Role of ICT Policymakers and Regulators in Capacity Building

Views from the Global Capacity Building Symposium 2016

Presented at the workshop on

"Strengthening Capacity Building in the field of Telecommunications/ICT"

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Agenda

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Introduction

- **"When** education fails to keep pace with technology, the result is inequality. Without skills to stay useful as innovations arrive, workers suffer - and if enough of them fall behind, society starts to fall apart.

- If 21st-century economies are not to create a massive underclass, **policymakers** urgently need to work out how to help all their citizens learn while they earn."

The Economist, January 2017

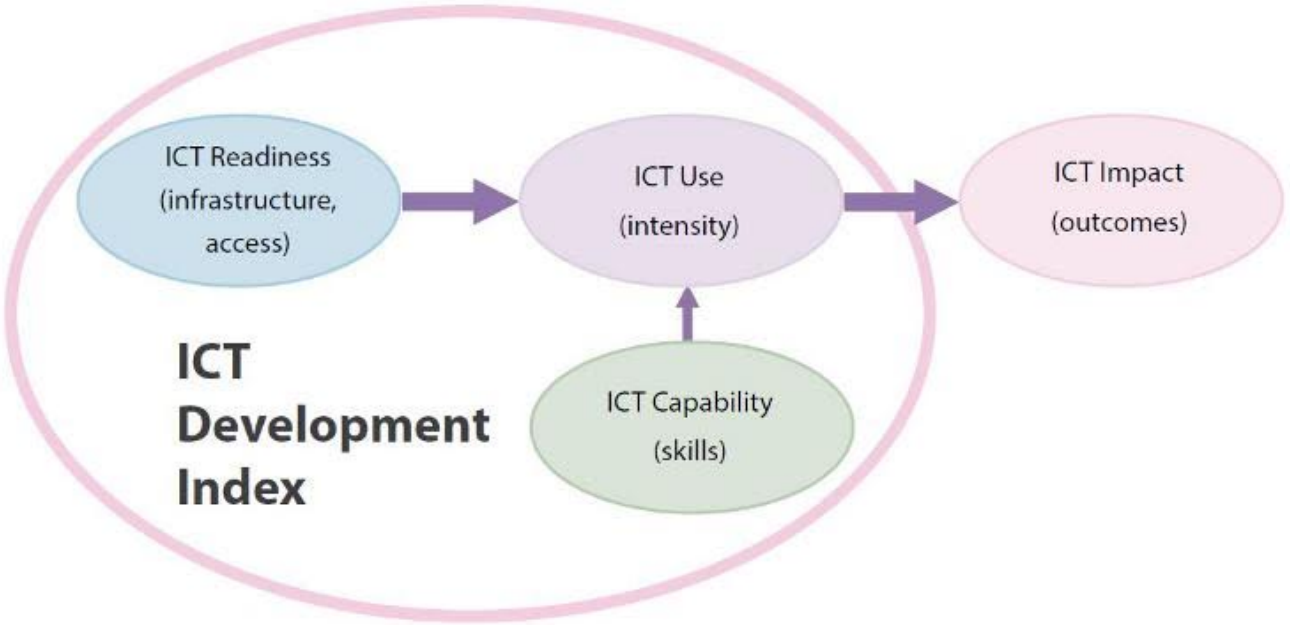
- The above statement underwrites the importance of state or state institutions to intervene in capacity building in the digital era.

The Digital Divide

- The Two central problems.
  - limited access to digital technologies (high costs, general lack of infrastructure,)
  - limited access to training in digital technologies.
- Providing state of the art infrastructure in communities most affected by the digital divide, will not alone resolve the problem of poor digital skills or lead to an immediate adoption of such facilities.
- Digital training is the vital ingredient in harnessing better use of ICT infrastructure investments made by both the public and private sectors.

A holistic approach to digital inclusion

- The ICT development process, and a country's evolution towards becoming an information society, can be depicted using the three-stage model illustrated

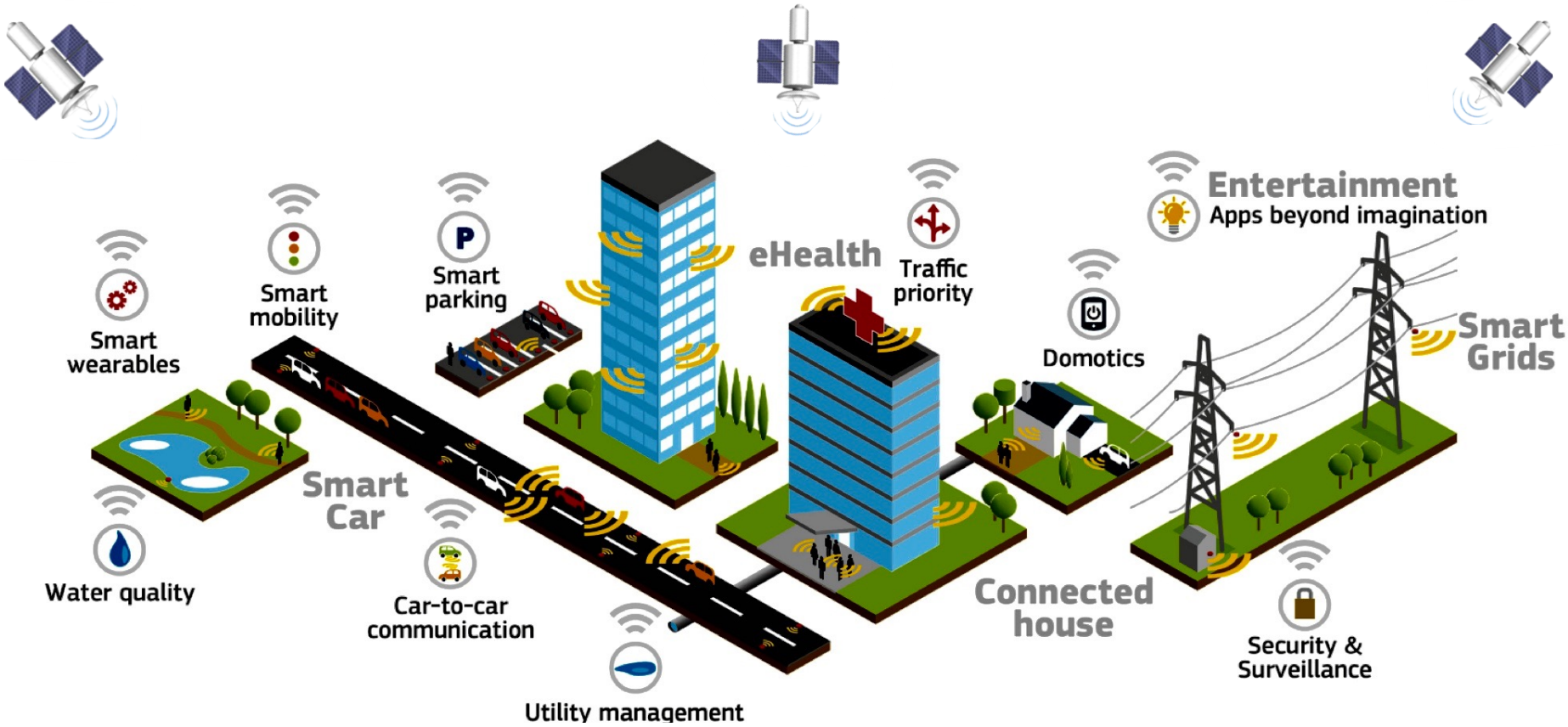


Stage 1: ICT Readiness – reflecting the level of networked infrastructure and access to ICTs
Stage 2: ICT Intensity – reflecting the level of use of ICTs in the society
Stage 3: ICT Impact – reflecting the results/outcomes of more efficient and effective ICT use

Problem Statement

- Digital exclusion leads to inequality. Digital exclusion is a regulatory challenge
- Digital skills divide: One in four adults in the OECD has no or limited experience of Computers.
- During the Industrial Revolution- huge skills challenges
- Response was **state funded schooling**
- Now Fourth Industrial Revolution (4IR)
  - Propelled by Mass Automation
  - Artificial Intelligence (AI)
  - Hyperconnectivity
  - Internet of Things (IoT), driverless cars, robotics and nanotechnology
- Again, huge skills challenges, changing at a very fast pace
- A New revolution is needed in Education and Training

The Digital economy: Internet of Everything



DATA DATA DATA DATA DATA DATA DATA DATA

Regulation and the IoT

1 *The Internet of Things and Data*

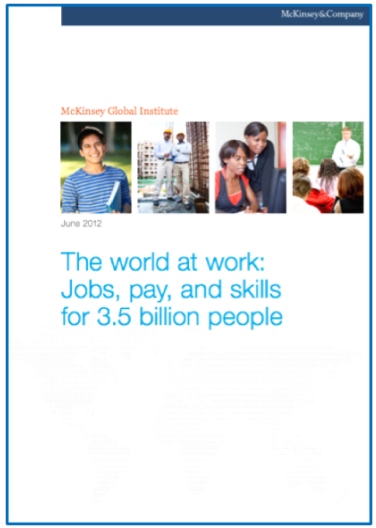
	Individual	Community	Society
Level			
IoT	Smartphones Wearables	Connected cars Health devices Smart homes	Smart Cities Smart Grids
Examples	GPS, Fitbits Visa PayWave Mastercard Paypass Employee passes	Intelligent Transport Systems Event Data Recorders (EDRs) Blood pressure monitors Remote burglar/heating systems	Smart metering Smart water meters Traffic monitoring
Data	Mobile money Fitness data GPS location-based data	Speed, distance, airbag, crash locations/alerts; Heart rate, blood pressure, Diet; remote heating data	Electricity/water consumption & billing Traffic flow data
Intended Audience	Individual person Immediate friends/family Banks; employers	GP, health authorities Health & car insurance; Police Wider friends, social networks	Authorities/regulators Utility companies Other citizens

Source: GSR Discussion Paper, "Regulation and the Internet of Things" Professor Ian Brown (2015).

Digital Ecosystem & Skills Challenge

- The global shortage of skilled workers will amount to: 85 million in 2020
- Globally, a shortage of high- and medium-skilled workers, and a surplus of low-skilled workers is expected by 2020;

McKinsey Global Institute



What does this all mean?

- Capacity building has to be at the centre of strategic planning for both private and public organisations in the digital era
- Old skills are obsolete, and the there is need for retraining of current staff
- These developments represent a training and development opportunity
- Requires a more active role in capacity building in the ICT sector.

Role of the State & other State Institutions

- Options:
  - Do nothing
  - Leave it to the Private Sector
  - Regulatory Intervention
  - State Intervention (the Developmental State)

What United Kingdom did: March 2017 Budget

- £300m allocated for new academic research
- £200m allocated to develop high speed broadband
- £500m per year allocated for technical skills

Regulators as Beneficiaries and Enablers of Capacity Building

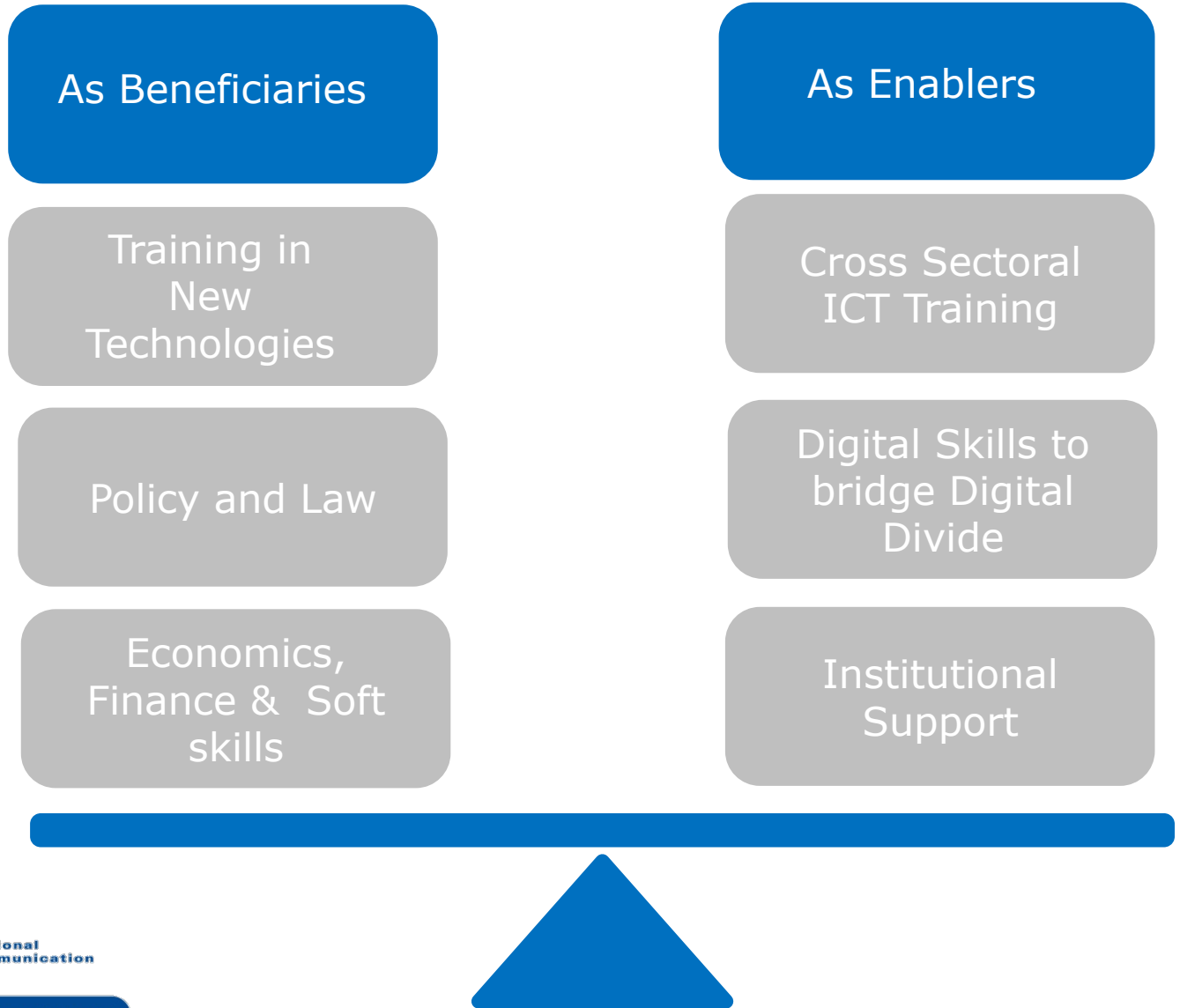
The Regulator's Challenge

- Regulators are on the front lines of nearly every controversy resulting from a new technology
- Persistence and scale of technology-induced change
- Keeping up with technical and business model innovations
- You cannot regulate what you do not understand
- Regulators therefore need to be a step ahead of the rest
- Credibility of regulators rests on the trust that they know what they are doing.
- Regulators therefore have to keep running just to stay still.

The changing landscape opens up a number of opportunities for the regulator of tomorrow

Regulators as enablers and beneficiaries of capacity building

Regulators as Beneficiaries and Enablers of Capacity Building



ICTs are now cross cutting

Role of Regulators in CB in ICT: Outcomes from CBS-16

- If involved in Capacity building:
  - Regulators can influence alignment of training to the needs of the ICT sector
- Levelling the skills terrain in the ICT sector will eliminate information and knowledge asymmetry among the sector players and consumers of ICT services.
- Regulators should consider funding digital skills initiatives to enable citizens to fully leverage existing ICT's
- Disseminating across the whole sector, of information on available training opportunities.

Role of Regulators in CB in ICT: Outcomes from CBS-16

- What Regulators need to do:
  - Supply of reference materials, books and ICT equipment
  - Sponsorship of ICT innovations and activities
  - Support to training centres, and research activities
  - Disseminating across the whole sector, of information on available training opportunities
  - Establishing advisory groups in various areas of the ICT sector, for example, Advisory group on a specific technology, consumer issues. Promotion of digital literacy, broadband etc.
  - Under job training programs, establishing an exchange program/benchmark between employees from regulator and operators

Case Study of the Communications Authority of Kenya(CA)

- Collaborates with other regulatory learning institutions in Kenya and own participates in building capacity e.g. partnerships with Kenya Library Services
- The CA opened 46 libraries with IT services end of 2016 month
- Utilized Universal Service Fund (USF) to connect 1,000 schools through the first disbursement. The USF targets to connect 202 sub-locations out of the more than 500 that do not have connectivity.
- Exploring further collaboration with institutions to put up connectivity in schools such as computer labs

Case Study of CA: Internal Capacity Building

Strategic Plan

- Strategic Plan Pillar No 4: Promote Institutional Capacity Building

Initiatives

- Sponsorships for Postgraduate programmes
- Internship programmes; Benchmarks
- Skills transfer; ICT Consultancies

Results

- Enhanced Knowledge and Skills to develop framework for Conducive Regulatory Environment

Case Study of CA: Industry Capacity Building

Studies

- CA's Mandate
- ICT Access Gap Study
- National ICT Study (Partnership with KNBS)

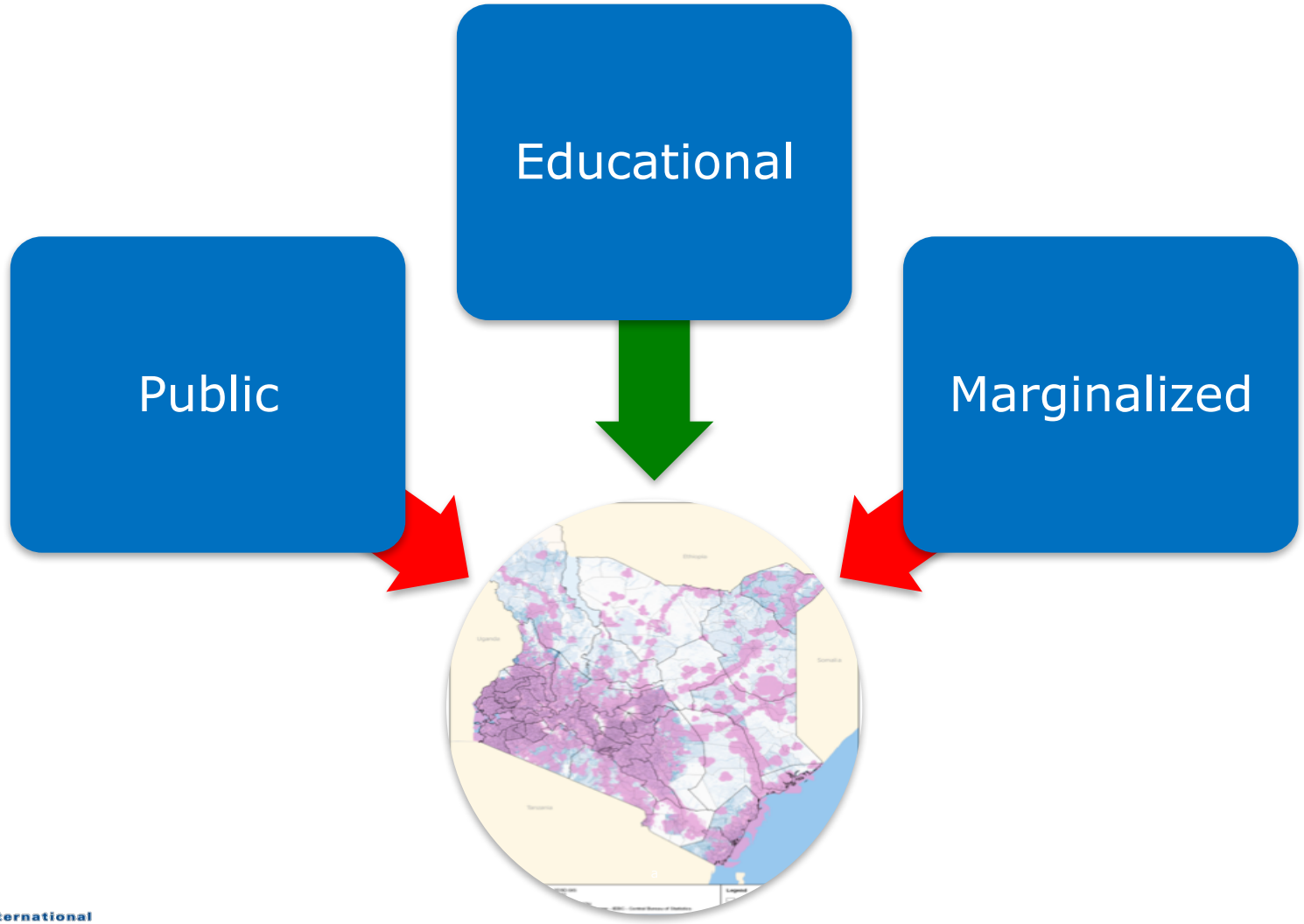
ICT Connectivity Projects

- ICT for for Public
- ICTs for Educational Institutions
- ICTs for Marginalized Groups e.g PwDs

Projects

- E-resource centre (Public Libraries & Community centres)
- Digitization of school curricula
- School for PwDs

Case Study CA: Industry Capacity Building Interventions



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Regulators as Champions of Capacity Building Contribution by Federal Communications Commission(FCC), USA.

- Encouraging industry to innovate
  - Establish Industry Advisory Groups

    - **Technological Advisory Council (TAC)** – The TAC is comprised of a diverse array of leading experts (academia, tech companies, consulting etc.) that helps the FCC identify important areas of innovation and develop informed technology policies supporting America's competitiveness and job creation in the global economy

    - **Consumer Advisory Committee (CAC**) – CAC makes recommendations to the FCC regarding consumer issues within the jurisdiction of the Commission and facilitates the participation of all consumers in proceedings before the Commission. CAC seeks application for membership from interested corporations, nonprofits, and other entities in both the private and public sectors. CAC is accessible to people with disabilities.

Regulators as Champions of CB: Externally

- Communications Security, Reliability and Interoperability Council (SRIC) – Provides recommendations to the FCC to ensure, among other things, optimal security and reliability of communications systems, including telecommunications, media, and public safety. Members include US government agencies and private industry.
- Industry-Led Robocall Strike Force
- Establish through Rulemaking Process, ITC Goals and Seek Industry Solutions
- Spectrum Sharing – Allowing Diverse Users to Co-exist

Regulators as Champions of CB: Externally

- Promoting Digital Literacy
  - Licensing Conditions
  - Target funds, such as Universal Service Fund, for Broadband Buildout and Training
  - Outreach and Education Initiatives
    - FCC Town Hall and Webcasts
    - DTV Transition Outreach and Education
    - FCC Career Day
    - FCC Girls' in ICT Day
    - NTIA Stakeholder Outreach Toolkit for Community Broadband Projects

Regulators as Champions of CB: Internally

- Regulatory Employees – Opportunity to be Most Knowledgeable in the industry
  - Key positioning of short-term appointees
    - Allows for innovative expertise and ideas
    - Cross-sector knowledge
  - Revolving Door Experience
    - Important for bringing in new ideas
    - Avoiding regulatory capture

Regulators as Champions of CB: Internally

- Increasing Knowledge through Training and Multi-Sector Engagement
  - Internal Trainings
    - FCC University allows for human capacity building among all FCC employees and interns. Training courses ranging from telecommunications issues to professional development are available online, in-person, and through blended learning
  - Private Sector Engagement
    - FCC brings in academia and private industry to offer workshops and give briefings through FCC Speaker Series
  - International Visitors Program (IVP)
    - Enablers foreign delegations to interact in informal discussions with FCC personnel who provide legal, technical, and economic perspectives on a wide range of communications issues

Case Study of the Nigeria Communications Commission(NCC)

- NCC Has been involved in universal aservice programs through the Universal service provision Fund (USPF).
- **School Knowledge Centres (SKC)-** under this project:
  - 396 public secondary schools are being provided with computers and connectivity;
  - Support includes power supply backup, connectivity, desktop computers plus accessories to facilitate e-learning and teaching.
  - Teachers and students are trained on how to use ICT for teaching and learning.
  - one year technical support, warranty and remote management for the deployed ICT tools and connectivity.

Case Study of the Nigeria Communications Commission(NCC)

- University Inter-Campus Connectivity-UnICC
  - NCC uses USPF to connect the networks of the main campuses of selected universities to the networks of their corresponding medical colleges and teaching hospitals
  - This project is in support to the Nigerian Research and Education Network (NgREN) project, run by the National Universities Commissions.
  - deploys fibre optic cable and associated equipment.
- Establish the Digital Bridge Institute (DBI)

DBI established in 2004 by NCC . To be a leading centre of ICT training.is involved in capacity building through the Digital Bridge Institute(DBI), an ITU Centre of Excellence

NCC supports all the CAPEX of DBI .Sits on the board of DBI

DBI is being transformed into Nigeria's first ICT University.

Conclusion

- Digital economy needs new skills, and constantly updated skills. This calls for another Education and Training revolution.
- Political Leaders must lead and put in place economic structures that are fit for purpose.
- State needs to be a key player in the development of digital skills and digital capacity across all sectors, and regulators should be at the forefront of promoting this growth.
- A SMART STATE

Conclusion

- (SDGs) are to be achieved at a time of major digital technology transformation
- The advent of smart cities and smart societies, as well as the growth of big data, require different sets of knowledge and skills across all sections of society.
- Governments, industry, universities and other higher education institutions need **to invest in, and develop a range of ICT skills,** which will not only enable increased participation in economy, but will ensure the creation of digital citizens for a digital society.
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Source: Program CBS 2016

Conclusion

"The biggest challenge the ICT sector – and other sectors - will face in the digital era will not be the access gap, but the digital skills gap. Therefore we need to reflect on how regulators can contribute to strengthening such capacities and skills, in the interest of ensuring digital inclusion for all. "

Brahima Sanou, Director BDT
Speech at CBS-16

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