Challenges of ICT Skills Development in East Africa

GEOFFREY MARK KAGARURA

MAKERERE UNIVERSITY

"Bridging the ICT Skills Gap through collaboration between The Industry and the Academia in the East African Region."

Kigali, 20th June 2016

EACO East African Communications Organisation

Introduction

- The skills in Africa are yet to match the needs of the employers. There is need to look at the school ecosystem from primary to the tertiary levels to be able to identify the challenges.
- ICT has enormous potential to improve learning methods and overall quality of education, offer greater accessibility and mobility and support wider access to lifelong learning.
- Africa has 226 million[1] people only 15-24 group alone in 2015, efforts should be channeled towards ensuring that these youths are fully and constructively engaged in ICT to play a critical role. 500bn
- Today IT holds the promise to promote social inclusion, combat corruption, expand the digital economy and enable stronger links between citizens and governments, businesses and customers, NGOs and the communities they serve.

1. UN 2015: http://www.un.org/en/development/desa/population/publications/pdf/popfacts/PopFacts_2015-1.pdf

ICT Skills or e-skills?

- The definition for ICT skills is more related to e-Skills

  The European E-Skills Forum define three major types of e-skills

  - *ICT practitioner skills,*
  - *ICT user skills and*
  - *e-Business skills.*

  UK definition e-Skills is extended to include

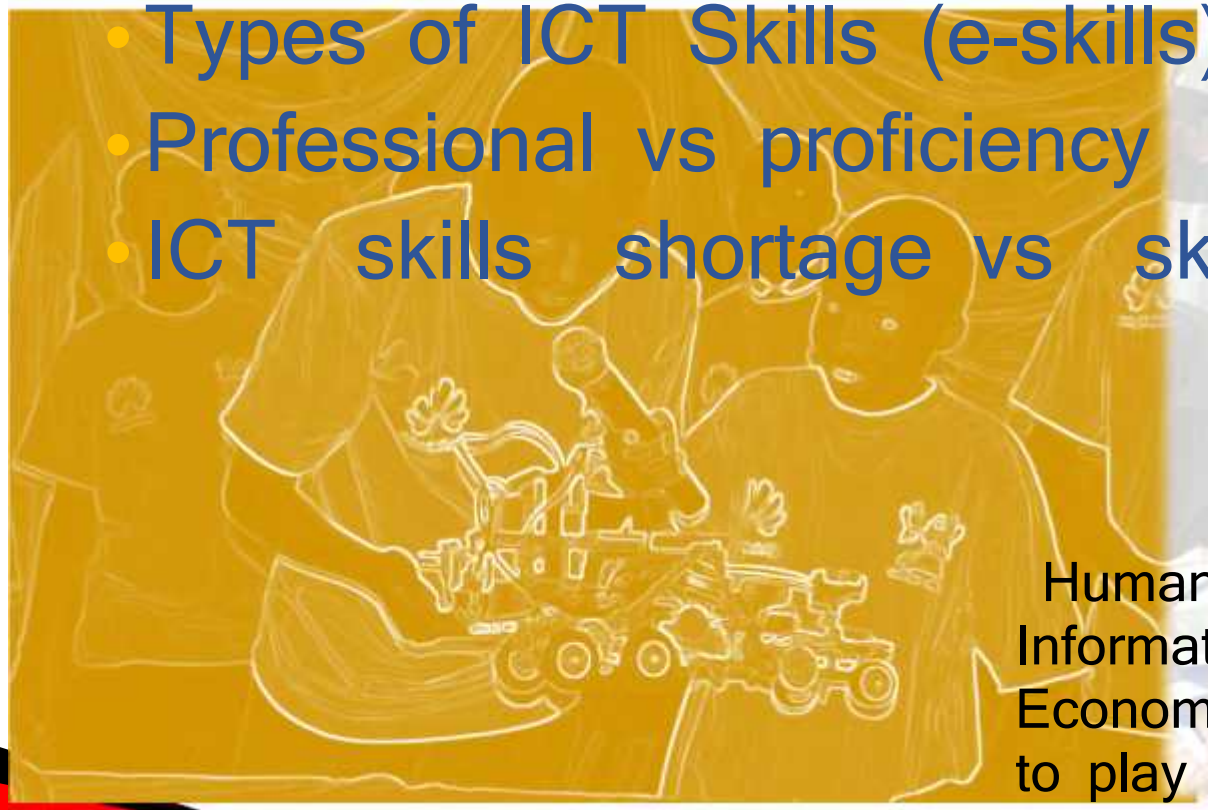
  - *members of society using technology for private purposes.*

  "This ranges from the ability of businesses to understand and gain competitive advantage from the exploitation of IT, through to the IT user skills every person needs to

http://www.europeanskills.eu/background.asp
e-skills UK Document - The Tech Partnership

Comparative areas of skills

- Types of ICT Skills (e-skills)
- Professional vs proficiency
- ICT skills shortage vs skills mismatch



Human resources play in an Information and Knowledge Based Economy. A primary capital in nations to play a dominant role in the global scientific, cultural, economic and

Challenges to skills development

Quantifying the skills

- ICT skills availability is very difficult to ascertain
- The skills categories are diverse e.g. programmers, technicians, developers, designers, level of computer usage or proficiency varies per qualification
- ICT environment is ever-changing: Every 10 years a technology becomes obsolete, changes every year.
- Employer or Social demands are diverse matching skills to jobs or development areas
- Data collection procedures and results are ill-defined and difficult to interpret (indices)

Internet connectivity

- *unaffordable to many Africans.*
- *coverage is low.*
- *bandwidth is low (broadband is expensive)*
- *Project monitoring (e-infrastructure)–appropriateness, effectiveness etc.*

Challenges to skills development…

Investment or funding of ICTtraining initiatives

- *initially dependent and largely dependent on external funding*
- *sustainability is affected when external funding ends*

Inadequately ratified sectoral-specific ICT policies

- *Low focus on initiatives suggestive of ICTs (outside the line ministry) in some E. Countries*
- *Negative view of legislation Interception of Communications Act 2010 (Uganda) Electronic communication Act 2015 –(Tanzania),*

Limited depth of programmes –

- Cover the selected areas especially urban
- **Limited scope e.g. student training only without instructors

Challenges to skills development…

ICT illiteracy

- (the inability to use digital tools, communication technology, and networks to manipulate and relay information)
- Limited depth

Limited content is a disincentive

- Few companies, government initiatives online even websites
- Poor design layout, navigation

Cyber crime and poor netiquette

- pornography, cyber terrorism (including radicalisation), publication of illegal content, social engineering, cyber prostitution, electronic fund transfer fraud, telecom fraud, software piracy, identity theft, scamming, online abuse and hacking,

Challenges to skills development…

Cultural issues

- *Low integration into indigenous cultures and Foreign influence (especially social)*
- *Lack of "trust" on both government and users*

Digital divide

- Gender (male vs female) , Urabanisation (Rural-Urban)

Standardizations of training

- Not harmonized, many participants Lecturers, engineers, technicians*
- Employers cant assess the level available
- Foreign based e.g. CISCO, Microsoft vs local training centres

Low intra-sector and inter-sector integrations

- E.g. health and social, health and e-commerce, Government departments

Solutions to *ICT Skills Challenge*

- **Quantifying the skills**
  - Quantify and categorise the skills through studies
  - Register the skills through e-portals or database e.g. linkedin style
- **Skills harmonization and standardisation**
  - Establish gaps and the new skills required based on gaps
  - Job evaluation or re-evaluation mechanisms
- **Retooling existing skills**
  - Industrial training and internships e.g. graduates : lack of in-service training makes skills obsolete)
  - Encourage employers to enhance current skills Versus demanding new skills
  - Regional Competitions and challenges

Solutions…

- **Innovation Hubs and Clusters**
  - Technology transfer incl. Sharing of facilities, theoretical and practical skills and know-how among the producers and the consumers of knowledge. (HiveColab, Nairobi)
- **Implement ICT education initiatives that**
  - Introduce new learning methods at both primary and secondary level schools _OLPC
  - Improve the infrastructure available in schools –computers, multimedia tools etc
  - use of eLearning techniques, and train teachers to use ICT in the teaching process.
  - Improve the quality of education for science and technology
  - greater accessibility and mobility and support wider access to lifelong learning.
- **Developing peer-to-peer networking**

Solutions…

- **Infrastructure**
  - Backbones, equipment, tax incentives
  - ICT training centres
- **Solving Universal access and Digital divide**
  - Encourage partnerships among public, private and community at all levels in support of universal access
  - Creating incentives for service providers to deploy services in rural and underserved, disadvantaged groups
- **Integrating ICT within lifestyles and cultures**
  - Documenting Culture online, community resource centres etc.
  - Valuing and Promoting Scientific, Cultural and Economic Heritage of the Country

Solutions…

- **Enhance online services through ICT**
  - income tax, central excise, company affairs, property registration, passport and Visa, municipalities, police, pensions, land records, Road transport, e-courts, employment, Agriculture
  - Boost local content
- **Increase ICT expenditure as a % of GDP**
  - Promote a Competitive Economic Sector
  - Private and public partnerships
- **Sharing of experiences**
  - Clear openness
  - Regionally international best practices.
  - Improving the Legal, Regulatory and Institutional Framework

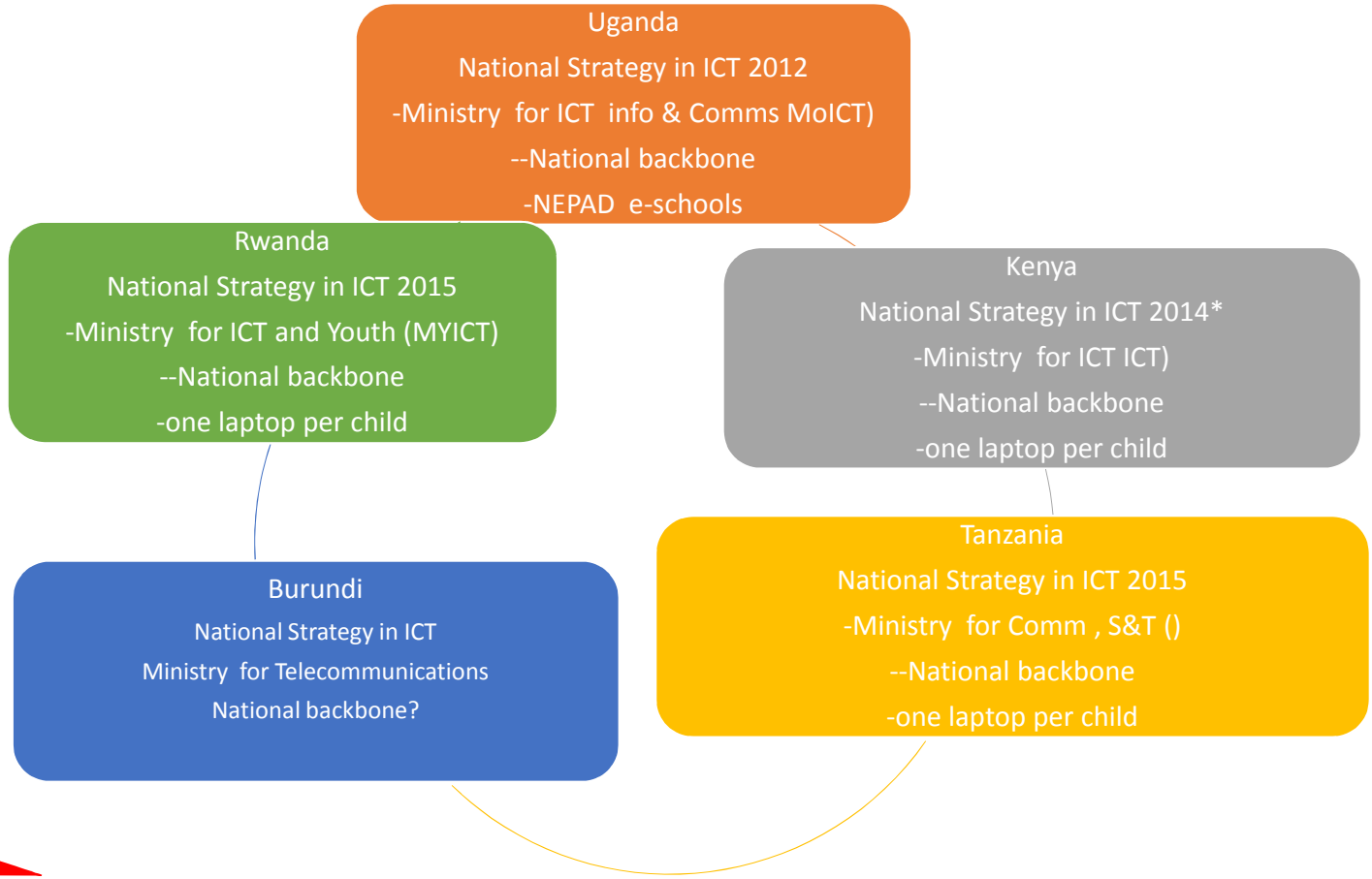
Success stories (Lessons to learn)

- **Mauritius[1]**
  - Integrating ICT into lower curriculum+ More hours a week of ICT training
  - Reducing pupil to computer ratio
  - Electronic services, data protection, cybercrime, online child protection
  - Support/ Boost ICT Exports
  - Increase ICT expenditure as a % of GDP
  - Ability to train skilled workers or develop new technologies
  - Presence of established companies and multinational corporations
  - Entrepreneurial drive in population to start new ventures
  - Availability of venture capital to help ensure ideas make it to market

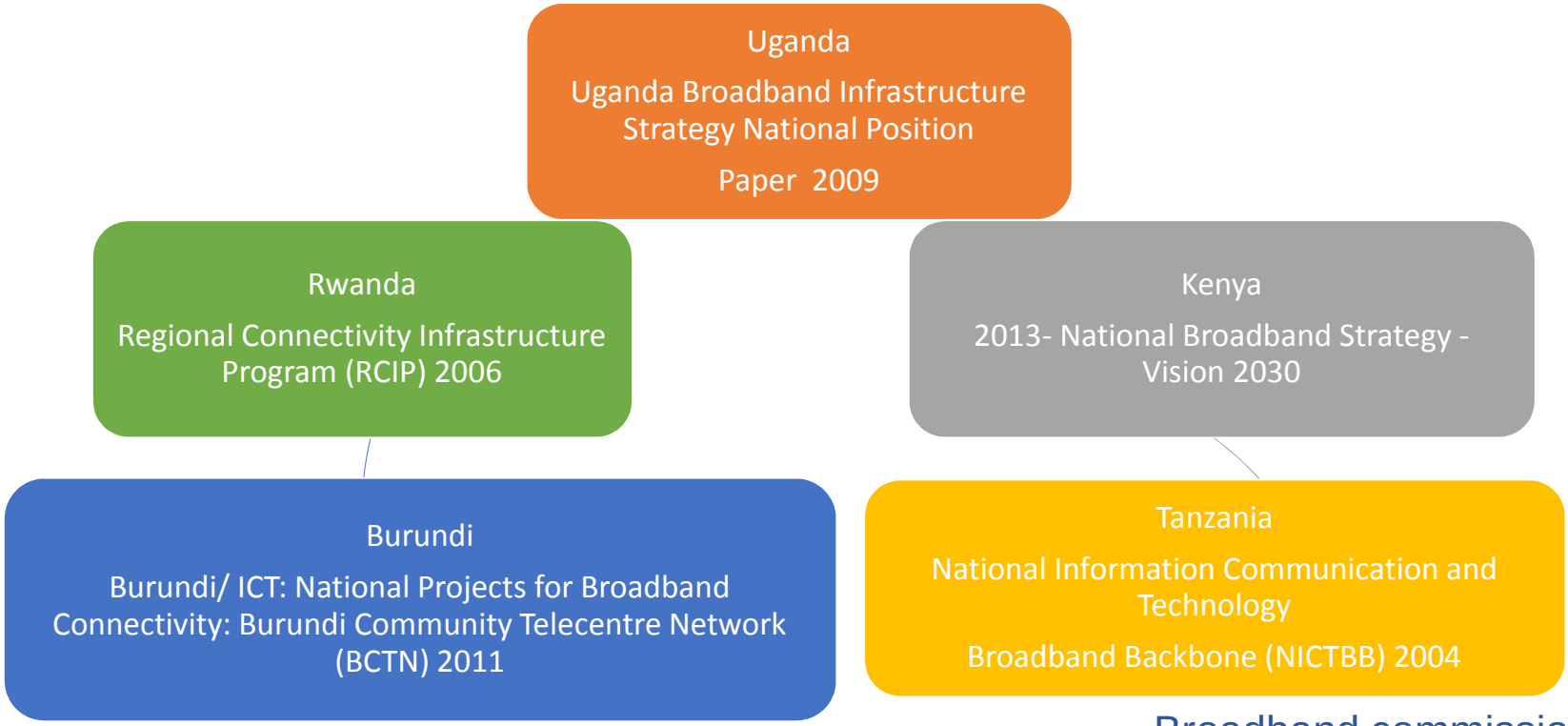
Mauritius CT Development Index IDI 72 above China , SA, Kenya 124 (+2), Uganda 129 (2), Tanzania 157, Rwanda 164, Ethiopia 165

Source: ITU Measuring the Information Society Report 2015

Key comparisons ICT plans



Key comparisons broadband plans



Broadband commission.org - NationalBBPolicies-2015.


Thank you