



Outcome report

Trends in emerging technology for connectivity

Monday, 5 July 2021, 3PM-4PM, CEST

Moderator

- H.E. Prof. Muhammadou M.O. Kah, Permanent Representative of the Republic of Gambia to the United Nations Office and other international organizations in Geneva

Speakers

- Aminata Amadou Garba, Senior Technology Coordinator, ITU Development Bureau
- Teresa Gomes, CEO, Internet Para Todos
- Teddy Woodhouse, Research Manager, A4AI,

Session summary: This session discussed the role of emerging technologies in the digital transformation of LDC, LLDCs and SIDS. Selected initiatives were presented, on emerging technology for connectivity. Panellists discussed solutions and shared experiences on using emerging technology to connect the unconnected and to implement SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), SDG11 (Sustainable Cities and Communities and SDG 17 (Partnerships for the Goals), especially in LDCs, SIDs, LLDCs. Hybrid connectivity solutions as well partnership opportunities for connecting the unconnected were discussed.

1. Main outcomes highlighting the following:

- Teddy Woodhouse presented some foundations for an Emerging Digital Economy: Affordable & Meaningful Connectivity among LDCs. He highlighted that a successful public policy that leverages emerging technology for sustainable development needs to focus on inclusive foundations for the digital economy. This means that, as we take up new technological innovations in the hardware of the internet, we similarly need to champion innovations in public policy that support these innovations. These areas span [spectrum management](#), [licensing frameworks](#), and [infrastructure sharing](#).
- Teresa Gomes, presented the case study of Internet Para Todos, a solution for rural connectivity. She focusing on the model, challenges, achievements and opportunities.
- Aminata Amadou Garba presented an overview of emerging technology for connectivity including 5G, LEO, HAPS, fiber technology, millimeter waves, etc. As various emerging technologies for connectivity are currently being developed, there is a promise of improved coverage and quality of connectivity. In some cases, the technologies have already been used to provide last-mile access to remote areas as a test of their viability. Some, like LEO satellites and fibre via overhead

medium-voltage distribution lines, free-space optical communication are newer versions or adaptations of existing technology, while others, such as HAPS, are relatively new developments. There is no one technology that is perfect for all applications. Technology choice should be based on the need of the population being served and the applications. In many cases, many technologies will be combined in a hybrid manner to provide a sustainable solution.

2. Main conclusions reached during the discussion:

- Appropriate adoption of emerging technologies, solving the last-mile challenges with access to affordable and reliable broadband connectivity, digital platforms, and services with adequate skilled and quality human resources will stimulate wider commercial opportunities, creating additional jobs across value chains, and sustaining livelihoods for millions.
- Implementing and deploying emerging technologies to resolve connectivity challenges requires smart policy regimes to build smart infrastructure driven by these emerging technologies (including skilled human capacity, agile and digitally enabled supply chains with digital transaction services, appropriate legislations and regulations, etc.).
- As these policy changes are pursued, it's important to build from an evidence-based policymaking practice that is also inclusive of inputs from external stakeholders. These two practices, together, build trust within the sector and bolster the regulator's reputation to govern effectively and fairly for the long-term benefit of the sector. It's not about changing policy for the sake of policy change: it's about what policy can enable when interests and goals are aligned across different groups to achieve sustainable development.
- When examining emerging technologies for last-mile access, it is important to look at their suitability for rural deployment, their affordability, their financial viability and sustainability. There are a variety of technologies for connectivity. The important part is to select which technology fits more the constraints and the situation.
- There is no one technology that is perfect for all applications. Technology choice should be based on the need of the population being served. In many cases, many technologies will be combined in a hybrid manner to provide a sustainable solution.

3. Panellists contributions to the outcome reports:

- *What are the opportunities and challenges of emerging technology for LDCs, LLDCs and SIDS?*
 - LDC's adopting and equipped with core competencies as **'builders/producers'**, rather than **'consumers' only**, of emerging technologies for the *creation of smart ecosystems anchored with pragmatic data governance and digital inclusion*, will largely depend on access to affordable and reliable broadband connectivity to adopt the growing trends of emerging technologies.
 - A crucial aspect to these policy innovations and emerging technology is to ensure that these strategies are assessed on how *inclusive* they are. A public policy failure would let an emerging technology be introduced but favour only those who are already connected – typically men, the wealthy, and those in urban areas. The value of technology (both in terms of hardware and of policy) should also be assessed in how well it enables connectivity that reduces the digital gender gap, the affordability barrier, and the urban-rural divide.

- *What are the most important points/aspects of the emerging technology that should be considered in order to accelerate the digital transformation in LDCs, LLDCs and SIDS?*
 - It is key that these emerging technologies unleash affordable connectivity and digital services and tools for rural communities, harness and unleash the creativity and resilience of women and youths to facilitate building the productive capacity, scalability, and the ecosystem to facilitate growth and development, SDG's attainments, resilience, sustainability, and wealth creation across LDC's.
 - A blended model of traditional operators, community networking, and public access provide the strongest basis for long-term success that creates a thriving and inclusive foundation for a digital economy to grow to scale and be a true engine for economic growth.
 - The centrality of adequate investments, capacity and competency building are key requirements for LDC's to adopt and benefit from the evolving trends of emerging technologies and connectivity. Implementing and deploying these emerging technologies to resolve connectivity challenges requires smart policy regimes to build smart infrastructure driven by these emerging technologies (including skilled human capacity, agile and digitally enabled supply chains with digital transaction services, appropriate legislations and regulations, etc.).
 - Creating and developing ecosystems enabled by emerging technologies, digitalization and innovations will require high quality learning institutions and centres of excellence distributed across national urban and rural economies with strategic competencies in disciplines of the future that will provide graduates from LDCs with their creativities, passion and entrepreneurial drives to create start-ups with frugal innovations that will strengthen core ecosystems and value chains adopting evolving trends in emerging technologies.
 - As competencies on emerging technologies are infused in curriculum and program structures, it will be crucial to incorporate data and information governance, digital inclusivity, cyber and information security, digitalization skills and competencies in AI, Machine learning, Blockchains, Robotics, Drone's technologies, autonomous machines, mechanization, coding and STEM competencies, etc. as key ingredients of augmented and disrupted curriculums and learning engagements.
 - It is urgent that LDCs go beyond implementing short-term interventions to the challenges of connectivity, digital divide, lack of depth and impactful impacts of skill-up interventions.
 - As developing countries' governments, civil society organizations, private sector, start-ups, continue to embrace and adopt emerging technologies such as AI, Machine learning, Deep learning, Robotics, Big Data/ Data Science, IoT's, Blockchains, Bitcoin and Digital Currencies, etc., it is important for developing countries to ensure it plays significant role and provide their unique context, values, culture and content as inputs to the global internet, digital platforms and services and data governance for strengthening LDCs ecosystems that are digitally enabled and embrace evolving trends in emerging technologies and frugal innovations.

- *Takeaway: please provide one key word and one sentence that most fit the session topic*
 - Granularity
 - Inclusiveness