics Infrastructure & Project Management	**Blended**	20 November -1 December, 2023

(D) Background of Digital Bridge Institute (DBI)
The Digital Bridge Institute (DBI) is a telecommunications and information technology training institute located in Nigeria. It was established to provide specialized training and capacity building in the field of information and communication technology (ICT). DBI is one of the ITU's Academy Training Centres in Africa with priority area in Telecommunication infrastructure and emerging technologies.
Here are some key aspects of the Digital Bridge Institute:
1. DBI Address: No. 8, P.O.W. Mafemi Crescent, Off Solomon Lar Way, Utako District, Abuja, NIGERIA; **Website:** www.dbi.edu.ng ; Emails: okeyugwoke@dbi.edu.ng , info@dbi.edu.ng
2. Mission and Purpose: The primary mission of DBI is to bridge the digital divide by equipping individuals with the necessary skills and knowledge to excel in the rapidly evolving field of ICT. It aims to foster the growth of the ICT industry in Nigeria and beyond by providing high-quality training and education.

3. Training Programs: DBI offers a wide range of training programs and courses in various areas of ICT. These programs are designed to meet the needs of different segments of the population, including students, professionals, and organizations. The institute covers topics such as telecommunications, networking, cybersecurity, software development, and more.
4. Affiliation: DBI is affiliated with the Nigerian Communications Commission (NCC), the regulatory authority for the telecommunications industry in Nigeria. This affiliation helps ensure that the institute's programs are aligned with industry standards and regulatory requirements.
5. Campuses: DBI has multiple campuses across Nigeria, allowing it to reach a broad and diverse audience. These campuses are equipped with state-of-the-art facilities and resources to support hands-on learning and research in ICT.
6. Research and Innovation: In addition to its training programs, DBI is involved in research and innovation activities related to ICT. The institute may collaborate with industry partners and other educational institutions to promote innovation and contribute to the growth of the ICT sector.
7. Industry Collaboration: DBI often collaborates with industry stakeholders, including ICT companies, government agencies, and international organizations, to enhance the quality and relevance of its training programs. This collaboration helps ensure that graduates are well-prepared for the demands of the job market.
8. Certification: Many of the courses offered by DBI lead to recognized certifications in the ICT field. These certifications can be valuable for individuals seeking employment or career advancement in the technology sector.
Overall, the Digital Bridge Institute plays a vital role in Nigeria's efforts to develop a skilled workforce in the field of ICT and to promote digital inclusion and technological advancement in the country. It serves as a hub for education, research, and collaboration in the telecommunications and information technology sectors.
COUNTRIES in FOCUS: All African Countries/Developing Countries

YEARS of IMPLEMENTATION: [Tick the relevant boxes or delete the irrelevant items]

☒ 2023

☐ 2024

☐ 2025

RELEVANT ITU REGIONAL INITIATIVE: [Tick the relevant boxes or delete the irrelevant items]

☒ AFR1: Supporting digital transformation to usher in a rapid transition to a digital economy while accelerating innovation in Africa

☒ AFR2: Implementation and expansion of broadband infrastructures, connectivity and emerging technologies

☒ AFR3: Building trust, safety and security in the use of telecommunications/ICTs and protection of personal data

☒ AFR4: Fostering emerging technologies and innovation ecosystems

Please find more information on the ITU Regional Initiatives 2023-2025, as defined by WTDC-22, here.

RELATED ITU-D PRIORITIES AS DEFINED BY THE ITU WORLD TELECOMMUNICATION DEVELOPMENT CONFERENCE 2022

☒ Affordable connectivity

☒ Digital transformation

☒ Enabling policy and regulatory environment

☐ Resource mobilization and international cooperation

☒ Inclusive and secure telecommunications/ICTs for sustainable development

Please find more information on the ITU-D Priorities, as defined by WTDC-22, here.

RELATED ITU PRIORITIES AS DEFINED BY ITU PLENIPOTENTIARY CONFERENCE 2022

☒ Spectrum use for space and terrestrial services

☐ International telecommunication numbering resources

☒ Inclusive and secure telecommunication/ICT infrastructure and services

☒ Digital applications

☐ Enabling environment

Please find more information on the ITU Priorities, as defined by PP-22, here

RELATED WSIS ACTION LINE: [Tick the relevant boxes or delete the irrelevant items]

☐ C1: The role of governments and all stakeholders in the promotion of ICTs for development

☒ C2: Information and communication infrastructure

☒ C3: Access to information and knowledge

☒ C4: Capacity building

☒ C5: Building confidence and security in the use of ICTs

☐ C6: Enabling environment

☒ C7: ICT applications

☐ C8: Cultural diversity and identity, linguistic diversity and local content

☐ C9: Media

☒ C10: Ethical dimensions the Information Society

☐ C11: International and regional cooperation

RELATED SDG:

☐ SDG 1: No Poverty

☐ SDG 2: Zero Hunger

☐ SDG 3: Good Health and Well- being

☒ SDG 4: Quality Education

☒ SDG 5: Gender Equality

☐ SDG 6: Clean Water and Sanitation

☒ SDG 10: Reduced Inequalities

☒ SDG 11: Sustainable Cities and Communities

☐ SDG 12: Responsible Consumption and Production

☐ SDG 13: Climate Action

☐ SDG 7: Affordable and Clean Energy

☒ SDG 8: Decent Work and Economic Growth

☒ SDG 9: Industry, Innovation and Infrastructure

☐ SDG 14: Life Below Water

☐ SDG 15: Life on Land

☐ SDG 16: Peace, Justice and Strong Institutions

☒ SDG 17: Partnerships for the SDGs