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Key Note Address

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- **Chairman UKTA**
- **(Honourable Minister(s) if present?)**
- **Director ITU**
- **Distinguished Guests,**
- **Ladies and Gentlemen**

It is with great pleasure and an honour that I address you all at this Opening Ceremony of the ITU Global Symposium for Human Capital Development

First and foremost, I would like to thank the UKTA and ITU for their commitment to the development of Human Capacity in the Telecomms and IT Sector and their vision in organising this session to explore the potential for unlocking and developing skills and knowledge for practitioners in this area, and their request to me to make this key note address this morning.

I will be discussing the important role that the development of the Telecoms and ICT sector is and will continue playing in the socio economic development of Rwanda specifically and the African region as a whole.

Ladies and Gentlemen,

We recognise the undisputable importance of ICT for economic development and it's potential impact in all sectors of the economy, from education and health care, to the financial sector, government and strengthening of governance, etc.

As has been highlighted by economists ICT is a "general purpose technology" which has an impact on technical change across a large number of industries, which can lead to continuous improvement, sustained productivity growth, and Innovation spawning.

Modern international experience has demonstrated the profound impact that ICT, and in particular the growth of the network through broadband, has had in transforming people's lives. I note that in his book "*The Big Switch – Rewiring the World from Edison to Google*" Nicholas Carr stresses that the future of computing will lie in high bandwidth networks hooked up to "*massive information processing plants*". The revolution in computer broadband networks is seeing information services delivered to every home, changing society as dramatically as the cheap electricity that was delivered to people's homes from the early part of the 20th century.

The Government of Rwanda recognises the importance of Science and Technology to her development and economic growth.

The Government's Vision 2020 Statement, its National Policy on Science, Technology and Innovation, and the Economic Development Poverty Reduction Strategy (EDPRS) for Rwanda are all based on the premise that, through embarking on a concerted effort to build science, technology and innovation capacity, Rwanda will greatly enhance her prospects of achieving the growth, poverty reduction, wealth creation, and export diversification objectives. We recognise that we need to develop the human resource base, particularly through the medium of ICT, to capitalise on the benefits of the global computer revolution that is, as stressed by Nicholas Carr, "*reshaping business, society, and culture*".

We also recognise the rapid developments in ICT that continue to be ongoing in particular the impact of convergence which is evidenced by the four types of service products: voice, data, image and video.

These four types of scenarios can all be represented by numbers with series of zeros and ones. However, the requirements for corresponding processing, storage and bandwidth are significantly different. The voice needs a narrow bandwidth and less space storage. The images (two-dimensional data) need more storage capacity, more bandwidth for transmission, and more processing power for various analyses. The video (three dimensional data) needs even more storage space, more bandwidth for transmission, and more processing power for analysis.

We recognise, therefore that processing power, storage and bandwidth are key elements in a growing ICT sector.

Ladies and Gentlemen,

To enable our vision of Science and Technology and specifically ICT in spurring our development and economic growth we need the necessary

human resources. We recognise the magnitude of the task and that no country can do this alone, Rwanda, as a developing nation, does not enjoy the benefits of science and technology that the developed world does and therefore it is of critical importance for both regional and global collaboration in helping us develop our ICT capabilities and infrastructure. As Clark A. Miller has said this was also a key factor in the US foreign policy where they recognised that:

- “... international cooperation in science contributes in important ways to the furtherance of broader goals of international peace and prosperity”. Their belief is that this would be achieved through the application of science and technology for “economic development and political stability.”

One landmark achievement in this area was in the Connect Africa Summit which was hosted by Rwanda in November 2007. This summit adopted five major goals to bridge the digital divide in Africa. These included: the roll out of broadband infrastructure throughout Africa including the interconnection of all major cities, adoption of a national e-strategy, key regulatory measures to promote affordable and widespread access to a full range of broadband services, and to:

“Support the development of a critical mass of ICT skills required by the knowledge economy, notably through the establishment of a network of ICT Centres of Excellence in each sub-region of Africa and ICT capacity-building and training centres in each country, with the aim of achieving a broad network of inter-linked physical and virtual centres, while ensuring coordination between academia and industry by 2015.”

Ladies and Gentlemen,

At the Connect Africa Summit it was proposed that His Excellency Paul Kagame, President of Rwanda should be a Patron of Connect Africa and champion the Connect Africa Initiative at Heads of State level.

I am pleased to report that Rwanda has embarked on two regional initiatives in this respect:

The first is a partnership between the Government of Rwanda, Carnegie Mellon University of the US and the African Development Bank to build a Carnegie Mellon University Regional Centre of Excellence in Engineering and Information Communication Technologies. This centre will offer CMU post-graduate degrees. The campus will be built and operated to the same exemplary standards as Carnegie Mellon of the US meaning that a qualification issued by this campus will carry the same weight as one from the US.

The second is an initiative from His Excellency Paul Kagame to partner with the African Institute for Mathematical Sciences to establish a regional satellite centre of AIMS in Rwanda in support of the “Next Einstein” initiative. AIMS was founded by Neil Turok of Cambridge University with an initial institute in Cape Town, South Africa. The goals are to build capacity in Africa to promote mathematics and science in Africa. President Kagame is a Patron of the “Next Einstein” initiative which has a vision that “only Africans will solve Africa’s problems” and provides the opportunity for “the next Einstein can be African”.

Ladies and Gentlemen,

I note the key subject areas that will be addressed in this symposium:

- The Policy and Regulatory Challenges
- ICT applications and their impact on the Human Capital
- Technology Trends and related HR requirements
- Knowledge Transfer
- Strategic HR Management

I am pleased to inform you that Rwanda recognises all these essential areas of development in ICT and strategic plans are in place to address the challenges in developing skills and capacity in the ICT sector. The National Information and Communications Infrastructure (NICI) Plan is a 20 year strategy, now in it’s second phase (2006 –2010).

This Plan aims to incorporate ICT at every level and in every sector of society, bringing collective benefits to everyone in Rwanda based on the following ten pillars:

- Education
- Human capacity development
- Infrastructure, equipment and content
- Economic development
- Social development
- E-Government and E-Governance
- Private sector development
- Rural and community access
- Legal, regulatory and institutional provisions and standards
- National security, law and order

Although I recognise there is still a long way to go I will outline some of the key achievements in Rwanda that have been achieved since our concerted drive has been underway to develop science, technology and ICT to spearhead Rwanda’s development:

1. Investment in **high level science and technology training establishments**; Key to this has been the establishment of the Kigali Institute of Science and Technology in 1998 which is growing in strength and is becoming one the best engineering schools in Africa. KIST has produced over 350 graduands in area of Computer Science to date.
2. **Karisimbi project**: an Infrastructure project, based around a 50m mast installed on top of a 4,500m mountain in the North of Rwanda. Through its unique vantage point the Karisimbi project is already improving broadcast coverage in Rwanda and will eventually provide: FM Radio broadcast within a 700 km radius, Digital Broadcast with a 250 KM radius, together with a communications navigation surveillance project to improve air safety in the region.
3. **One laptop per child**: As part of the drive to improve computer literacy and give every child in Rwanda an opportunity to take part in the IT revolution Rwanda is working with the One Laptop Per Child project based in the US. A trial installation has already been conducted in a semi-rural school in Rwanda with very encouraging results. A national steering committee has been established, 5,000 laptops are already in Rwanda and around 100,000 laptops in Rwanda by the end of 2009.
4. **One mobile phone per household**: The target is to both introduce low cost phones throughout the country including rural villages, with a manufacturing plant in Rwanda, together with schemes to assist in the purchase of the phones. Mobile telephony in Rwanda is already mushrooming with one of the operators reporting 10,000 new customers every week. Coupled to the “one mobile phone per household initiative” we expect that access to mobile phones will increase at a rate of 30% per annum with the accompanying benefits in the support of literacy through the use of SMS and, mobility and empowerment of the people through communication and enhanced services such as mobile banking.
5. **ICT park**: an ICT Park is being established which, will ultimately become one of the main drivers of Rwanda’s evolution into an ICT society and mature into a regional hub for ICT innovation. An initial ICT Park and incubation facility has been established in Kigali currently hosting 13 IT companies of which 6 are local Rwandan companies under incubation and 3 established local Rwandan companies.

6. National ID Card Scheme: a scheme is being implemented to provide electronic National ID cards to all Rwandans over 16 years of age. Over five million three hundred thousand Rwandans will receive this electronic ID card. This has entailed the process of biometric data for all the individuals, including photographs and the cards will be used for the first time during the forthcoming National Elections scheduled for September 2008. The cards will also be used as part of an electronic payment which is being established.

Ladies and Gentlemen,

On the crucial subject of regulation goal three of the Connect Africa Summit states:

“Adopt key regulatory measures that promote affordable, widespread access to a full range of broadband ICT services, including technology and service neutral licensing/authorization practices, allocating spectrum for multiple, competitive broadband wireless service providers, creating national Internet Exchange Points (IXPs) and implementing competition in the provision of international Internet connectivity.”

A Regulatory Agency has been established in Rwanda which is already enforcing its mandate to: improve the quality of service in the telecommunications industry in Rwanda, attract investors by an enabling environment of fair competition and to protect consumers.

There are currently two licensed telecommunications operators in Rwanda which, due to the size of the market, the Government of Rwanda had decided for duo-poly period of 5 years from 2003. This period is now expired and bids have been invited for a third license which will help to increase the competition in the telecommunications industry in Rwanda with the resulting benefits to the consumer and increased penetration in voice and data services.

Ladies and Gentlemen,

The drive to develop high level ICT infrastructure in Rwanda is continuing.

As I mentioned earlier one of the key imperatives is to provide the high bandwidth broadband connectivity both within Rwanda and to link Rwanda with the outside world. One of the key projects in this regard is the construction of a fibre optic backbone network which will cover the whole of Rwanda by the end of 2009. This will be coupled with wireless connectivity for last mile solution to make Rwanda the most wired country in sub-Saharan Africa;

For international connectivity there are currently four projects targeted to provide submarine cable landing points in East Africa through both Mombasa in Kenya and Dar-es-Salaam in Tanzania. This will provide competitively priced international connectivity to these landing points fibre optic cables have been laid to the Rwanda border and we are currently engaged in negotiations with the owners of these cables to secure a virtual landing point in Kigali.

Other ongoing initiatives include:

- **Governance Support Systems:** To continue to enhance efficient delivery of key public services and the decentralized government process, including a Local Government Communication System,
- **Community Healthcare Support Systems:** Including a strategy for rural telemedicine for District hospitals and health centres,
- **Education initiatives:** Including a strategy for supporting distance education and the one lap top per child project for Rwanda as below,
- **Rural Private Sector Development Support:** including establishment of tele-centres to enable the gathering and distribution of information of all sorts and the widespread dissemination of detailed “best practice” and market information.

Ladies and Gentlemen,

Rwanda looks forward to the future, converting its large population base and its small landlocked status, two areas of potential weakness, into strengths.

With a knowledgeable, computer literate, population, a concentrated nationally distributed ICT network and a burgeoning computing industry, Rwanda intends to position itself as a centre of excellence in ICT. Utilising the many areas of potential through access to the virtual global market place which will be made possible through the nationwide, high bandwidth, broadband network.

By 2012 it is expected that ICT will have a sizeable percentage of GDP competing strongly with Agriculture. Already one of the main telecoms operators in Rwanda is the highest individual contributor to tax in Rwanda, surpassing even soft drinks and alcoholic beverages.