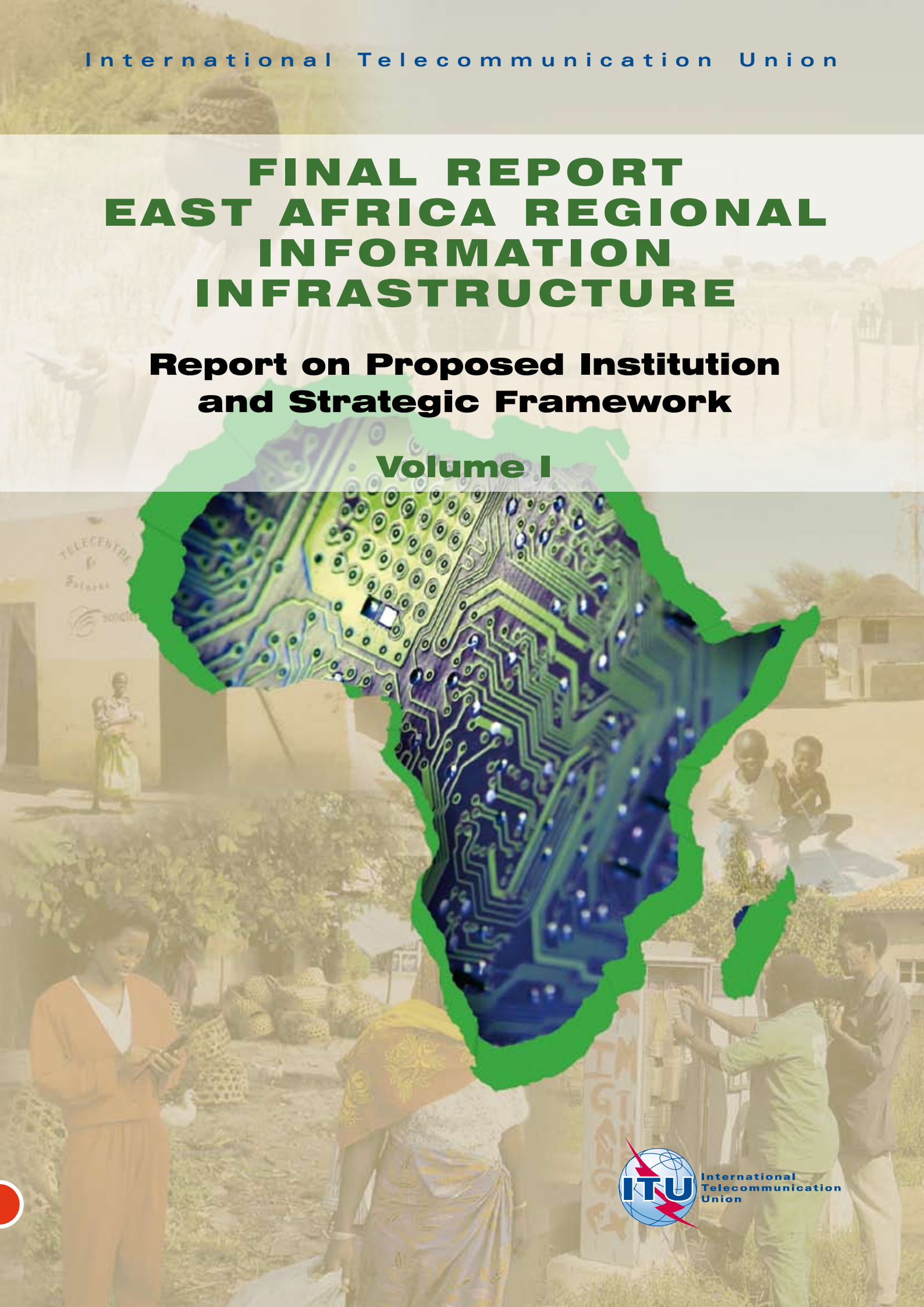
International Telecommunication Union

FINAL REPORT EAST AFRICA REGIONAL INFORMATION INFRASTRUCTURE

Report on Proposed Institution and Strategic Framework

Volume I



International Telecommunication Union

EAST AFRICA REGIONAL INFORMATION INFRASTRUCTURE (EARII)

VOLUME I

FINAL REPORT ON PROPOSED INSTITUTIONAL AND STRATEGIC FRAMEWORK TO FACILITATE ACCELERATE PLANNING, DESIGN, DEVELOPMENT, OPERATION AND MANAGEMENT OF A BROADBAND ICTs/TELECOMMUNICATION INFRASTRUCTURE FOR EAST AFRICA (EARII)

International Telecommunication Union

FOREWORD

The World Telecommunication Development Conference (WTDC-06), Resolution 17 (Rev. Doha, 2006), recalled Resolution 17 (Rev. Istanbul, 2002) of the WTDC-02 which considered that telecommunication/ICT is one of the vital elements for the growth of national and regional economies. Besides, the World Telecommunication Development Conference, WTDC-02, Resolution 37 (Istanbul, 2002), recognized, among other issues, that there is need to show clearly what the digital divide is, where it occurs and who suffers from it, considering that, even with all the developments occurring in the recent years, in many developing countries telecommunications are still not affordable to the majority of the people. Therefore, it was resolved that each region, country and area must tackle its own specific issues regarding the digital divide and that many countries do not have the necessary basic infrastructure, long-term plans, laws, regulations and such like in place for Information and Communication Technology (ICT) development.

Following the conceptualization of NEPAD, African countries through the highest organs within ITU, the World Telecommunications Development Conference (WTDC-02) held in Istanbul in March 2002 and the Plenipotentiary Conference (PP-02) held in Marrakech in September 2002 sought the assistance of ITU to support their efforts towards meeting the objectives and action plans of the NEPAD. This request was endorsed through Resolution 35 from the WTDC-02 and Resolution 124 of the PP-02.

In addition to the above, the Declaration of Principles and the Plan of Action from the World Summit on the Information Society (WSIS) held in Geneva in December 2003 stressed the need for regional dialogue, cooperation and partnership among national, regional and international stakeholders in order to realize the objectives, goals and targets for building an all inclusive Information Society. Ahead of WSIS, ITU organized a meeting of African countries and some other stakeholders in Arusha, Tanzania, in 2003 to discuss on how the ICT objectives under the NEPAD programme could be further advanced. In 2004, as a follow up to these developments and after due consultation, the ITU started implementing the ***ITU NEPAD Preliminary Assistance Project*** to define precisely the scope and level of support required by Africa to meet the NEPAD objectives in the ICT sector as part of the global WSIS objectives as well as the Millennium Development Goals (MDGs).

The report of ***the ITU-NEPAD Preliminary Assistance Project*** was considered during the African ICT Ministerial Symposium held in Abuja on 4th of July 2005 preceded by the meeting of experts on 3rd July 2005 in the framework of Africa Regional Preparatory meeting for WTDC-06 prepared by the ITU. The outcome of the symposium was the ***Abuja Declaration*** whose recommendations reflected the aspirations of the African peoples and shaped the decisions to be taken by WTDC-06 in the interests of the Africans.

WTDC-06 decided to support all the recommendations of the ***Abuja Declaration*** and these are included in the five Regional Initiatives for Africa, one of which is ***Broadband Infrastructure Development and Regional Interconnectivity.***

It was in conformity with the ***Broadband Infrastructure Development and Regional Interconnectivity initiative*** that countries in East Africa Community including various ICTs stakeholders, regional institutions and the East Africa Community Secretariat were visited by the ITU Regional Office for Africa. The visits were in an effort to study the current situation and obtain views on how best the East African Community would like to have its Regional Information Infrastructure planned, developed and strengthened.

In this report the current situation has been analyzed and recommendations have been given. A project document to ensure the success and effectiveness of technical assistance planning and strengthening Broadband Cross-boarder connectivity in the East African Community has been formulated.

The report also references the beginning of addressing some of the WSIS Outcomes (in particular, Action Line C2, which ITU has been mandated to facilitate) and some of the World Telecommunication Development Conference, Resolution 17 (Rev Doha, 2006), Regional Initiatives, with respect to the East African Community.

With this foundation, it is my hope that an effective and efficient East African Regional Information Infrastructure (EARII), as part of the Global Information Infrastructure, will be developed to meet the capacity required for social, cultural and economic development.

Brahima Sanou

Regional Representative for Africa

ACKNOWLEDGEMENTS

This report was compiled by Dr Shem J. Ochuodho under the direction and supervision of Ms Chali Tumelo, Senior Advisor for Network Management and Development for Eastern and Southern Africa, Telecommunication Development Bureau, ITU's Africa Regional Office, Addis Ababa. The study was deeply enriched with formal and informal dialogue with Ministers responsible for ICTs and/or Telecommunications from the East African region, and their Permanent Secretaries and Secretary Generals. Interactions with Members of the East African Legislative Assembly, privately as well as in regional infrastructure workshops immensely enhanced the consultants' view of the status and challenges to the sector within the Community. Members of the Committee on Communications, Trade and Investment, especially Hon. Abdirahin H.H. Abdi offered vital and rare inputs that enriched the study from a legislative and oversight perspective.

The EAC Secretariat played a key role in not only coordinating the Missions, but also arranging meetings and appointments, as well as providing invaluable insights into the status and plans for the sector's development in East Africa. The Deputy Secretary-General (Projects and Programmes), Dr Kipyego Cheluget and Eng. Enock Yonazi, Engineer/Planner (Communications), offered candid expose of the current status of ICT infrastructures and initiatives within the Community. They also shared the Secretariat's – and indeed, the Community's vision and plans with respect to communications and ICT infrastructure development and their utilization to leverage the Community's socio-cultural, political and economic development and competitiveness. Without the input of the principal stakeholders and direct beneficiaries themselves, this study would not have been complete. Mr. Elias Bahanda, BetaCom (U) Ltd, gave very useful insight into the pertaining status of communications infrastructures within the Community.

At the national level, various stakeholders actively participated and informed the discussions at workshops, mainly facilitated by the National Regulatory Authorities. The respective Directors-General and staff of the Communications Commission of Kenya, the Tanzania Communications Regulatory Authority, and the Uganda Communications Commission did an exemplary job to both ensure the success of the national dialogues, as well as provide incisive information. For the period that the UCC Director-General was unavailable, Mr. Patrick Mwesigwa was of great help to the study team. Several other stakeholders, within and outside the Community offered valuable assistance and information – too many to enumerate all.

Finally, we give gratitude to all who contributed to the success of the study and write up of the report.

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Acronyms and Abbreviations

Acronym	In Full
ADB	African Development Bank
AFICTA	African Federation of ICT Associations
ATRA	African Telecommunications Regulators Association (proposed)
AFUR	Africa forum for Utility Regulators
APC	Association for Progressive Communications
APRM	African Peer Review Mechanism
APT	Asia Pacific Tele-community
ARAPKE	African Regional Action Plan on the Knowledge Economy
ARICEA	Association of Regulators for Information and Communication in Eastern and Southern Africa
ARN	Arab Telecommunication Regulators Network
ARTAC	Association de régulateurs de télécommunications de l'Afrique Centrale
ATRC	ASEAN Telecommunication Regulators Council
ATMs	Automated Teller Machines
ATU	African Telecommunications Union
AU	African Union
AVU	African Virtual University
BDT	Telecommunications Development Bureau
C&MA	Construction and Maintenance Agreement
CCK	Communications Commission of Kenya
CCTFA	Central Corridor Transport Facilitation Agency
CDMA	Code Division Multiple Access
CEMAC	Central African Economic and Monetary Community
CePRC	Canadian e-Policy Resource Centre
CEPT	Conference of European Postal and Telecommunications Administrations
CFI	Computer Frontiers International
COAN	Computer Association of Nigeria
COMESA	Common Market for East and Southern Africa
COMTEL	COMESA Telecommunication Network/Company
CRA	Common Regulatory Authority
CRASA	Communications Regulatory Association of Southern Africa
CSK	Computer Society of Kenya

CTO	Commonwealth Telecommunications Organization
DFID,	Department for International Development – United Kingdom
DFIs	Development Finance Institutions
DMB-T	Digital Multimedia Broadcasting – Terrestrial
DOI	Digital Opportunity Index
DSF	Digital Solidarity Fund
DVB-H	Digital Video Broadcasting – for Handheld Terminals
DVB-T	Digital Video Broadcasting – Terrestrial
EABs	East African Backhaul System
EABC	East African Business Council
EAC	East African Community
EACCU	East African Community Customs Union
EACJ	East African Court of Justice
EADB	East Africa Development Bank
EAIA	East African Internet Association
EALA	East African Legislative Assembly
EALS	East Africa Law Society
EARII	East African Regional Information Infrastructure
EARPTO	East African Regulatory, Postal and Telecommunications Organization
EASE	East African Stock Exchange (soon to be established)
EASSy	East Africa Sub-marine Cable System
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EDGE	Enhanced Data Rates for GSM Evolution
EMCCA	Economic and Monetary Community of Central Africa
ERG	European (Independent) Regulators Group
EU	European Union
FRATEL	Réseau Francophone de la Régulation de Télécommunications
G8	Group of the Eight World's Leading Economies
GDP	Gross Domestic Product
GII	Global Information Infrastructure
GIS	Geographic Information Systems
GOS	Grade of Service
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications

HSPDA	High Speed Downlink Packet Access
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	Information and Communication Technologies
ICT4D	ICT for Development
ICT4PVR	ICTs for Poverty Reduction
IDRC	International Development and Research Centre (Canada)
IFIP	International Federation for Information Processing
I-Net	I-Network (Uganda)
IOC	Indian Ocean Commission
IP	Internet Protocol
IRCC	Inter-Regional Coordinating Committee
ISF	Internet Society Foundation – Uganda
ISP	Internet Service Provider
ITU	International Telecommunications Union
ITU-D	ITU Development Sector
ITU-T	ITU Standardization Sector
IUC-EA	Inter-University Council of East Africa
IXP	Internet Exchange Point
JICA	Japanese International Cooperation Agency
JPC	Joint Permanent Commission
KCO	Kenya Consumer Organization
KCOMNET	Kenya Community Media Network
KDN	Kenya Data Network
KENIC	Kenya Network Information Centre
KEPSA	Kenya Private Sector Alliance
KIF	Kenya ICT Federation
KIXP	Kenya Internet Exchange Point
KPIs	Key Performance Indicators
KUJ	Kenya Union of Journalists
LDCs	Least Developed Countries
M&E	Monitoring and Evaluation
MASA	Meteorology Association of Southern Africa
MDGs	Millennium Development Goals
MIS	Management Information System
MOU	Memorandum of Understanding

NBI	The Nile Basin Initiative
NCTTCA	Northern Corridor Transit Transport Coordination Authority
NEPAD	New Partnership for Africa's Development
NIGF	National Internet Governance Forum – Uganda
NITDA	National IT Development Agency – Nigeria
NRAs	National Regulatory Authorities
NRENs	National Research and Educational Networks
OECD	Organization for Economic Co-operation and Development
OP	Office of the President
PITA	Pacific Islands Telecommunications Association
QOS	Quality of Service
RARA's	Regional Associations of Regulatory Authorities
RASCOM	African Regional Satellite Communication Project
RCIP	Regional Communications Infrastructure Project
RECs	Regional Economic Communities
RICTSP	Regional ICT Support Program
RISM	Regional Integration Support Mechanism
RIXP	Regional Internet Exchange Point
RRC	Regional Radio Conference
S&T	Science and Technology
SADC	Southern Africa Development Community
SAPOA	Southern Africa Postal Operators' Association
SARA	Southern Africa Railways Association
SATA	Southern Africa Telecommunications Association
SATCC	Southern Africa Transport and Communications Commission
SATCC-TU	SATCC-Technical Unit
SATRC	South Asia Telecommunication Regulators Council
SIDA	Swedish International Development Agency
SKA	Sender Keeps All system
SLA	Service Level Agreement
SMP	Significant Market Power
SPV	Special Purpose Vehicle Company
SRII	Southern Africa Regional Information Infrastructure
tzNIC	Tanzania Network Information Centre
T-DAB	Terrestrial Digital Audio Broadcasting

TCA	Tanzania Consumers Association
TCM	Transport, Communications and Meteorology
TCRA	Tanzania Communications Regulatory Authority
TEAMS	The East African Marine System
TICTA	Tanzania ICT Association
TIF	Tanzania ICT Federation
TISPA	Tanzania Internet Service Providers Association
TIX	Tanzania Internet Exchange Point
TRASA	Telecommunication Regulatory Association of Southern Africa
TVA	Telecommunication Vendors Association (Kenya)
UCC	Uganda Communications Commission
UCS	Uganda Computer Society
UMTS	Universal Mobile Telecommunications System
UIXP	Uganda Internet Exchange Point
UN	United Nations
UNCSTD	United Nations Commission on Science and Technology for Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNIFEM	United Nations Development Fund for Women
UPU	Universal Postal Union
USAF	Universal Service and/or Access Fund
USAID	United States Agency for International Development
VoIP	Voice-over-Internet Protocol
WiFi	Wireless Fidelity
WIMAX	Worldwide Interoperability for Microwave Access
WITSA	World Information Technology Services Alliance
WLL	Wireless Local Loop
WRC	World Radiocommunication Conference
WSIS	World Summit on the Information Society
WTDC	World Telecommunications Development Conference
WTO	World Trade Organization
WTSA	World Telecommunications Standardization Assembly

Executive Summary

Perhaps nothing has characterized the trends in telecommunications in the past two decades globally more than sector reforms that included liberalization, privatization, and distinct separation of roles between the major stakeholders. These trends have been fuelled by technological advances, among them mobile communication, the emergence of the Internet and migration from circuit to packet switching. The East African Region has been no exception. The past decade or so has seen the dismantling of state monopolies, often with blotted workforces, and doing literally everything from service provision to regulation, from international gateway services to customer premise equipment maintenance. The long-standing monopoly normally led to inefficiency and complacency. The future looked so assured to the incumbents that innovation was thrown out of the window by most. However, given the fast spread of globalization, technological advancement, and the ever more sophisticated consumer, business could "not remain as usual".

Propelled by the liberalization craze which paved way to competition, telecommunication operators soon realized that they had to transform and adopt new methods and strategies for competitiveness, and sometimes for outright survival. The emergence of the mobile telephony in particular put unprecedented pressure on the incumbents. By early 1990's, some governments had already started to put in place mechanisms to liberalize the telecommunication sector. Buoyed in part by pressure by development partners, especially the World Bank through its structural adjustment programs (SAPs), governments of developing states realized that they could no longer allocate public resources for programs that were "bankable", and were clearly good opportunities for private sector intervention, e.g. the provision and modernization of telecommunication services. Given the many competing priorities for most national governments, a good chunk of the public budget ended up being channelled towards the more social services, notably health and education. It was difficult for most governments to justify why they would include telecommunication infrastructure development in their balance sheets, at the expense of some of the more pressing "social basic needs". In part, the liberalization maestro was inspired by the experiences of the telecommunication bubble of the 1990's in the West, especially in North America [STIG'04].

Based on the successful models of the West, whereby roles of policy formulation, service provision, and regulation were separated, with good success, state monopolies in the developing world (including East Africa) too started to crumble. In most cases, new administrative units were created to set and oversee the implementation of rules and regulations in the sector. In the East African region (like several other regions), the dawn of this new era also witnessed the separation of telecommunication from postal services; this unbundling helped to identify which aspects of business were more viable than others. Besides, it gave an opportunity to many countries to update their telecommunications policies and laws that had almost stagnated for nearly two decades. Thus, either new telecommunications sector policies were developed, or existing ones revised. Kenya, for instance, enacted the Communications Act of 1998 [GOK'98], which liberalized the telecommunications sector, followed closely by a Telecommunications Sector Policy Paper. Similar experiences were witnessed in the other EAC States.

The liberalization was not without incident. The main positive side to it was that it allowed the injection of new capital into the sector. Its timing coincided with the emergence of mobile telephony, which revolutionalized telecommunications like never before. Given the convenience and flexibility of mobile communications, very fast growth rates were witnessed in mobile phone ownership and usage. Indeed, by the turn of the century, the total number of mobile subscribers had tipped the total number of fixed lines, with a growth rate that was almost exponential. Since then, the number of the mobile phone users grew much faster than any of the most optimistic predictions. In East Africa, the total number of mobile

subscribers surpassed the fixed line users in 2001, being over 1.3 million, as compared to just a little over 800 000 fixed line users. It is notable that the mobile numbers had just jumped from about a mere 500 000 the previous year, depicting a growth rate of about 260% (Table 1). The trend was maintained with a steady growth factor of between 2 to 3 over a 6-year period, crossing the 10 million mark (actually 10 123 million) by the end of 2005. The trend in East Africa of mobile subscribers fast outstripping fixed subscribers is not isolated: as depicted in global statistics [ITUI'06], this has been the general global trend as well.

With the onslaught of the generally aggressive mobile operators, the incumbents soon realized they had to radically change their ways of doing business. Most started to adopt new business strategies, upgraded their systems (to the extent that their resources could allow), retrench staff, and some which were lucky, also ventured directly or through subsidiaries in the fast-growing, lucrative mobile sub-sector.

Along with the emergence of the mobile boom, also appeared new value-added services, especially the Internet. The years ahead saw quick emergence of other Internet-based services, including voice-over-Internet Protocol (VoIP), etc. The private sector wasted no time to cash into these emerging value-added services, with part of the revenues generated being ploughed back into network expansion and/or modernization. Soon, telecommunications (and ICTs, generally) became a major sector, rivalling other traditional core infrastructure sectors such as roads and energy.

However, in spite of liberalization and privatization, some of the widely acknowledged sectoral challenges in East Africa persisted. They ranged from regulatory to infrastructural, from (human and network) capacity constraints to commercial economics, and included:

i) **Regulatory divergence**, which created a problem to investors and stands a major hindrance to coordinated development of the sector in East Africa.
ii) **Poor rural communications** with glaring digital divide between the rural and urban populations.
iii) **Lack of backbone infrastructure** that threatened the intra and transit East Africa traffic growth, and responsible for high tariffs in the sub-region.
iv) **The high tariffs**, as a problem that arose mainly from the lack of backbone infrastructure as well as high taxes levied.

Because of some of these challenges, in spite of the apparent success in some of the sub-sectors (especially the mobile sub-sector), overall tele-densities still remained low in this part of the world, compared to the more advanced economies [ITUI'06 – a listing of some of the Core ICT Indicators is given in Annex I]. It was abundantly clear that more interventions by the international community would be required to "***bridge the digital divide***", as exemplified during the respective ITU World Telecommunications Development Conferences (WTDC's) of 2002 and 2006, among other similar international – especially ITU – fora. Thus during WTDC'02 in Istanbul, two key ***Resolutions*** were reached: ***37*** (to help bridge the digital divide), and ***Recommendation 14*** (to Pilot Integration Projects for ICTs). Within the framework of the East African Community (EAC), these resolutions – which were later deepened in subsequent ITU assemblies (e.g. in Doha WTDC'06) – could not have come at a more opportune moment, with the efforts for the region's own economic and political integration in top gear.

Consequently, the Telecommunications Development Bureau (BDT) of the ITU, through the Regional Office for Africa, initiated this study to review and propose a strengthened institutional framework to facilitate the accelerated planning, design, development, operation, and management of a broadband[1]

[1] While cross-border connectivity could also be enhanced through narrow band interconnections, this study took the position that high-speed connections and new applications are important for transformation into information societies and reap the associated benefits [UNTF'05].

ICT/telecommunication infrastructure for East Africa (EARII), as a way of bridging the digital divide and accelerating socio-economic integration. The study included field visits, interviews and consultations with the major stakeholders mostly from the sub-region.

Among the specific action lines, were:

- Review of pertaining regulatory and policy regimes;
- Analysis and review of existing, on-going and planned ICT broadband and cross-border initiatives within and/or of a direct interest to the sub-region;
- Study of other similar regional initiatives, and their relevance and/or applicability to East Africa; and
- Review of the existing institutional structures, and their suitability to enable and accelerate the development of broadband infrastructure and cross-border interconnectivity in East Africa.

The study made a comprehensive review of the status of the sector, looking at all the major on-going regional and cross-border initiatives, including the East Africa Sub-marine Cable System (EASSy), the East African Backhaul System (EABs), The East African Marine System (TEAMS), and the Lake Victoria Maritime Communications Project, among others. It also looked at major initiatives that were either abandoned, overtaken by circumstances, or otherwise significantly delayed for one reason or another, e.g. the East African Carrier Project, the East African Digital Transmission Network, the COMESA Telecommunications Network (COMTEL), and other similar regional or sub-regional initiatives. The study also looked at the prevailing environment, especially with regard to the policy, regulatory and legislative framework, as well as the pertaining institutional arrangements. It also critically evaluated these existing frameworks against best practices from elsewhere inside and outside Africa.

The study noted some sticky issues that needed priority attention, among them issues of an infrastructural or technical nature (e.g. network upgrade, cross-border interconnection, etc), a regulatory nature (e.g. interconnection and resource sharing guidelines, harmonization of spectrum management strategies, etc), a financial nature (e.g. resource mobilization to complete the Lake Victoria Safety Project), and of an institutional nature. With regard to the last category, it was apparent that if the dream of an integrated East African Regional Information Infrastructure (EARII) was to be attained, the existing institutional arrangements had to be strengthened. An evolutionary, rather than revolutionary approach was recommended, beginning with the strengthening of the EAC Secretariat (e.g. through the establishment of a strengthened ICT or Infrastructure Directorate), to be able to effectively provide some of the co-ordination functions, as well as the establishment of a better endowed Secretariat for the East African Regulatory, Postal and Telecommunications Organization (EARPTO). The study also recommended the establishment of a regional professional association to help educate and create awareness among the masses, as well as maintain and promote standards and professional ethics in the sector.

The study regrettably noted that recommendations like those above were not new. It was noted that as early as 2001 when the 2nd EAC Development Strategy was developed, some of the pertaining issues (e.g. harmonization of policies and regulations, improving cross-border connectivity, adoption of common frequency management strategies, etc) were long recognized and prioritized for action, but unfortunately to date they remain on the to-do lists[2]. Study after study has been conducted, consultant after consultant engaged, and meeting after meeting held. The answer therefore cannot be more studies or

[2] A glance at the sample EAC's Action Plans (e.g. for January-June 2006 – Annex IV), and periodic Progress Reports (e.g. that of April-June 2005 [EACP'05]) attest to this concern.

meetings. Some of these may still be necessary, but their success will be limited unless some of the major underlying challenges are addressed. In certain cases, fairly elaborate decisions would be made (e.g. by EARPTO Congress), but they would remain in the planning books unimplemented. One would posit that perhaps what was required most was a legal mandate that empowered the sectoral bodies and committees to have their resolutions implemented and honoured. But then again, the laws, without a policy framework, and without addressing the "bigger picture" would be limited in scope and usefulness, leading to a cyclic situation where in the early stages what is in fact required might be a mechanism for follow-up, and to ensure compliance and implementation of all major decisions. This thesis is not off the mark, since even some decisions of the TCM Sectoral Committee meetings (all to which EARPTO Chairperson is invited) go unimplemented, in spite of the fact that the TCM Committee itself has legal backing of the Treaty.

The study found the following to be some of the main operational and implementation challenges:

i) lack of a common ICT vision and a comprehensive regional strategy,

ii) lack of a regional "ICT Champion",

iii) slow decision-making processes (that lack the backing of law), contrary to the fast pace of technological evolution, dynamism and vibrancy of the sector,

iv) Partner States are at different levels of ICT development and its infusion in the economy, sometimes making harmonization and standardization difficult, as well as mitigating against economies-of-scale, especially when it comes to procurement,

v) lack of a resource mobilization strategy and poor coordination of development assistance in the sector,

vi) lack of an effective monitoring and evaluation (M&E) strategy, and

vii) lack of a strong, functional institutional arrangement and programme implementation team.

In fact, of all these impediments, the last one was found to be perhaps the most critical at this stage. With satisfactory institutional arrangements, most of the other challenges could be stemmed. This recognition motivated the focus of this study which is "strengthening institutional arrangements". Thus, in the medium to long run, the study recommends the establishment of a multi-sectoral stakeholders' organization, similar to the Southern Africa Telecommunications Association (SATA) and the Pacific Islands Telecommunications Association (PITA) in some respects, but also to EARPTO in others. The timelines and indicative budgets for achieving some of the reforms recommended – infrastructural, regulatory or institutional – are also given. The importance of ICTs in attaining the millennium development goals (MDGs), reducing poverty, generating employment, and creating wealth is under-scored, making it an absolute necessity for some of the recommended actions to be attended to, if the digital divide is to be bridged, and East Africa is to truly become an integral part of the global economy.

Finally, the study recognizes that not all the challenges are best addressed at the regional level: it recognizes that some are better tackled at local or national levels, yet others are best addressed at even higher, continental level to benefit from economies of scale. Thus, in addition to the support to regional economic communities like the EAC, interventions by ITU and other partners at national as well as continental (e.g. NEPAD) levels must continue in tandem for the goals identified in this report to be fully realized.

1 Introduction

Subsequent to Resolution 37 (Bridging the Digital Divide), and Recommendation 14 (Pilot Integration Project for ICTs) of the World Telecommunication Development Conference (WTDC'02 [WTDC'02]), Istanbul, the Telecommunication Development Bureau (BDT) of the ITU initiated this study. Among other things, Resolution 37 recognizes the importance of ICT statistics to highlight the extent of the "divide", the ability of independent regulators to deal with interconnection issues, determining tariffs, and the need to create digital opportunities in developing countries (DCs). It further recognizes that each region must tackle its own "divide" issues, but nonetheless that in spite of the various past interventions, by and large telecommunication services still remain beyond the means of the majority in DCs. It is noted that among some of the known measures to lower trans-national communications costs, are cross-border connectivity, interconnectivity, and broadband services. Consequently, the Conference resolved to request the ITU Development Sector (ITU-D) to, among other things:

- Assist Member States and Sector Members in developing a pro-competition policy and regulatory framework (e.g. in e-commerce), as well as capacity building in connectivity and access;
- Study and formulate a workable universal access funding mechanism;
- Assist in creating awareness among ICTs have-nots; and
- Assist in reducing communications costs by encouraging manufacturers to develop appropriate technologies, scaleable to broadband applications.

Recommendation 14 noted the glaring "digital divide" and attempts by various groups from the public and private sectors, academia, non-governmental organizations (NGO's) and multilateral agencies to bridge the gap. It further recognized that the "divide" leads to rapid escalation of socio-economic disparities. It is noted, for instance, that with the current 5% average growth recorded by Africa, if the rate is maintained, no country will attain the Millennium Development Goals (MDGs), unless a leap is found to reverse the reduction in Africa's competitiveness. It is widely believed today that only ICTs, through affordable infrastructure can realize that magic [EASY'06]. Thus, the Recommendation recognizes that the integration models adopted by the Conference proposed ways to increase profitability of existing infrastructure to lower the cost of implementing ICT projects, to provide sharing of experience, and to foster intra-regional and extra-regional technology transfer.

It resolved to ***recommend that the BDT adopts all necessary measures to implement regional projects derived from non-exclusive models designed to link all stakeholders, organizations, and institutions of the various sectors in an ongoing relationship of co-operation.***

Following the conceptualization of NEPAD, African countries through the highest organs within ITU, the World Telecommunications Development Conference (WTDC-02) held in Istanbul in March 2002 and the Plenipotentiary Conference (PP-02) held in Marrakech in September 2002 sought the assistance of ITU to support their efforts towards meeting the objectives and action plans of the NEPAD. This request was endorsed through Resolution 35 from the WTDC-02 and Resolution 124 of the PP-02.

In addition to the above, the Declaration of Principles and the Plan of Action from the World Summit on the Information Society (WSIS) held in Geneva in December 2003 stressed the need for regional dialogue, cooperation and partnership among national, regional and international stakeholders in order to realize the objectives, goals and targets for building an all inclusive Information Society. Ahead of WSIS,

ITU organized a meeting of African countries and some other stakeholders in Arusha, Tanzania, in 2003 to discuss on how the ICT objectives under the NEPAD programme could be further advanced. In 2004, as a follow up to these developments and after due consultation, the ITU started implementing the ***ITU NEPAD Preliminary Assistance Project*** to define precisely the scope and level of support required by Africa to meet the NEPAD objectives in the ICT sector as part of the global WSIS objectives as well as the Millennium Development Goals (MDGs).

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WTDC-06 decided to support all the recommendations of the ***Abuja Declaration*** and these are included in the five Regional Initiatives for Africa, one of which is ***Broadband Infrastructure Development and Regional Interconnectivity.***

It was in conformity with the ITU Resolutions, recommendations and ***Broadband Infrastructure Development and Regional Interconnectivity initiative*** that ***Technical Assistance to the East Africa Community to plan and strengthen cross-boarder connectivity to form an integrated East Africa Region Information Infrastructure (EARII)*** was initiated. The Technical Assistance had as its main objective "to evolve a strengthened institutional framework within East Africa, possibly at the East Africa Community (EAC) Secretariat to facilitate accelerated planning, design, development, operation and management of a robust broadband regional Telecommunication/ICTs infrastructure for the sub-region". The Technical Assistance recognizes that among others, three targeted interventions are important in bridging the digital divide in the East African context: high quality, affordable infrastructure (broadband, cross-border connectivity, interconnection guidelines, etc), policy and regulatory framework, and institutional and human capacity development.

It is noted that in subsequent Conferences, Resolution 37 and Recommendation 14 were continued and deepened through Resolutions 37 (Rev.Doha, 2006) Resolution 50[3] (Doha, 2006), and further reinforced by Resolution 21 (Rev.Doha, 2006) of the WTDC'06 ([WTDC'06]) with regard to co-ordination and collaboration with regional organizations in executing regional integration projects. These new Resolutions were part of the "Doha Action Plan". Specifically, Resolution 21 recognized the increasingly important roles played by regional organizations, notably the regional economic communities (RECs).

It is on the backdrop of these resolutions and recommendations that the BDT, through the Regional Office for Africa, initiated the process of recruiting an expert vide a field vacancy notice, to review and propose a strengthened institutional framework to facilitate the accelerated planning, design, development, operation, and management of a broadband ICT/telecommunication infrastructure for East Africa (EARII). The study included field visits, interviews and consultations with the major stakeholders, mostly from within the region.

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[3] Resolution 50 (Doha, 2006), is on "Optimal integration of ICTs", and takes cognizance of Phases 1 and 2 of the World Summit on the Information Society (WSIS), like most other Doha Resolutions.

Among the specific action lines, were the:

- Review of pertaining regulatory and policy regimes;
- Analysis and review of existing, on-going and planned ICT broadband and cross-border inter-connectivity initiatives within and/or of a direct interest to the sub-region;
- Study of other similar regional initiatives, and their relevance and/or applicability to East Africa; and
- Review of the existing institutional structures, and their suitability to enable and accelerate the development of broadband infrastructure and cross-border interconnectivity in East Africa.

The full Terms of Reference of the study are given in Annex II.

The study, without going outside its mandate, has taken cognizance of some of the aspects of other related Resolutions of WTDC'06, notably Resolutions 32 (International and regional co-operation, including regulators associations), 35 (Support for African ICT Sector in the framework of NEPAD), and 17 (Regionally approved initiatives). For instance, within the NEPAD framework, the study looks at the implications of the East African Submarine Cable System (EASSy), COMESA telecommunication network (COMTEL) and other regional ICT broadband initiatives with a bearing on the Community (EAC). On the other hand, within the context of Resolution 17, rather than the ITU Regional Office to attempt to propose solutions for the region, the study seeks instead to work together with the stakeholders and the region generally to evolve and suggest solutions. It has been attempted to the extent possible to faithfully reflect genuine feelings of the key stakeholders in arriving at the recommendations herein.

2 Problem statement and study objectives

2.1 Background

Communications and ICTs have revolutionalized world economics, and are expected to do so even more dramatically in the near future, and the stage is set. The way people do business globally is bound to change beyond imagination. Improved communications with proper e-applications offer the developing countries an unprecedented opportunity to reduce poverty, generate employment and create wealth at the fastest rate ever imagined. But this potential will remain unexploited in Africa if it is left to the market forces alone. Governments and Regional Economic Organizations, such as the EAC need to identify necessary interventions that will suitably position the region to reap the opportunities presented by the digital magic. One of the interventions that has swept through the Community (like anywhere else) like bushfire is liberalization of the telecommunication sector. While liberalization has fostered competition and brought in some new investment, it has also brought about new challenges. In what follows, some of these effects and challenges for the EAC are presented.

2.2 Effect of liberalization on the Communications Sector in East Africa

Following the liberalization in the sector in the three EAC Partner States, a large number of service providers/investors have been attracted to the investment opportunities in the sector. However, liberalization and privatization have also affected financing mechanisms of interregional projects, in some cases leading to discontinuation of projects. This has in turn had serious implications on tariff and

regional interconnection of the telecommunications infrastructure. Following are some of the implications liberalization has had on the sector (Annex III – [EAC'04]):

i) Improved services

Privatization and liberalization have greatly contributed to improved service offering:

a) Many new players, particularly in mobile and smaller, new ISPs
b) Greatly increased investments in the sector
c) Growth rates of subscribers
d) Increased Product range

ii) Effect on regional co-operation

Privatization and liberalization of the sector have adversely affected a considerable number of large, interregional projects, including:

a) COMTEL project and the Submarine Cable projects substantially delayed
b) The East African Digital Transmission Project discontinued

iii) Mobile operators drive the market

a) Mobile customers generate most of the long distance traffic (i.e. regional and international traffic)
b) Exclusivity for fixed line operators is viewed by many as a hindrance rather than a business and market driver for service provision

iv) Infrastructure – Present situation in the region

The most critical issue is that there is inadequate capacity and not-so-efficient operation of the regional telecommunications network, resulting in:

a) bottlenecks and constraints for regional economic development
b) likely reduced interest in regional investments due to inadequate telecommunications service)

v) Key Constraints in Service Provision

a) Congested regional traffic due to insufficient number of direct channels between Partner States
b) High charges for regional and international traffic, affecting both voice and data services
c) Costly access to the Internet and the slow speed of connections

2.3 Some persistent challenges to the Communications Sector in East Africa

In spite of liberalization and privatization, some of the age-old problems have persisted. They range from technical, regulatory as well as administrative. The EAC Secretariat has identified the following to stand out among them:

i) Regulatory divergence in East Africa, which creates a problem to investors and is a major hindrance to coordinated development of the sector in East Africa.
ii) Poor rural communications whereby the digital divide between the rural and urban populations in Africa is perhaps more serious than that between African cities and the developed world, hence the urgency to bridge the urban-rural communications gap.
iii) Lack of backbone infrastructure threatens the intra and transit East Africa traffic growth and is responsible for high tariffs in the sub-region.
iv) The high tariffs is a problem that arises mainly from the lack of backbone infrastructure as well as high taxes levied by governments.

To address some of these challenges, the following key strategic areas, which EAC (Partner States) would need to focus on have been identified as of immediate priority:

i) To solve the problem of inadequate capacity on regional links between the three Partner States [4];
ii) To establish a mechanism for regional licensing to enable companies to operate in the three Partner States;
iii) To involve all operators who generate more volume of telecommunications traffic in providing regional and long distance services including development of regional infrastructure; and
iv) To address the issue of communications on Lake Victoria in order to improve safety for maritime traffic and general communications in the Lake Victoria Basin.

In order to improve communications in the EAC, it therefore becomes imperative to attend to some of these issues. It is emphasized that these are priority problem areas that have been identified by the beneficiaries themselves, in this case the EAC Member States. Fortunately, some of these strategic areas requiring intervention are in tandem with the global trends, as was amply confirmed during the respective WSIS [5] and WTDC meetings, among others. Though as of the time of the study, some of the Work Plans were lagging way behind schedule, it is noteworthy that some of the above priority actions are in line with the EAC's Work Plans for the ICT Sector for the period January-June 2006 that were availed to the consultants during the study (Annex IV). As already explained in Section 1, the study commissioned by the ITU Regional Office has taken cognizance of these primary concerns of the Community.

2.4 Some of the implementation and operational challenges

The study regrettably noted that recommendations like some of those given in this report were not new. It was noted, for instance, that as early as 2001 when the 2nd EAC Development Strategy was developed, some of the pertaining issues (e.g. harmonization of policies and regulations, improving cross-border connectivity, adoption of common frequency management strategies, etc) were long recognized and prioritized for action, but unfortunately to date they remain on the to-do lists [6]. Study after study has been conducted, consultant after consultant engaged, and meeting after meeting held. The answer therefore cannot be more studies or meetings. Some of these may still be necessary, but their success will be limited unless some of the major underlying challenges are addressed. In certain cases, fairly elaborate decisions would be made (e.g. by the EARPTO Congress), but they would remain in the planning books unimplemented. One would posit that perhaps what was required most was a legal mandate that empowered the sectoral bodies and committees to have their resolutions implemented and honoured. But then again, the laws, without a policy framework, and without addressing the "bigger picture" would be limited in scope and usefulness, leading to a chicken-egg situation. It emerges that in the early stages what might in fact be required is a mechanism for follow-up, and for ensuring compliance and implementation of all major decisions.

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4 At inception of the Community, one of the four major ICT projects identified was the "Cross-border Connectivity Project". Indeed, completion of this project has again been identified as one of the four priority interventions in ICTs for the EAC in the 3rd Development Strategy (for the period 2006-2010 [EACS'06]).

5 For instance, as part of the Geneva Plan of Action (WSIS 2003), Action Line C2 on "Information and Communication Infrastructure" recognizes infrastructure as being central to achieving the goal of digital inclusion, enabling universal, sustainable, ubiquitous, and affordable access to ICTs by all, and specifically urging for "optimization of connectivity among major networks by encouraging the creation and development of regional ICT backbones and Internet Exchange Points, to reduce interconnection costs and broaden network access" [WSIS'03, WSIS'05].

6 A glance at the sample EAC's Action Plans (e.g. for January-June 2006 – Annex IV), and periodic Progress Reports (e.g. that of April-June 2005 [EACP'05]) attest to this concern.

The study found the following to be some of the main operational and implementation challenges:

i) lack of a common ICT vision and a comprehensive regional strategy,

ii) lack of a regional "ICT Champion",

iii) slow decision-making processes (that lack the backing of law), contrary to the fast pace of technological evolution, dynamism and vibrancy of the sector,

iv) Partner States are at different levels of ICT development and its infusion in the economy, sometimes making harmonization and standardization difficult, as well as mitigating against economies-of-scale, especially when it comes to procurement,

v) lack of a resource mobilization strategy and poor coordination of development assistance in the sector,

vi) lack of an effective monitoring and evaluation (M&E) strategy, and

vii) lack of a strong, functional institutional arrangement and programme implementation team.

In fact, of all these impediments, the last one was found to be perhaps the most critical at this stage. With satisfactory institutional arrangements, most of the other challenges could be stemmed. This recognition motivated the focus of this study which is "strengthening institutional arrangements".

2.5 Study objectives

Generally, this ITU support to the EAC seeks to assist in planning and strengthening cross-boarder connectivity to form an integrated East Africa Region Information Infrastructure (EARII). This particular study has as its overall objective to identify and strengthen existing institutional frameworks within the East African Community through an appropriate arrangement that will facilitate accelerated planning, design, development, operation and management of a robust broadband regional Telecommunication/ICTs infrastructure for the sub-region, as part of the Global Information Infrastructure (GII). Among some of the specific study objectives are to:

- Analyze and review existing, on-going and planned ICT broadband and cross-border interconnectivity initiatives within and/or of a direct interest to the sub-region;
- Review existing regulatory and policy regimes;
- Study other similar regional initiatives, and their relevance and/or applicability to East Africa;
- Review the existing institutional structures, and their suitability to enable and accelerate the development of cross boarder connectivity and broadband infrastructure in East Africa; and
- Identify the impediments and gaps, where they exist, and recommend ways in which the general environment for broadband and cross-border interconnectivity in East Africa can be escalated.

3 Methodology of the study

This short study was undertaken between August and October, 2006. It included missions to respective Member States, and consultations with some of the key stakeholders, among them the East African Legislative Assembly (EALA), the EAC Secretariat, Government Ministries with Telecommunication and/or ICT in their attribution, regulators, operators, Internet Service Providers (ISPs), trade and professional associations, and samples of major consumers (e.g. universities). Specifically, the missions

included visits to Tanzania (EAC Headquarters, Arusha, and TCRA Stakeholders' Consultative Workshop in Dar-Es-Salaam) and Uganda (UCC). Minutes of the Stakeholders' Workshop in Dar-Es-Salaam are given in Annex V. Two earlier related but independent missions also informed the study:

- Mission by the Senior Advisor for Network Management and Development for Eastern and Southern Africa, Telecommunication Development Bureau, ITU's Regional Office for Africa, which included a Stakeholders' Consultative Workshop co-organized with the UCC in Kampala. Minutes of this meeting are given in Annex VI;
- Preliminary Mission to EAC by the Senior Advisor; and
- Unofficial mission to Arusha by the Consultants to attend the High-Level Meeting of ICT Policy Advisors, Regulators and Operators on ICT Broadband Connectivity in East Africa convened by the EAC Secretariat. A final communiqué from the meeting appears in Annex VII;
- Due to unforeseen circumstances, the meeting of stakeholders meeting in Kenya was postponed and successfully took place on 25th February 2007. The Senior Advisor took mission to participate in the meeting and the minutes of the meeting are in Annex VII.

Desk and on-line literature reviews, some of which appear in the Bibliography, were also conducted for relevant documents, institutions and programs both within and without the East African region. The researchers' own experience and knowledge of the study area also proved vital.

4 Situational analysis

4.1 Overview

Overall, the East African Community has witnessed rapid growth in tele-density in recent times, largely attributed to the mobile explosion. This in turn, has been driven by competition, liberalization, privatization and distinct separation of roles of key stakeholders, that has assisted in investor confidence building. Recent times have also witnessed increased awareness and interest in development of both wireline and wireless broadband networks. Some of the major cities are already linked with broadband optical fibre cable, namely: Mombasa-Nairobi (Kenya), Dar-Es-Salaam-Morogoro-Dodoma-Tabora (Tanzania), Kampala-Masaka-Mbarara and Kampala-Entebbe-Jinja-Malaba (Uganda). There are also other major on-going construction works, among them: Nairobi-Eldoret-Malaba-Busia (Kenya), Tabora-Nyakanazi-Rusumo and Nyakanazi-Mwanza-Bukoba (Tanzania), and Masaka-Mbarara-Katuna (Uganda). All the three countries are in the process of developing their national broadband backbone networks, with two (Kenya and Tanzania) having made public calls for expressions of interest.

Apart from the national networks, in some cases, substantial work has been done to build metropolitan networks, notably in Dar-Es-Salaam, Kampala, Nairobi and Mombasa. Apart from the terrestrial networks, discussions are full-steam with regard to the long-awaited East African Submarine Cable System (EASSy).

In addition to the wireline networks, the emergence and spread of broadband wireless networks (WiFi, Wimax, WLL, etc.) is fast sweeping across the region. Whereas pioneer networks of this kind were popularized mainly by Internet Service Providers (ISPs), increasingly and partly due to issuance of converged licenses, more and more networks are being rolled out by traditional incumbents and the indomitable mobile operators.

In spite of these inspiring developments, interconnection and cross-border connectivity still remain a major challenge. Most of the traffic between the Member States is still delivered through satellite. As of the time of compiling this report, wherever there existed a terrestrial cross-border link, it was through

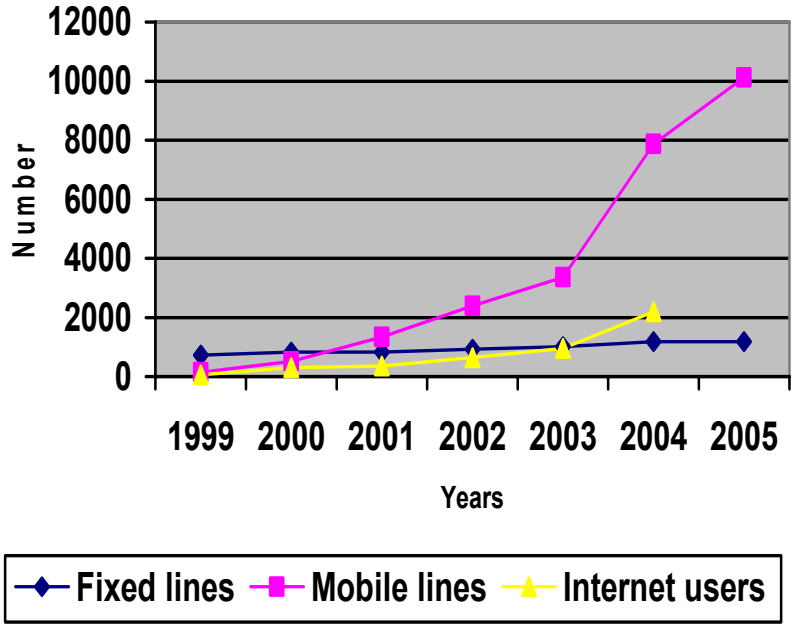
microwave. And the only known operator which has a seamless network across the entire territory is Celtel, spanning all the three EAC Member States. As reported later in Section 4.3, there are advanced plans to construct fibre cables across some of the borders. What is perhaps most deplorable is the fact that the absence of direct interconnection is not due to technical challenge, but largely to a lack of mutually acceptable commercial framework to the partner states and their operators.

4.2 Indicative statistics

In general, the trend is to see a rapid growth in mobile usage, with a stagnating growth (sometimes a reduction) in fixed lines. Table 1 has a summary of some of the basic statistics: fixed lines, mobile, and Internet users. There are other statistics that do not appear here, but are also telling. For instance, it is no secret that Africa, generally, today posts one of the best returns in investment in the mobile phone sector. In Kenya, one of the leading mobile service providers, Safaricom, has within a credibly short time of its existence (only 8 years) risen to become the leading "blue-chip" company, over the past 4 years consistently reporting one of the best performances. It has not only become a leading tax-contributor, but in 2006 posted the highest profit margin of USD 17 million, among all Kenyan companies.

Table 1 – Trends in ICT Growth in East Africa ('000)

	1999	2000	2001	2002	2003	2004	2005
Fixed Lines	733	819	829	928	1 012	1 180	1 188
Mobile	138	514	1 338	2 391	3 356	7 872	10 123
Internet Users	62	295	351	639	960	2 196	NA



One thing that is deplorable is the difficulty of getting accurate and timely data. Perhaps if not for anything else, this is reason enough to establish an appropriate institutional framework to, among other things, facilitate data collection, analysis, collation and sharing. It would have, for instance, been very useful to analyze international traffic patterns – both incoming and outgoing, and more so, a comparison of traffic between and among the member states, versus traffic to/from the rest of the world, but this information was not readily available. It is believed, for example, that because of the absence of direct cross-border interconnections, some countries bundle their traffic destined to the neighbouring country with outgoing traffic to a distant country via satellite, and have it redirected back to the destination country as if it is incoming traffic from that distant country, originating from the latter.

For instance, it is believed that due to the skewed traffic regimes, traffic from Country X meant for Country Y gets sent to Japan, which in turn relays them to country Y, as if it was originating from Japan. However, since there is no information as it is so difficult to get from operators like traffic details, this study was not able to get such information to more clearly authoritatively put its case. ***However, some indicative regional and international traffic projections were found in [SWED'06, EAC'03, ITM'06, EMC'06, ITUT'06], which justified the strong need for direct cross-border interconnection***.

4.3 Selected major projects

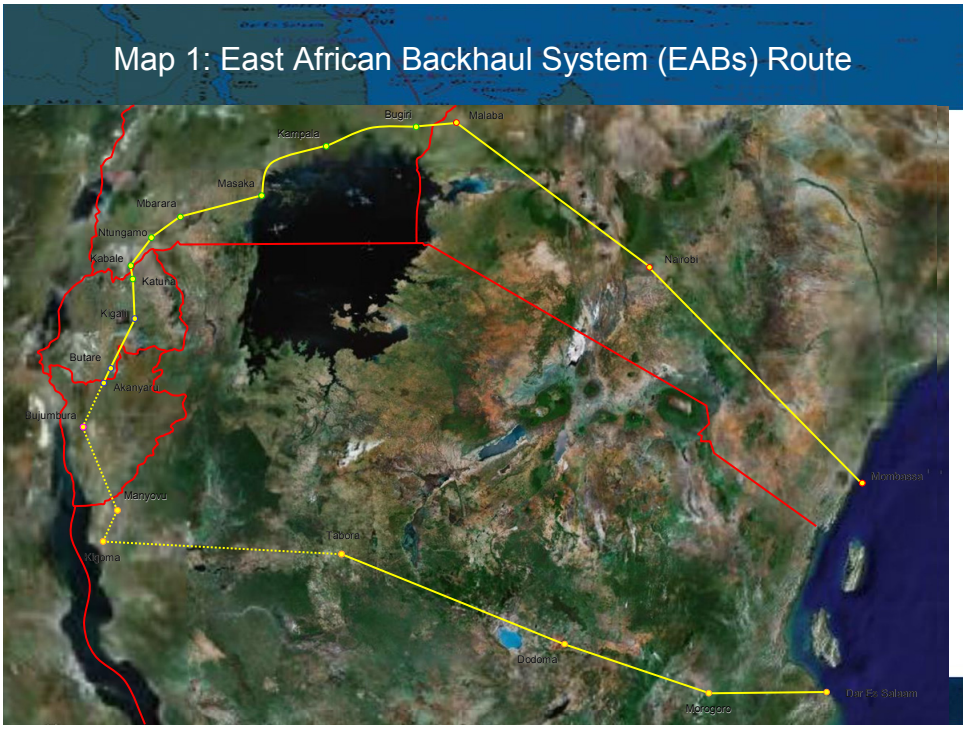
There are a number of emerging and ongoing regional broadband initiatives in East Africa, some of which are summarized below.

4.3.1 East African Sub-marine Cable System (EASSy)

The East African Sub-marine Cable System (EASSy) is a 9,900 km under-sea cable that seeks to link the Eastern African Coast from Mutnizini (near Durban) in South Africa to Port Sudan (Sudan), and thus complete the fibre ring around the continent. Conceived by members of the East African Business Council in November 2002, EASSy has unfortunately been mired in controversy due to misunderstanding between some of the key stakeholders, especially between the private operators (EASSy "Consortium"), who would like to see less of government in the project, and representatives of the governments supported by NEPAD, who prefer a system built under open access model, thus ensuring affordability, equity and non-discrimination.

4.3.2 East Africa Backhaul System (EABs)

For the land-locked countries to access sub-marine cables (e.g. EASSy) and reach international fiber gateways, a terrestrial network is required. There are various joint and separate efforts that seek to construct such backhaul networks within East Africa. Perhaps the most prominent, is the East African Backhaul System (EABs – Map 1), spearheaded by some members of the EASSy Consortium. Although some governments of Eastern and Southern Africa through the NEPAD Protocol for Regional Broadband ICT Infrastructure signed in Kigali in August 2006 (the "Kigali Protocol" [NEPD'06]) allude to construction of such terrestrial infrastructure through a co-operative, public-private partnership scheme similar to EASSy's, its precise details have yet to be worked out. In the meantime, with support from the World Bank and IFC, a preliminary technical and financial feasibility for EABs has been completed. Besides, substantial sections of the cable, which is meant to create a "ring" between Mombasa – Nairobi – Kampala – Kigali – Bujumbura – Dar-Es-Salaam have either been constructed or are under development by private operators or utility companies.



[Source: EASSy Consortium]

4.3.3 The East African Marine System (TEAMS)

Ostensibly due to the undue delays in EASSy, the Government of Kenya has teamed up with private investors, mainly from the Middle-East, to construct a submarine cable linking its coastal City of Mombasa to Fujairah in Oman. Though the precise details of this project are still scanty, the cable is expected to be in operation by the end of 2007, and that local private investors will be called upon to bridge any financing gaps. Skeptics of this project doubt if it will meet the "open access" objectives, especially with regard to affordability.

4.3.4 The East African Carrier Project

Ahead of the EASSy/EABs, the EAC Secretariat spearheaded an effort to develop a regional backbone network covering the Member States. The "Carrier Project" was conceived following a study by the EAC on a communications strategy for the Lake Victoria Basin, which recognized the inadequacy of the current communication system, whereby even some areas where transmission capacity was available across borders, intra-regional traffic was still being delivered via satellite.

The Project sought to involve multiple stakeholders, including mobile operators and regulators, with an initial focus on cross-border interconnections for regional traffic. Whereas a pre-feasibility study was completed, and the project received great support from most of the operators [EAC'03, EACB'04l], it seems to have since been overtaken by the EABs project. ***One major challenge that faced the Carrier Project was the licensing of a single regional entity to develop, own, operate and maintain the network, in view of the diverse regulatory regimes pertaining in the three countries***.

The study – supported by SIDA – suggested a micro-wave based backbone, which would cost between USD 2.5-6.5 million. It recommended rapid implementation through a two-pronged approach: establishment of a regional consortium of leading operators, and regional licensing of the same. The delayed implementation of the project has made it to be overtaken in terms of concept, scope and technology, with the emergence of new regional initiatives and expiry of exclusivity of incumbents in Partner States. ***It is felt that lack of an appropriate, empowered institutional structure for the co-ordination and follow-up is one reason for the common delay in execution of such vital projects***.

4.3.5 Lake Victoria Maritime Communications Project

This project seeks to study and evaluate a suitable communications system for the lake users, targeting emergency, safety and rescue operations. The study recommended the use of extended range implementation of GSM as the appropriate technology for this project [SCAB'06]. Among the outstanding issues that would ensure success and wide coverage of the lake, are: spectrum allocation/management, licensing arrangements, and roaming agreements.

Safety for the maritime users and general communications on the Lake having been identified as of high priority concern (Section 2.3), it is vital to identify resources to speedily implement this project.

4.3.6 The Regional Communications Infrastructure Project (RCIP)

The Regional Communications Infrastructure Program (RCIP), supported by the World Bank, is being developed on the basis of public-private partnerships and the flexibility for Governments to facilitate and accelerate the roll-out of broadband communications infrastructure across the East and Southern Africa region.

The Program involves:

a) technical assistance to promote further sector liberalization and market integration; as well as

b) investment financing for the key components of the overall program, namely:

   i) the EASSy cable;

   ii) the Eastern loop network connecting Kenya, Tanzania, Uganda, Rwanda, and Burundi to the submarine cable (i.e. EABs), and

   iii) the Southern loop network connecting Mozambique, Malawi, Zambia, Botswana, South Africa, Zimbabwe, Lesotho and Swaziland.

In addition, underlying national backbone infrastructure in the countries concerned is also considered for World Bank Group financing. An initial study for this project [SWED'06] estimates that over the next 10 years, the amount of international traffic that will be moved will be in the region of 400-800 million paid minutes per year, and concludes that in the foreseeable future, digital microwave networks would provide the EAC with sufficient regional and international connectivity.

4.3.7 The Regional ICT Support Program (RICTSP)

The Regional Information and Communications Technologies Support Programme (RICTSP) is a Euro 21 million joint initiative of the Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC), Inter Governmental Authority on Development (IGAD) and the Indian Ocean Commission (IOC), supported by the European Union. Its overall

objective is to contribute to the Eastern and Southern African regional agenda for economic integration through efficient and effective business environment, by removing some of the constraints to efficient use of ICTs. Some of the key activities to be implemented are in the area of:

i) Development and monitoring of ICT policies;

ii) Improved Internet connectivity in the region; and

iii) Improved access to information for public and private sectors.

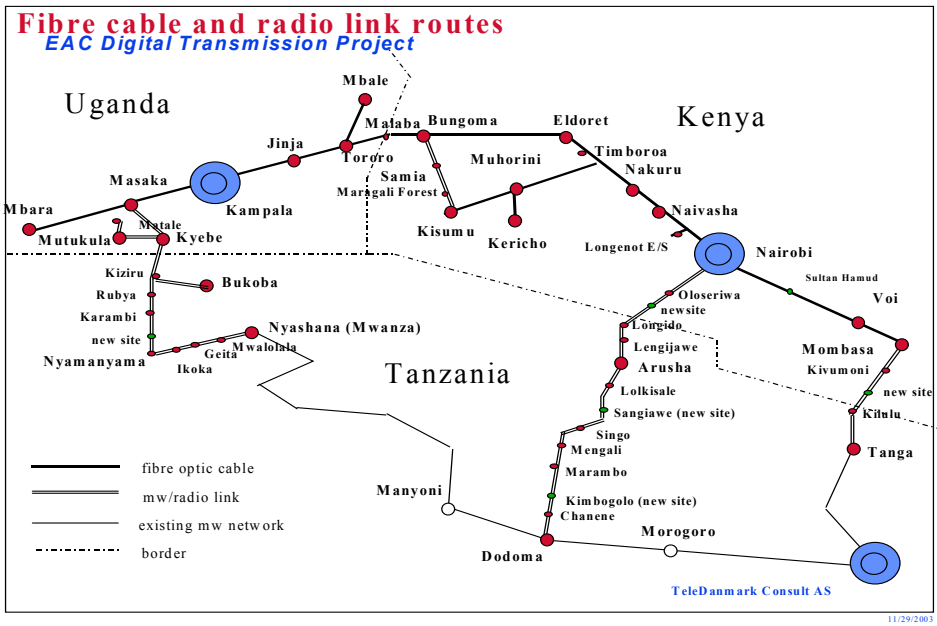
The project will make full use of the structures of the regional organisations to implement ICT Policy guidelines, which will be developed through National ICT Working Groups, coordinated at the regional level by the Association of Regulators for Information and Communications Services of Eastern and Southern Africa (ARICEA) **and the Inter-Regional Coordinating Committee (IRCC). The project is still in infancy, but appears to be picking up fast in the three EAC Member States (Annex VIII).**

4.3.8 The East African digital transmission network project

The East African Digital Transmission Network sought to establish a digital, seamless network within the region (Figure 1). Based on the Network's preliminary feasibility, a Study Team identified three microwave links to establish a high capacity regional transport network that could be built in a short time span and at modest costs [EAC'03, EACB'04]. Identified links were:

- Mombasa – Tanga (five sites, four hops)
- Arusha – Nairobi (six sites, five hops)
- Masaka – Bukoba (minimum three sites, but to Mwanza maximum 12 sites, 11 hops)

Figure 1 – The proposed East Africa digital transmission project



Based on modest traffic projections, the circuit dimensions proposed were as given in Table 2.

Table 2 – Cross-border traffic projections

Mombasa – Tanga	56 E1 Circuits [7]
Arusha – Nairobi	10 E1 Circuits
Masaka – Bukoba - Mwanza	36 E1 Circuits

However, having been mired in controversy, affected by sector reforms, and overtaken by other projects (e.g. EABs), the project has since been abandoned.

4.3.9 The East Africa trade and transport facilitation project

Pursuant to the implementation of the East African Community Customs Union (EACCU) Protocol [EACC'04], this World-Bank supported project has as its main objectives:

a) improving the trade environment among the Regional Countries, through effective implementation of the EACCU Protocol;
b) enhancing the efficiency of transport and logistic services along key transport corridors by reducing non-tariff barriers and uncertainty of transit time; and
c) improving railway services in Kenya and Uganda.

The Project consists of the following components: Strengthening the capacity of the EAC Secretariat, including the EAC Directorate of Trade; Improving information technology connectivity within the EACCU (including a study of interconnectivity for Regional Countries within the Customs Union; and investing in customs inter-connectivity); Strengthening and modernizing the customs departments of the Regional Countries; Strengthening the Northern Corridor Transit Transport Coordination Authority (NCTTCA [8]) and supporting the establishment of the Central Corridor Transport Facilitation Agency (CCTFA); Establishing one-stop border posts in key border crossings; Supporting the establishment of trade points, including information communication technology to facilitate the flow of information and trade transactions; among others. Though the project is still in its infancy, and has a broader sectoral scope, its focus on facilitation of cross-border trade, transport and service provision makes it important to this study. Besides, it is noted that the primary objectives of EAC's 3rd Development Strategy (2006-2010 [EACS'06]) are to consolidate and complete the EAC Customs Union; establish the East Africa Common Market; and lay all foundations for an East Africa Monetary Union and an East African Political Federation. For some of these key objectives – particularly the first two – adequate, reliable ICT infra-structure will be paramount.

7 Includes 16 E1 circuits for one 34 Mb/s TV channel.

8 The "NCTTCA Countries" are Burundi, DRC, Kenya, Rwanda and Uganda, while the "CCTFA Countries" are Burundi, DRC, Rwanda and Tanzania.

4.3.10 Private sector initiatives

Apart from the projects enumerated above, where public institutions (incumbent operators, utilities or governments) have been major actors, there have also been a plethora of projects where the lead has been by the private sector.

Three major categories of operators fall in this group:

i) mobile operators, especially those with a regional coverage and/or roaming arrangements;
ii) cable companies and data operators (e.g. the Kenya Data Network); and
iii) large Internet Service Providers (ISPs).

Given the performance of the mobile operators, it is not in doubt that this category is likely to be major investors in ICT infrastructure in the region in the foreseeable future. Of the leading providers, only Celtel is present in all the three countries, with MTN being present in two (Uganda and Tanzania) (Table 3).

Table 3 – Mobile operators licensed in the EAC countries

	Operator	Kenya	Uganda	Tanzania
1.	Benson Informatics	No	No	Yes (Soft Launch)
2.	Celtel	Yes	Yes	Yes
3.	Econet Wireless	Yes, but not yet operational	No	No
4.	MIC/Tigo	No	No	Yes
5.	MTN	No	Yes	No
6.	Safaricom [9]	Yes	No	No
7.	Six Telecom	No	No	Newly Licensed
8.	TTCL Mobile	No	No	Yes
9.	Uganda Telecom	No	Yes	No
10.	Vodacom	Only through Safaricom	No	Yes
11.	Zantel	No	No	Yes, Zanzibar and mainland

In the recent past, Celtel has rolled out a seamless network, smacking of a revolution in the mobile phone industry, permitting unified charges across the region. It is believed that they are using microwave links across the borders for interconnection. It is further understood that MTN-Uganda (and Kenya's Safaricom) are also advanced in discussions to evolve an interconnect arrangement that will also enable them to provide unified rates across the region. However, since Vodacom (whose parent company, Vodafone UK) owns 40% stake in Safaricom is a major, direct competitor with MTN in several other countries of the continent, it will be interesting to see how this partnership plays out.

While the pace of cellular network growth has been laudable, however, there remain some concerns on the quality of service which need to be seriously attended to. Some of the noted concerns were raised during the Stakeholders Meeting in Dar-Es-Salaam, with responses and/or clarifications given in Annex IX.

9 Substantial stake is held by Vodafone, which is also the parent company for Vodacom.

For the cable companies, KDN is perhaps the best example, having constructed not only metropolitan fiber networks in Nairobi and Mombasa, but also establishing a fiber link between the two cities (along the electricity grid). With the emergence of cable TV companies, it is only a matter of time before they too could be contenders in long-haul communications. Some of the mobile operators – notably MTN-Uganda – have also started to construct terrestrial optical cables to augment their microwave links. MTN has, for instance, constructed a fiber link from Kampala-Jinja-Bugiri, towards Malaba on the Kenyan border. Incidentally, the cross-border link to the Kenyan side (Samia Post), hardly 5 km away, is still via microwave.

Broadband networks being built and/or promoted by ISPs are elaborated upon below.

4.3.11 Wireless broadband networks

Apart from fiber cables, there are those who believe that wireless networks (WiFi, WIMAX, etc) is the cost-effective way for Africa to rapidly roll out broadband networks, especially in the rural areas. Perhaps the only best known example of a near-wholly wireless broadband network is the South African sea-side town of Knysna [SOUT'07] [10]. The contention is that initial investment costs for wireless networks are relatively lower. A number of ISPs and licensed "data operators" are rapidly introducing and expanding wireless broadband networks in East Africa. Apart from fixed broadband wireless networks, mobile broadband services (through 3G and 4G technologies – e.g. CDMA 2000, UMTS, EDGE, HSDPA, etc) are also expected to find root in East Africa, sooner rather than later. CDMA networks are fast mushrooming already in all the three Member States, while Safaricom has already announced plans to upgrade its GPRS network to EDGE technology.

4.4 Selected regional (continental) projects

Apart from the sub-regional initiatives listed above, there are also a host of continent-wide projects that could have significant impact on broadband infrastructure development in the East African sub-region. Some of these are summarized below.

4.4.1 The African Regional Action Plan on the Knowledge Economy (ARAPKE)

The African Regional Action Plan on the Knowledge Economy (ARAPKE) is Africa's Framework of Action to leverage ICTs for the realization of the millennium development goals (MDGs) under the auspices of the African Union. Although ICT/Telecommunications Ministers have adopted the framework, the project – a collaborative effort mainly between the AU Commission and the United Nations Commission for Africa (UNECA), is still in infancy.

4.4.2 The Indian/Pan-African Satellite (e-network) Project

The Indian/Pan-African Satellite Project evolved out of a USD 55 million commitment from the Indian Government in partnership with African Governments to foster telemedicine, tele-education and a very-very important persons (VVIP) communication network in Africa. Preliminary technical meetings under the auspices of the AU have been held, and a number of countries have signed the enabling Agreement with the Implementing Agency, TCIL of India. This project is also still in infancy.

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[10] It is understood that a leading wireless broadband service provider, IBurst, (with already nearly 30 000 units deployed as of the time of writing) intends to use the City of Port Elizabeth to demonstrate the viability of this platform. In the US, the City of Philadelphia is reputed to be all-wireless [DIGA'07].

4.4.3 NEPAD regional broadband ICT infrastructure for Eastern & Southern Africa

At its meeting of 9th March, 2003, the NEPAD Heads of State and Government Implementation Committee (HSGIC) adopted the development of a broadband ICT network linking all countries in Africa to one another and in turn to the rest of the world as a top priority NEPAD project. Subsequently, an agreed, rationalized regional broadband network was adopted as a NEPAD flagship project by the 12th Summit of the HSGIC of NEPAD, in Algiers, Algeria, in November, 2004. The NEPAD ICT Broadband Infrastructure for Eastern and Southern Africa (ESA), and its attendant supporting Protocol (the "Kigali Protocol"), seeks to plan, design, develop, finance, own, operate and maintain a regional broadband network for the ESA region. The East African Submarine Cable System (EASSy) is seen as part of this network. A similar network has also been proposed for the Northern and Western Africa Region.

4.4.4 COMESA Telecommunication network (COMTEL)

The COMESA Telecommunication Project (COMTEL), seeks to link all the 21 capital cities of COMESA States by fiber, including the three[11] EAC Member States. Motivation for COMTEL was the outcome of a study on telecommunications network inter-connectivity and tariff harmonization undertaken by Telia Swedtel on behalf of COMESA with financing from the African Development Bank. The project cost is estimated as USD 240 million. It entails the establishment of a privately owned regional terrestrial telecommunications network linking National Telecommunications/ICT Operators in the Eastern and Southern Africa region (Figure 2). The network is to be built on the existing infrastructure where available but in most cases, new transmission routes employing a mix of fibre-optic cable and digital microwave infrastructure is to be constructed.

COMTEL's core business is to provide a high quality carrier system for regional traffic. A feasibility study is already completed, and at some stage a serious strategic investor had been identified. However, the project seems to have slowed down and is substantially behind schedule. Consultations with other regional broadband infrastructure projects are on-going.

4.4.5 The Southern Africa Regional Information Infrastructure (SRII)

The Southern Africa Regional Information Infrastructure (SRII) initiative, spearheaded by the Southern Africa Development Community (SADC) and the Southern Africa Telecommunications Association (SATA), is fast expanding a broadband terrestrial network within and between the Southern States. This is one of the few success stories for the development of broadband regional infrastructure, especially in terms of cross-border links. It is significant that one of the EAC States – Tanzania – is a participant in this initiative, by virtue of its membership in SADC.

4.4.6 The Pan-African Satellite Project (RASCOM)

The African Regional Satellite Communication Project (RASCOM) is due for launching, with commercial exploitation expected by the end of 2007. However, the project appears substantially delayed.

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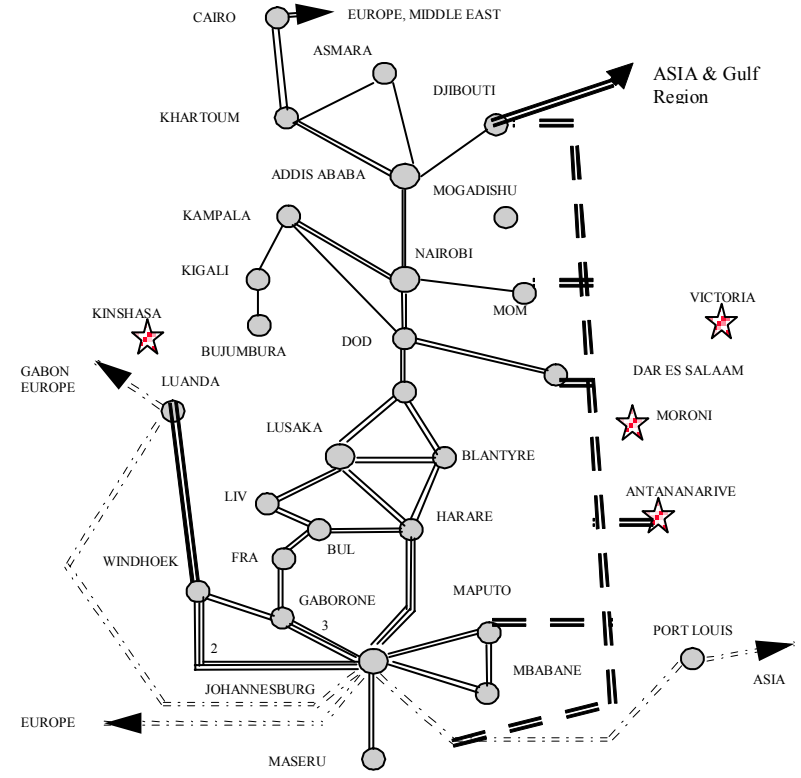
[11] Tanzania has been on and off COMESA at varying times. Presently, it is not a member. However, non-COMESA Member States are free to participate in COMTEL, and Tanzania is a participant in COMTEL.

Figure 2: The COMTEL Transmission ATM Network



4.4.7 Other relevant initiatives

There are a host of other regional ICT initiatives that could have a bearing on the development of broadband infrastructure in East Africa – directly or otherwise. The NEPAD e-Schools Project, which is currently demonstrating the use of ICTs in six schools in each of some of the initial 15 African States that have committed themselves to the African Peer Review Mechanism (APRM) is one such initiative. It seeks to link up all the 600 000 schools in Africa by the year 2015. It has already been rolled out in Kenya and Uganda, in addition to 3 other countries – Lesotho, Ghana and Rwanda. The impact of this project, when fully implemented, would be to create huge demand for broadband services. There are also other various similar NEPAD-supported ICT initiatives, among them the e-Africa Parliament, the e-Tourism/ World Cup 2010 Project, the Development Gateway Foundation, etc, that could boost such demand.

The regional academic and research network, Ubuntu Alliance (UA), through its associated national research and educational networks (NREN's) could also have significant impact. As a matter of fact, UA is understood to have already mobilized about USD 3 million, and is seeking to co-invest in the EASSy cable. The Nile Basin Initiative (NBI), which groups ten countries along the Nile Basin (including the three EAC Member States) has a shared vision "*to achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin resources"*. Although presently, the only known ICT program in which they are collaborating with the EAC is a Water Resource Management Database, it can only be expected that with suitable funding levels, the scope of its projects could be expanded to include broadband infrastructure, with the most radical being the construction of a marine cable along the Nile River length. Two of the relevant stated strategic objectives in this regard are: "to ensure cooperation and joint action between the riparian countries, seeking win-win gains", and "to target poverty eradication and promote economic integration".

Within the domain of "*Infrastructure"* [NBI'06] the following areas have been identified:

i) Regional energy networks, including power interconnection and gas pipelines,

ii) Telecommunication development, and

iii) Regional transport, including: railway and road networks; river and marine navigation; aviation – thus making the proposition above not unrealistic.

4.5 Policy and regulatory profile

Presently, each of the EAC Member States has its own distinct and dissimilar policy and regulatory regimes. However, there are preliminary attempts to harmonize them. Perhaps the point of convergence stops only at the fact that today all the three Member States have approved National ICT Policies in place. However, there are glaring areas of divergence in those policies. Nevertheless, within the framework of COMESA (and now the EAC and NEPAD), attempts are way advanced to harmonize the policies within the areas of jurisdiction. Annex X indicates the commonalities and areas of divergence within the policy, regulatory and legal frameworks among the Member States. COMESA (and SADC) have since developed model ICT Policies. However, it is not clear yet to what extent they have influenced the respective national policies.

Apart from the comprehensive "National ICT Policies", different countries also have subsidiary policies, the most common being "Telecommunications Policies" (as is the case with all the Partner States). In addition, some the countries have evolved comprehensive stand-alone "e-Government Strategies" (e.g. Kenya), and "Universal Service and/or Access Strategies" (notably Uganda). In regard to the National ICT Policies, perhaps unlike Rwanda and Mozambique (some of the countries which developed their policies early), none of the EAC Member States has developed a corresponding comprehensive implementation plan.

A Task Force consisting of key senior Policy experts was constituted by the EAC Sectoral Council for Transport, Communications and Meteorology (TCM) in November 2003. The Task Force in its first meeting reviewed the existing National and Regional ICT Policies and agreed on the best approach towards development of a Harmonized Regional ICT Policy for East Africa. It has since released the Zero Draft [EACZ'04], which includes a Draft Harmonized Regional ICT Policy, and gives a summary of the current status on attempts to harmonize the Policies.

Apart from the policies, regulations and legislation are equally non-uniform. Save for the fact that all the Member States now have fully functional, autonomous regulators, there is little beyond that which is uniform. The focus for individual regulators also seems to differ, and can only diverge further apart, in the absence of a concerted effort to harmonize the regulations.

Tanzania, for instance, appears committed to (and has indeed pioneered) converged licensing, supporting "triple-play", i.e. telecommunications (both fixed and mobile), information technology (IT), and broadcasting. The nature of IP-based licensing, being technology-neutral, enables nearly all manner of content (voice, video, or data) to be relayed along one common channel, without worrying too much about content-type. Though Tanzania may not have gone the full way with "convergence" in terms of seeing companies that provide all-in-one "triple-play" services, the trend seems to suggest that it will not be long to see, for instance, cable TV companies compete for content with telecommunication companies. Indeed, in places like the UK, this is already happening; a new home broadband "telephone" user can apply for service either from British Telecom, or from one of the Cable TV companies! During the Stakeholders Consultative Workshop in Dar es Salaam, a TCRA official reported that they had already one application from a broadcaster for network and application service licenses.

In Uganda, on the other hand, the emphasis is on "infrastructure licensing [12]", with the objective being to open infrastructure to full competition. The idea is to motivate private entities to provide their own infrastructure, if they so wish. Further distinction is made between "public" and "private" infrastructure licenses, depending on for whom the infrastructure is meant. For Kenya, on the other hand, the focus has been at the "service" level, with some of the segments being: international gateway, mobile communication, data operator's license, ISP, etc. With the joint efforts of the EAC Secretariat and EARPTO to harmonize these regulations through another Joint Task Force [EART'05], it is expected that some of the current frameworks will change.

Just as there are discrepancies in policies and regulations, so are they in legislation. However, in this latter case, there does not yet seem to be any major effort to harmonize the respective legislations, save for the model laws being promoted separately by COMESA and SADC, and the NEPAD Protocol which requires signatories to reform their policies, regulations and legislations by July 2008. *This area too requires a concerted effort if the Community is to fully benefit from harmonized markets*.

4.6 Institutional framework

4.6.1 Central government level

At national level, all the countries have Ministries responsible for ICTs and/or Telecommunications. In the case of Uganda, it is the Ministry of ICT; in the case of Kenya, it is the Ministry of Information and Communications; while in Tanzania, it is the Ministry of Infrastructure Development (with a Deputy Minister in charge of all communications matters and sectors). In nearly all the cases, there is also a strong ICT Unit within the Ministry of Finance, sometimes referred also to as the "Government Computer Centre/Services", for historical reasons. In the case of Kenya, there is also the e-Government Directorate within the Office of the President. For its part, in Uganda, there is also a newly established National Information Technology Authority (NITA), modelled along lines similar to Nigeria's National IT Development Agency (NITDA), Rwanda's RITA, and South Africa's SITA – Table 4. In Kenya, there have also been proposals to have ICT Units, headed by a senior officer preferably at Director level (like in Rwanda) in some, if not all Ministries and public agencies. In Tanzania, in line with the SADC TCM Protocol, there exists the office of National ICT Coordinator.

[12] As opposed to "service licensing". An applicant can be granted both or either license.

Table 4 – Summary of pertaining institutional frameworks in Member States

Country	Kenya	Uganda	Tanzania	Comments
Central Government				
Key Ministry	InfoComm	ICT	Infrastructure	
Other Key Portfolios	OP, Finance	Finance		
Information & Broadcasting Portfolio	Same Ministry	Ministry of Info & National Guidance	Ministry of Info, Culture & Sports	
Policy Formulation & Monitoring	Ministry	Ministry	Ministry	
Co-ordination of Implementation	Ministry/E-Govt Directorate	NITA	Ministry	
E-Government Co-ordination	OP	NITA	Ministry	
ICT Units/Directorates in Ministries	Under consideration	No	No	
Parliamentary Committee on Communication/ICT/Modernization	Yes	Yes	Yes	
Regulation				
Independent Regulator	CCK	UCC	TCRA	
Broadcasting Licensing	Ministry	Uganda Broad-casting Council	Regulator	
Private sector				
Fixed Operators	Two	Two	Two [13]	In Uganda: MTN & UTL
Mobile Operators	Two [14]	Three	Seven [15]	Including Zantel, Zanzibar/Mainland
Number of ISPs	65	17	23	
Professional ICT Associations	CSK, KIF/KEPSA, KICTA, TESPOK, IEK, IEEE, TVA	UCS, I-Net, ISF, UgaBytes, ISPA, WOUGNet, NIGF	e-Think Tank, TISPA, TICTA, TIE	
Internet Domain Administration	KENIC	Computer Friont-iers Int'l (CFI)	tzNIC	Hosted by NRAs in Kenya & Tanzania
Internet Exchange Point	KIXP	UIXP	TIX	Hosted by NRA in Uganda, elsewhere by ISP Association
Civil society				
Consumer Associations	Consumer Information Network, KCO		TCA, Consumer Watch	
Media Associations	Media Council, KUJ, KCOMNET	I-Network, Media Council		

[13] However, from February 2005, a converged licensing regime is in place, which allows all operators to offer both fixed and mobile services as they read signals from the market.

[14] A third one, Econet Wireless, was given a license that however to date remains disputed.

[15] So far, only five are operational though, the other two having just been licensed.

4.6.2 Regulators

In all the Member States, there are distinct, autonomous regulatory agencies. Apart from regulatory oversight and licensing, all the regulators are currently also mandated to co-ordinate the utilization and management of the universal service and/or access fund, wherever it has been established.

In spite of:

i) the very strong ICT private sector in all the three countries, and
ii) a plethora of ICT associations, there is no strong, respectable ICT association that spans the entire EAC region.

It is imperative that one emerges. The East African Regulatory, Postal and Telecommunication Organization (EARPTO), being an association of regulators and operators is perhaps one of the most respected regional forums for ICT deliberations. However, it naturally leaves out certain major categories of stakeholders, e.g. IT companies, ICT consultants, etc. Some of the members of EARPTO also subscribe to other regional regulators' associations, e.g. ATRA, ARICEA (for COMESA), and CRASA (for SADC).

4.6.3 Professional associations

The African ICT Association (AFICTA), supported by the World Information Technology Services Alliance (WITSA), was expected to evolve into a continental professional body. However, that goal hasn't been fully achieved. In the past, certain individual professional associations have forged some loose alliances through membership of some of the international groupings, for instance CSK, the Computer Society of Zimbabwe (CSZ), and the then Computer Association of Nigeria (COAN) at some stage collaborated very closely through their membership in the International Federation for Information Processing (IFIP). More recently, there have been talks of an East Africa ICT Association and an East and Central Africa ICT Media Network (JOURNet), but these are yet to be fully realized.

The experiences of the East Africa Law Society (EALS – http://www.ealawsociety.org) may be worth emulating, even if not an ICT Association. EALS, the premier regional Bar Association in East Africa, is a dual membership organization, bringing together the seven thousand-plus individual lawyer-members from the region as well as the four national Bar associations: Law Society of Kenya, Tanganyika Law Society, Uganda Law Society and Zanzibar Law Society [16]. It is the largest organized Professional/Civil Society membership organization in the region with a strong mandate and interest in professional development and diverse legal issues. It is incorporated as a Company Limited by Guarantee in Tanzania, and registered as a foreign company in Kenya and Uganda. It is governed by its diverse regional membership through general meetings. Policy and administrative supervision is undertaken by an elected Governing Council. Some programmatic as well as membership activities are carried out through Committees. To achieve its goals, EALS actively lobbies for enabling legislation in the EAC Partner States, while insisting on the highest ethical standards in the professional practice of its members. It seeks support for its activities through strategic partnerships in order to promote people's growing choices and ability to access legal services throughout the sub-region. Implementation and co-ordination is carried out by the Secretariat, headed by the Chief Executive Officer, and based in Arusha, Tanzania. Certain mandates and activities of the EALS are also carried out by the national Bar associations. EALS recognizes that it is uniquely positioned to promote cross border integration for the people of East Africa.

16 The members are bound by the Memorandum and Articles of Association of the EALS.

As such, it works to harmonize processes leading to the goal of East African regional integration. Save for a program jointly run with EALA and the East African Court of Justice, EALS presently has no formal ties with the EAC.

4.6.4 The EAC secretariat

The EAC has its Secretariat in Arusha, Tanzania. As spelt out in the EAC Treaty [EAC'99], the Secretariat is the executive organ of the Community. Headed by a rotational Secretary-General, the Secretariat is made up of several professional and administrative personnel (Annex XX). Some of the functions of the Secretariat include: submitting recommendations to the Council and Bills to the Assembly (EALA); co-ordination of implementation of Community projects; co-ordination and harmonization of policies and strategies; mobilization of resources and management of those resources, etc (Annex XI). For full details, see the EAC Treaty.

The Secretary-General has three deputies (DSG's), respectively being in charge of:- Finance and Administration, Political Federation, and Projects and Programmes, under whose portfolio "Infrastructure", and ICTs by extension, fall. There is also a Director General (DG) in charge of Customs and Trade. In a new structure, there shall be a Directorate of Planning and Infrastructure (headed by a Director), within which the "Department of Communications", headed by a Senior Communications Expert, shall fall. Presently, this is the Department mandated to initiate and co-ordinate ICT activities at the Community level. The Department has been fairly active, in spite of being thin on staff, coordinating various (sub)-regional ICT programs and administrative functions, including the hosting of the EARPTO Website [17]. It might be desirable to seek ways to strengthen the Department and re-define its mandate, to enable it better attain the ICT and communications-related attributions of the Community.

4.6.5 The EAC Summit and Council

The highest decision making organ of the EAC is the Summit – made up of Heads of State or Government of Partner States. The Summit gives general direction to the Community, and can delegate its functions (save for a few) to a Member of the Summit, the Council, or Secretary-General. Ordinarily, the Summit's business is transmitted to it by the Council. The Council [18], which is ordinarily made of Ministers of Member States responsible for regional co-operation, is the policy organ of the Community, and closely monitors and reviews implementation of the Community programmes. It has powers to make regulations, issue directives, take decisions and make recommendations, as provided for in the EAC Treaty. Such decisions shall be binding to the Member States. Effectively, then, the Council becomes the day to day decision making "Board" of the Community. In situations where the need arises, other Ministers (e.g. sectoral heads) can acquire temporary Council Membership.

The Council's decisions are normally implemented by a "Co-ordination Committee", made up of Permanent Secretaries (PS's) responsible for regional co-operation, and any other such PS's that Member States may determine. Some activities of the Co-ordination Committee are executed through Sectoral Committees. Sectoral Committees are responsible for comprehensive preparation of implementation plans, and constant monitoring and review of those plans, in conjunction with the Secretariat. Presently, there is for instance, the Transport, Communications and Meteorology (TCM) Committee, under whose attribution ICTs/telecommunications fall.

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17 At the time of study, the EARPTO website seems to have been hosted by the current Chair, CCK (http://www.cck.go.ke/earpto_issues/).

18 "Sectoral Councils" normally include Ministers responsible for those specific sectors as well, and like ordinary "Council", their decisions too are binding.

4.6.6 The East Africa Legislative Assembly (EALA)

The Assembly is the legislative arm of the Community, liaising whenever necessary with National Assemblies of Member States on matters relating to the Community. It debates and approves the Community's budget. It also deliberates on all matters pertaining to the Community, and makes recommendations for implementation as and when necessary to the Council. Enactment of Bills of the Community shall be by passage by the Assembly, and assent by the Heads of State. The Assembly has Committees through which it conducts some of its businesses, for instance, the Committee on Communications, Trade and Investment is the one dealing with ICT and communications matters.

The Committee (and sometimes the Assembly itself) has in the past deliberated on a number of pertinent issues, including broadband and cross-border connectivity [e.g. Minutes of Committee Meetings – Annex XII]. However, as acknowledged in the 3rd EAC Development Strategy, there are still weaknesses in:

i) linkages between national laws (and policies) and the regional ones, and

ii) mediation and alignment of national positions to regional ones.

The Plan *calls for enactment of clear guidelines on resolving inconsistencies between national and regional goals, policies, laws, strategies, standards, etc, and ensuring compliance and implementation of EAC decisions*.

4.6.7 Selected best practices

In an attempt to find some other comparable institutional arrangements that have worked, or seem to be working (even if with some minimal expected difficulties), the study looked at other arrangements within and outside Africa. Within Africa, the common experiences with the regional or sub-regional associations of regulators may offer some lessons. These include also experiences in which EAC States and/or their Regulatory Authorities are members. A special case of interest is that of the Southern Africa Telecommunications Association (SATA), and its umbilical linkage with the SADC. Though not discussed in any length, the experiences of running the RECs themselves also offer some lessons – least that having arrangements where Member States are also stakeholders may be a viable way to evolve sustainable institutions.

Beyond Africa, the study found the cases of the Pacific Islands Telecommunications Association (PITA) and a host of other Asian and European telecommunication associations worth learning from as well. The findings are summarized below.

4.6.7.1 Regional associations of regulatory authorities in Africa

In Africa the trend in the establishment of the regulatory bodies has been accelerated from 1996 sub-sequent to the adoption by the Regional Telecommunication Development Conference (RTDC), Abidjan 1996, of the African Green paper on telecommunication policies to promote competition and supervise the transition from monopoly systems to liberalized markets. Most African countries have already created separate Regulatory bodies, though the form and the institutional framework may vary from country to country. In order for the Regulatory bodies to achieve and accomplish their missions they have found it necessary to come together within some form of regional or sub-regional framework to develop common regional norms to stimulate the development of telecommunications in their areas of jurisdiction.

As a result of this realization, the individual regulators, often with the support of the Regional Economic Communities (RECs) have established Regional Associations of Regulatory Authorities. Consequently, there are several such Associations in Africa that have been created by and/or operate under the auspices of REC structures. The RECs in turn deal with wider regional socio-economic issues.

There are about a half a dozen regional and sub-regional associations of regulatory authorities in Africa. They vary significantly in size, levels of activity, membership and tangible achievements. In spite of these diversities, they seem to have fairly common functions, objectives, and mandates, including [ITUA'03, GSR'04, CHEP'05]:

- Harmonization of telecommunication policies;
- Exchange ideas views and experiences on all aspects of telecommunication regulation;
- Promotion of efficient, adequate and cost effective telecommunication networks;
- Harmonization and maximization of the utilization of scarce resources – electromagnetic spectrum, numbering, etc.;
- Coordination of activities;
- Identification and sharing of best practices;
- Promotion of Human Resource Development; and
- Contribution to the integration of their regions.

Proceedings from past Annual Global Symposia for Regulators and Meetings of Regional Regulatory Associations [ITUA'03, GSR'04]] indicate that several of the associations have developed, or are in the process of developing model guidelines on key issues such as harmonization of ICT policies and regulatory frameworks, interconnection, cross boarder connectivity, licensing, tariffs, universal access, regional frequency band plans, etc. Annex XIII, adopted from [CHEP'05] gives a summary of functions, structure and achievements of Africa's Regional Associations of Regulatory Authorities (RARA's).

Overall, in spite of the acclaimed Africa's limitation of resources, the associations appear to have been relatively more active than their counterparts in other sectors. This is in spite of the fact that most of the Associations (and even the Regulators), are relatively young, the oldest, CRASA, hardly being 10 years. Perhaps this could be due to:

i) their close association with the respective RECs, and

ii) the fact that the constituent National Regulatory Authorities receive regular fees from licensed operators, which enable them to self support some of their core activities.

As the table shows, whereas some of the associations have recorded remarkable achievements, others have not, in spite of their apparent activeness. Several reasons could account for this. In general, it would appear that associations that are backed by legal instruments and mandates, secured budget, and formal structures (e.g. regular meetings, standing sectoral working committees, and/or permanent secretariat) seem to have better performance records. Obviously, these advantages are not without overheads. It is therefore advisable that they have to be kept to a bare minimum – e.g. a secretariat should have a fairly lean staff.

Considering that alternative regional or sub-regional ICT groupings – in the public or private sector domains (including policy makers, professionals or consumers) do not have any more inspiring track records, in recommending an institutional structure for the EAC, there could be useful lessons to learn from these RARA's. However, given their typical membership focus, they are likely to exclude some

other key stakeholders in the sector, save for those examples that have their memberships widened to include other players, notably policy makers and government regulators [19]. In the next sub-section, we look at a good example of a private-sector led initiative. In the final analysis, it appears that:

i) different scenarios would be ideal for different goals (e.g. to protect the commercial interests of operators, they may require a closed "business club"; and
ii) at any rate, it would be useful to have some form of "clearing house" for all stakeholders to allow multi-sectoral, and sometimes multi-disciplinary dialogue – even if an informal one, at a minimum.

4.6.7.2 The Southern Africa Telecommunications Association (SATA)

a) SATA – An overview

The Southern Africa Telecommunications Association (SATA – http://www.sata-sec.net) was established in 1980 as an association of government-owned, fixed line operators within the Southern African region. With the changing environment in telecommunications and regional integration, the body has transformed over the years to include private operators and then finally in 2004, it opened itself up to service providers and all other players [20] within the field of Information and Communications Technology in SADC. SATA now has 18 members; 14 of which are the original fixed line operators of the 14 SADC countries and the other 4 are mobile operators.

Its vision is to become the most dynamic, value adding-oriented ICT regional organization, and to realize a prosperous information society for the SADC region, while its stipulated mission is to co-ordinate the development of ICT networks and services of a regional nature that are responsive to the diverse needs of commerce and industry in support of SADC's regional socio-economic development programmes [SATA'05]. SATA is a SADC Institution established under the SADC Treaty (and later, the Protocol on Transport, Communications and Meteorology (TCM – [SADC'96]). SATA's principle objectives include the promotion of common interests of its members, assisting in the development of policies driving towards an efficient and fair telecommunications environment and the harmonization of such policies across the SADC region.

SATA's structure includes an Annual Conference (of Chief Executives and respective specialized committees [21]), a Permanent Executive Board, and Secretariat – made up of the Executive Secretary and other staff. One of the functions of the Secretariat is to collaborate with members in the collection and distribution of statistical data and information on the telecommunications networks and services in the region. The expenses of the Secretariat are financed through equal annual contributions from members. The Secretariat is hosted in Maputo following a signed Agreement between SADC and the Government of Mozambique [SADM'04], and such agreement stipulates all issues that enable SATA to operate comfortably in Mozambique and in the SADC Region, including tax waivers, immunities and privileges, diplomatic status, etc.

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[19] I.e. Governments which are yet to establish independent regulatory authorities, and therefore still depend on a Ministry or other government department to execute this function.

[20] Organisations from related sectors of the ICT industry and, in particular, the research, standard setting and learning sector; the manufacturing and distributing sector; the operations and services sector; and the content production and distribution sector, within and outside the Member States can also become Associate Members.

[21] At present, there are two such committees: Policy and Strategy, and Technology and Infrastructure.

Some of the main achievements of SATA have been the promotion of the development of the SADC Regional Information Infrastructure (SRII), the necessary broadband cross-border linkages, and the carrying out of the necessary technical and commercial studies to support such developments (e.g. SRII Phase I & II Studies – [ITUR'99, ITUS'05]).

Annex XIV gives more details about SATA, its Mandate, Structure and relationship with SADC. *SATA looks like what might be appropriate for a strengthened ICT arm of the EAC Secretariat, to help in achieving accelerated growth of regional ICT infrastructure in the Community*.

b) Contrasting the EAC and SADC arrangements

There are similarities, but also divergences between how regional programs within the EAC and SADC are being handled. In both cases, the significance and strategic-ness of ICTs in regional integration and socio-economic development have been recognized. Policies, regulations, legislation, institutional framework, capacity development, and infrastructure (especially broadband cross-border infrastructure) have been identified as vital elements. Both have fairly active regional associations of regulatory authorities (respectively EARPTO and CRASA), and in both cases, the important co-ordinating and facilitating roles of the Secretariats of the respective regional economic communities (EAC and SADC) is underscored. One thing that is for sure, the reason for it notwithstanding, is that the SADC region through the SRII initiative managed by SATA has a better developed broadband infrastructure and cross-border connectivity, in general.

Whereas SADC has a fully-fledged, pseudo-autonomous body (SATA) facilitating infrastructure development and policy harmonization in addition to its own Secretariat, the EAC Secretariat has to rely on ad-hoc committees of the EARPTO, the latter itself relying on a non-permanent secretariat. On the other hand, whereas SATA is a forum exclusively for service providers (save for associate membership), EARPTO's memberships groups together regulators with operators[22]. Such a forum can be useful for tackling issues across the two vital (and sometimes antagonizing) stakeholder groups. In the case of SADC, this is achieved under the SADC Secretariat which has created the machinery it requires to cover about everything needed, including informal forums for dialogue between the Operators and Regulators of the various infrastructure and service categories.

Even though EARPTO's membership includes operators, the study revealed that they have not been very active in EARPTO proceedings. Perhaps the EASSy Consortium is today an even more authoritative voice for the operators in the EAC region. Clearly, there is a glaring lack of a formal inter-stakeholder forum. It is true, nonetheless, there are issues that call for inter-stakeholder forums, but there are also those which require closed member or user groups. *For the EAC, perhaps it would be better to have a formal, permanent inter-stakeholder organization affiliated to the EAC Secretariat, working hand in hand with other less formal specialized member and/or user organizations*.

4.6.7.3 Other comparable arrangements

a) Pacific Islands Telecommunications Association (PITA)

Unfortunately no other regional institution in Africa that is comparable to SATA is known to exist. However, in the Pacific, there is PITA (http://www.pita.org.fj), a non-profit organization formed to represent the interests of small islands and developing states in the Pacific Region in the field of

[22] Note that CRASA, unlike EARPTO, is an association purely for regulators.

telecommunications. It promotes the development of telecommunications and ICT in the Region. Formed in 1997, the Association presently has 41 members from 22 countries of the region. Its membership includes telecommunications companies in five Pacific Countries. It has equipment and service suppliers as associate members, and regional and international organizations with vested interests in the development of telecommunications as partner members, respectively. It has close collaboration, for instance, with ITU, CTO, APT, PIFS, SPC, PTC, APNIC, ICANN, DCITA, etc. Governments and regulators have a special membership category.

Among its key *functions* are: Address key and priority issues through training, workshops, seminars, and Work Groups; Active representation in international bodies for stronger Resolutions to assist PICTs; and Regional technical cooperation (TCDC) – study visits and training assistance program. With its headquarters in Suva, Fiji, PITA has one full-time Resource Manager, with an elected Executive Board. PITA recognizes the diversity of its Member States, and their special needs, being thousands of islands, covering about a third of the globe, with long distances apart. Some of PITA's present *activities* include: Telecom contracts templates/arbitration, Disaster and Emergency Communications, Service Levels Measurements an Benchmarking, ICT Model Legislation, and PITA dedicated training coordinator. It seeks to work towards building expertise from within the Pacific as a key condition for success for "ICT for development (ICT4D)", as well as promoting a collaborative forum involving operators and regulators.

b) The Asia-Pacific Telecommunity (APT)

The APT, established in July 1979 jointly by the United Nations Economic and Social Commission for Asia & the Pacific – UN ESCAP and the ITU, is an organization of Governments, telecommunication service providers, manufactures of communication equipment, research and development organizations, and other stake holders active in the field of communication and information technology. With a membership of 32, and about 100 affiliates, the APT continues to serve as the focal organization for communication and information technology in the Asia Pacific region. Among its strategic objectives, are to:

- Promote the expansion and utilization of telecommunication services and information infrastructure;
- Develop regional cooperation in areas of common interest, including radio communications and standards development;
- Undertake studies relating to developments in telecommunication and information infrastructure technology, policy and regulation;
- Encourage technology transfer, human resource development and the exchange of information; and
- Facilitate coordination on major issues, with a view to strengthening the region's international position.

Over the years, APT has been able to assist its members in the preparation for global conferences such as the WTDC, WRC, WSIS, and other ITU events as well as promoting regional harmonization for these events. APT has a permanent Secretariat, headed by an Executive Director.

c) The ASEAN Telecommunication Regulators Council (ATRC)

ATRC is the oldest regulators' Association in the ASEAN region. ITU assisted in the setting up of this regulatory Association that brings together all the National Regulatory Agencies within the region. It does not have a permanent Chair or Secretariat. The participating countries hold the chair and secretariat on annual rotational basis.

d) The South Asia Telecommunication Regulators Council (SATRC)

The ITU also initiated the SATRC, but later handed it over to the APT for financial support. APT has been providing funding to this Association until 2005 when NRAs were requested to contribute funds to support research on topics that are of common interest. SATRC holds annual conferences convened by APT to discuss matters affecting the NRAs.

e) The Conference of European Postal and Telecommunications Administrations (CEPT)

The Conference of European Postal and Telecommunications Administrations **(CEPT)**, today with a membership of about 45, was established in 1959 originally by the then incumbent monopoly postal and telecommunications administrations. In 1988 CEPT created ETSI, the European Telecommunications Standards Institute, to which all its telecommunication standardization activities were transferred. In line with the then in vogue European policy of separating postal and telecommunications operations from policy-making and regulatory functions, in 1992, separate postal and telecommunications operators' associations (respectively Post Europe and ETNO) were created, with CEPT remaining a body for policy-makers and regulators. In 1995, the mandate of CEPT was redefined to include, among others:

- Establishing a European forum for discussions and settlements of sovereign and regulatory issues in the field of posts and telecommunications;
- Providing mutual assistance among members with regard to the settlement of sovereign/ regulatory issues;
- Exerting an influence on the goals and priorities through common positions; and
- Influencing, through common positions, developments within ITU and UPU in accordance with European goals;

Ultimately, three committees were established, dealing with postal, radio-communications, and telecommunications. As a response to convergence, the last two committees were merged into the Electronic Communications Committee. CEPT has a single permanent office to support the work the committees. CEPT itself has a secretariat that rotates with the Presidency. Members share costs related to assistance provided by the Office to the Presidency.

f) The European (Independent) Regulators Group (ERG)

The European Regulators' Group (established by the European Union from Independent Group of Regulators) is composed of the heads of the national telecommunications regulatory agencies of nineteen European countries. The ERG, created in 1997 as a flexible tool to approximate national regulatory practices and exchange useful experience, has as one of its main goals to promote the harmonization of the European market, to bring it into line with the Community laws, without breaching their national statutory independence. ERG also co-operates and exchanges appropriate information with the competent legislating State authorities, national competition authorities, as well as security agencies. With a view to enhancing competition, ERG has established working groups to address issues, including: unbundling of the local loop, broadband access, UMTS network roll-out, international and national mobile calls, leased lines or long run incremental costs (LRICs), market definition, market analysis and the designation of operators with significant market power (SMP), termination tariffs on mobile networks. A permanent secretariat co-ordinates ERG's work.

Among ERG's achievements towards harmonization are:

- A new set of statistical parameters for comparable market data;
- Additional guidelines known as PIBs (Principles of Implementation and Best Practices) on unbundling, incorporating Key Performance Indicators (KPIs) and Service Level Agreements (SLAs);
- Adopting a common position on the European Commission's recommendation on relevant markets; and
- Close collaboration with the European Commission on international mobile roaming charges.

4.6.8 Proposed structure for consideration for the EAC

After looking at the various institutional models, and talking to various EAC stakeholders, it is apparent that the present set-up can be strengthened, and there are several ways in which to do so.

The proposal is to have:

i) specialized formal or informal groupings for specific groups,

ii) a formal multi-stakeholder forum (including policy makers, regulators and operators) for co-ordination, with a permanent but lean secretariat and a budget, and

iii) a phased implementation of this recommendation.

4.7 Summary

The liberalization of the telecommunications sector, coupled with the unbundling of telecom state monopolies to create autonomous regulatory agencies and the promotion of competition has had remarkable impact on the growth of the ICT sector. The mobile sub-sector, has seen tremendous growth. Digitization and convergence have also brought about previously unimagined opportunities, but also with them – new challenges. One of the challenges is the evolution of an appropriate policy and regulatory framework. The different countries are at different levels of ICT development and utilization. Neither do they have uniform policies, regulations or legislation. *To accelerate ICT deployment and general economic growth, it becomes pertinent to harmonize these policy and regulatory instruments, and establish an appropriate institutional framework*. In subsequent sections, some suggestions are made in this regard, bearing in mind related on-going initiatives.

5 Emerging key issues

During the study, certain key issues stood out as important, if broadband and cross-border connectivity is to get root in the EAC. Some of those of issues are discussed in this section.

5.1 Interconnection framework

For purposes of this study, "Interconnection" shall be taken to mean the physical and logical connection of two operators' networks, thereby allowing customers of one system to connect with customers of the other, or to access services provided from the other system. Two forms of interconnection were considered: at national level between operators, and cross-border, e.g. between a Ugandan operator and a Tanzanian operator. To achieve regional integration of telecommunications infrastructure and services, equitable investment recovery and attract further investment to allow value added service providers to tap the potential of the East African market, it is important that (direct) interconnection is encouraged.

The concerns for cross-border interconnection have been echoed in many forums, among them in Council and Sectoral Committee meetings [EAC-TCM Meeting Reports EACT'05], as well as in Legislative Assembly deliberations [e.g. EALA Plenary and Communications Committee Reports].

A number of studies, including one undertaken by the Commonwealth Telecommunications Organization (CTO [CTO'04]) not only noted the glaring differences in regulatory regimes within the Community, but also observed that traffic exchange remained low and at very poor quality. This problem is also aggravated by the fact that prior to the liberalization reforms, the Sender Keeps All (SKA) system had been used as a settlement mechanism. As more operators were licensed, a more economically efficient settlement mechanism was required.

This called for a more coordinated approach in terms of regulating interconnection in the region, and it is within this spirit that the Task Force on East Africa Interconnection and Cross-Border Interconnectivity was formed, under the auspices of EARPTO. It is noted that, in as much as interconnection can be a technical issue, within the EAC context, it is perhaps more a commercial issue than anything else, especially in so far as revenue sharing and settlement is concerned.

The Task Force has recommended direct interconnection, and further that all countries should ensure that their policy environment enables all network operators to have direct interconnection without limiting some operators, for instance, to route their traffic via gateways of the fixed operators as has been the case in some of the countries. This recommendation was adopted during the 14th EARPTO meeting (1st Congress [Minutes of 14th Meeting EARP'05]) and the Task Force was charged to develop an interconnection framework for public networks and services providers applicable within the Community. A recommendation was also made to create a set of guidelines to be used as a basis for negotiating rates, with uniform costing, accounting and dispute resolution applicable to all operators in the region. The guidelines on interconnection stem from the realization and need for not only similar interconnection principles and policies, but also that interconnection rates used in the region should be both cost based and efficient to ensure affordability and universal access.

The Task Force has since presented recommended guidelines [EARP'06], which are due for adoption by the EARPTO Congress. The document presents a set of principles, guidelines and procedures to be adopted within the region to assist all key-players, from the policy makers, the regulatory authorities, the operators and end users. To oversee the effective implementation of the guidelines, a regulatory advisory council shall be established with representation from all Member countries as shall be agreed. *This study considers this an urgent matter, and recommends that the process to conclusively approve, adopt and implement the guidelines should be hastened.*

5.2 East African Submarine Cable System (EASSy)

The EASSy project is expected to be operational by the end of 2008. However, as has already been indicated, the project is presently mired in controversy. The problem is not only between governments and operators, but also within the governments themselves (as well as the operators themselves, although the latter is quieter). Certain governments fully support the NEPAD-leaning, open-access approach. On the other hand, there are governments which are inclined more towards the operators' position, of less government involvement.

Of the three EAC Member States, two have signed the Kigali Protocol, one has not. In a high-level meeting convened in Arusha, Tanzania, in July 2006, it was resolved that the Member States be encouraged to sign the protocol (see Arusha Meeting Communiqué – Annex VII). Equally, in various earlier sessions of the EALA, Member States were urged to assent to the protocol [EALA'06, EALC'06].

However, in subsequent meetings held, especially after the official protocol signing session in Kigali in August 2006, opinions have been divided [Minutes of PS's meeting in Arusha, Sept/October, 2006; [EALC'06].

Following informal consultations between the relevant East African Ministers (including Rwanda and Burundi), sessions have been arranged to forge a common position, which hopefully will convince the remaining country(ies)[23] to assent to the protocol, and progress the project. Further dialogue with development finance institutions (DFIs), represented by the World Bank and the African Development Bank (ADB) are also on course. *It would be nice if the EAC Member States took a common position – in consultation with the various stakeholders – regulators, operators, founders, and consumers*.

Some of the EASSy Consortium members themselves have signed their own "protocol" – the construction and maintenance agreement (C&MA). They have also indicated picking on Alcatel to construct the cable, but it is doubtful any supplier's agreement could have been entered into, in light of the prevailing uncertainty.

5.3 East African Backhaul system (EABs)

Perhaps unlike EASSy, EABs is progressing well, in spite of the apparent controversies above. In part, this is possible because EABs structure is such that segments can be developed, independent of each other. Besides, the business model is such that the "operator" or "consortium" need not own sections of the cable. In fact, most of it shall be leased dark-fibres, going by the EASSy Consortium's model. However, the NEPAD initiative seeks for the "terrestrial part" of the network to be developed, owned and operated by a special purpose vehicle (SPV), similar to the EASSy SPV, which would operate on open-access and NEPAD principals [Annex XV]. The Protocol has concentrated on the under-sea cable, and recognizes that much more work remains to be done for the terrestrial circuit. Indeed, some governments (especially the coastal ones, with planned landing points) favoured complete separation of the two portions. They, however, were in a minority as this would disenfranchise the interior countries from the project altogether.

The EABs partners have lately intensified dialogue among themselves. In the same vein, they have become more tight-lipped on what they do, and therefore some of the latest developments were not available to this study.

5.4 TEAMS project

From the face value of it, the project sounds very noble: it builds upon the experience gained in promoting EASSy, and even more importantly, it is going to bring fiber to un-served parts of the continent sooner than ever! However, the full details and reasons for it are not yet in the public domain. Towards the end of November, 2006 a Memorandum of Understanding (MoU) was signed between the Emirate's company, ETISALAT, and Telkom Kenya. The jointly owned cable system will comprise a minimum of two (2) fiber pairs with initial capacity of 10 Gbit/s upgradeable to 320 Gbit/s. Under the MOU each country will have a Cable Terminal Station, submersible plants including Branching Units (BUs). This agreement ensures connectivity to inland telecommunication facilities for the purpose of connecting the cable system to respective international gateways. The cable is expected to be ready for service by November 2007.

[23] As of the time of expiry of the deadline to *assent* to the Protocol, i.e. 30th November, 2006, Burundi and Kenya had not signed. They may wish to *accede* to the Protocol, nonetheless, at their pleasure.

However, sceptics contend that the timeframe is unrealistic, and that the cable will not be so affordable. Either way, the NEPAD/EASSy Protocol has no exclusivity clause; so as many cables as is commercially feasible can be constructed along the Indian Ocean coast. There are, for instance, at least 15 cables between North America and Europe in service! Besides, Kenya has made it clear that they are not pulling out of EASSy, neither has Telkom Kenya (which actually chairs the EASSy Consortium). *While the study has no problem with the various efforts, it would have been more rewarding if there was closer synergy and co-ordination, perhaps under the aegis of the EAC*.

5.5 Under-sea or terrestrial?

An issue that has been neglected, but is likely to receive increasing attention is: terrestrial or marine? It could well be that some people opted for marine cables because it was in vogue. Researchers (and some investors) are already beginning to question the wisdom behind construction of "another marine cable", when Africa is already connected to more than three international under-sea cables! The recent experience of Ethiopia – which in November, 2006, connected to fiber via Sudan at a paltry cost of USD 500 000 has given such proponents more credence. Indeed, some of the operators interviewed during this study indicated that depending on the speed at which EASSy moves, they could explore terrestrial links to Sudan through Uganda (or Kenya). The USD 1 billion project proposal – FibreAfrica – is premised along a purely terrestrial network, that would give broadband access to almost "the whole of Africa", including the villages [TONG'05]! Taking cue from the old-adage that the more the merrier, especially in telecommunications, it would make economic sense that even as EASSy and TEAMs are constructed, comprehensive studies be done to establish where terrestrial links would make more business sense. *Besides, and perhaps even more importantly, in order to avoid over-investment in fiber cables (a mistake that the US made in the 1990's), it is important that a comprehensive study on traffic patterns is undertaken, and that the cables under-development or planned are appropriately dimensioned*. Apart from EASSy and TEAMs, for instance, it is understood that the Kenya Data Network (KDN) has also signed an agreement with India's FLAG to construct a cable link from Mombasa that will terminate in an undersea junction in international waters off of the coast of Yemen [BALC'06]]. Obviously, such is to be expected within a liberalized market; but again, some form of close co-ordination or cooperation is desirable[24].

5.6 Wireline versus Wireless Broadband Connectivity

Just as some pundits are reflecting on whether Africa should go marine or terrestrial, so is ripe the debate on whether or not fiber is the panacea to Africa's broadband connectivity. With the emergence of broadband wireless platforms, which offer much lower roll-out costs than fiber, there are those who are advocating wireless solutions for the developing world. The World Bank-supported Regional Communications Infrastructure Project (RCIP), for instance, recommends a mix of broadband wireless with microwave backbones [SWED'06]. The reasoning here is that given the projected traffic demand for East Africa, the microwave backbones may well suffice for the foreseeable future. As indicated earlier, this study is unaware of any nation or region that has leveraged its backbone network on wireless technologies.

However, given the comparative cost advantages, it would be desirable to conduct a comprehensive study on what mix of technologies would be ideal for East Africa, as new wireless technologies emerge – especially for the rural and remote communities.

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[24] There are many reasons for such co-operation, least to benefit from "volume sales', e.g. through joint purchase of materials and equipment, and resource mobilization.

5.7 Mobile networks

It is not in doubt that mobile communications is what has spurred the fast growth of ICTs in East Africa, perhaps more than anything else. The mobile sub-sector drives the market. Indeed, it can safely be assumed that the main investment that has been infused into this sector has mostly gone into the mobile telephony sub-sector. Besides, mobile communications has stirred many regulatory issues that were previously not being attended to fast enough, e.g. inter-connection, inter-operability, convergence, spectrum management, etc.

The ideal situation would be for:

i) all the operators present to be licensed to operate in all the EAC States, and

ii) to allow those operators who so desire to have seamless interface with their affiliates or partners in the other countries.

That these arrangements can have profound impact was best demonstrated recently when one of the mobile operators, Celtel, announced a seamless connection across the EAC territory, with tariffs across the entire region being collapsed down to the same level as the national call charges. All the mobile networks in EAC are GSM-based. Rwanda which is supposed to soon join the EAC, though, has one operator with a CDMA network. However, some of the fixed line operators (incumbents) have started to roll out CDMA *fixed* wireless networks. With the fast advances in mobile technology, it can only be expected that in a short while, broadband mobile connectivity (3G, 4G, etc) will soon be available in East Africa. *Given the fast pace of the growth of the mobile industry, it is recommendable that necessary policy, regulatory and legislative regimes are put in place not to impede this revolution.*.

5.8 Policy, regulatory and legal framework

From the previous discussions, it is clear that to escalate ICT growth and investment in the EAC, harmonization of the applicable policies, regulations and legislations is paramount. The efforts already initiated by EARPTO and the EAC Secretariat are laudable.

However, they should be seen as only the first steps, because:

i) initially, the harmonized frameworks and guidelines are likely to be of a rather general nature,

ii) even after they are adopted, there would be need for transitional arrangements for migration, and

iii) so far, they only address policies and regulations – not legislation as yet.

To accelerate the development of the East African Regional Information Infrastructure (EARII), we suggest harmonization (or development, where they do not exist already) of the following:

i) Model ICT Policy

ii) Harmonized E-Government Strategy

iii) Harmonized Universal Service and Access Strategy

iv) Interconnection Guidelines

v) Harmonized Spectrum Management Strategy

vi) Converged, Technology-Neutral Licensing

vii) Resource Sharing Framework

viii) Model ICT Act

ix) Harmonized Laws on Broadcasting, E-Commerce, Intellectual Property Rights, Competition, Consumer Protection, Freedom of Access to Information, etc.

5.9 Framework for resource sharing

As more and more players get into the sector, and the networks continue to grow, it becomes pertinent to share resources. Resource sharing becomes even more necessary as the agitation for lower costs becomes louder. Besides, with the entry into the foyer by utility companies, who may have one asset or another to contribute, resource sharing becomes an issue of prime importance, bearing in mind that all the EAC States are still on the lower rungs of the development ladder, and cannot afford duplication or wastage of any kind. Assets to be shared could include way-leave (or land for right-of-way), physical space (e.g. for co-location), physical infrastructure (e.g. towers, electricity pylons, conduits), logical active devices (e.g. the leasing of dark fibres instead of constructing new ones, data mining and warehousing), training facilities, joint bulk purchase of goods and services (e.g. switching equipment, bulk purchase of bandwidth), etc.

This being a very competitive field, it cannot be easy to share resources. It thus becomes necessary to develop a mutually acceptable, fair and transparent framework for resource sharing. Perhaps one of the areas where Rwanda's experience can be of benefit to the Community is in this one. As the competition among the major two of the three licensed operators intensified, they both wanted to use facilities of the electricity company – Electrogaz – to co-locate their fiber infrastructure. Consequently, the government (in conjunction with the regulator and the operators themselves) developed a framework for resource sharing [RURA'06]. Though not comprehensive in itself, it forms a good basis for developing further and negotiating the framework.

Some of the issues it addresses include: Asset Management, Compensation, Quality and Grade of Service (QoS/GoS), Service Level Agreements (SLAs), Civil Works (including Trenching, Splicing, etc), Joint Network Planning, Network Operation/Maintenance, Network Performance Optimization, Restoration, Bandwidth Trading (as a Commodity), Virtual Private Networking, Data Centre Connectivity and Co-location, Internet Exchange Points (IXPs), Traffic Demand Forecast, Technology Options, Inter-operability, Cross-border Connectivity, Network Upgrades, Standards, Aerial versus Overhead Cabling, Topographical/GIS Maps, Number Planning, Spectrum Management, Computer-Aided Design Platforms, Operating Environment and Power, Electricity Interconnection under the Nile Basin Initiative (or Southern Africa Power Pool), etc.

Resource sharing cannot be easy, especially between private competing operators. However, if the dream of the EARII is to be realized, the operators must be prepared to co-pete, i.e. collaborate as they compete. But first, a framework for co-petition has to be created.

5.10 Institutional arrangements

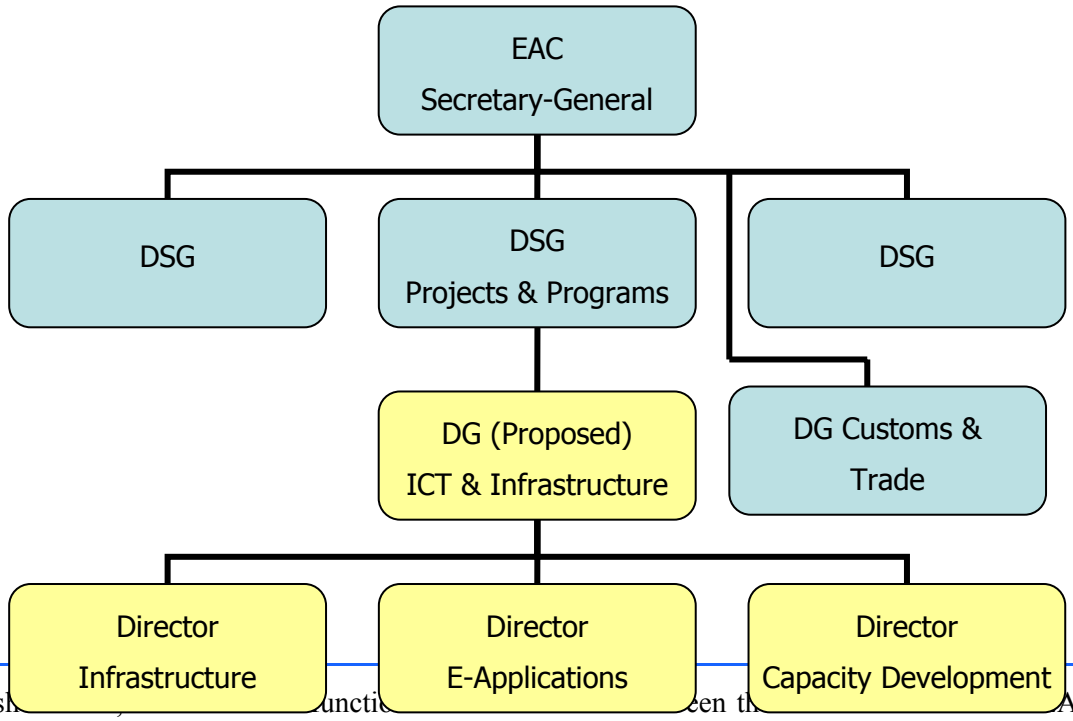
It would appear that alongside policy and regulatory reforms, some institutional restructuring may also be necessary. At a policy formulation level, the EAC Council may suffice, for the time being. Equally, at the legislative level, the EALA will do; however, it may require to progressively require more mandate as the Community moves towards a Federation. Besides, it may need to strengthen linkages with the National Assemblies of the Member States, to sufficiently play its oversight role over the Executive. Either way, some short and long-term reforms may be required at the implementation and co-ordination levels.

When it comes to issues of cross-border regulation, the current arrangement cannot sufficiently address them, as the mandate and jurisdiction of the National Regulatory Authorities (NRA's) are limited. In the short-term, the EARPTO Congress could be empowered and accordingly mandated to play the function of a loose "regional regulator". It would require, nonetheless, that an appropriate statute – legislation or treaty – is enacted.

The "Advisory Committee to the Council" could in the interim play this role. It will be important to clearly define the inter-relationships between this "regional regulator' and its constituent ones. *In the medium to long-term, the creation of an East African Common Regulatory Authority which has already been floated [MWES'06], with appropriate political, legal and resource empowerment, would be desirable.*

At the operational level, the EAC Secretariat would need strengthening to meet its mandate in so far as ICT development (and deployment) is concerned. *We propose that an office at the level of "Director General" be established*. To move towards a truly knowledge-economy, it is important to recognize that ICT is at some stage going to be almost as important as other "Infrastructure", all put together, or as "Customs and Trade", which currently have higher placing in the community structure. The Director-General would be assisted by three Directors, respectively in charge of Infrastructure Development[25], E-Applications and Capacity Development, and Policy, Regulation, and Legislation (Diagram 1).

Diagram 1 – Proposed ICT structure for the ICT Directorate at the EAC Secretariat



In the sh[illegible]unctio[illegible]een th[illegible]ARPTO. However, the following adjustments would be necessary for such an arrangement to meet the growing demands on these offices.

- Whereas the Chair of EARPTO can continue to rotate, it should have a permanent Secretariat, either in Arusha (at the EAC Secretariat), or in another capital city of the Community, but administratively answerable to the EAC Secretariat;

[25] These proposals are not far-fetched. NEPAD, for instance has recognized the following as its focus areas: ***African Peer Review Mechanism (APRM), Infrastructure, Agriculture,*** *and* ***ICT***. Apart from giving ICT this prominence, it has created the e-Africa Commission as a fully-fledged institution to manage ICT programs on its behalf.

- As a transitional arrangement, the position of "Director" in charge of Infrastructure be created, who will be responsible for all forms of physical infrastructure, as well as "info-structure". He could be assisted by at least three other senior officers covering for the three broad areas identified above. An additional "Liaison" Officer, could head the EARPTO Secretariat, and reporting to this Director. Besides, following an observed need at the EAC Secretariat, and reaffirmed not only by the Deputy Secretary-General (Projects and Programmes) during the Mission, but also by the 3rd Development Strategy[26] having identified publicity and marketing the community to the people of East Africa and the rest of the world as key, there should also be a Senior Officer in charge of Communications and Public Relations, to facilitate internal as well as external communication with the Community generally, and the Secretariat in particular.

Noting, however, that the Secretariat must remain with a lean, efficient personnel, while bearing in mind the importance of human capacity in ICTs across the Community, it would be important for the Secretariat to facilitate the formation of a credible, respected regional professional ICT association, of the stature like that of the East African Law Society (sub-section 4.6.3).

The association will not only help in professional development and networking, but also in developing and enforcing standards in the sector. It could have affiliate, corporate as well as individual memberships. Some of the present-day national professional associations could be its founding affiliate members, e.g. CSK, UCS, TISPA, I-Net, KEPSA/KIF, Media Council, etc. In turn, it could also seek affiliation to like-minded continental associations (e.g. AFICTA, AfriSPA, etc), as well global groupings, notably IFIP and WITSA, among others. The development of broadband infrastructure will only occur when there is demand (and supply) for infrastructure and content. For this to happen, the citizens of East Africa – corporate as well as individual – have to be mobilized. The need for such mobilization and engagement with stakeholders, chief among them the private sector and civil society, is vividly recognized in the 3rd EAC Development Strategy. For the ICT sector, there can be no better way to do this than through a credible East African ICT Association of sorts.

5.11 Areas needing ITU intervention

In the course of the study, it became apparent that there are some areas which may require ITU intervention, or the intervention of other comparable development partners. They are presented in what follows.

5.11.1 Support to EAC Secretariat

In terms of collaboration with the EAC Secretariat, it was recognized that there would be on-going activities, which may require continuation or escalation, but there would be also new activities. Following discussions with some of the relevant officers of the Secretariat, as well as other stakeholders in the respective Member States, the following were identified as priority areas where ITU's intervention would have high impact:

- Study Regional Traffic Patterns and Propose a Strategy to Decongest the Regional Links
- Harmonization of Regional Regulatory and Legislative Regimes
- Preliminary Study on Broadband Cross-Border Connectivity

[26] The Strategy recognizes the need to raise public awareness of the EAC and address the entrenched national sovereignty and to gradually cultivate a sense of East African-ness. It proposes to address this aspect through an appropriately packaged publicity and marketing strategy of the EAC among the key stakeholders, especially the grassroots.

- Establishing a Mechanism for Regional Licensing to Enable Companies to Operate in the three Partner States
- Completion of the Study on Harmonization of Spectrum Management and Development of a Strategy for the Introduction of Digital Broadcasting
- Internet Policymaking and Regulation
- Development and Implementation of e-Strategies and e-Applications
- ICT Capacity Development for the Secretariat
- Creation of a Common Regulatory Authority
- Strengthening of the Communications and Public Relations Functions of the Community
- Adoption and Ratification of the Interconnection Guidelines
- Statistics and Indicators in ICT.

a) Study of regional traffic patterns and a strategy to decongest the regional links

As already indicated in Section 2.3, one of the major impediments to regional communications is congestion due to insufficient number of direct channels between Partner States. It is recommended that a comprehensive study be conducted to analyze the traffic demands, and a proposal on how to upgrade the network to spur regional communication. The upgrade could be in phases, initially involving upgrades of the legacy systems, but eventually culminating into a full-blown broadband, optical fibre network.

b) Preliminary study on broadband cross-border connectivity

Having confirmed that most of the cross-border connections are presently through microwave [EACB'04], it would be helpful to upgrade these connections. This would require a preliminary study to establish exact status, and propose a strategy for upgrade, similar to the study ITU undertook on behalf of SATA for the SRII network [SRII Phase I & II Studies – ITUR'99, ITUS'05]. Such a study would look at the necessary infrastructure (switching, transmission, technology options, etc), regulatory issues, financing and commercial arrangements, resource mobilization, institutional and human capacity requirements, opportunities and risks, etc. This should be a matter of high priority.

c) Harmonization of regional regulatory and legislative regimes

Following the liberalization of the telecommunications sector, the three Partner States, created each a Communications Commission to regulate communications affairs at the national level. Due to the fact that the legislations came into being at different times and with divergent national foci, the respective strategies may not have been harmonized. Considering that the three economies still suffer from inadequate communications infrastructure, it is prudent to develop a harmonized Regional Communications Regulatory regime. A Study on Harmonization of the Regional Communications Regulatory was initiated by the EAC in June 2003 to look at various aspects including technical, legal, institutional and budgetary issues related to Communications regulation at the regional level with a view to establishing the basis for harmonization within the Community.

Following the Study's review of the sector performance since its reform, restructuring, liberalization and existence of divergences and variations in the three Communications Acts as well as the creation of independent regulatory authorities in the three countries, the Study Report made a case for a Harmonized East African Communications Regulatory Regime. It noted that a harmonized communications regulatory

regime in East Africa would bring about transparency, ease of cross-border interconnection, and increased foreign investment to the sector. A Project Concept was developed (Annex XVI). ITU's support in seeing this effort through may be desirable.

e) Establishing a mechanism for regional licensing to enable companies to operate in the three partner states

One of the priority areas identified by the Member States (Section 2.3) is the need to establish a mechanism for regional licensing of companies to enable them to operate in all the three Member States. As already demonstrated by Celtel's "One Network", this can radically lower costs, and spur unprecedented communication among the citizens and corporations of the Member States. Initially, automatic licensing of all the companies already registered in one or more of the Member States in other States where they are not already licensed, should they request for it. In the medium term, there could be a common regional license which allows eligible companies to register and operate in all the territories of the Member States.

f) Completion of study on harmonization of spectrum management and development of a strategy for the introduction of digital broadcasting

The 13th EARPTO Meeting (27th April, 2004) identified Broadcasting Frequency Management as one of the critical issues for the improvement of communications in the Community. The Meeting called for a common regulatory framework, in view of convergence of technologies, and resolved that a Task Force be formed to study and develop a framework to guide operations across borders.

Specifically, the Task Force was to:

i) review the possible socio-political, regulatory and legal implications of spillovers across the borders,

ii) study the impact of spillovers in respect of roaming services,

iii) review compliance with ITU guidelines regarding coordination of stations across the boarders, and

iv) propose mechanisms for coordination and conflict resolution in radio frequency utilization.

During the 14th EARPTO Meeting (12th April 2005), a problem along the Kenya/Uganda border was reported, where consumers were automatically forced to roam on neighbouring country networks, necessitating the addition of the following assignments to the Task Force: v) coordination of the usage of network colour codes between the three Partner States, and vi) resolution within 3 months of the specific case of roaming problem between the common Uganda/Kenya border.

The EARPTO meetings thus recognized two major broad areas requiring intervention: harmonization of spectrum regulation, and migration to digital broadcasting. It is noted that since digital broadcasting is more efficient in spectrum utilization than analogue, spectrum would be freed up to offer newer services such as television on the cell-phone, wireless broadband access, more capacity for educational, health and e-government programmes, and for channels in more local languages, thereby helping address the diverse cultural and linguistic needs of the region.

Subsequent to a request from the EAC Secretariat, in February 2005, the ITU Regional Office, through Action 7522, initiated a study on Harmonization of Broadcasting Frequency Management Strategies for the EAC.

Specifically, the study was intended to:

i) review Broadcasting Network Planning,

ii) Examine TV and FM Broadcasting Licenses with regard to their compliance with applicable regional and ITU Standards and Plans and propose strategies for harmonization, and

iii) propose a Broadcasting Frequency management and co-ordination framework, and related conflict-resolution mechanisms.

During a Meeting of the Task Force held in June 2005 in Arusha to consider the report [ITUF'05], it was resolved that ITU be requested to consider supporting Phase II of the study to incorporate the "Migration of the EAC to digital broadcasting" [EATF'05].

Specifically, it was proposed that the terms of reference (TORs) of Phase II of the study include to:

i) develop procedures and guidelines in planning for digital terrestrial broadcasting, recognizing the existing analogue TV broadcasting services,

ii) develop a framework for planning for Terrestrial Digital Audio Broadcasting (T-DAB) in Band III,

iii) develop a framework for compatibility and interference analysis of broadcasting and/or non-broadcasting assignments,

iv) develop a mechanism for assignment and conflict resolution for digital broadcasting, as well as resolution of interference with analogue assignments during the transition, and

v) formulate a work plan and assignment of roles for the various stakeholders for the preparation of EAC's effective participation in the Regional Radio Conference of 2006 (RRC-06).

In light of the outcomes of RRC-06, it is recommended that the ITU considers supporting Phase II of the study, especially to inform EAC's migration to digital broadcasting, including T-DAB, DVB-T, DVB-H, DMB-T and any other emerging standards and relevant platforms and services.

f) Internet policymaking and regulation

Whereas traditionally, focus has been on national/regional ***telecommunication*** backbones, increasingly national/regional ***Internet*** backbone infrastructures are attracting even greater attention. The two are related though, as ordinarily, the cost especially of ***international*** telecommunication bandwidth has a bearing on the overall cost of the Internet. Some of the traditional international interconnection arrangements for telecommunications may not apply, though. For instance, whereas traditionally, the cost of international traffic was shared between operators (e.g. through Sender-Keeps-All schemes), in the case of Internet traffic, users (and operators) mainly from developing countries have to pay for the whole circuit.

This has been an issue of contention, particularly for African operators (and users), with their counterparts in North America and Europe. Fortunately, Internet-based traffic is susceptible to greater interconnection choices. Operators, for instance, can choose to enter *peer* (barter) or *transit* (purchase) arrangements. They could also establish a cascade of Internet Exchange Points, aggregate traffic and negotiate better bulk bandwidth rates. However, the availability of more options portends new policy and regulatory challenges.

Moreover, in recent times, with the fast spread of Internet, its governance has presented increasing challenge. ITU could assist the EAC Member States to develop and harmonize Internet policies and regulations, as well as build capacity to access and negotiate the greater choices in interconnectivity and prices, and effectively participate in the ongoing global and regional Internet governance discourses.

g) Development and implementation of e-strategies and e-applications

For ICTs to contribute significantly towards wealth creation, employment generation, poverty reduction, and the attainment of the millennium development goals (MDGs) generally, concrete and sustainable e-applications have to be developed. Already each of the Partner States is making effort to develop and roll-out some e-applications (including e-government, e-education, e-tourism, e-health, e-commerce, e-agriculture, e-security, etc). In regions where e-applications have succeeded, with remarkable socio-economic development impact, they were preceded with clear, realistic and concise, harmonized e-strategies, Some of the EAC Partner States already have comprehensive e-Government Strategies, and others are in the process of developing them. Usually, an e-readiness assessment precedes development of e-strategies. Mainly through World Bank support, national e-readiness assessments have been undertaken in all the Member States [WBID'05]. Presently, through the support of the UNECA, the Canadian e-Policy Resource Centre (CePRC), and the regional ICT support programme (RICTSP) of the EU, the Partner States are in the process of developing and harmonizing their e-Strategies and the enabling e-Legislation. In light of the WSIS Resolutions, ITU could play a role in strengthening and accelerating these efforts, and sharing its immense best practice experiences from elsewhere.

h) ICT capacity development for the secretariat

It was noted that at present, in spite of the significance attached to ICTs, there is only one professional officer in that Unit. In effect, the Unit cannot be fully functional. It would be helpful for ITU and other partners to assist in establishing a lean, but full-fledged Directorate (as explained above). The support could take one of several forms:

- secondment or deployment of vital professional staff to the Secretariat for a limited period of time;
- facilitating the process of identifying, recruiting, and training key personnel; and
- technical assistance and ICT training for the Secretariat staff.

j) Creation of a common regulatory authority

The need for a common regulatory authority has long been recognized [MWES'06], especially as the Community moves towards a Federation. Unlike the current national regulatory authorities (NRA's), the common regulatory authority (CRA) would have jurisdiction and the full power of the law in all the territories of all the Member States. As a transitionary measure, a strengthened EARPTO could play some of its functions. In the longer term, it should be a fully-fledged regulatory authority, but with certain functions and powers delegated to the NRA's.

j) Communications and public relations functions of the community

During the study, it was clear that whereas the Secretariat (and other organs of the Community) were doing so much in terms of their set mandate, communication of the same to the citizens of the Community was limited. This could be as a result of lack of a suitable communications strategy and qualified personnel for its implementation. Intervention could take one or more of the following forms:

- assisting in the development of a comprehensive communications and public relations strategy;
- secondment or deployment of appropriate professional staff to the Secretariat for a given period of time; and
- suitable training in communications, media, and public relations for the appropriate staff.

k) Adoption and ratification of the interconnection guidelines

It was noted that to a large extent, reasonable Interconnection guidelines have been developed through a Task Force constituted by EARPTO. However, for these guidelines to be enforceable, they must first be adopted officially and ratified. For them to be binding, they may require a supporting legislation, as may be advised by a Legal Counsel. The interventions that may be required in this area include:

- engagement of Legal Counsel to steward the process of ratification and legislation by the EALA and/or respective National Assemblies as and if necessary;
- facilitating formal adoption and ratification by the relevant organs of the Community, including EARPTO Congress, Sectoral Committee/s, and the Sectoral Council; and
- initial implementation and enforcement of the ratified guidelines.

There are obviously other equally important areas requiring intervention, however, the study noted that, either:

i) they were already being addressed under other programs, or
ii) they didn't directly fall within the mandate of the current study, or generally the ITU Action plans for the short-term meant for the EAC.

l) A communications master plan for East Africa

One thing that is lacking among all the three Member States is a comprehensive National (or sub-regional) Communications Master-plan. Yet this would be helpful in identifying the specific interventions necessary, the kind of infrastructures required (where, in what timeframes, and at what cost), who would be developing, operating and maintaining which sections of the network, the gaps that may exist, etc. Such a regional plan would be essential, particularly to accelerate structured network roll-out, bearing in mind the unavoidability of resource sharing, and the dire need to deliver broadband connectivity to all parts of the region (including rural communities), as the surest way to truly "bridge the digital divide".

m) Statistics and indicators in ICT

One of the things that is visibly lacking is accurate, credible and timely ICT statistics and indicators – leading to what some people have chosen to refer to as the "statistical divide" [ITUD'05, ITUI'06]. The responsibility for collection, analysis, collation and sharing of such information should jointly be between the Secretariat and EARPTO. The statistics that would be required is wide-ranging, and should include: the standardized ICT indicators [ITUI'06, UNTI'05 – Annex I], private sector development and trade related issues (e.g. the levels of investments in ICTs, opportunities and threats, etc), impact of emerging trends (e.g. impact of international fiber gateways on long-term commitments of incumbents to international satellite providers, especially Intelsat; impact of VoIP on revenues to incumbents; etc), concrete impact of ICTs on national and regional socio-economic development priorities (e.g. on poverty reduction – ICT4PVR[27], millennium development goals, employment generation, wealth creation, improvement of quality of life, etc), enabling environment (e.g. tax incentives and their impacts on the overall economy, investment incentives and impediments, etc), and so on.

[27] ICT for Poverty Reduction, as distinct from ICT for Development (ICT4D).

In fact, as of the time of writing the report, *two major studies were noted as urgent (during the High-Level Meeting in Arusha in July 2006):*

i) tax analysis for purposes of exempting taxation on ICT equipment for the NEPAD Broadband Infrastructure, including EASSy, and

ii) impact of the NEPAD "Kigali" Protocol on commitments to satellite providers. This is one of the functions that a strengthened Secretariat could do (or co-ordinate) on a day-to-day basis.

It is noted that the Council had set up a general Statistics and Information Exchange Committee responsible for making recommendations on planning and implementing the compilation and production of statistics. However, it would seem that as of the time of the study, the Committee had not been active, for a number of reasons. Whereas the Committee's focus may not necessarily be ICT statistics*, it would be desirable to involve it in any such efforts to collect, collate and disseminate ICT statistics*.

5.11.2 Support to EARPTO

Having recognized that it was important for continuity and effective follow-up to have a permanent secretariat for EARPTO, it is recommended that ITU or other development partners consider assisting in the establishment of a permanent secretariat. This could be through secondment or engagement of professional personnel, training of secretariat staff, equipment and/or other budget support for administration and logistics.

5.11.3 Support towards a professional ICT Association

Noting that it would be important to launch a regional professional ICT Association, development partners, in conjunction with the EAC Secretariat, EARPTO and existing national and regional ICT or ICT-related associations, could assist in the establishment of such an association. The facilitation necessary would be towards sensitization, mobilization, and support for a lean secretariat for a limited period of time (say, 3 years). Such a feat would be in line with the 3rd EAC Development Strategy which in part seeks to "facilitate the creation and/or development of the capacities of non-state actors' associations".

5.12 Summary

The Treaty for the Establishment of the East African Community, Article 99, spells out cooperation latitudes in the sub sector. The Treaty specifically provides for, among other things, that Partner States shall take steps to develop harmonized policies and regulatory frameworks in the sector and improve communication links and establish new ones as a means of furthering the physical cohesion of the Partner States and to facilitating and promoting communications within the Community.

In addition to the need for the development of efficient national communications infrastructure, there is also an increasing realization that effective interconnection arrangements of telecommunications infrastructure among the EAC Partner States have become key to the successful and cost efficient operations of an increasing wide range of services and providers. In view of the impediments identified, the Fifth Council of Ministers directed the Secretariat and the Regulatory Authorities in the Partner States to find ways and means to facilitate regional interconnection and harmonize tariff structures. A number of other emerging pertinent issues have also been identified, and it is vital to address them decisively, and in a timely manner, for the successful realization of the EARII.

6 Recommendations

From the previous sections, it is abundantly clear that if the EARII vision is to be realized to assist the EAC to reap the full benefits of the potentials offered by ICTs, a number of actions and reforms (including in the institutional structures) would need to be put in place. In this section, the recommendations are consolidated, with indicative timelines and costs offered. It is noted that these figures are preliminary, and actual figures could emerge once detailed analyses – outside the scope of this study – are done.

That the EAC should even further scale up its prioritization of ICTs, and its integration and main-streaming into the general regional integration and socio-economic development should be no longer a point for conjecture. Today, there exists sufficient body of research-based evidence to this effect. Just to give a feel of some of the evidences, the following menu of literature may be helpful: Jeffery Sachs' "The End of Poverty" [SACH'05] (he of the Millennium Development Goals fame, and UN Secretary-General's Advisor on the MDGs), Joseph Stiglitz's "Roaring Nineties" [STIG'04] (Nobel Prize Winner in Economics, former Chief Economist and Vice President of the World Bank, and Chairman of President Bill Clinton's Council of Economic Advisors), and the ITU's own "Measuring of ICT Indicators" [ITUI'06, ITUS'06]. Indeed, just to use Europe as an example, acknowledging the potential of ICTs, the Union has made ICTs a top priority for economic growth.

According to a recently released Information Society Strategy, ICTs are "*a powerful driver for economy-wide productivity, growth and jobs, and are arguably Europe's best-bet investment for the future. A quarter of EU's GDP and 40% of our productivity growth are due to ICTs*" [EUIS'05, EUIN'05]. The OECD too has a large collection of empirical data and studies on productivity growth [OECD'05, OECD'06]. Other studies have shown that the contribution of ICTs to economic growth is a global phenomenon, evident not only in developed economies, but also in developing countries [JORG'05, WAVE'05].

In making the recommendations here below, full recognition of the potentials appropriate infusion and mainstreaming of ICTs into the EAC economy, particularly broadband, cross-border inter-connectivity is made. Obviously, *it is recognized that ICTs alone – technology and infrastructure – are not a complete and sufficient requirement for productivity and economic gains*. Other factors also come into play, some which are beyond the scope of this study, but others within (e.g. appropriate regulatory and legislative framework, sufficient human and institutional capacities, deployment of e-applications and exploitation of opportunities – e.g. in outsourcing, etc).

6.1 Summary of Recommendations

In these report, various recommendations have been made. They fall in three broad categories: infrastructural, enabling environment (including policies, regulations and legislation), and institutional and human capacity development. Annex XVII summarizes these recommendations, citing the concrete benefits they would bring, the prerequisites necessary, and who should be responsible. There are interventions that are long-term; but there are also those which can be achieved in the short-term, with limited resource requirements. In nearly all these actions, the EAC Secretariat and EARPTO would be focal players. In some of them, ITU would consider its support, based on its mandate, and the various resolutions at the Plenipotentiaries, WTDC's, and the WSIS's (e.g. Resolution 21 of WTDC'06 on Co-ordination and Collaboration with RECs, and the Tunis Agenda (Second Phase of WSIS – 2005) recommending in Item 27(a) the "enhancing of regional cooperation and creating multi-stakeholder partnerships, especially by creating incentives for building regional backbone infrastructures").

For purposes of this study, we shall take short-term to mean up to 1 year (i.e. by end of 2007), medium-term to mean 1-3 years, and long-term to be beyond 3 years.

6.2 Short term

Some of the short-term actions are mainly of an institutional restructuring nature, and could include:- Restructuring of EAC Secretariat to strengthen the ICT Unit, Permanent Secretariat for EARPTO, Legal Grounding for EARPTO[28], and Strengthening of the Communications and Public Relations Functions of the Community. Other interventions that could be short-term, and include: Adoption of Interconnection Guidelines, Spectrum Management Strategy, Direct Interconnection (and intra-regional roaming) for all Licensed Operators, Converged, Technology-neutral Licensing, Comprehensive Study on Traffic Projections and Tariff Analysis, Establishment of a Regional Internet Exchange Point (RIXP), and the Development of a Comprehensive Universal Access and Service Strategy. Some of the short-term interventions could be tackled within the framework of some of the on-going programs, e.g. by ITU, EU/RICTSP, World Bank/RCIP, etc.

6.3 Medium term

Over the medium term, focus could be on the policy, regulatory and legal reforms. Some of the actions that could be undertaken in this period would include:- Harmonization of ICT Policies, Regulations, Selected Laws, and E-Applications Strategies (E-Government, E-Commerce, E-Tourism, Cyber-security, etc). Other actions that could be undertaken include:- Collection, Analysis, Harmonization and Dissemination of ICT Statistics, Common Position on Restructuring for ICT Development within the AU Framework, Establishment of Regional Professional ICT Association, Capacity Development Plan, Construction of the EASSy cable, Completion of the EABs Backhaul, Upgrading of the Cross-border Links to fiber, Completion of the Lake Victoria Emergency Communication project, and the Development of a Regional Broadband Communications Master-plan. If the high-impact, quick-win projects for the short and medium-terms are well implemented, they should be a good impetus for mobilizing resources for other longer-term projects.

6.4 Long term

In the long-term, all the projects listed herein should have been or be implemented. In particular, the Regional Backbone Infrastructure (EARII) should be in place, the Multi-Stakeholder Organization should be fully functional, and the Regional Professional ICT Association should be vibrant. At that point, the EAC should be ready to fully reap the benefits brought along by ICTs.

6.5 Proposed timelines and indicative budget

In Annex XVIII, an attempt is made to propose timelines and budget estimates for the actions recommended. One of the things the proposed institutional structure would focus on is mobilization of resources for the stated activities. It is re-emphasized that these figures are only indicative, and could vary if the actual actions were to be executed. The actual figures would vary, depending on a number of parameters. For instance, the costs related to the adoption of the Interconnection Guidelines would depend on what processes are required, e.g. whether a Ministerial Council or an EARPTO Congress would be the appropriate authority.

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[28] During the missions, stakeholders expressed the need for integrating and/or upgrading EARPTO into the EAC Treaty. See for instance minutes of UCC/ITU consultative meeting in Annex VI.

6.6 Resource mobilization

From the foregoing, it is clear that substantial resources would be required to develop a modern regional broadband infrastructure in East Africa. Obviously, the bulk of the resources required has to come from the private sector (operators) itself. In discussing regional network upgrade, it is vital to also *involve all operators who generate higher volumes of regional and long distance telecommunications traffic.* In addition to private sector financing, it is imperative that some public finance will also be required.

Firstly, the Member States themselves must be convinced to see broadband infrastructure development as of paramount importance. *A given fraction of the annual national budget should be put into ICT infrastructure development, especially for:*

i) projects of a "common good' nature, e.g. backbone infrastructure that needs to be affordable, and
ii) projects that are not commercially attractive (e.g. rural connectivity).

Recognizing that all the EAC Member States have limited budgets, and are straddled with other equally pressing priorities (e.g. health, education, energy, transport, etc), it is needless to say that the support of development partners will time and again be needed. *To get their buy-in, it is important that the projects being proposed and promoted be fully discussed with them. It is therefore recommended that proposals in this report be discussed with them for final adoption.*

Secondly, *existing regional mechanisms should be utilized to the maximum for own resource mobilization, notably the private sector*[29] *(through the East African Business Council), and the East African Development Bank (EADB)*. Indeed, the 3rd Development Strategy of the EAC has already recognized the need for the establishment of a "Partnership Fund", possibly managed by the EADB, for purposes of financing projects and programmes. As acknowledged in the Plan, *such a Fund would be a much needed vehicle for better co-ordination of donor support and better alignment with the priorities established by the Community*. *Also worth paying attention to in this regard is the utilization of stock markets*, with the nascent attempt to establish an "East African Stock Exchange".

Recent events particularly in Kenya, and to some extent, Uganda, through initial public offerings (IPO's) of strategic public and private institutions at the Stock Exchanges have shown that this method has huge potential of attracting capital for infrastructure development from corporations and the general public. Equally noteworthy is the move towards cross-listing of companies among the various Nairobi, Kampala and (soon), Dar es Salaam Stock Exchanges. With the imminent joining of the Community by Rwanda and Burundi, the potential for this avenue for resource mobilization can only become more promising.

Thirdly, a number of emerging regional and global opportunities that support the development of science and technology (S&T) generally, and ICTs, in particular must be strengthened and scaled up. They include supportive regional and global initiatives notably the New Partnership for Africa's Development (NEPAD), infrastructure programmes of the African Development Bank (ADB), endorsement and commitment to the Millennium Development Goals (MDGs) and poverty reduction strategies, the various support initiatives at the level of the UN, including ITU-promoted WSIS and the Digital Solidarity Fund (DSF), the various ICT-enabled programmes of the World Bank, UNECA, UNDP, UNCSTD, UNESCO,

[29] For the success of public-private partnerships in infrastructure financing, a clearly defined, unambiguous framework (with supporting legislation) will be required. The recently published "Draft Law Concerning Provisions Applicable to Privately Financed Infrastructure Projects (PFIPs [GORP'06])" by the Government of Rwanda may be a useful resource to this end.

UNIFEM, etc, positive decisions by the G8 in terms of scaling up official development assistance for the poor countries following the adoption of the Blair Commission Report [UKCA'05], and special provisions in WTO, regional integration support programmes of the EU, bilateral engagements with pro-ICT development agencies, e.g. SIDA, IDRC, DFID, USAID, Finnish International Cooperation, JICA, etc. However, for maximum gain, these programmes must be harmonized, closely coordinated, monitored and be part of a larger comprehensive, cohesive regional agenda. *An ICT donors' conference might be a first step towards buy-in, harmonization and alignment of donor support for this sector.*

Fourthly, considering the volume of investment that may be required, especially for infrastructure projects, all other avenues must be explored for resource mobilization and cost containment. One innovative way would be to put in place transparent ways of supplier-financing, either *through soft payment terms to equipment suppliers (e.g. through long-term, low-interest payment arrangements), or through build-operate-transfer (BOT) arrangements*. Finally, even cases where direct sales are necessary, *it always pays to arrange bulk sales. Perhaps the EAC Secretariat can assist in developing strategies for joint-purchases whenever feasible, in collaboration with the Member States and Operators*.

6.7 Assumptions

In coming up with the recommendations in this report, and the time and budget estimates, certain assumptions have been made, among them that:

- The Member States would remain bound by the EAC Treaty as presently stipulated;
- The Community will grow from strength to strength, with the anticipated joining of Rwanda and Burundi;
- The Top Leadership of the Community would create and sustain a conducive environment for ICT growth;
- ICTs and Telecommunications would remain a priority, and would even be escalated during the foreseeable future in the EAC Strategic Plans;
- ITU and other partners would continue to support the EAC within the framework of the various Plenipotentiary, WTDC, WTSA, and WSIS resolutions; and
- Flexible mechanisms will be put in place to change course in line with the dynamic dictates of the ICT industry.

6.8 Risks

Some of the risks that may threaten the proposals in this study include:

- Degeneration in governance, and the breakdown of law and order;
- Instability of the Community as a consequence of divided loyalties to other RECs (e.g. COMESA, SADC, IGAD, IOC, etc);
- Failure of the main EASSy/EABs stakeholders to agree on a common ground (e.g. the operators and governments/NEPAD failing to agree on a common business model, or the governments failing to agree on a common strategy, etc);
- Dissent due to unequal growth of ICTs in the various Member States; and
- Failure by development partners to see ICTs as a primary priority development area.

Mitigation against some of the risks herein is beyond the scope of this study.

7 Proposed institutional framework

Further to the recommendations for institutional restructuring, it is clear that a phased approach would be required. In Phase I, the EAC Secretariat's ICT Unit would be strengthened, and a permanent secretariat for EARPTO would be created. In Phase II, a semi-autonomous, fully-fledged multi-stakeholder organization would be established, with budgetary support from Member States, NRAs, and other stakeholders.

In considering the establishment of an institutional structure to facilitate regional broadband and cross-border connectivity in East Africa, following are some of the issues that were considered:

- The need to have a functional and effective system of achieving the main objectives;
- The need to build on the existing institutional arrangements and avoid radical reforms;
- Opting for evolutionary reforms as opposed to revolutionary reforms;
- The need to minimize running costs while leveraging already existing opportunities;
- Recognition of the diverse (and sometimes conflicting) interests, priorities and orientations of the various stakeholders;
- The need to establish the necessary synergies and provide for cooperation among the diverse, multi-stakeholders; and
- The need to avoid duplication and unnecessary competition with existing and effective institutions.

7.1 Phase I – Strengthened EAC Secretariat and EARPTO

In this phase (1-2 years), the EAC Secretariat is restructured to have an ICT Directorate or Department, headed by a Director-General. In the interim, the Department could be headed by a Director[30]. It would be important to clearly define the functions of the Department or Directorate. More than anything else, it should regularly liaise with the policy making organs of Member States, i.e. Ministries. Its focus should be in policy co-ordination and implementation monitoring. The relationship between the Directorate and the Ministries should also be formalized, possibly through an Annex to a relevant Treaty or other statute. Administratively, the Directorate should be treated like any other within the EAC Secretariat. The Director/Director-General should report to the Deputy Secretary-General (Projects and Programmes).

In parallel to the ICT Directorate, there should also be established a permanent secretariat for EARPTO in Phase I. Initially, it should only have one or two staff – say a mid-level Executive Officer, and a Secretary. The EARPTO Secretariat would mainly co-ordinate the Organization's activities, and follow up on its resolutions. Unlike the Directorate, which would directly deal with policy makers, the EARPTO Organs (including its Secretariat) would deal with the ***regulators*** (NRA's). Besides, whereas the Directorate would focus on policy and implementation, the latter would focus on regulation. Legislative co-ordination, to be carried out in conjunction with EALA, should be split between the Directorate and the EARPTO Secretariat. Thus, legislation with a bearing on regulation should be coordinated by EARPTO Organs, while all other ICT legislation would be coordinated by the Directorate.

[30] Actually, as of the time of this study, the EAC had created the position of "Director of Infrastructure", whose jurisdiction included ICTs.

Functionally, the Executive Officer shall be answerable to the Chairperson of EARPTO, while administratively, he reports to the Director/Director-General. The EARPTO Secretariat should have its own separate account from the EAC's, but supervised by the EAC Secretariat (specifically the Director or Director-General, to avoid bureaucracy and red-tape, while promoting accountability). There should be a formal Agreement between the Directorate and EARPTO, with regard to the management of the EARPTO Secretariat. In terms of physical location, the latter could be cited either at the EAC Secretariat (in Arusha), or at the headquarters of one of the three NRA's. The benefit of citing the Secretariat at either the EAC or one of the NRA's is to defray some of the running costs, including office rent and logistics. The decision of where to cite the Secretariat can be a sensitive matter, and should be decided by the EARPTO Congress.

7.2 Phase II – A semi-autonomous Multi-Stakeholder Organization

In the medium to long term (say over 3-5 years), an East African Multi-Stakeholder ICT Organization could emerge. With a proposed name of East African ICT Commission, the Organization would merge some of the functions previously performed by the Directorate (in sub-section 7.1), and the EARPTO Secretariat. It could also take up some of the functions of the other EARPTO Organs, including the Congress. It could, for instance, co-ordinate implementation and/or monitoring of the universal access strategy and infrastructure development. Following are some of the proposed functions of the Organization:

- Overall co-ordination of ICT development and utilization in East Africa, in consultation with the Council;
- Promotion of development of regional backbone infrastructure, including cross-border inter-connections and Internet exchange points;
- Co-ordination of harmonization of ICT policies, regulations, laws, and standards;
- Resource mobilization for prioritized activities of the Organization, and ICT development generally in the EAC;
- Collection, analysis, harmonization and dissemination of ICT Statistics, in conjunction with other relevant bodies;
- Information gathering and dissemination (including databases, Management Information Systems/MIS, Geographic Information Systems/GIS, etc) to affiliates through various means, including conferences, workshops, seminars, newsletters, bulletins, review reports, case studies, on-line discussion forums, dynamic website, blogs, etc;
- Studies and research on priority issues of a regional nature;
- Facilitation of institutional and human capacity development in ICTs;
- Mobilizing Member States and affiliates for common positions at regional and international fora; and
- Serve as a Secretariat for other regional ICT organizations, e.g. EARPTO, East African Internet Association (EAIA), and other regional professional associations that may emerge.

The staffing requirements for the Organization would be determined after carrying out a needs analysis at the time of its creation. It should be headed by an Executive Secretary, like SATA's. It should be established through a Protocol, similar to the SADC TCM Protocol, and it should enter into a formal Agreement with the EAC, as well as the host country.

At inception, the Organization could be based at the EAC Secretariat, subject to concurrence of the Council. In the long run, its headquarters should be either at the EAC Secretariat (in Arusha), or at one of the Capital Cities of the Member States, preferably at an ICT policy making institution (ordinarily the Ministry for the time being responsible for ICT and/or Telecommunication matters). This would allow substantive savings on office space rentals and other administrative costs. The permanent seat of the Organization should be determined by the members once all the structures have been put in place.

The bulk of the Organization's budget should be covered through contributions from Member States, NRA's (through EARPTO), and other stakeholders. Governance, transparency, equity and professionalism are some of the most important values that the Organization must espouse from the very start. The Organization should have a legal personality, and be able to sue and be sued, to own assets and have financial autonomy. It shall be important that it has sound management and oversight structures. It should have its own Constitution and/or Articles of Association. It should have a professional oversight Board. The Board should ideally have representatives of all the major stakeholder groups, among them Member States/policy makers, regulators, operators and service providers, professional associations, consumers, and research and academic institutions.

Though the Organization shall have some minimal full-time staff, it should be able to transact most of its day-to-day business through Sub-Sectoral Committees – ***ad-hoc***, as well as standing committees. For the ease of co-ordination, feedback and follow-up, each Member State should designate a focal point – similar to the National ICT Co-ordinator advocated by SADC.

A clear chain of command should be established between the Organization and the Council (as well as the EAC Secretariat) to avoid unnecessary tussles. The Organization shall produce its own Regulations and Rules of Procedure, with the guidance of the Board, and subject to the legal instruments under which it shall have been incorporated.

Annex XIX gives a proposed itinerary for the establishment and operationalization of such an Organization. Table 5 offers some indicative costs to establish and run such an Organization over its first year of existence.

Once again, the dates given herein are only indicative, and firming them up would be dependent on a number of factors pertaining at the time.

The figures used in Table 5 are based on applicable estimates at the time of writing the report. It is assumed that the Multi-Stakeholder Organization will come into being during the third year. It is further assumed that the EARPTO Secretariat will continue to exist (and so will the ICT Directorate within the EAC Secretariat), but will gradually transfer some of their functions over to the Multi-Stakeholder Organization. It is finally assumed that Office Space and Support Services (listed in Table 6) will be provided by the hosting institution/s, e.g. EAC Secretariat, Ministry or NRA's.

Table 5 – Budget estimate for EARPTO Secretariat & Multi-Stakeholder Organization over a 3-year period

Budget line	Year I (USD)	Year II (USD)	Year III (USD)	Total (USD)
EARPTO Secretariat				
Executive Officer Emoluments	60 000	60 000	60 000	180 000
Program Assistant Emoluments	10 000	10 000	10 000	30 000
Office Equipment (Computers, Printers, Software, etc)	10 000	5 000	5 000	20 000
Web Portal Development	10 000	5 000	5 000	20 000
Database/MIS Development	20 000	10 000	10 000	40 000
ICT Statistics	20 000	15 000	15 000	50 000
Missions	7 500	7 500	7 500	22 500
Contingencies	12 000	12 000	12 000	36 000
				398 500
Regional ICT Multi-Stakeholder Organization				
Executive Secretary Emoluments			100 000	100 000
2 Program Officers (Emoluments)			120 000	120 000
Office Equipment (Computers, Printers, Software, etc)			20 000	20 000
Web Portal Development			15 000	15 000
Database/MIS Development			30 000	30 000
ICT Statistics			30 000	30 000
Missions			15 000	15 000
Contingencies			30 000	30 000
				360 000

Table 6 – In kind contributions from host institutions

	Budget line	Amounts in USD
1.	Office Space Rental	N/A
2.	Office Equipments	N/A
3.	Furniture	N/A
4.	Communications	N/A
5.	Stationery	N/A
6.	Administrative Support	N/A
7.	**Total in kind contributions from Host Institutions**	N/A

By and large functions of the Multi-Stakeholder Organization and those of the EARPTO Secretariat should be seen to be complimentary. As indicated earlier, there will still be need for specialized organizations to play specific functions and serve the interests of specific groups or communities. However, any duplications should be minimized as much as possible.

8 Summary of Responses to Terms of Reference

In this section, we revisit the Terms of Reference (TORs), with a view to answering the question: ***have the TORs been sufficiently addressed in this study?*** We begin with the overall study objective, and then walk through the eleven specific TORs, one by one.

Overall Objective: ***The study was part of a wider assistance to the East Africa Community (EAC) to plan and strengthen cross-boarder connectivity to form an integrated East Africa Region Information Infrastructure (EARII). The study's overall objective was to review and recommend an institutional framework within East Africa, possibly at the EAC Secretariat to facilitate accelerated planning, design, development, operation and management of a robust broadband regional Telecommunication/ ICTs infrastructure for the sub-region, as part of the Global Information Infrastructure (GII).***

The study has reviewed some of the policy, regulatory, legal, technical, commercial and institutional requirements for the EAC for the successful planning, deployment and exploitation of a broadband infrastructure and cross-border connectivity. It has looked at the prevailing situation, and to be pragmatic, has analyzed in detail some of the major existing regional and sub-regional initiatives (Sections 2 & 4), and identified some of the sticking out issues in Section 5. In Section 7, it has recommended a robust institutional framework, premised upon the EAC Secretariat, but with roles shared with a strengthened EARPTO. A migration path too, with timelines and a working budget also has been prescribed.

Specific TORs

1. ***Visit and consult with various key stakeholders in the sub-region, among them the East African Legislative Assembly (EALA), EAC Secretariat, Ministries of Member States with Telecommunication and/or ICT in their attribution, regulators (and their associations including EARPTO, ARICEA and CRASA), telecom operators, ISPs, trade and professional associations, and carefully selected samples of major consumers (e.g. universities, banks etc) with a view to seeking opinion on the way forward and to collect any relevant information.***

Missions were conducted to Uganda and Tanzania as planned, including a visit to the EAC Headquarters (Arusha, Tanzania). The work "at home" enabled the consultants to also factor in the prevailing situation in Kenya. The study also took advantage of the intense dialogue that was on-going at the time with regard to building consensus around the East African Submarine Cable System (EASSy) Project to gauge opinions of the various key stakeholders, including participation at the EAC High Level Meeting on this subject in Arusha in July, 2006, and the Protocol Signing of the NEPAD Regional ICT Broadband Infrastructure for Eastern and Southern Africa in Kigali, Rwanda, in August, 2006. In the course of the study, the consultants talked to Senior AU Officials, Senior Ministry Officials, Regulators, Officials of Regulators' Associations, Operators (including EASSy Consortium Members), Trade and Professional Associations[31], some major consumers (including ISPs and universities – the latter through their regional associations, the Inter-University Council and/or the Ubuntu Alliance), and Managers of some of the major regional infrastructure projects, notably NEPAD e-Africa Commission, COMTEL, SRII, Indian Pan-African e-Network, etc. Prior to and during the study, the consultants were privileged to participate also in some of the major regional and international ITU fora, including the Plenipotentiary Conference (November, 2006), various WTDC and WSIS sessions and/or processes, etc.

[31] Especially Tanzania and Uganda ISP Associations. Cognizance was taken also of the fact that the Lead Consultant for many years headed the Computer Society of Kenya (CSK). Informal interactions were also made with past and present officials of some of the nascent National professional ICT Associations.

Some of these sessions allowed interactions and interviews with the leadership of other major regional institutions, notably ATU and RASCOM. It is, therefore, believed that sufficient consultations were made. The only regrettable thing is that the formal meeting with CCK officials and the Kenyan stakeholders' workshop had to be called off last-minute. However, adequate effort was made to informally engage with the respective stakeholders, including senior policy making and regulatory officials.

2. Review ''Protocols, Policies and Bills'' or legally binding regional agreements and any other legal instruments concerning cross-border Telecommunication/ICTs infrastructure connectivity that plan and/or strengthen cross-border connectivity to form integrated East Africa Region Information Infrastructure (EARII) as part of GII;

Various statutes, policy instruments, and regulatory frameworks were looked at. A full list of the Bibliography is given at the end of the report. Examples of instruments reviewed included the Protocol on NEPAD Broadband ICT Infrastructure for Eastern and Southern Africa (the Kigali Protocol), the EAC Treaty, Kenya's and Uganda's Telecom Policies and Communications Acts, EASSy Technical and Commercial Feasibility Studies, Work-in-Progress (e.g. EARPTO Interconnection Guidelines), Meeting Reports (e.g. of EALA's Communications, Trade and Investment Committee, EAC Council, and EARPTO Congress, etc), and so on. The extensive use of the Internet greatly facilitated this process, and so did the vast body of knowledge of information available especially at the EAC Secretariat, the ITU Regional Office and the SATA Office.

3. Do situational analysis and review of the current regional Telecommunication/ICTs programmes, activities and initiatives within and/or with a direct interest to the EAC;

Review of the other current regional and sub-regional Telecommunications/ ICTs initiatives, especially under the auspices of the AU (ARAPKE), the Indian Pan-African Satellite e-network project, RASCOM, the NEPAD e-Africa Commission Broadband ICT Infrastructure for Eastern and Southern Africa the EU supported Regional ICT Support Programme (RICTSP), the proposed World Bank Regional Communication Infrastructure Programme (RCIP), the East African Digital Transmission Project as well as other related initiatives by the ATU, ITU, COMESA, the Nile Basin, and private sector-led initiatives and their implications on the East Africa;

4. Sub-region

All known major regional and sub-regional projects and initiatives were reviewed. Although some of the private sector initiatives were known to exist (e.g. considerations by some of the major regional mobile operators to tap fiber access through Sudan and Uganda), the information was scanty (and understandably confidential), and therefore they were not reported. However, some of the private initiatives that were more in the public domain (e.g. KDN's plans to link up with FLAG Undersea Cable, or Celtel's Regional Roaming Facility) were covered. Section 4 reports on all the initiatives reviewed – regional as well as sub-regional.

5. Study of selected successful broadband sub-regional ICTs infrastructure development initiatives, including the Southern African Regional Information Infrastructure (SRII) under the Southern Africa Telecom Association (SATA) flagship and institutional framework initiative like SATA itself and its impact on SADC region;

A comprehensive review of the SADC arrangement, beginning with SATCC, the emergence and transformation of SATA, CRASA, SRII, etc, was made and reported in Section 4. Equally, building upon the work done by Chepkonga, et al [CHEP'05], a review was done of active regional associations of

regulatory authorities (RARA's) in Africa. The manner in which they have been able to sustain themselves to an extent was important in proposing the establishment of a Regional ICT Multi-stakeholder Organization within the EAC System. Finally, the study also reviewed selected success stories of stakeholder organizations and associations from outside the continent, especially Europe, Asia and the Pacific.

6. Review of EAC and EARPTO organizational structures, and the suitability of the current institutional frameworks to support and accelerate Telecommunication/ICTs Infrastructure development and cross-boarder connectivity in the sub-region;

Sub-section 4.6 analyzes the various EAC Organs, not only the Secretariat and EARPTO, but also the decision making and legislative organs like the Summit, EALA, Council, as well as the sectoral task committees. Where such organs do not exist yet for the ICT sector, comparable arrangements within the EAC System were studied, e.g. the operations of the East African Law Society, which offers pointers to the possibility of a Regional Professional ICT Association.

7. Recommend an institutional framework to facilitate accelerated Telecommunication/ICTs infrastructure development for the sub-region, bearing in mind medium to long-term EAC's strategic plans, and benchmarks with other successful sub-regional initiatives;

The EAC Strategic Plan for the next 5 years (2006-2010) was reviewed and reported in Sub-Section 4.7. Based on the outcomes of TOR 6, an enabling, sustainable institutional framework has been recommended, which builds upon existing structures. A migration path, too, complete with timelines and budget-lines is also given in Section 7.

8. Propose a roadmap, with timelines, for the recommendations proposed for the enhanced framework;

9. Propose resource requirements with indicative budget implications for the establishment of the proposed framework, showing where necessary, any assumptions and risks;

TORs 8 and 9 have been carried out, and reported in Sections 6 and 7.

10. Prepare final report; and

This report, together with its Annexes, is the response to this TOR.

11. Prepare project document for the recommendations.

A separate project document has also been produced as an attachment.

Thus it is felt that the TORs have been adequately addressed, and the study objectives achieved, within the constraints pertaining at the time.

9 Proposed Further Work

Although this study looked at various aspects of broadband connectivity, it concentrated on cross-border and inter-country issues. Even for these, it only dwelt on the supportive institutional framework, in line with the study's terms of reference. There are several other pertinent areas that require studying, e.g. the development of a Broadband Master-plan for the region, which were way out of the scope of this study, but would still be useful for the widespread access and usage of broadband connectivity. Moreover, some of the actions recommended herein have used the principle of "first approximation", in giving indicative timelines and budget estimates. It is understood that for every action line to be implemented, a more comprehensive time and cost estimation would be made *a priori*.

As of the time of the study, it was evident that in the very near future, the Community (EAC) would expand to include two more Member States: Rwanda and Burundi. It is noted, in particular, that for Rwanda which has mainstreamed ICTs into its national psyche and development agenda, there may be several pertinent experiences to be shared. Rwanda, for instance, was one of the first Sub-Sahara African countries to develop a National ICT Policy and 5-Year Rolling Implementation Plan. Besides, one pioneering action Rwanda has taken was to develop a comprehensive resource sharing framework, which would obviously interest the other Member States. In addition, there are already on-going bilateral negotiations that would help hasten the harmonization of ICT Policies and Regulations. A case in mind is the Uganda/Rwanda Joint Permanent Commission (JPC), that among other things, has already initiated a process to evolve a bilateral arrangement for cross-border interconnection, and co-ordination of spectrum management around the border areas [JPC Minutes – GORU'06].

The benefits would be both ways. As was noted during the study, there are innovative solutions that the present EAC Member States have evolved that would benefit the new members. Cases in mind include the Converged Licensing (Tanzania), Universal Service Strategy (Uganda), and E-Government Strategy (Kenya). Given that both Rwanda and Burundi have fairly younger regulators, there is no doubt they would be abundantly enriched if they were to work closely with some of the more established ones. In view of the impending accession to the Community, it would therefore be helpful to extend the scope of this study to include Burundi and Rwanda as well.

10 Way Forward

It is noted that within the limited time frame allotted, the study may not have achieved much more. It was, for instance, not possible to hold the multi-stakeholder consultative workshop in Kenya, as was done in the case of the other Member States. Besides, if time had permitted, more informants could have been interviewed, and more cases of "best practices" would have been analyzed. Nevertheless, it is believed that the study conducted sufficient interviews to be able to arrive at certain informed positions. Some of these positions, however, can be enriched if further feedback was obtained from targeted key stakeholders, before finalizing this report. In particular, *it is recommended that a Multi-Stakeholders Regional Workshop be held to present this preliminary report, and take on board any arising feedbacks*.

Finally, information and experience sharing can be a very effective way for technology transfer and learning. It is encouraged that some of the players within the EAC ICT scene (say from the EAC Secretariat or EARPTO) consider conducting short visits to some of the best practices illustrated in this report, e.g. to SATA, PITA, etc. There would be much to gain through such study visits and staff exchange.

11 Conclusions

The study, while recognizing the important role of ICTs in regional integration and socio-economic development of East Africa, has also noted some major challenges that needed priority attention. The challenges are diverse, ranging from infrastructural or technical (e.g. need for network upgrade, cross-border interconnection, etc), regulatory (e.g. lack of interconnection and resource sharing guidelines, harmonized spectrum management strategies, etc), financial (e.g. affordability, limited resources for infrastructure development, etc), to capacity limitation (e.g. inadequate institutional arrangements, limited human capacity, etc). With regard to institutional arrangements, it was apparent that if the dream of an integrated East African Regional Information Infrastructure (EARII) is to be attained, the existing institutional structures have to be strengthened.

The study recommends an evolutionary, rather than revolutionary approach, beginning with the strengthening of the EAC Secretariat (e.g. through the establishment of an empowered ICT or Infrastructure Directorate) to be able to effectively provide some of the co-ordination functions, as well as the establishment of a better endowed Secretariat for EARPTO. The study also recommends the establishment of a regional professional association to help educate and create awareness among the masses and corporations, as well as maintain and promote standards and professional ethics in the sector.

In the medium to long run, the study recommends the establishment of a multi-sectoral stakeholders' organization, similar to the Southern Africa Telecommunications Association (SATA) and the Pacific Islands Telecommunications Association (PITA), but with notable improvements, based on the documented experiences of the two (e.g. to be multi-stakeholder, including operators, regulators, as well as policy makers) – thus incorporating the different strengths from not only SATA and PITA, but also EARPTO (in its multi-stakeholder membership). The timelines and indicative budgets for achieving some of the reforms recommended – infrastructural, regulatory or institutional – are also given. Overall, the importance of ICTs in attaining the millennium development goals (MDGs), reducing poverty, generating employment, and creating wealth is reiterated in the study. If the development goals and regional integration are to be achieved, it becomes an absolute necessity for some of the recommended actions herein to be attended to, in a phased manner. In the end, they will significantly contribute towards bridging "the digital divide", and make East Africa become truly an integral part of the global economy.

It is noted that the current (3rd) EAC Development Strategy continues to recognize the importance of ICTs in regional integration and socio-economic development. It, however, introduces a deepened focus on science and technology – which is laudable, as this has both direct and indirect impact on overall socio-economic development, as many studies have shown. However, the study feels it does not go far enough in mainstreaming ICTs into the integration and development affairs of the Community, say for instance, the way the European Union has chosen to do. We believe that this study could significantly contribute towards deepening ICT mainstreaming into East Africa's medium to long term transformation agenda.

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ANNEXES

ANNEX I

Sample list of core ICT indicators (Source: [ITUI'06])

Core indicators on ICT infrastructure and access

Basic core

A1 Fixed telephone lines per 100 inhabitants
A2 Mobile cellular subscribers per 100 inhabitants
A3 Computers per 100 inhabitants
A4 Internet subscribers per 100 inhabitants
A5 Broadband Internet subscribers per 100 inhabitants
A6 International Internet bandwidth per inhabitant
A7 Percentage of population covered by mobile cellular telephony
A8 Internet access tariffs (20 hours per month), in US$, and as a percentage per capita income
A9 Mobile cellular tariffs (100 minutes of use per month), in US$, and as a percentage per capita income
A10 Percentage of localities with public Internet access centres (PIACs) by number of inhabitants (rural/urban)

Extended core

A11 Radio sets per 100 inhabitants
A12 Television sets per 100 inhabitants

Core indicators on access to, and use of ICTS, by households and individuals

Basic core

HH1 Proportion of households with a radio
HH2 Proportion of households with a TV
HH3 Proportion of households with a fixed line telephone
HH4 Proportion of households with a mobile cellular telephone
HH5 Proportion of households with a computer
HH6 Proportion of individuals who used a computer (from any location) in the last 12 months
HH7 Proportion of households with Internet access at home
HH8 Proportion of individuals who used the Internet (from any location) in the last 12 months
HH9 Location of individual use of the Internet in the last 12 months:

a) at home;
b) at work;
c) place of education;
d) at another person's home;
e) community Internet access facility (specific denomination depends on national practices);
f) commercial Internet access facility (specific denomination depends on national practices); and
g) others

HH10 Internet activities undertaken by individuals in the last 12 months

- Getting information:
  a) about goods or services;
  b) related to health or health services;
  c) from government organizations/public authorities via websites or E-mail; and
  d) other information or general Web browsing
- Communicating
- Purchasing or ordering goods or services
- Internet banking
- Education or learning activities
- Dealing with government organizations/public authorities
- Leisure activities:
  a) playing/downloading video or computer games;
  b) downloading movies, music or software;
  c) reading/downloading electronic books, newspapers, or magazines; and
  d) other leisure activities

Extended core

HH11 Proportion of individuals with use of a mobile phone

HH12 Proportion of households with access to the Internet by type of access: Categories should allow aggregation to narrowband and broadband, where broadband excludes slower speed technologies, such as dial-up modem, ISDN and most 2G mobile phone access. Broadband will usually have an advertised download speed of at least 256 kbit/s.

HH13 Frequency of individual access to the Internet in the last 12 months (from any location):

a) at least once a day;
b) at least once a week but not every day;
c) at least once a month but not every week; and
d) less than once a month.

Reference indicator

HHR1 Proportion of households with electricity

Core Indicators on Use of ICT by Businesses

Basic core

B1 Proportion of businesses using computers
B2 Proportion of employees using computers
B3 Proportion of businesses using the Internet
B4 Proportion of employees using the Internet
B5 Proportion of businesses with a Web presence
B6 Proportion of businesses with an intranet
B7 Proportion of businesses receiving orders over the Internet
B8 Proportion of businesses placing orders over the Internet

Extended Core

B9 Proportion of businesses using the Internet by type of access: Categories should allow aggregation to narrowband and broadband, where broadband excludes slower speed technologies, such as dial-up modem, ISDN and most 2G mobile phone access. Broadband will usually have an advertised download speed of at least 256 kbit/s.

B10 Proportion of businesses with a Local Area Network (LAN)

B11 Proportion of businesses with an extranet

B12 Proportion of businesses using the Internet by type of activity

- Sending and receiving E-mail
- Getting information:
  a) about goods or services;
  b) from government organizations/public authorities via websites or E-mail; and
  c) other information searches or research activities
- Performing Internet banking or accessing other financial services
- Dealing with government organizations/public authorities
- Providing customer services
- Delivering products online

Core indicators on the ICT sector and trade in ICT goods

Basic core

ICT1 Proportion of total business sector workforce involved in the ICT sector

ICT2 Value added in the ICT sector (as a percentage of total business sector value added)

ICT3 ICT goods imports as a percentage of total imports

ICT4 ICT goods exports as a percentage of total exports

ANNEX II

Terms of reference of study

Under the supervision of the Action Manager for Action 8381, Assistance to the East Africa Community to plan and strengthen cross-boarder connectivity to form integrated East Africa Region Information Infrastructure.

With the overall objective of establishing an institutional framework within East Africa, possibly at the East Africa Community (EAC) Secretariat to facilitate accelerated planning, design, development, operation and management of a robust broadband regional Telecommunication/ ICTs infrastructure for the sub-region, as part of the Global Information Infrastructure (GII), the expert will take mission to the regulatory bodies in Tanzania, Kenya, Uganda and EAC Secretariat.

He will:

1. Visit and consult with various key stakeholders in the sub-region, among them the East African Legislative Assembly (EALA), EAC Secretariat, Ministries of Member States with Telecommunication and/or ICT in their attribution, regulators (and their associations including EARPTO, ARICEA and CRASA), telecom operators, ISPs, trade and professional associations, and carefully selected samples of major consumers (e.g. universities, banks etc) with a view to seeking opinion on the way forward and to collect any relevant information.

2. Review ‘’Protocols, Policies and Bills’’ or legally binding regional agreements and any other legal instruments concerning cross-border Telecommunication/ICTs infrastructure connectivity that plan and/or strengthen cross-border connectivity to form integrated East Africa Region Information Infrastructure (EARII) as part of GII;

3. Do situational analysis and review of the current regional Telecommunication/ICTs programmes, activities and initiatives within and/or with a direct interest to the EAC;

4. Review of the other current regional and sub-regional Telecommunications/ ICTs initiatives, especially under the auspices of the AU (ARAPKE), the Indian Pan-African Satellite e-network project, RASCOM, the NEPAD e-Africa Commission Broadband ICT Infrastructure for Eastern and Southern Africa the EU supported Regional ICT Support Programme (RICTSP), the proposed World Bank Regional Communication Infrastructure Programme (RCIP), the East African Digital Transmission Project as well as other related initiatives by the ATU, ITU, COMESA, the Nile Basin, and private sector-led initiatives and their implications on the East Africa sub-region;

5. Study of selected successful broadband sub-regional ICTs infrastructure development initiatives, including the Southern African Regional Information Infrastructure (SRII) under the Southern Africa Telecom Association (SATA) flagship and institutional framework initiative like SATA itself and its impact on SADC region;

6. Review of current EAC and EARPTO organizational structures, and the suitability of the current institutional frameworks to support and accelerate Telecommunication/ICTs Infrastructure development and cross-boarder connectivity in the sub-region;

7. Recommend an institutional framework to facilitate accelerated Telecommunication/ICTs infrastructure development for the sub-region, bearing in mind medium to long-term EAC's strategic plans, and benchmarks with other successful sub-regional initiatives;
8. Propose a roadmap, with timelines, for the recommendations proposed for the enhanced framework;
9. Propose resource requirements with indicative budget implications for the establishment of the proposed framework, showing where necessary, any assumptions and risks;
10. Prepare final report; and
11. Prepare project document for the recommendations.

ANNEX III

Overview of communications infrastructure in East Africa

EAST AFRICAN COMMUNITY SECRETARIAT

Presentation at the Consultative Meeting of

Telecommunications Stakeholders
Silver Springs Hotel
16th July 2004

EAC Secretariat
Arusha, Tanzania
July, 2004

1 Importance of the communications sector

The communications sector has in the recent past been considered to incorporate four main areas. These are Telecommunications; Postal; Broadcasting; and Information Technology (IT). The technologies behind the foregoing sub sectors are broadly referred to as Information and Communications Technologies (ICT's).

ICT's have been credited with the structuring and restructuring of human race from the late 1800s. Recently, ICTs have been associated with globalization due to their impact on the global economy brought about by their speed, intensity, scope, volume and value of international transactions in the areas of information, finance, trade and administration among others.

The Communications in the form of ICT's have so far changed the world, but it is expected to change the world dramatically in the near future and the stage is set. The way people do business globally is expected to change beyond imagination. Improved communications by proper applications of ICT's offers the developing countries an unprecedented opportunity to reduce poverty at the fastest possible speed. But this potential of ICT's will remain unexplored if it is left to the market forces alone. Governments and Regional Economic Organization, such as, EAC need to identify necessary interventions such as developing ICT related policies and institutional and legal frameworks to help their member countries participate effectively in the global economy.

2 Infrastructure development

The development of efficient infrastructure has been identified as one of the most important pre-requisites for an effective regional integration process.

The Treaty for the Establishment of the East African Community, Article 99, spells out cooperation latitudes in the sub sector. The Treaty specifically provides for, among other things, that Partner States shall take steps to develop harmonized policies and regulatory frameworks in the sector and improve communications links and establish new ones as a means of furthering the physical cohesion of the Partner States and to facilitating and promoting communications within the community.

In addition to the need for the development of efficient national communications infrastructure, there is also an increasing realization that effective interconnection arrangements of telecommunications infrastructure among the EAC Partner States have become key to the operations of an increasing wide range of service providers.

The need for the development of efficient national communications infrastructure was factored in when the renewed cooperation in East Africa was being nurtured and the first regional projects to be defined were in the infrastructure areas. In the communications sector, three projects were identified viz; the "Digital Transmission Project; the Postal Automation Project and the Cross Border Connectivity Project.

3 State of the communications sector

Following the liberalization in the sub sector in the three EAC Partner States, a large number of service providers/investors have been attracted to the investment opportunities in the sector.

The growth rate of mobile subscribers in East Africa in the late 90's and early this decade exceeded any expectations. A study conducted by EAC on Development of a Comprehensive Communications Strategy in June 2003 indicates that the percentage of mobile subscribers by mid 2003 was 82.7% of the total subscribers, while those of fixed lines were 17.3%. This subscription scenario has resulted in the shift in market power since the mobile customers generate most of the local and long distance traffic. However, due to the exclusivity of the incumbent licenses, most of the long distance traffic including regional and international traffic has to be channelled through the fixed operators switches and gateways.

Due to liberalization and privatization in the sub sector, financing mechanisms of interregional projects was also affected and some regional projects were discontinued. This had serious implications on tariff and regional interconnection of telecommunications infrastructure.

In summary Liberalisation and privatisation of the sector have had the following implications on communications and ICT services in the region:

i) Improved services

Privatisation and liberalisation of the sector have greatly contributed to improved service offerings:

a) Many new players, particularly in mobile and smaller, new ISPs

b) Greatly increased investments in the sector

c) Growth rates of subscribers

d) Increased Product range

ii) Effect on regional co-operation

Privatisation and liberalisation of the sector have adversely affected a considerable number of large, interregional projects including:

a) COMTEL project and the Submarine Cable projects substantially delayed

b) The East African Digital Transmission Project discontinued

iii) Mobile operators drive the market

a) Mobile customers generate most of the long distance traffic (as well as regional and international traffic)

b) Exclusivity for fixed line operators is viewed by many as a hindrance rather than a business and market driver for service provision

iv) Infrastructure present situation in the region

The most critical issue is that there is inadequate capacity and less efficient operation of the regional telecommunications network, resulting in:

a) bottlenecks and constraints for regional economic development

b) possible reduced interest in regional investments due to inadequate telecommunications services

v) Key constraints in service provision

a) Congested regional traffic due to insufficient number of direct channels between Partner States

b) High charges for regional and international traffic, affecting both voice and data services

c) Expensive access to the Internet and the slow speed of connections

In view of the above, the Fifth Council of Ministers directed the Secretariat and the Regulatory Authorities in the Partner States to find ways and means to facilitate regional interconnection and harmonize tariff structures for communications service in the region.

4 Persisting problems of the communications sector

The new environment in the communications sector has brought with it considerable changes, some could be considered revolutionary and unprecedented. Nevertheless, some old problems have survived both in the technical, regulatory and management areas of communications, which should continue to be addressed by the stakeholders concerned. Among these, the following seem to stand out:

i. **Regulatory Divergence in East Africa,** which creates a problem to investors and is a major hindrance to coordinated development of the communications sector in East Africa.

ii. **Poor Rural Communications** whereby the digital divide between the rural and urban populations in Africa is more serious than that between the most African cities and the developed world, hence the urgency to bridge the urban-rural communications gap.

iii. **Lack of Backbone Infrastructure** threatens the intra and transit EA traffic growth and is responsible for high tariffs in the sub-region.

iv. **The High Tariffs** is a problem that arises mainly from the lack of backbone infrastructure as well as from high taxes levied by governments.

5 Ongoing efforts

Pursuant to the above directive, the Secretariat and the Regulatory Authorities have initiated and are carrying out the following studies:

a) Study on Harmonisation of Regional Communications Regulatory Strategy, which focuses on various regional issues including harmonisation of national ICT Policies. The Final Report is being finalised;

b) Development of a Harmonised ICT Policy Framework for East Africa. A Task Force consisting of key senior Policy experts was constituted by the EAC Sectoral Council for Transport, Communications and Meteorology (TCM) in November 2003;

   The Task Force has already commenced its work. The First meeting reviewed the exiting National and Regional ICT Policies and agreed on the best approach towards development of a Harmonized Regional ICT Policy for East Africa. The Task Force is now working on the Zero Draft of the Harmonized Regional ICT Policy;

c) Development of Comprehensive Communications Strategy for Lake Victoria Basin, supported by SIDA. A Preliminary Study has been undertaken and its Final Report came out in June 2003. The Report recommended that a Carrier Company be Established for the region. The Report further recommended that a Pre Feasibility Study be conducted on the Regional Carrier Project. The Pre-Feasibility Study was undertaken and was completed in January 2004. The Study result indicates that the project is feasible;

d) Study on Regional Interconnection supported by the Commonwealth Telecommunications Organisation (CTO). The Preliminary Report proposes an Inter–Region Interconnection Service (IRIS). The Service is expected to harmonise telecommunications tariff in the region;

e) East African Submarine Fibre Optic Cable System implemented by telecom operators with international gateway licence); and

f) Implementation of the East African Postal Automation Project, part financed by the East African Development Bank (EADB).

The three East African Postal Administrations have completed implementation of Phase II of the project, which include installation of Counter Automation Software, International Postal System and International Financial System. In terms of communications infrastructure, the Postal Corporation of Kenya has installed VSAT equipment in over 200 Post Offices in Kenya.

Tanzania Posts Corporation has installed a Data Communication Network based on VSAT network at twelve regional Post Offices. The three Postal Administrations have started preparing appropriate infrastructure that would support e-Post services.

6 Way forward

In recognition of scope of the necessary investments required to develop the communications and ICT sector including resources for effective infrastructure deployment, private sector participation and foreign capital investment becomes all too evident in order to meet the ever-growing communications needs in the region.

Private sector partnerships with Partner States governments need to promote and improve on infra-structure interoperability that would allow for more effective communications among individuals and groups as well as governments within the region. Private companies can also play an active role in regional integration by seeking investment opportunities to promote more widespread ownership by lower end users of the technology.

There are enormous opportunities and potential for private sector involvement in infrastructure development in East Africa. However, to realise this potential, Partner States' Governments will need to put in place the appropriate enabling policy environment and make the necessary long-term commitment to regional infrastructure development.

The EAC Partner States as a bloc need to make investment in communications sector, if the region wants to attract others to invest as well. A prerequisite for successfully attracting private investment in infrastructure projects is a sound regional regulatory and institutional framework.

The key strategic areas, which EAC (Partner States) would need to focus as of immediate priority include:

i. To solve the problem of inadequate capacity on regional links between the three Partner States;

ii. To establish a mechanism for regional licensing to enable companies to operate in the three Partner States;

iii. To involve mobile operators who generate more volume of telecommunications traffic in providing regional and long distance services including development of regional infrastructure; and

iv. To address the issue of communications on Lake Victoria in order to improve on safety for maritime traffic and general communications in the Lake Victoria Basin.

ANNEX IV

EAC WORK PLAN

Communications Sector January to June 2006

PROJECT CODE	PROJECT TITLE (IMPLEMENTER)	PROJECT OVERALL OBJECTIVE	CURRENT STATUS (Delayed/ Ongoing/New)	KEY PLANNED ACTIVITIES	TARGET DATE (END)	RESOURCES	COMMENT/ SPECIAL INTERVENTION
	1. Harmonisation of Regional Communications Regulatory Strategy *(EAC Secretariat/ Regulatory Authorities)*	To improve cross border and national communications in East Africa	Ongoing	a) Preparation of MoU between the Partner States (PS's) on Communications b) Prepare ToR and secure funding for the Study on Harmonisation of Regulatory Regimes in East Africa c) Implementation of regulatory related tasks as recommended in the Report on the Harmonisation of Communications Regulatory Study	June 2006 May 2006 May 2006	USD 250 000 EAC Budget/ RICTSP Project	
	2. Harmonisation of Regional ICT Policies *(EAC Secretariat)*	Development of Harmonised Regional ICT Policy Framework	Delayed	a) Engage a Consultant to Finalise Draft Regional ICT Policy Framework b) Preparations for the involvement of ICT stakeholders (Workshops)	May 2006 June 2006	USD 42 000	To be included in the 2006 PE of RICTSP
	3. East African Submarine Cable System (EASSy) Project *EAC / EASSy Secretariat)*	To develop a broadband gateway for East African data/voice traffic to the rest of the world	Ongoing	a) Holding of a High Level EA Policy Meeting to discuss EASSy Financing Approaches b) Finalisation & signing of Supply Contract and Construction and Maintenance Agreement c) Construction of the Cable system (start)	March 2006 April 2006 June 2006	USD 53 000 Sida/WB (for the High Level Policy Meeting)	USD 2.5 mill required for the implementation of the Project
	4. Study on Maritime Communications Infrastructure for Safety on for Lake Victoria	To evaluate the feasibility GSM technology for the maritime emergency communications system for Lake Victoria	Ongoing	a) Undertaking feasibility of a GSM based system b) Establish costs and mechanisms for sustenance of the communications services c) Hold Stakeholders meeting to discuss Study Report	February 2006 February 2006 March 2006	USD 100 000 Sida (Sweden)	Funds for local Consultants & meetings (SEK 250 000) received Inception Report Received

PROJECT CODE	PROJECT TITLE (IMPLEMENTER)	PROJECT OVERALL OBJECTIVE	CURRENT STATUS (Delayed/ Ongoing/New)	KEY PLANNED ACTIVITIES	TARGET DATE (END)	RESOURCES	COMMENT/ SPECIAL INTERVENTION
	5. Study on Harmonisation of Broadcasting Frequency Management Framework for EAC	To develop Regional framework to facilitate broadcasting frequency Mgmt. and migration to digital broadcasting.	Ongoing	a) Stakeholders meeting to discuss Study Report b) Finalise ToR and engage Consultant for Phase II of the Study– Migration to Digital Broadcasting – Submit a request to ITU	April 2006 March 2006	USD 20 000 (meeting) Phase II Study USD 15 000 (ITU)	
	6. EAC e-Government Programme	a) To improve access to Government services among and within the Partner States b) Promote ICT usage for regional integration; and c) To develop a Regional Framework for implementation of flagship e-government applications	Ongoing	a) Finalisation of approval process of the Draft Final Report of the Study on Development of Regional e-Government Framework for EAC b) Development of National e-Government Strategy/Policy for EAC Member States (Uganda) c) Identification & Implementation of Flagship Applications/services in the all PSs d) Holding of Workshop on Cyber Laws & e-Justice – Kampala; e-immigration Dar es Salaam, March 06	April – May 2006 March 2006 May 2006 (cont) February-March 2006	USD 500 000 CePRC (Canada)	
	7. Regional Information and Communications Technology Support Programme (RICTSP)	To Facilitate integration through efficient and effective Information Communications and Technology (ICT) environment. Joint Initiative: COMESA, EAC, IGAD, IOC	Ongoing	a) Reporting of the ICT Project coordinator b) Finalisation of EAC PE (Budget) for Phase I of the RICTSP c) Establishment of National ICT Working Groups d) Identification and recruitment of Short Term Consultants (Phase I)	February 2006 February 2006 April 2006 May – June 2006	Euro 600 000 (18 months) EDF Funds	
	8. Study on Establishment of a Regional Communications Carrier Project			a) Obtain approval & Commence undertaking Detailed Feasibility Study b) Formation of Consortium of Operators c) Establishment of Regional License	May 2006 April 2006 May – June 2006	USD 350 000 Sida (Sweden)	

ANNEX V

ITU, TCRA & ICTS stakeholders' meeting

Held at Markham Suite Hotel, Dar-Es-Salaam, Tanzania 2nd October, 2006

1 Meeting agenda

1.1 Welcoming remarks by Prof. John Nkoma

1.2 Brief Remarks by Ms Chalu Tumelo (ITU Representative)

1.3 Opening Remarks by Eng. Augustin Kowero, Ministry of Infrastructure Development

1.4 Presentation by Tanzania Internet Service Provider Association (TISPA)

1.5 Presentation on Status of .tz cc T LD re-delegation process in Tanzania by Eng. James Kilaba

1.6 Presentation on Current Status of Licenses in the Converged Licensing Framework in Tanzania by Dr. Raynold C. Mfungahema

1.7 Presentation by ITU

1.8 Discussions on the presentations

1.9 Closing

2 Meeting proceedings

2.1 The meeting was opened by Prof. Nkoma with the following remarks:

2.1.1 ITU and TCRA jointly organized the meeting as a consultative way of collecting views and ideas on several issues of national and regional interests.

2.1.2 Reminded audience on the TCRA functions;

2.1.2.1 To promote effective competition and economic efficiency among all licensed ICT and postal operators.

2.1.2.2 To protect the interests of consumers

2.1.2.3 To promote investment in ICT sector

2.1.3 Noted on challenges facing both the regulators and operators which arise from the rapid advances in the development of Information and Communications Technologies (ICT) and that; TCRA as a regulator has responded to some of them by introducing the new Converged Licensing Framework and market segmentation of licenses into International, National, Regional and District domains. This will encourage innovations and further investment in the ICT sector and promote effective competition which will create several technological benefits to ICT consumers.

2.1.4 Identified the following as some of the priority areas: Capacity development, switching to digital broadcasting, broadband development and cross-border connectivity, harmonization of regulatory environment, and e-applications. A subsequent presentation by another TCRA staffer, Dr Mfungahema noted the following additional challenges: development of national ICT backbone, number portability to increase competition, demand for frequency spectrum, and the need for consumer education and awareness.

2.2 In her Brief Remarks, Ms Chalu Tumelo (ITU) congratulated the TCRA for evolving the converged licensing framework (CLF). She reiterated the importance of cross-border and inter-regional communication, noting that for a while, optical fibre communication and satellite shall remain complimentary.

2.3 In Brief Remarks by the Session Moderator, Mr. Theo Mlaki underscored the importance of focusing on "how the sector benefits society", using ICT for poverty reduction (ICT4PVR) as an important study area. He observed the importance of stakeholders from the region (netizens) driving the process of ICT development.

2.4 In his Official Opening, Eng. Kowero commended TCRA, and emphasized the importance of robust national (and regional) backbone infrastructure. He reiterated the importance of public-private partnerships, as well as the importance of content development and promotion of national Internet domains/names. He lauded the meeting as being an important forum for feedback and public hearing. He informed the meeting that five companies have been short-listed to advise the Government on the development of the national backbone infrastructure.

2.5 Presentation by Tanzania Internet Service Provider Association (TISPA's) Secretary General (Mr. Gregory Almeida)

The presentation by TISPA concentrated on the country integration and cooperation of Internet Service Providers (ISPs) in order to keep local traffic local [in line with Paragraphs **50 (b)** and **(c)** of the WSIS Tunis Agenda] rather than routed through Europe and USA. This will be done through the establishment of an Internet Exchange Point (IXP) within Tanzania, linking it (TIX[32]) with other neighbouring IXPs, and encouraging people in the country (and region) to use the country domain name (.tz) provided; at a very minimum cost. He indicated that save for the initial USD 20 000 set-up fees, both TISPA and TIX are 100% self-financed through membership and peering fees.

He, however, decried the absence of a cross-border interconnect framework, for instance, who would pay tax, and to which Government. He also expressed uncertainty on what would be the point of interconnection (POI) between ISPs/IXPs, who would maintain the common equipment, etc. He also decried the lack of accurate, reliable statistics, eg. That there had been no recent study of traffic analysis. He used the frustration JICA went through in attempting to establish a virtual regional university due to unsatisfactory arrangements for "trading in bandwidth". He also expressed concern of other general issues that reduce Tanzania's attractiveness for investment, eg. Visa fees charged for business visitors from Kenya, while the reverse is free. He urged telecom operators to engage with TISPA in carrying traffic between IXPs.

[32] It was reported that the Tanzania Internet Exchange (TIX) presently only serves ISPs in Dar es Salaam, with discussions involving TCRA advanced to support launching of IXP's in Arusha, Mbeya, Mwanza and Zanzibar, and then interconnect those IXPs through a peering arrangement.

It was reported that the regional post and telecommunications body, East Africa Postal and Telecommunication Organization (EAPTO) supports the interconnection of the regional ISPs in order to do away with the international routing of regional Internet traffic.

It was also mentioned that regional projects on ICT infrastructure like East Africa Submarine Cable System (EASSy), Regional African Satellite Communication (RASCOM), and others will accelerate the regional goal of keeping the local traffic local as it has been witnessed from one mobile cellular operator (Celtel) by seamlessly interconnecting its networks in Kenya, Uganda and Tanzania.

2.6 Presentation on status of .tz, Country Code Top Level Domain (ccTLD) re-delegation process in Tanzania by Eng. James Kilaba.

The presentation gave general overview of Internet addressing which has two main categories of domain names based on generic Top Level Domain (gTLD) and country code Top Level Domain (ccTLD). It was said that gTLD names have disadvantages including high competition for names and that registrars are outside Africa which complicates both registration and management compared to the advantages of ccTLDs which has less competition for names, local registrars and depicts national identity as a country's pride.

Internet resources at the global level are managed by ICANN to ensure stability, and as for Africa region Internet addresses are managed by AFRINIC while management of .tz ccTLD was previously delegated to an individual, Mr. Randy Bush of USA.

It was mentioned during the discussion that ICANN reserves the right to re-delegate the ccTLD administration, in consultation with local stakeholders.

The presentation also highlighted TCRA's mandate through the Tanzania Communications (Telecoms Numbering and Electronic Address) Regulations of 2005 to manage .tz ccTLD as one of the resources it regulates, in line with the broader mandate in TCRA Act No. 12 of 2003.

On the .tz ccTLD re-delegation, TCRA formed a National Steering Committee (NSC) with members from ICT stakeholders in Tanzania to study and come up with findings and recommendations. One of the recommendations whose implementation has started was to establish a non-profit company, the Tanzania Network Information Centre (tzNIC) to manage the tz ccTLD. The efforts in this regard were noted to be in line with WSIS Tunis Agenda paragraphs **38**, **63** and **64**.

The current status of the implementation of .tz ccTLD is:

- Equipment has been procured through tendering process
- Acquiring of office is underway
- Memorandum and Articles of Association of tzNIC are ready
- Application for re-delegation to be initiated with ICANN by December 2006.

It was further assured that tzNIC will be operational soon and all stakeholders in Tanzania are invited to support tzNIC and migrate to dot tz cc TLD.

2.7 Presentation on Current Status of Licenses in the Converged Licensing Framework in Tanzania

TCRA is an independent authority for regulations of Postal, Broadcasting and Electronic Communications Industries in the United Republic of Tanzania; established under the TCRA Act No. 12 of 2003 which merged the Tanzania Communications Commissions (TCC) and Tanzania Broadcasting Commissions (TBC) with the assignment of the following functions:

- To promote effective competition and economic efficiency
- To protect the interests of consumers
- To promote the availability of regulated services; licensing and enforcing license conditions of broadcasting, postal and telecommunication operators
- Establishment of standards for regulated goods and services
- Regulations on rates and charges (tariffs)
- Management of radio frequency spectrum
- Monitoring the performance of the regulated sectors
- Monitoring the implementation of ICT applications.

TCRA introduced the Converged Licensing Framework in the year 2005 with following objectives:

- To encourage the growth of new applications and services
- To simplify existing licensing procedures to ease market entry and operations
- To create a set of stand-alone regulations so that issues such as interconnection, QoS, universal access/service, spectrum and number allocations can be addressed comprehensively
- To ensure regulatory flexibility to address market and technological developments
- To ensure efficient utilization of network resources, so that individual networks may be used to provide a broad range of ICT services
- To encourage market entry by a full range of operators, including large and micro entrepreneurs
- To ensure that the transition to a converged licensing framework fosters a level playing field among all operators.

The Converged Licensing Framework is technologically and service neutral and applies under the categories of Network Facility License (NFL), Network Service License (NSL), Application Service License (ASL) and Content Service License.

Other licenses in the new framework are Postal Services License, Courier Service License, Frequency Spectrum User License, Installation and Maintenance License, Type Approval and Numbering.

The license categories in the converged licensing framework are further subdivided into four market segments to reflect and focus their corresponding markets as International, National, Regional and District market segments with the following fees:

- Application fee
- Initial License fee
- Royalty fee.

The Authority has set the migration plan from old to new license framework and the licensing guidelines and procedures have also been reviewed to accommodate the converged licensing framework.

It was also mentioned that, as an incentive at the beginning the migration was made voluntary and the cut off date was 23rd February 2005 whereby licenses based on the previous framework were not issued or renewed and there was a grace period of 12 months (later extended for six months) from 23rd February 2005 to be eligible for the migration incentive. During the migration process no additional application fee was required.

In order to cope with the rapid changes in the communications industry, the following need to be done by the authority:

- TCRA enabling Act and Regulations made in 2005 need to be reviewed to accommodate changes in the sector.
- License conditions need to be periodically reviewed to facilitate rapid sector development.

As a result, all existing operators have shown their desire to migrate to the New Converged Licensing Framework and so far several have already migrated and the process of granting new licenses is continuing , with a resultant total number of Telecommunication subscribers by 30th September 2006, standing at 5 698 441.

Challenges facing the New Licensing Framework as outlined by the presentation are:

- To lower prices of services that are out of line with cost and customer's expectations.
- The need for a Balanced, Clear, Consistent, Predictable, Comprehensive and Transparent Licensing Framework.
- Consistent regulatory treatment of essential similar services.
- Technology and platform neutral licensing framework.
- To be pre-competitive.
- To be flexible enough to adapt to new developments to reflect different consumer's and provider's perspectives.

Others mentioned were the overall challenges the development of ICT in Tanzania which are Development of National ICT Backbone, Number portability to increase level of competition, switching from analogue to digital broadcasting, consumer awareness and education and demand for Frequency spectrum.

As the concluding remarks some benefits experienced with the new licensing framework were mentioned as to create an enabling environment for the growth of ICT in the country to reach a larger number of the population especially in the unserved and rural areas (Universal Access/ Services) in order to bridge the digital divide and provide more employment.

2.8 Discussions[33] on the presentations

Theo Mlaki (COSTECH) observed that it is important to find ways for stakeholders to engage government on issues of common interest. Mr Almeida (TISPA) recommended the spooling together of resources to acquire bulk, but cheaper bandwidth[34] (as being advocated by the Big Dish/BushNet group in Uganda and Rwanda). He informed the meeting of consultations to establish a local search engine for ***yahoo***. A participant indicated that there are presently experiments with WiMax in the districts, but it wasn't clear year how this was being received by the local populations.

Mr Almeida noted that the last traffic study was more than two years old and needed updating. The meeting was informed that JICA was granted space segment for sponsored virtual university (AVU) training, but were hampered with complexities in bandwidth purchase. He observed that with better cross-border information flows, e-tourism, for instance would boost common tourist activities between Tanzania and Kenya. He had reservations on government driving the tzNIC project.

Ms. JaneAnn Mukundi (A–ricaOnline – Tz) too lauded TCRA, contrasting their openness with the bureaucracy and rigidity in Kenya. She advocated freer border movement, not only for persons and goods, but also information. She also enquired on how they would get feedback on the outcomes of meetings like this one.

A TCRA participant decried ego problems which sometimes hamper progress, as was witnessed with initial reluctance of banks to share automated teller machines (ATMs), but now they do after signing an MOU. Mr. Saidi Mchomvu of the University of Dar es Salaam's Computer Centre (UDCC) decried the practice of data operators "poaching" customers from their client-ISPs. He advocated for regulations to stem such malpractices. He informed the discussions that through the AVU, the university community was able to the following frequencies for wireless communication: 2.4, 3.5, 5.8 and 10.5 GHz. Mr. Almeida informed the meeting that one mobile operator was in the process of acquiring licenses, and that ISPs can go to mobile operators to buy bandwidth.

A participant, Mr. Chewe informed the discussions of plans to produce a National Backbone Masterplan. The meeting was also informed of the registration of the Tanzania ICT Association (TICTA) to vet recycled equipment, among others. A participant decried the 20% tax currently being levied on communications equipment, including mobile phone handsets, routers and other active network devices, etc.

There were additional questions which were raised, to which TCRA undertook to obtain and avail answers at a later stage. The questions and the responses are annexed (Annex IX).

2.9 Closing

The meeting was closed at 1.30 pm by Prof. Nkoma; Director General of TCRA.

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[33] It is noted that some of the discussions herein proceeded in smaller group sessions at the request of ITU, after the official sessions.

[34] Some of the on-going consultations can be found at www.mambo.tz.

List of participants at ITU/TCRA ICT stakeholders workshop, Markham suites hotel, Dar-Es-Salaam, Tanzania, 2nd October, 2006

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36.	Dr Shem J. Ochuodho	ITU Consultant		shemochuodho@yahoo.com
37.	Ms Tsyege	ITU Addis Ababa		
38.	Eng. Augustin Kowero	Ministry of Infrastructure Development		

ANNEX VI

Report on ITU/UCC consultative meeting on management and development of connectivity of ICTS in the East African Community, UCC board room, Wednesday, August 30, 2006

1 Introduction

The Uganda Communications Commission (UCC) and the International Telecommunications Union (ITU) Regional Office for Africa held a half-day consultative workshop with ICTs stakeholders on the management and Development of Information Communication Technologies (ICTs) in the East African Community. These included major Internet Service Providers (ISPs) and telecommunications service providers.

1.1 Objectives

The objectives of the meeting, which was called on behalf of the ITU Regional Office Senior Advisor for Network Management and Development for Eastern and Southern Africa Telecommunication Development Bureau, Ms Chali Tumelo, were:

- To achieve regional interconnectivity infrastructure.
- To assess the needs from the available data, national plans or master plans for the development of national networks.
- To identify the appropriate carriers, in particular LDCs and landlocked countries, to be used on each backbone (fibre optic, radio relay, satellite, etc).
- To assess the existing internet node connections between countries.
- To propose appropriate solutions for the traffic assessed for each country, (or sub-region) and connection of IXPs.
- To asses the need for the mechanism/establishment of appropriate maintenance, management structures of networks and services.
- To assess the need to provide a platform for ICTs stakeholders to present problems and solutions encountered in the networks to ITU-T so that changes may be proposed to ITU-T recommendations as well as to propose new recommendations based on networks evolution.
- To assess the need to provide expertise in development of processes and performance measurements regarding convergence of networks (wireless/wire line and circuit/packet) and services.
- To discuss the need to encourage the development, testing and use of tools in order to enhance, on real time basis, the need of operations taking into account Service Level Agreements (SLA) establishment with the customers and among operators.
- To assess the need to provide advice and guidance to Services Providers, Network Operators on planning, development, implementation and application of Network Management facilities.

- Assess the need for regional co-operation among EAC Members States as envisaged in the EAC Treaty and the EAC Protocol on Transport, Communications and Meteorology.
- To inform stakeholders of the forthcoming launch of ITU-SNO AFRICA.

2 Agenda

1. Introductory remarks by UCC
2. Self Introduction
3. Presentation by Ms Chali Tumelo
4. Open discussion
5. Lunch

3 Attendance

1. Ms Chali Tumelo – ITU Senior Advisor
2. Mr Patrick Mwesigwa – Technical Manager, UCC
3. Ms Patricia Kateihwaho – Bushnet
4. Ms Dorcas Batwala – MTN Uganda
5. Ms Annrita Ssemboga, Economist, UCC
6. Mr Badru Ntege, Chairperson, ISP Association of Uganda
7. Mr Samuel Ssembatya – Bukasa Telecom Ltd
8. Isaac Kalembe – Assistant Corporate Affairs Officer, UCC

4 Introductory remarks

4.1 The meeting started at 10:14 am with welcome remarks from Mr Patrick Mwesigwa. Mr Mwesigwa, who spoke on behalf of Mr Patrick Masambu, said the Executive Director was in London attending the Commonwealth Telecommunications Organisation (CTO) Council Meeting.

4.2 Apologised for having started the meeting one hour late, saying that the delay had been tactical to give time to participants to arrive given the short notice at which they had been invited.

4.3 Briefed participants of how UCC had recently opened up the telecommunications sector thereby ending the duopoly/exclusivity policy that had expired in July 2005.

4.4 Revealed that though the Government had not yet passed the new telecommunications policy, the line minister has issued guidelines under which the new licensing regime was operating, adding that the new licensing regime took effect on August 14, 2006.

4.5 Said all services had been opened up except the infrastructure backbone, which awaited the ongoing consultations.

4.6 Added that UCC pursued a technology-neutral regime, hence the reason to allow even ISPs to participate in offering services available under the new licensing regime.

4.7 Further said Uganda was one of the seven out of 23 states that had signed the Protocol for EASSy Project at the recently-concluded regional meeting in Kigali, Rwanda. He said some member states were uneasy with a number of issues in the Protocol, including the clause on the need to harmonise their respective countries' policies with the EASSy Project.

4.8 Urged ISPs to work for the common good of Ugandans rather than focusing on narrow interests as was evidenced in their demand for a "clubs only" or consortium arrangement under the EASSy Project.

5 Tumelo's presentation

5.1 Ms Chali Tumelo thanked UCC for opening up the telecommunications sector, saying the end of the Exclusivity Period heralded a new beginning.

5.2 Tumelo said the shift from ***circuit switching*** to ***packet switching*** was an evolution in the ICT sector, adding that it had brought about a number of challenges. She said while the circuit switching had ably addressed the engineering formulae observed for Quality of Service (QoS) reference units and target values relevant to quality control and monitoring of grade of service for packet switching, including other issues that are not yet available, the sector was still grappling with management issues such as values, service agreements and standards.

5.3 Said ***packet switching*** was an inevitable technological development, hence the need for African countries to open up, set up management standards, policies and enforcement mechanisms

5.4 Declared ITU's commitment to working with regional organisations such as the East African Community (EAC), the Common Market for East and Central Africa (COMESA) and Southern Africa Development Coordination Council (SADCC) in ensuring harmonisation and integration of ICT policies.

5.5 Called for the integration and/or upgrading of the EARPTO into the EAC Treaty to ensure effective cross-border connectivity, among other ICT issues.

5.6 Said the WTDC-06 Doha Summit had mandated ITU to ensure regional, intra and inter-state ICT traffic connectivity in the region.

5.7 Pointed out that though ICTs played a significant role on socio-economic development, East Africa still lagged behind in infrastructure development. She said during her visit to EAC in Arusha, Tanzania recently, she had learnt of how there were not enough channels to facilitate ICT development in the EAC.

5.8 She said cross-border connectivity was another big problem still faced by ISPs in the region, especially the high and almost double costs of sending e-mails.

5.9 Advocated the need for a mechanism for maintenance of network services, and the urgency for the provision of a platform to ISPs and service providers on operational problems.

5.10 Ms Tumelo announced the ITU-SNO of Africa Sector to be inaugurated in Cape Town, South Africa under the SADC auspices the following week. She said the forum was a big opportunity for non-public sector members such as ISPs to articulate their views. However, she said the forum is supposed to be open to all African states and stakeholders, and not only to the Southern Africa body.

6 Open discussion

6.1 ISP-ITU relationship

Mr Ntege asked if it was possible if ISPs could apply for ITU membership. Ms Tumelo said non-public sector members such as ISPs could benefit from ITU's Service and Network Cooperation, which allows ITU for a and conferences. Mr Mwesigwa added that ITU was open to member states and non-public sector members, but that there was not yet ITU member in the latter category from Uganda.

6.2 Unsuitable ICT equipment

Mr Ntege said for quite so long the developing countries have expressed their concern over the monopoly of equipment standards, which were still a preserve of the developed economies.

He said ITU, like national regulatory bodies and service providers, had not done enough to assist the private sector in Africa on the purchase of suitable equipment and any other useful information. "If ITU is to get value-for-service, it should understand what's on the ground in the region, especially on issues of quality of service", he said.

Ms Tumelo stressed that ICT equipment meant for the temperate climate of the Western world are not suitable to the humid and hot climate of most developing countries in Africa and elsewhere. She advised African countries to unite and to always attend international fora on ICT infrastructure to articulate their needs and concerns with one voice.

Ms Tumelo advised that ISPs could join ITU as sector members; but that there was a cost to pay.

Ms Batwala said even if MTN Group was a member of the ITU, they were having problems in accessing certain ITU documents on new ICT technologies, among others.

6.3 ITU role in Internet development

Ms Tumelo said, as an inter-governmental body as well as a UN development agency, ITU originally could not do much to help in the development of the Internet in the developing economies because the technology had started in the United States in the 1980s as a private venture.

She said that since now the Internet had become a public issue, ITU had come out to ensure universal public access of the new technology. "The Internet has become a public infrastructure, and ITU has been seen to handle public sector issues better," she said.

6.4 ICT infrastructure development

Mr Mwesigwa said Kenya and Uganda were negotiating separate deals with the Chinese Government on the development of E-government and national infrastructure backbone respectively. Ms Tumelo said it would be better and cheaper if East Africa negotiated as a region or block. She advised East Africa to emulate SADCC where the member states had reached consensus on a number of ICT-related issues.

6.5 ISP development

Mr Ntege said ISPs in Uganda and elsewhere in the region and continent were joining hands to address ICT issues pertaining to them. He cited the efforts made by ***Afrinic.net*** and ***Afrispa.org*** that had done much to mobilise, train and sensitise ISPs in dozens of African countries.

Among the achievements the ISP continental body had registered was the setting up of five exchange boards. He, however, conceded that harmonising ISP operations was still a big challenge since different countries had different laws e.g. on International Data Gateways (IDGs).

6.6 Lake Victoria GSM Project

Ms Tumelo inquired what had become of a study proposal requested by MTN on the propagation characteristics specifically on the GSM Network around the Lake Victoria region. Mr Mwesigwa said UCC had postponed the exercise because of lack of funds, but agreed with Ms Tumelo that the project should be revived.

Furthermore, Ms Tumelo said ITU was ready to provide expertise in the development of processes and performance measurements to assess convergence of networks.

6.7 ISPs want profit

Reacting to Ms Tumelo's call for ISPs to heed the public good, Mr Ntege said Governments and ICT regulation bodies should allow ISPs to operate on a commercial basis rather than advocating idealistic but impractical measure to regulate the ICT sector. "The public is good, but the financial is better." Mr Ntege said it was unrealistic of African countries to adopt the Free Access Models of Europe whose ICT infrastructure had been established by the state in contrast to Uganda where companies such as MTN set up infrastructural frameworks of their own.

6.7 IXP development

Mr Mwesigwa said the EASSy Project would reduce the costs of communication in the region, saying local traffic in Uganda and to the East African region would be sent direct to its destination rather than being channelled through the satellite as is the case now.

Mr Ntege thanked UCC for offering free accommodation to ISPs to house the country's IXPs, saying the humanitarian gesture was unprecedented in the region. He, however, said much as Uganda was the first country in East Africa to introduce mobile phone telephony in East Africa, it had been overtaken by her neighbours. Ntege said Kenya has about 5 million mobile phone subscribers and over 20 ISPs compared to Uganda's estimated two million subscribers and 17 ISPs.

6.8 Cross-Border Connection

Mr Mwesigwa said an EARPTO Task Force had developed guidelines on Cross-Border Inter-Connection for their mobile telephony. Ms Ssemboga, a member of the task force, who said it was premature to divulge information about the project, said they had developed guidelines on technical, costs and conflict resolution issues. She said these would be adopted soon.

6.9 EARPTO status

Mr Mwesigwa said it was quite frustrating that EARPTO resolutions were still not yet binding on the East African Community; that EARPTO needed to be streamlined into the EAC Treaty.

Ms Ssemboga expressed her concern on the need for enforcing policies in EARPTO, and was enthusiastic of the suggestion to streamline EARPTO into the EAC Treaty and protocols.

6.10 Flexible EASSy Project

Mr Mwesigwa said the EASSy Project was quite flexible to the needs of ISPs and telecommunications service providers. He said the recently-signed Protocol allows even non-service operators to invest in the project.

6.11 Lack of Sensitisation

Ms Dorcas Batwala (MTN) said in the absence of adequate funds and technical know-how, UCC needs to do more to stimulate ICT use. Citing the joint UCC-MTN education projects in the country, Ms Batwala said UCC should do more to sensitise the public about the importance of, and how to utilise, ICTs.

Mr Ntege added that there was need to build a "critical mass" by targeting the next generation Ugandans. "Let's target schools whose products will join the ICT market after their education, rather than teaching ICT use to 40-year-olds," he said, adding that it was important the ICT sector adopts strategic, long-term planning.

Mr Mwesigwa said unlike in the past where UCC had held a series of regional sensitisation workshops, of recent little has been done. He promised UCC would resume the intense public awareness campaign soon. He said the Commission works with such organisations like the Uganda Consumer Protection Association (UCPA), was willing to work with others to sensitise Ugandans on ICT usage.

6.12 Content development

Ms Patricia Kateihwaho (Bushnet) said there was need to develop Internet content, especially on the district portals, to stimulate reader interest in the new technology. She said most district websites had not updated for over a year. Therefore, much of the information contained therein was outdated.

Mr Mwesigwa said UCC had trained district officials to man and update the websites but that it seems the districts were not putting them to good use.

6.13 ICT sustainability

Ms Tumelo said ITU would look into Mr Mwesigwa's request for assistance to sustain the district information portal project if UCC tendered in a formal proposal.

However, Ms Kateihwaho (Bushnet) said the proposal should address concrete measures of sustainability rather than 'pumping in financial resources into the drain'. Ms Batwala (MTN) said, with decentralisation, each district now had graduates (critical mass) able to use ICTs upcountry.

Mr Ntege expressed disquiet at the RCDF mode of operations in selecting tenders, awarding contracts, and making follow up (monitoring and evaluation) of the project. He said, because of these shortcomings, the RCDF Project, had had little impact on the target group despite the big amount of cash injected in it.

Mr Mwesigwa said UCC was planning to conduct an assessment survey of the impact of the RCDF Project.

6.14 Formation of task force

Members agreed to set up a task force to look into the above twin problems of ICT awareness and content development. It was agreed the team be given a one-month duration to complete its work and produce a report.

The Task Force members are Annrita Ssemboga (Chairperson), Ms Patricia Kateihwaho (Bushnet), Ms Dorcas Batwala (MTN), Mr Badru Ntege (UISPA Chairperson) and Isaac Kalembe (UCC). Ms Ssemboga said she would circulate to all members the terms of reference of the task force by Friday, September 1, 2006.

6.15 Holistic national telecommunications policy

Ms Ssemboga said many of the above issues had been addressed in the new national telecommunications policy. She added that it was unfortunate that the policy was being implemented piecemeal, but said all the above concerns would be addressed once the Government passed the policy.

6.16 National consultation

Ms Ssemboga said the policy was divided into two major parts: national backbone infrastructure and the Rural Communication Development Fund (RCDF) Project. She said while RCDF addressed education, public access, agriculture, health and similar issues, the national backbone focused on E-Government and Infrastructure. Ssemboga said the Government would consult extensively on the two backbone aspects. She added that UCC would redefine its RCDF policy from one of infrastructure to sustainability.

6.17 Redefinition of VOIP

Ms Batwala said there was need to redefine VOIP, so as to determine how the service would be regulated. She said it was important for regulators, service providers and customers to know who would pay for the VOIP services.

Mr Ntege said there was no need to re-invent the wheel since there were internationally-accepted standards elsewhere. He called for national regulators to put a framework in place.

Mr Mwesigwa said UCC has developed a proposal on VOIP, which would be discussed soon. He advised ISPs and service providers to bring forward all their issues at the forthcoming EARPTO meeting, and other fora.

Ms Tumelo advised against the formation of an ISP and other operators' cartel, saying service providers should welcome competition in an open environment.

7 Any other business

It was agreed the draft report be circulated to members by the following day (August 31, 2006). It was also agreed that the report would be sent to other members who had missed the meeting. There being no any other business to discuss, the meeting ended at 1:15 pm. Thereafter, members were treated to a sumptuous lunch at Fang Fang Chinese Restaurant.

Isaac Kalembe
Rapporteur

Ms Chali Tumelo
Facilitator

Dated: August 30, 2006

ANNEX VII

Report of the ICT industry stakeholders' meeting on connectivity 26th February 2007, Grand Regency Hotel, Nairobi

1 Introduction

The Information and Communications Technologies (ICT) Industry Stakeholders' Meeting on Connectivity was held on 26th February 2007, to discuss infrastructure development and connectivity in Kenya.

2 Opening remarks

2.1 Eng. John Waweru – Director General, CCK

Eng. Waweru welcomed all participants to the meeting and emphasized the importance of telecommunication connectivity to all sectors of the economy including operators, government, the regulator, business and consumers alike. He pointed out that the output of the meeting would go a long way in contributing to better provision of communications services in the country.

The Director General recognized that improved connectivity would obviously result in lower prices of communication services to the benefit of users. He maintained that CCK as a regulator will strive to ensure that operators improve on reliability.

In order to achieve the above goals, Eng. Waweru underscored the need for maximum co-operation from the industry stakeholders.

2.2 Ms. Chali Tumelo, Senior Advisor for networks management and development, ITU regional office for Africa

Ms Tumelo expressed her gratitude to CCK for the efforts in improving the communications sector in the Kenyan economy and stressed the need for better regulation to consolidate the gains already made.

She emphasized the significance of developing broadband access to enhance the capacity of communications services and indicated that the International Telecommunications Union (ITU) advocates for the right to communicate at reasonable cost. The regulator was encouraged to ensure that there is fair competition among the industry players.

She informed the meeting that ITU was ready to support the development of the communications sector in conjunction with the Government, the Regulator and industry players.

2.3 Dr Bitange Ndemo – Permanent Secretary, Ministry of information and communication

Dr. Ndemo, in his key note address, noted the importance of ICT in the development of the economy. He reiterated that the Government was keen to improve the ICT industry through among others, ensuring

establishment of high bandwidth connectivity. The planned sub-marine cable projects (TEAMS, EASSy) are expected to link Kenya and the East African coastline to the rest of the world.

He further noted the need for infrastructure sharing and asked the meeting to explore efficient ways of effecting it. He thanked ITU for its commitment towards the development of ICT in the developing countries and Kenya in particular.

3 Stakeholder discussions

3.1 Session I: Government perspective on connectivity

3.1.1 Harnessing the potential of telecommunications infrastructure development in the East African region

- Status of regional connectivity infrastructure and gaps in development of national networks (**TKL)**
- Harnessing the multiplier effect on other development sectors (**KAM/NCS**)

The session, moderated by Mr. Felix Mugabe (Ministry of Information and Communications), had the following panelists: Eng. Thomas Senaji (Telkom Kenya Limited), Eng. John Kariuki (National Communications Secretariat), Moses Kiambuthi (Kenya Association of Manufacturers) and Charles Njoroge (Communications Commission of Kenya).

The presentations made by Telkom Kenya and the National Communications Secretariat noted that Government supports regional connectivity. Government also supports the development of regional ICT projects through public-private sector collaboration in order to develop a modern and efficient telecommunications infrastructure, which remains a challenge.

The Government has identified strategies, which it will employ to achieve connectivity. These include infrastructure sharing and co-location. It was noted that Government is ready to co-operate with other countries in establishing infrastructure as demonstrated by its initiative to drive the broadband strategy currently being pursued. In its goals to achieve universal access, the Government noted the need for improvement of other physical infrastructure facilities like roads, railways, pipelines, power etc., This improvement will spur the penetration of communications services in the remote areas and similarly promote the use of broadband access technologies including DSL, Cable TV, Wifi among others.

Examples of Government-initiated projects include:

1. Nairobi – Mombasa Link – is complete
2. Nairobi – Malaba – is ongoing
3. Arusha – Nairobi power line
4. Eldoret – Kampala pipeline
5. EASSy – on going with some countries already committed
6. FLAG – Mombasa – Sanaa
7. TEAMS – linking Mombasa- Fujaira
8. National Optical Fibre Backbone Infrastructure (facilitated by CCK). National broadband network with access points in every district and its intention is to stimulate private sector participation

Additionally, microwave links between Kenya, Uganda and Tanzania are already in place and a fibre-optical link is under implementation.

Existing gaps still include connectivity to the international optical fibre cables, national high-capacity connectivity, aged microwave radio networks between countries and extension of services to the rural areas.

The gaps are occasioned by among others: differing policy and regulatory environments in different countries, high interconnect rates, financial constraints and inadequate 'supporting' infrastructure like power supply and roads.

3.1.2 Potential of Telecom infrastructure development: harnessing multiplier effect on other development sectors

The presentation highlighted the high correlation between connectivity and competitiveness. It was noted that connectivity benefits business by providing the link between customers and suppliers, improving information flow, increasing supply chain responsiveness and reducing transaction costs. Businesses were also more likely to benefit from economies of scale and reduction of operational costs with the existence of cross-border connectivity.

3.2 Deliberations

Sharing of infrastructure will be enabled through governments and eventual implementation of the policies undertaken by the regulator. The regulator is scheduled to issue co-location guidelines by 30th June 2007.

Leasing of excess capacity: The operators would be expected to agree on pricing for the capacity. However, in case of disagreement, the regulator would devise a formula to determine these costs.

Infrastructure providers may lease excess capacity available from the private networks such as Kenya Railways, Kenya Power and Lighting Limited.

Infrastructure provision: The Government will continue to support infrastructure – based policies and initiatives like The East African Marine System (TEAMS) projects.

It was noted that the National Optic Fibre Network being laid will be managed by operators appointed through a competitive bidding process.

Currently, there are a number of initiatives for building national infrastructure including that of Telkom Kenya and Kenya Data Networks. While the initiatives may seem like duplication, multiple provision encourages competition given the high demand, and the advantage of complementarities, and the required redundancy that is necessary for back up.

Frequency resources: The Commission was noted to be working on a frequency migration plan that will be released once completed. The revision will assist in making provision for deployment of new and emerging technologies.

Local *vis-à-vis* regional policies: There are efforts in the region to harmonize the ICT policies through various fora including the East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA), East African Regulatory, Posts and Telecommunications (EARPTO).

4 Session II: Operator perspective on connectivity

4.1 Enhancing the capacity of carriers and digital links for cross-border connectivity

- Challenges hampering the infrastructure development in the region
- Maintenance, management of networks and services

The second session was moderated by Joseph Mucheru (The Telecommunications Service Provider of Kenya). Panelists included Eng. Vitalis Olunga (Safaricom), Eric Mureithi (Popote) and Eng. Joel Tonui (TKL)

In this session, it was noted that Quality of Service that complies with international standards is recognized as one of the factors critical in the maintenance of networks.

Kenya has several challenges in the maintenance of Networks including; shortage of skills, institutional capacity building and delivery of services in the rural areas especially where other supplementary services are lacking e.g. power. Other challenges that need to be addressed include the fast obsolescence of equipment due to fast evolution of technologies; vandalism and increased insecurity of communications facilities.

4.2 Deliberations

Implementation of plans on the continent: It was noted that there were a number of plans in the ICT sector that had not been implemented. The non-implementation or delayed implementation arises from the non-preparedness of countries to tackle the challenges. However, as countries also realize the role of ICTs in economic growth, they are becoming more proactive.

Resource mobilization also poses a challenge. There is need to address the scarcity of resources through collective efforts. African countries can come together to bargain for discounted loans, credit and lower equipment costs to build infrastructure.

Similarly, African countries can also explore other opportunities for raising capital e.g. securing investment funds through the Stock Exchange.

The importance of participation of African countries in global discussion through the ITU also emerged as a critical factor in ensuring implementation of ITU recommendations especially on standards and that the application of those standards meet the needs of Africa. This facilitation ought to be done by having the operators give their inputs and requirements to manufacturers, associations like the GSM Association, regulator and the ITU. It was noted that the GSM Association entered into a memorandum of understanding with ITU. This will provide a platform to lobby for harmonization of the international standards and subsequent reduction of prices of equipment particularly as they begin using open source standards.

The issue of dumping of obsolete equipment in Africa was also raised as a concern. It was noted that the operators have started vetting the equipment to ensure that any equipment bought is of current standards with adequate provision for maintenance throughout its lifespan. It was noted that the regulator, CCK, also undertakes type-approval/acceptance before any equipment is deployed in the country. Additionally, it was also noted that dumping has also reduced as a result of zero-rating of duty on equipment.

5 Conclusions

In her closing remarks, Ms. Chali Tumelo noted that ICT was recognized as a vital element of growth of national and regional economies. ITU will continue to strengthen the planning, design and development of ICT in its member countries. Through its Development Sector Bureau – BDT would also assist in implementing of national and regionally ICT initiatives when called upon.

ITU was cognizant of the challenges facing the region including rolling out of broadband infrastructure, ICT database management, services and network operations management, NGN planning, resource mobilization for projects and implementation of policies.

In his closing remarks, Eng. John Waweru emphasized the need for stakeholders to meet regularly and to address the ICT challenges such as infrastructure development. The Director General affirmed CCK's commitment in continuing to play a leading role in coordinating the activities of ITU and supporting industry initiatives.

While delivering the vote of thanks, Mr. Joshua Chepkwony, Executive Chairman of the Jamii Telecommunications Limited thanked the participants for their participation. He further reiterated the need for closer collaboration among players and advocated for establishment of more infrastructure for present and future use. He called upon the industry to involve other stakeholders like financial institutions who are increasingly using ICTs for service delivery.

In conclusion, the meeting concluded that there was need for a policy framework to facilitate infrastructure-sharing; collaboration as much as there was competition; public private partnerships; added efforts towards rural access; harmonization of national with regional policies; acceptable standards that will benefit the country in the long run; and vigilance on the part of operators on the maintenance of networks.

ANNEX A

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ANNEX VIII

The Arusha communiqué on the regional ICT broadband infrastructure 1st August 2006, Ngurdoto mountain lodge, Arusha, Tanzania

We, the participants, including representatives from EAC Legislative Assembly, NEPAD, governments, regulators and telecommunications companies of the East African Community,

Assembled at the High Level Meeting of ICT Policy Advisors, Regulators and Operators on ICT Broadband Connectivity in East Africa on 1st August 2006, and hosted by the EAC Secretariat with funding from SIDA,

Recalling that the NEPAD Heads of State and Government Implementation Committee (HSGIC) has adopted the EASSy project as a NEPAD Flagship Project,

Noting the decision of the EAC Council of Ministers 3rd - 4th April 2006, to convene a meeting of ICT policy makers,

Noting the Johannesburg Declaration of Ministers of ICT and/or Telecommunications (attached as Appendix A, and especially its Annex 2 on the Open Access Principles),

Noting the milestone consensus arrived at in the Nairobi meeting of 4th - 6th July 2006 by the key stakeholders,

Noting the pivotal role that ICTs and Backbone Infrastructures can play in accelerating regional and national socio-economic development, regional integration, and trade, in general, and in particular wealth creation, employment generation, poverty reduction, and meeting the Millennium Development Goals,

Cognizant of the various national and regional ICT Infrastructure development initiatives, among them the African Union (AU), African Regional Plan of Action for Knowledge Economy (ARAPKE), the NEPAD Broadband ICT Regional Infrastructure for Eastern and Southern Africa, the East African Submarine Cable System (EASSy) Project, the Indian Pan-African e-Network Satellite Project, the EU-Supported Regional ICT Programme (RICTP), World-Bank-supported Regional ICT Infrastructure Project, among others,

Recognizing the efforts made and the momentum built so far by some of the various key stakeholders particularly the EASSy MOU Parties, Policy Makers under the auspices of the NEPAD e-Africa Commission, Development Finance Institutions (DFIs) including international development agencies,

Guided by the spirit of African brotherhood enshrined in the Swahili expression 'Harambee' meaning 'to pull together',

Recognizing the need to develop comprehensive benchmarks on which to measure and monitor the concrete benefits and impacts of ICTs and Backbone infrastructures in attaining these development goals,

Considering that the Protocol on High Level Policy and Regulatory Framework for NEPAD Broadband ICT infrastructure is to be signed on the 29th of August 2006, and that the Joint Task Force is already constituted and in place, and concerned about the long-delay in the implementation of EASSy, which is a critical and strategic regional infrastructure project,

Responding to the need for the expeditious implementation of the project and noting that the EASSy Construction and Maintenance Agreement (C&MA) is due to be signed,

Recognizing that the proposed SPV structure is primarily set up to be a vehicle for minimizing user input costs rather than making profits, and to be an efficient sharing mechanism of a commodity (bandwidth) with large economies of scale,

Notes and appreciates the offer by the EAC Secretariat to immediately launch studies in some of the key outstanding issues, among them:

i) legal counsel to guide the Protocol Signing process,

ii) traffic projections for the region,

iii) tariff analysis,

iv) impact of EASSy on incumbents, especially those locked in long-term commitments to international satellite companies;

Urge the EAC Partner States, East African Legislative Assembly (EALA) and their respective national assemblies, policy makers and regulators to take note of the important development objectives that will be achieved by minimizing the cost of bandwidth from the project and therefore, in consultation with the EASSy MOU Parties, to:

1. Ensure smooth and prompt signing by EAC Partner States of the Protocol on High Level Policy and Regulatory Framework for NEPAD Broadband ICT infrastructure by urging them to hold extensive internal consultations with, among others, Ministries of the EAC, Justice, Finance, ICT/Telecommunications/Information, regulators, operators, other service providers and content developers, key potential consumers, and other key stakeholders to harmonize the common regional and national positions;

2. Laud and support the resolutions by the ICT Ministers meeting in Sandton, South Africa on 5th - 6th June, 2006, and encourage Partner States who may have any reservations on those resolutions and decisions to raise them promptly through the Intergovernmental Working Committee and the Joint Task Force, and to provide immediate feedback to the IGWC's August 10th - 11th, 2006 meeting to finalize the Protocol, Shareholders Agreement and the further refinement of the C&MA as a living document;

3. Initiate processes of necessary legislative reforms as soon as the Protocol is signed, to bring in line regional and national legislations with the protocol and its spirit;

4. Find means and ways to accelerate the development of regional and national backbones, to ensure corporate and individual citizens of the Community benefit most from EASSy once it is constructed;

5. Immediately start the process of informing and mobilizing potential investors, among them Partner States, operators, utility companies, entrepreneurs, and the general public to invest in and support the project;

6. Recommend on how the return on investment (ROI) should be regulated to ensure the cost of access to the network is kept to a minimum;

7. Mandate the Joint Task force to identify the potential shareholders, and a meeting be convened for them to hasten the constitution of the SPV;

8. Plan for the licensing of the Hybrid-SPV as an international connectivity provider to the retail sector by late 2007, and make the necessary arrangements to deal with any prior international licenses sold on basis of exclusivity from 2008 onwards when the EASSy cable is expected to be operational;
9. Ensure that the initial (one-off) license fee for the SPV operator only covers administration costs incurred by national regulators in preparing the necessary licenses, and that the national regulators of the Community and their associations to urgently compute and recommend the minimum reasonable license fees, preferably not higher than USD 10 000 in any country;
10. Exempt the SPV from all annual, including turnover related, license fees and from any universal service obligations;
11. Note the differential and cumulative nature of national taxes and duties, and the danger for double taxation, exempting the equipment, plant etc for the construction of regional backbone as well as the wholesale bandwidth from the regional backbone, prepare the ground with their Ministries of Finance for the protocol's request for the SPV's exemption from all national taxes, duties and levies;
12. To request the EAC Secretariat, in consultation with Partner States, East African Regulatory, Posts and Telecommunications Organizations (EARPTO), regional and national professional associations, East African Business Council, Inter-University Council for East Africa, and other key stakeholders to explore a viable permanent mechanism to co-ordinate and promote ICT adoption and development within the Community, particularly infrastructure development; and
13. Encourage their Partner States to be actively involved in the final lap of discussions of the Draft Protocol, and be on hand and ready to sign it on 29 August 2006 in Kigali, Rwanda, under the auspices of the African Union once adopted by the meeting of regional ICT Ministers to be held on 28 August 2006.

Ask the Joint Task Force to:

1. Ensure that a lean, efficient inter-governmental mechanism be put in place to safeguard in the long-term the development objectives of the project;
2. Ensure the Board of the Hybrid-SPV company be designated the promoter of the project, and prior to its constitution, the Joint Task Force to play that role;
3. Include non-MOU signatories in the drafting process of the Hybrid SPV bylaws;
4. Propose clear mechanisms in the shareholders agreement and SPV bylaws to ensure that upgrading of the cable can take place when needed, and with no dilution of quality of service;
5. Ensure that the institutional design and access fees of the landing stations are part of the Open Access model;
6. Recognize the need to safeguard the Open Access principles by seeking financial investors that share the same principles, and like the service providers, are more inclined to desire efficient, low-cost operation of the Hybrid SPV (Examples from similar situations suggest that these are to be found among end-users desiring competitive offers from a well functioning sector). This should include looking at the financing scenarios and different traffic forecasts to determine the impact on pricing of different types of financing and traffic levels;
7. Keep the cable cost to as low as feasible, encourage that as much of the funding as possible should be concessionary, preferably grant;

8. Ensure that the participation of the SPV in the EASSy project should be increased as much as possible, and should preferably be no less than 70%;
9. Adopt more aggressive benchmarks on bandwidth price than currently envisaged by the EASSy MOU parties, with the objective of:

   i) leveraging the development advantages to the maximum, and

   ii) creating more flexibility for the coming discussions on the conditions for the terrestrial backhaul links.

   The benchmark price for the wholesale price of the bandwidth should be targeted to be comparable to the cheapest and most developed regions e.g. the East Africa to Europe cost should be comparable to costs of bandwidth from Europe to United States of America; and
10. Ensure that the Protocol is able to accommodate new networks; in particular the new regional terrestrial backhaul networks that are expected to emerge.

Recognising the need for a substantial portion of the financing of regional backbones to come from concessionary financing as well as the investment portion from commercial entities needing as low interest as possible relevant to basic backbone infrastructure for social economic and utilities services, hence achieving balance between development and investment objectives, call on the Development Finance Institutions (DFIs) to participate as catalysts in this process by:

1. Ensuring the donors and development agencies and their policy arms (e.g. IDA, EC, etc.) recognise the low yield bond nature of their participation, and work with governments to mobilise the concessionary financing required as the major portion; and
2. Ensuring their private sector arms, investment agencies and commercial banks (e.g. IFC, EIB, ADB, EADB, DBSA) work with investors to mobilise the minor portion of investment for building the regional backbone.

Extend our heartfelt gratitude to the EAC Secretariat, SIDA and the government and people of Tanzania for the warm hospitality afforded to us and the professional stewardship and professional organization of the meeting

EAC Headquarters
ARUSHA, TANZANIA

Dated: August 1st, 2006

ANNEX IX

Update on status of the RICTSP within the EAC

East African Community Secretariat

Regional Information and Communications Technology Support Programme

Brief on the project

The Regional Information and Communications Technologies Support Programme (RICTSP) is a joint initiative of the Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC), Inter Governmental Authority on Development (IGAD) and the Indian Ocean Commission (IOC). The five year Programme is being implemented with financial support to the tune of Euro 21 mil from European Union.

1 Objectives

The overall objective of the RICTSP Programme is to contribute to the Eastern and Southern African regional agenda for Economic integration through efficient and effective Information and Communication Technology (ICT) environment.

2 Scope

The RICTSP programme will support over a five-year period COMESA, EAC, IGAD, IOC and respective member states, to reduce the digital divide by removing some of the constraints to effint use of ICT.

3 Key activities

The key activities to be implemented are in the area of:

a) Development and monitoring of ICT policy;

b) Improved Internet connectivity in the region; and

c) Improved access to information for public and private sectors.

The overall project consists in the provision of Long term and Short Term Technical Assistance, Studies, equipment, software and administrative support.

4 Current status

a) Establishment of National ICT Working Groups: Uganda has already constituted the NICTWG. Tanzania and Kenya in the process. National meetings to be held in May-June 2006;

b) A Technical Assistance team comprising the Overall Project coordinator and four ICT Regional Coordinators (for EAC, IGAD, COMESA and IOC) has already been appointed;

c) Phase I (2006/7) Programme Estimates (PEs) for the Regional Economic Communities (RECs) are being developed. EA PE (0.7 mil) approved by EU Delegation in Dar-es-Salaam; and

d) MoU between EAC, COMESA, IGAD and IOC signed.

ANNEX X

Responses and clarifications to some of the questions raised during the ITU/TCRA ICT stakeholders workshop, Dar-Es-Salaam, 2nd October, 2006

The United Republic of Tanzania
Tanzania communications regulatory authority

Telegram:	TUMEWASILI, Dar-Es-Salaam	P.O. Box 474
Simu:	255 22 2118947-52	DAR-ES-SALAAM
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Telex:	41858 COMCOM TZ	
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website:	www.tcra.go.tz	
Ref: No.:	**TCRA/O.20/5/34 Vol. II**	**6th September 2006**

Ms. Chali Tumelo,
International Telecommunications Union,
Telecommunications Development Bureau,
Regional Office for Africa.

RE: Outstanding questions/information from the ICTS stakeholders meeting

Reference is made to your letter dated 4/10/2006 requesting for elaborations/response to the questions raised by various Stakeholders. Find enclosed herewith, a copy of the responses on the same for your ease of reference.

We believe this response will shed some light on the issues raised and the affected Members be advised accordingly. In case one avails the complete information on this matter, his address and dates of such calls/SMS we also could follow it up with the respective operators (from our side) and clear such shortfalls with our operators.

Regards,

Godliving J. Kessy
For Director General

c.c. DG

Responses to outstanding questions/information from the ICTs stakeholders meeting

Q1 Are all operators /ICTs stakeholders' active members of EARPTO?

A1 Yes, All except Broadcasting.

All major operators (i.e. Telecom and Postal) are active members of EARPTO. Other small operators i.e. Data, Couriers, are joining in their National association/groups. These include TESPOK (Kenya Electronic/Internet service providers); TISPA (Tanzania Internet Service Provider Association), and the couriers are presently in the process of forming their National Associations and finalize their joint process.

Q2 What strategies are in place to develop content other than broadcasting?

A2 Ongoing strategies include:

i. Consultations are going on with the Independent Producers Association (TAIPA) on the possibility to produce local content.

ii. That TAIPA is discussing with the Broadcasters Forum aiming to agree on quarter system of local content percentage production.

iii. That, Public Service Broadcaster produces 70% of its content as local content.

iv. That, Public Service Broadcasters include in their Charter, Terms and Conditions indicating that 25% of its local content and 10% Foreign.

Q3 Any Documentation/Report on Universal Access in Tanzania?

A3 Currently, there are several efforts being directed to address the issues of Universal Access and in particular Rural Communications development.

There was a study carried out by Apoyo Consultoria of Peru on the Rural access development during year 2003. The report gives the detail analysis of the Rural situation, needs assessment and modalities of establishing and managing the Rural Communications Development fund (RCDF).

This document/Report proposed for the pilot implementation together with identification methods for bidders to provide universal service access through the utilization of the RCDF.

Q4 For Celtel (new network roaming): how come a Nairobi Celtel subscriber in Kampala can call a Vodacom subscriber in Dar-Es-Salaam, but can not send SMS to the same (and *vice-versa*)?

A4 This depends on the prevailing situation at a particular moment the caller is making/sending the call/SMS. Every operator has an SMS Centre where the message is stored before the same is forwarded to the recipient network. Here there are links both sides of which both operators may need to establish whether from either sides both links are/were working at that period of transferring the message.

Electronic Systems is a matter of Technology and software. Due to frequent improvement of networks by the network operators and of which do not go together with other operators, there also could have been installations of software, change of number plans, installation of new technology altogether. While this happens with one network operator, it may take sometimes for the other country operator to adjust his situation to be able to continue receive and sending SMS normally.

According to the Engineer (Celtel), it is necessary in such case that, the affected customer had to report the case to his service provider once that happens and the operator could report the faulty to his counterpart and both of them trace any malfunctioning in both sides at the same time. At present no other reason can readily be given unless the problem be traced by both operators once they are furnished with enough information as no call/SMS barred by any operator as such.

Q5 For Celtel or Vodacom: how come MTN Rwanda Cell subscribers can not call and/or SMS mobile subscribers in Tanzania? For example 0746 XXXXXX (number not working) but works ok for 0754XXXXXX.

A5 The above answer in A4 applies also to this question. There is an issue of compatibility both in equipment and software operations which need always be communicated between the operators themselves in order they then can arraign their networks in the required operational standards and quality. If the numbers that are involved could be availed to all the three operators, then we believe they could work together to establish the problem and amicable solution as well.

ANNEX XI

Status of policy, regulatory and legislative regimes in the EAC

Country	Kenya	Uganda	Tanzania	Comments
Policies				
National ICT Policy	Yes	Yes	Yes	
Compliance with COMESA Model Policy	No	No	N/A	
Compliance with SADC Model Policy	N/A	N/A	No	
Assent to the NEPAD "Kigali" Protocol	No	Yes	Yes	
National Implementation Plan	No	No	No	
Telecom Policy	Yes	Yes	Yes	Uganda's partially implemented
E-Government Strategy	Yes	In draft form	Under development	One of the pillars in the ICT Policy
Universal Service Strategy	Not as such, but provided for in the ICT Policy	Yes	Not as such, but as an act	Under development in Kenya, Tanzania
Broadcasting Policy	As above	Yes	Yes	
Postal Policy	As above	Draft awaiting approval	Yes	
Information Policy	No	Not as such, but has law	Yes	Uganda has the "Information Act"
Regulations				
Independent Regulator	Yes	Yes	Yes	
Converged Licensing	No	No	Yes	
Level of Competition	Partial	Partial	Almost full	
Spectrum Management	Under development	Yes	Yes	Tanzania & Uganda have policy guidelines & regulations
COMESA Guidelines on Licensing, Interconnection and Universal Access	No	No	N/A	Some implemented, but by default
Consumer Protection	No; Under development	No	Yes	
Legislations				
Comprehensive ICT Act/Bill	Draft	No	Draft	
Telecom/Communications Act	Yes	Yes	Yes	
E-Commerce Law	No	No	No	Model under devel-opment under SADC
Intellectual Property Rights Law	No	No	No	General IPR Laws may exist, but thin on ICTs
Freedom of Access to Information	No	No	No	Under discussion in Kenya. Guaranteed under Uganda Constitution
E-Security, Data Protection, and Privacy Laws	No	Drafts awaiting approval	No	
Competition Law	No	No	No	Uganda considering evolving one
Broadcasting Act	Yes	Yes	Yes	But most are outdated

Legend: N/A = Not applicable.

ANNEX XII

Functions of the EAC Secretariat (Chapter 10, Article 71 of the EAC Treaty)

The Secretariat shall be responsible for:

a) initiating, receiving and submitting recommendations to the Council, and forwarding of Bills to the Assembly through the Co-ordination Committee;

b) the initiation of studies and research related to, and the implementation of, programmes for the appropriate, expeditious and efficient ways of achieving the objectives of the Community;

c) the strategic planning, management and monitoring of programmes for the development of the Community;

d) the undertaking either on its own initiative or otherwise, of such investigations, collection of information, or verification of matters relating to any matter affecting the Community that appears to merit examination;

e) the co-ordination and harmonization of the policies and strategies relating to the development of the Community through the Co-ordination Committee;

f) the general promotion and dissemination of information on the Community to the stakeholders, the general public and the international community;

g) the submission of reports on the activities of the Community to the Council through the Co-ordination Committee;

h) the general administration and financial management of the Community;

i) the mobilization of funds from development partners and other sources for the implementation of projects of the Community;

j) subject to the Treaty, the submission of the budget of the Community to the Council for consideration;

k) proposing draft agenda for the meetings of the organs of the Community other than the Court and the Assembly;

l) the implementation of the decisions of the Summit and the Council;

m) the organization and the keeping of records of the meetings of the institutions of the Community other than those of the Court and the Assembly;

n) the custody of the property of the Community;

o) the establishment of practical working relations with the Court and the Assembly; and

p) such other matters that may be provided for under the Treaty.

ANNEX XIII

Sample Minutes of the EALA Committee on Communications, Trade and Investment

UMUIYA YA AFRIKA MASHARIKI

EAST AFRICAN LEGISLATIVE ASSEMBLY
SECOND MEETING – FIFTH SESSION – FIRST ASSEMBLY
COMMITTEE ON COMMUNICATIONS, TRADE AND INVESTMENT

Minutes of the thirty seventh sitting of the committee held on Tuesday March 07, 2006 at 10.00 am in Committee room B, sixth floor, Ngorongoro Wing, AIC Complex, Arusha

PRESENT:

The following Members were present:

1. Hon. Dr. George F. Nangale, Chairperson
2. Hon. Mohammed A. Zubedi
3. Hon. Amb. Isaac A. Sepetu
4. Hon. Mabere Marando
5. Hon. Rose Waruhiu
6. Hon. Irene Ovonji-Odida
7. Hon. Sarah Bagalaaliwo
8. Hon. H. H. A. Abdi
9. Hon. Yonasani Kanyomozi

IN ATTENDANCE

1. Eng. Enock Yo-azi, Eng/Planner – EAC
2. Mr. Tuomo Raitenen, Consultant
3. Mr. Kenneth Madete, Principal Clerk

AGENDA:

The following agenda was adopted:

i. Communication the Chair
ii. Confirmation of Minutes of Previous Sittings
iii. Matters Arising
iv. Brief on the progress in the Citation Sector
v. Any Other Business

MIN. No. 001: COMMUNICATION FROM THE CHAIR

The meeting was called to order at 10.15 am.

The Chairperson welcomed Members to the meeting. He hoped that Members had had a good end of year holiday and were looking forward to the challenges of the New Year.

He pointed out to the Members the five items adopted on the Agenda.

MIN. No. 002 / CTI / 2006: CONFIRMATION OF PREVIOUS SITTINGS

The Minutes of the thirty sixth sitting of the Committee held on Tuesday November 29, 2005 were confirmed and signed by the Chairperson.

MIN. No. 003 / CTI / 2006: MATTERS ARISING

Min. No. 074 en 2005: (Motion for a Resolution on WTO).

Arising out of Min. No. 069/CTI/2005. Hon. Irene Ovonji-Odida reported that she drafted the Motion as agreed by the Committee and submitted it to the relevant offices as per the Rules of Procedure of the House. However, the House adjourned before the motion was tabled, and without a formal reply as to the fate of the motion.

The Committee took note of the report but requested Hon. Irene Ovonji-Odida to check whether the Motion could be modified and tabled to take care of the post Hong King Conferences.

MIN. No. 075 / CTI / 2006 (SQMT Bill)

The Committee noted with concern that despite having completed its consideration of the SQMT Bill in November, 2005, the Bill is not on the agenda for the current meeting of the Assembly and yet no explanation had been given.

The Chairperson was requested to check with the Clerk and CTC for an explanation.

MIN. No. 076 / CTI / 2005 (Work Plan 2006)

Reference was made to the work-plan for 2006 as adopted by the Committee in November, 2005. Out of the seven activities, the Following haven agreed upon.

1. The briefing on the progress in the telecommunications sector in the region was t' be done at the day's sitting by the responsible officer from the EAC Secretariat.
2. The brief o' the Partner States' plans in the harmonization of policies on SMEs, VAT rates and Investment polices by the EAC Secretariat would be done on Monday March 13, 200'.
3. The Post Hong' Kong WTO Ministerial Conference review and analysis conference for the EAPLC will be held at Nyali Beach Hot-l, Mombasa from 23-26 March, 2006. The meeting will be facilitated by FES.
4. The Public Hearing Workshops on the implementation of the Customs-Union and aspects of the Common Market will be held in the late April and early May, 2006. The workshops will be facilitated by AWEPA. The Clerk was instructed to liaise with AWEPA and the Country contact persons on the finaogramme.
5. The FES tour of Customs border posts will be held in late July and early August, 2006.

MIN. No. 004 / CTI / 2005 BRIEFING ON THE TELECOMMUNICATIONS SECTOR

The briefing was done by Eng. Enock Yonazi, the Engineer/Planner at the EAC Secretariat. He was assisted by Mr. Tuomo Raitenen Consultant at EAC on the Regional Information and Communication Technology Support Programme (RICTSP).

The briefing focused on the following main issues:

1. Global trends in the Communication Sector.
2. Trends in Africa showing that Africa has not developed to the same extent as then of the world.
3. Levels of interaction in EAC sub-region focusing mainly on the efforts at the harmonization of ICT Policies and Strategies and Regional Support Programmes.

The Committee was informed that to make any tangible headway, EAC needs to:

- Harmonize their ICT regulatory frameworks;
- Manage its broadcasting spectrum;
- Enter into a Memorandum of Understanding between the three countries on the telecommunications sector as the first step towards the enactment of a common law for the region; and
- Need to speed up the drafting of an e-vernment strategy for Tanzania.

The Assembly was called upon to play its advocacy role in the Partner States to ensure that they support these programmes.

A copy of the Power Point presentation is attached to these Minutes.

MIN. No.005 / CLT / 2006 ANY OTHER BUSINESS

1. Hon. George Nangale reported that three Members were invited to join the Directorate of Customs and Trade on a sensitization mission to all major stakeholders on the operations of the Customs Union from 20-25, 2006. The areas covered were Mwanza, Isebania, Kisumu, Lunga Lunga, and Holili/Taveta.

   The Committee took note of the report. The Clerk was requested to ask the Director of Customs for the detailed report of the sensation mission.

2. Hon. Abdi reported that the Kenya Chapter had held a fact finding tour to some of the major Customs Border Posts in Kenya in late January to also check on the operations of the Customs Union, one year after its implementation. The places visited were Busia, Mombasa, Taveta and Lunga Lunga. He said the report of the tour would be availed to all Members of the Committee.

   The Committee took note of the report and further noted that the two reports would assist the Committee to identify the necessary stakeholders for similar activities in future.

MIN. NO. 006 CTI 2006 ADJOURNMENT

There being no any other business, the Chairperson adjourned the Sitting at 1.00 pm to Monday, March 13, 2006 at 10.00 am.

Confirmed:

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CHAIRPERSON DATE

ANNEX XIV

A summary of stated functions, achievements and structures of African Regional Associations of Regulatory Authorities

	ARICEA	ARN	ARTAC	CRASA	EARPTO	FRATEL	WATRA
Region/Sub-Region	Eastern & Southern Africa	Arab Region	Central Africa	Southern Africa	East Africa	Franco-phone Africa	West Africa
Number of Countries Covered	21			14	3		15
Affiliation to REC/s	COMESA		ECCAS, EMCCA	SADC	EAC		ECOWAS
Year of Establishment	2003	2003	2004	1997	2000	2003	2002
Functions							
Harmonization of telecom policies	Yes	Yes	Yes	Yes	Yes		Yes
Coordination of activities	Yes	Partial	Yes		Yes	Yes	Partial
Exchange ideas views and experiences	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Promotion of Interconnection and Cross-border Services	Yes				Yes		
Promotion of cost efficient networks	Yes	Yes	Yes	Yes			Yes
Promotion of Network Security					Yes		
Develop a Regional Telecom Masterplan			Yes				
Harmonization of resource utilization	Yes			Yes	Partial		
Sharing of the best practices						Yes	
Standards		Yes		No	Yes		Yes
Promotion of E-Applications	Yes						
Encourage Investment and Private Sector Participation	Yes	Yes					
Human Capacity Development	Yes	For Network Members		In Regulation		To Regulators	
Universal Service and/or Access		Yes		Yes	Yes	Yes	Yes
Fair Competition				Yes	Yes		Yes
Consumer Protection				Partial			Partial
ICT Statistics							Yes
Notable Achievements							
Fair Competition Guidelines				Study Report			

	ARICEA	ARN	ARTAC	CRASA	EARPTO	FRATEL	WATRA
Interconnection Guidelines/Model Inter-connection Regulations	Yes			Yes	Yes		
Establishment of Regional Backbone	COMTEL			EASSy & SRII	Remarkable		
Harmonized Spectrum Licensing					Substantial		
Band Plan				Yes			
Tariff Guidelines / Model Tariff Regulations	Yes			Yes			
Effective Regulation and structures				Yes			
Regulatory Accounting Guidelines				Yes			
Study on Cross-border connectivity & Roaming				By SATA	Yes		Yes
Study on Routing of Regional and Int'l Traffic				By SATA			Yes
Model Telecom Bill	Yes			Yes			
Universal Access Strategy	Yes						
ICT Statistics/Database				By SATA			U/D
Capacity Development	Reasonable						Some
Structure and Organization							
Backed by Legal Statute (Constitution, Protocol, Treaty)	C, T			C, T, P	C		C, T
Regulators-Only Membership	Incl Govt Regulators		Or/Alt. Policy Makers	Yes	Also Operators	Also Policy Makers	Also Govts
No. of Member Organizations	18	16		!4			11
Permanent Secretariat	Yes	Yes	Yes		Rotational	Yes	Yes
Secretariat has Executive Officer/Secretary					No	Supervised by Chair	Yes
Converged Environment	Somewhat			Yes	Somewhat		Telecom
Financed by Regulators		Member States	Trust Fund		N/A	By TRAF	Yes
Has a Budget			Yes		No	No	
Has a Legal Personality / Status					No		

[Source: Chepkonga Report CHEP'05]

ANNEX XV

The Southern Africa Telecommunications Association (SATA) – Its functions, mandate, structure and relationship with SADC

a) SATA: Its mission, mandate, functions and structure

The Southern Africa Telecommunications Association (SATA: http://www.sata-sec.net) was established in 1980 as an association of government-owned, fixed line operators within the Southern African region. With the changing environment in telecommunications and regional integration, the body has transformed over the years to include private operators and then finally in 2004, it opened itself up to service providers and all other players[35] within the field of Information and Communications Technology in SADC. SATA has 18 members; 14 of which are the original fixed line operators of the 14 SADC countries and the other 4 are mobile operators. Its vision is to become the most dynamic, value adding-oriented ICT regional organization, and to realize a prosperous information society for the SADC region, while its stipulated mission is to co-ordinate the development of ICT networks and services of a regional nature that are responsive to the diverse needs of commerce and industry in support of SADC's regional socio-economic development programmes. It is recognized as a SADC Institution, established under the SADC Treaty (and later, the Protocol on TCM). Some of the principle objectives of SATA include to:

- Promote the common interests of its members, assisting in the development of policies driving towards an efficient and fair telecommunications environment and the harmonization of such policies across the SADC region;
- Promote the entry of operators and establishment and operation of efficient, adequate, and cost-effective ICT-based high-speed networks, and services in the SADC region so as to enhance affordability of access and connectivity;
- Facilitate the participation of the stakeholders belonging to the same industry in one organisation and unfold the opportunity to learn from the global industry;
- Optimise and promote the efficient and effective utilisation of scarce resources in specialized areas, including frequency spectrum and numbering facilities; and
- Enhance network interconnectivity and interoperability, incorporating information highway carriers and information exchange and transfer nodes.

[35] Organisations from related sectors of the ICT industry and, in particular, the research, standard setting and learning sector; the manufacturing and distributing sector; the operations and services sector; and the content production and distribution sector, within and outside the Member States can also become Associate Members.

SATA's structure includes an Annual Conference (of Chief Executives and respective specialized committees[36]), a Permanent Executive Board, and Secretariat – made up of the Executive Secretary and other staff. Among the functions of the Secretariat are to:

- Collaborate with members in the collection and distribution of statistical data and information on the telecommunications networks and services in the region;
- Assist committees in developing concepts and strategies in carrying out tasks assigned to them by the Executive Board;
- Organize the Annual Conference; and
- Provide administrative and secretarial support to the Association or any of its organs.

The expenses of the Secretariat are financed through equal annual contributions from members. SATA follows SADC Administration Rules and Procedures (Recruitment, Emoluments, Legal issues, Diplomatic Status, Travel Conditions, etc). SATA Secretariat is hosted in Maputo following a signed Agreement between SADC and the Government of Mozambique [SADM'04], and such agreement stipulates all issues that enable SATA to operate comfortably in Mozambique and in the SADC Region, including tax waivers, immunities and privileges, diplomatic status, etc.

Some of the main achievements of SATA have been the promotion of the development of the SADC Regional Information Infrastructure (SRII), the necessary broadband cross-border linkages, and the carrying out of the necessary technical and commercial studies to support such developments (e.g. [SRII Phase I & II Studies ITUI'99, ITUS'05]).

b) The SADC Protocol on Transport, Communications and Meteorology (TCM)

Pursuant to Articles 22 and 23 of the Southern African Development Community (SADC) Treaty [SADC'92] which provides for Member States to conclude a Protocol to expand and deepen their co-operation in the areas of infrastructure and services, a Protocol was signed in 1996 on Transport, Communications and Meteorology (TCM – [SADC'96]) with the overall objective to establish transport, communications and meteorology systems which provide efficient, cost-effective and fully integrated infrastructure and operations for SADC. The main strategic objective of the Protocol was the integration of regional transport, communications and meteorology networks to be facilitated by the implementation of compatible policies, legislation, rules and regulations, standards and procedures that promote competition, and public and private investment.

Within the specific domain of communications, the Member States agreed to take advantage of international technological developments and to develop national telecommunications networks for the provision of reliable effective and affordable telecommunications services in order to:

- ensure adequate high quality and efficient services responsive to the diverse needs of commerce and industry in support of regional social and economic growth;
- achieve regional universal service with regard to telecommunications services and regional universal access to advanced information services; and
- enhance service interconnectivity in the Region and globally.

To achieve the objects of the TCM Protocol, and in accordance to Article 12 of the SADC Treaty, the Southern Africa Transport and Communications Commission (SATCC) was established.

[36] At present, there are two such committees: Policy and Strategy, and Technology and Infrastructure.

c) SATA and the SADC Communications Commission (SATCC)

The SATC Commission comprised a Committee of Ministers (the supreme body that provided overall guidance and general coordination); a Committee of Senior Officials reporting to the Committee of Ministers and served as nodal point to guide and co-ordinate the sectoral and sub-sectoral implementation strategies and sustain their implementation; sub-sectoral committees with their specialized working groups which reported to the Committee of Senior Officials and facilitated detailed implementation of sectoral and sub-sectoral strategies; a technical unit, the SATCC-TU responsible for the necessary co-operation and liaison between the SATCC and the SADC Secretariat.

Each Member State was required to appoint a sub-sectoral coordinator for each sub-sector, responsible for:

- promoting the achievement of the general objectives, strategic goals and sectoral objectives of the Protocol;
- coordinating the national implementation of the Protocol within each sub-sector and identifying actions for the accelerated implementation of the Protocol; and
- receiving inputs from national public and private sector stakeholders and canvassing the views of such stakeholders regarding any matter dealt with in the Protocol.

Each Member State was also required to nominate one sub-sectoral coordinator as **national coordinator** to assume overall responsibility within its administration in respect of the transport, communication and meteorology sectors and ensure cross-sectoral coordination of implementation strategies within each Member State, liaise with SATCC-TU, and be responsible for compiling and submitting three-monthly progress reports to the SATCC-TU. The SATCC-TU served as a SATCC Secretariat, providing technical, implementation and monitoring support to all the implementation agencies involved with the implementation of the provisions of the TCM Protocol, monitoring compliance by Member States, and providing secretarial and administrative support to the SATCC.

d) Migration of Some of the SATCC Functions to SATA and CRASA

The SATC Commission was ultimately dissolved by the SADC Heads of State and all its functions transferred respectively to the SADC Secretariat, the SADC Telecommunications Committee, the Communications Regulatory Association of Southern Africa (CRASA[37]) and the Southern Africa Telecommunications Association (SATA). By the time of dissolution, apart from SATA and CRASA, the SATCC had also created the following SADC institutions that are still to date in operation: the Southern Africa Railways Association (SARA), the Southern Africa Postal Operators' Association (SApOA), and the DMC for Meteorology functions, now being turned into the Meteorology Association of Southern Africa (MASA).

[37] Formerly Telecommunications Regulatory Association of Southern Africa (TRASA).

ANNEX XVI

Objectives and principles of NEPAD

NEPAD'S primary objectives

1 To eradicate poverty.

2 To place African countries, both individually and collectively, on a path of sustainable growth and development.

3 To halt the marginalization of Africa in the globalization process and enhance its full and beneficial integration into the global economy.

4 To accelerate the empowerment of women.

Principles of NEPAD

1 Good Governance as a basic requirement for peace, security and sustainable political and socio-economic development.

2 African ownership and leadership, as well as broad and deep participation by all sectors of society.

3 Anchoring the development of Africa on its resources and resourcefulness of its people.

4 Partnership between and amongst African peoples.

5 Acceleration of regional and continental integration.

6 Building the competitiveness of African countries and the continent.

7 Forging a new international partnership that changes the unequal relationship between Africa and the developed world.

8 Ensuring that all Partnerships with NEPAD are linked to the Millennium Development Goals and other agreed development goals and targets.

ANNEX XVII

Project concept for harmonization of regulatory regime

EAST AFRICAN COMMUNITY SECRETARIAT

1 Project name

Harmonization of the EA communications latory regime

2 Programme / Sector

Programme Area: Transport and Communications

Sub programme: Communications and Priority Investment

3 Project objectives

The objective of this Study is to develop a framework for Harmonised Regional Communications Regime for the EArtner States.

4 Background

Following the liberalisation in the telecommunications sector, the three Partner States created each a Communications Commission to regulate communications affairs at the national level. Due to the fact that the legislations came into being at different times, hence may not have been harmonised and considering that the three economies suffer from inadequate communications infrastructure, it is thus prudent to develop a harmonized Regional Communications Regulatory regime.

Subsequent to the above, a Study on Harmonisation of the Regional Communications Regulatory was initiated in June 2003 to look at various aspects including technical, legal, management and budgetary issues related to Communications regulation at the regional level with a view to establishing the basis for the harmonization of communications strategy in the three Partner States.

Following the Study's examination of the communications sector performance since its reform, restructuring, liberalization and existence of divergences and variations in the three Communications Acts as well as the creation of independent regulatory authorities in the three countries, the Study Report made a case for a Harmonized East African Communications Regulatory Regime.

The Study report emphasized that a harmonized communications regulatory regime in EA would bring about transparency, ease of cross-border implementation, and increased foreign investment to the sector in the sub-region.

This proposal project proposal is a follow-up on the recommendations of the aforementioned study and focuses on establishment of a regional regulatory regimor East Africa.

5 Justification

The three Partner States have been pursuing their own development goals and this equally applies to the communication sector where the countries have developed their policies and Communications Acts, which differ variously in substance and style. It is, therefore, important to harmonize regulatory regimes in the region for a number of reasons. These include:

a) The regulatory environment has changed dramatically in the recent years especially following liberalization of the communications sector, ushering in privatization and competition and the dismantling of public monopolies.

b) A harmonized communications regulatory regime will enhance cooperation between the partner states in the East African Community and will be catalytic in the East African social and economic integration and possible future political Union which the three nations aspire to form.

c) A harmonized regulatory regime will provide a transparent regulatory environment throughout East Africa which will give a big boost to both local and foreign investment in the region as investors will not need to worry as to what surprise legislation might be applying next door.

d) For the reason in c) above it is now a global trend to have regulatory regimes harmonized at regional and sub-regional levels to facilitate and enhance trade and investment within that economic community such as for TRASA, WATRA, EARPTO. At continental level, the African Telecommunications Regulators' Network (ATRN) was created in Rabat, Morocco following a forum on telecommunication regulation in Africa, and in January 24, 2003 in Addis Ababa, COMESA countries launched Association of Regulators of Information and Communications of Eastern and Southern Africa (ARICEA).

e) A harmonized communications regulatory regime that brings about a vibrant communications sector in East Africa will be mutually supportive to the implementation of the recently signed EA Customs Union Protocol and hence accelerate economic development in the region.

6 Intervention strategy

a) The overall objective: To enhance the economic integration and development of the region

b) Project objectives:

   1) to assess the state of Communications Regulatory regimes in the three Partner States; and

   2) develop a Harmonised Regional Communications Regime for the EAC Partner States.

c) The study should produce the following tentative outputs as recommendations:

   1) Recommendations on establishment of harmonized Communications Regulatory Regime for East Africa;

2) Recommendations on legal aspects:

- Amendment of specific existing Communications Acts in the Partner States;
- Proposal on formulation of new bills for consideration by the East African Legislative Assembly which will have regional enforcement

3) Proposal on mechanism for regulating the Communications Industry in the E A Region.

d) Activities

Hereunder is a summary of major tasks that need to be taken to ultimately achieve a Harmonized Communications Regulatory Regime in East Africa:

- Preparation of Terms of Reference;
- Recruitment of Consultant;
- Consultants undertake work on Harmonization;
- Facilitation of the implementation of the study; and
- Coordination of project with the Regional Integration Organizations (COMESA, IRCC)

Preconditions:

i) Seeking Council approval of the proposal on Harmonization of the E.A. Regulatory Regime

ii) Source funding

iii) Provide office space and logistics to the consultant

iv) Appoint a liaison person for the study at EAC Secretariat.

9 Duration and project costs

i) *Project cost*

The Project cost is estimated between USD 250-300 000. This cost includes hiring of a Consultant, facilitation of consultative meetings, travel for project staff; information sharing, project equipment; documentation and publication.

ii) *Time frame*

The tentative study time frame will be 8-12 months.

EAC Secretariat
January 2006

ANNEX A

Outline of terms of reference for the consultant

i) To assess the state of Communications Regulatory regimes in the three Partner States;

ii) Identification of areas of divergence in the 3 Communications Acts;

iii) Propose harmonized modern regulatory regime suitable for multi-operator environment providing for *inter alia,* rights and obligations of operators, licensing, interconnection, public service obligations, fair competition seeking to protect both subscribers and investors' interests;

iv) Propose mechanism for tariffs harmonization and corresponding regulatory regime in East Africa;

v) Propose a harmonized interconnect regime for the region;

vi) Analyze and propose harmonized spectrum management regime for the region including licensing and monitoring;

vii) Propose procedures and conditions for licensing including regional license;

viii) Propose relevant provisions of the restrictive trade practices, monopolies and price control;

ix) Propose appropriate conflict resolution mechanism for the harmonized regime;

x) Propose enforcement mechanisms for the harmonized regime; and

xi) Propose regulation and coordination of numbering plan for the sub-region which are concordant with ITU-T Recommendations.

ANNEX XVIII

Summary of recommended actions, with benefits, possible impacts and responsible agencies

Recommendation	Benefit	Pre-requisite	Responsibility	Remarks
Infrastructure				
Study regional traffic patterns and propose a strategy to decongest the regional links	Remove communications-related bottlenecks to socio-economic activity	Willingness of operators to share traffic information for analysis purposes	**EAC Secretariat**, EARPTO, operators	
Construct the EASSy cable	Cheap and reliable international bandwidth	Governments, operators and DFIs agreeing to work together	**NEPAD e-Africa Commission**, **the EASSy Consortium**, DFIs [38]	
Complete the EABs backhaul	Access to interior countries and cities	Completion of the feasibility study and agreeing on business model	NEPAD e-Africa Commission and the **EASSy Consortium**	
Upgrade cross-border links to fiber	Avoiding costly international satellite transit	Comprehensive technical and financial feasibility studies	**EAC Secretariat** and EARPTO	
Direct interconnection (and intra-regional roaming) for all licensed operators	Cheaper and better quality communications	Necessary regulatory and legislative reforms	EAC Secretariat, **EARPTO** and Operators	
Establish a Regional Internet Exchange Point (RIXP)	Reduce Internet costs by keeping "local" traffic, local	Institutionalizing/ reactivating all national IXPs	EAC Secretariat, EARPTO & **ISP Associations**	Tender/ procurement process on-going
Complete the lave victoria emergency communication project	Easy rescue for lake users in distress	Since not likely to be financially viable, get a sponsor	EAC Secretariat, **Lake Victoria Commission,** SIDA	
Develop a comprehensive universal access and service strategy	Broadband access to rural and un-served areas	Harmonization of national USAF strategies	**EAC Secretariat** and EARPTO	Uganda already has a comprehensive USAF strategy
Resource sharing framework	Cost-effectiveness and optimization of resource use	–	**EAC Secretariat** and EARPTO	
Regional broadband communications masterplan	Identify optimum and appropriate regional network design and technologies	–	**EAC Secretariat**, EARPTO and ITU	
Collection, analysis, harmonization and dissemination of ICT statistics	Better planning and informed decision-making	Appropriate institutional arrangements with statistics bodies and other relevant agencies	**EAC Secretariat**, EARPTO ITU and UNECA	

[38] Including the World Bank and the ADB.

Recommendation	Benefit	Pre-requisite	Responsibility	Remarks
Recommendation	**Benefit**	**Pre-requisite**	**Responsibility**	**Remarks**
Comprehensive study on traffic projections and tariff analysis	Better informed decision making and planning	Willingness of operators to avail statistics, in confidence	**EAC Secretariat**, EARPTO	
Development and harmonization of e-applications strategies (e-govt, e-commerce, e-tourism, e-security, etc.)	Deepen benefits accruable from e-applications	Harmonized ICT policies, strategies and implementation plans	**EAC Secretariat**, EARPTO, e-Africa Commission, COMESA, UNECA, EU	
Joint resource mobilization for infrastructure development	Identifying financing for common projects; bulk sourcing of equipment and supplies	Having appropriate institutional arrangement to co-ordinate implementation	**EAC Secretariat**, EARPTO and ITU	In the interim, through the EAC Secretariat, Member States and operators can jointly source supplies
Policy, regulatory and legislative reforms				
Establish mechanism for regional licensing	Enable companies to operate in all the 3 Member States	Comprehensive study of implications of regional licensing	EARPTO, **NRAs**, EAC, ITU	Step 1 could entail giving national licenses; Step 2 could involve issuing one "regional license"
Complete harmonization of ICT policies	Market harmonization and investment attraction	Completion of task force work and adoption of report	**EAC Secretariat** and EARPTO	
Completion of harmonization of regulations	Market harmonization and investment attraction	Completion of task force work and adoption of report	EAC Secretariat, **EARPTO**	
Converged, technology-neutral licensing	Encourage competition and increase consumer choice	Harmonized regulations and legislation	EAC Secretariat, **EARPTO**	Tanzania already has converged licensing regime in place
Legal standing for EARPTO by the EAC	Making EARPTO resolutions enforceable and binding	–	EAC Secretariat, **EARPTO**	As an interim measure
Harmonization of ICT laws (e-legislation)	Market harmonization and investment attraction	Comprehensive national ICT laws in place	EAC Secretariat, **EALA** and EARPTO	
Interconnection guidelines	Cost-effect, secure connectivity	Completion and adoption of task force work	EAC Secretariat, **EARPTO**	
Spectrum management strategy	Efficient and effective use spectrum	Completion and adoption of preliminary task force work	EAC Secretariat, **EARPTO** and ITU	An ITU Consultant has completed review of broadcasting frequency management
Strategy for migration to digital broadcasting	Better and more efficient utilization of broadcasting resources	Completion of harmonization of spectrum management	EAC Secretariat, **EARPTO** and ITU	Phase II of the above study is to start February 2007, to address digital

Recommendation	Benefit	Pre-requisite	Responsibility	Remarks
				broadcasting

Recommendation	Benefit	Pre-requisite	Responsibility	Remarks
Recommendation	**Benefit**	**Pre-requisite**	**Responsibility**	**Remarks**
Internet policymaking and regulation	Better environment for Internet usage and growth	Harmonized communications policies and regulations	EAC Secretariat, EARPTO, **ISPs** and ITU	
Development and harmonization of policies and regulations on VoIP	Affordable communication	Allowing VoIP access and usage, in principle	EAC Secretariat, **EARPTO**, operators & ISPs	
Institutional framework and capacity development				
Restructuring of EAC Secretariat to strengthen ICT unit	Strengthened co-ordination	Adoption of new structure by the Council	**EAC Secretariat**, ITU	
Permanent secretariat for EARPTO	Strengthened co-ordination and regulation	Adoption of proposal by EARPTO congress and EAC Secretariat and availability of resources	EAC Secretariat, **EARPTO** and ITU	
Establishment of formal multi-stakeholder organization	Enhanced consultation and co-ordination	Acceptance of concept by all key stakeholders	**EAC Secretariat**, EARPTO and ITU	
Creation of a common regulatory authority	Have a legal entity with sufficient jurisdiction and mandate for regional and cross-border regulation	Harmonized policies, regulations and legislation	EAC Secretariat, **EARPTO** and ITU	This would be in line with long-term plans for political federation and a common market
Common position on restructuring for ICT development within AU framework	Streamlining collaboration and co-ordination at the regional (AU) level	Adoption of study on reforms by a multi-stakeholder forum	**EAC Secretariat,** AU Commission, UNECA, ITU, ATU	The current duplication of roles between various regional agencies is wasteful and confusing
Capacity development plan	Having appropriate institutional and human capacity to fully utilize ICT opportunities	Harmonized national ICT policies, strategies and plans	**EAC Secretariat**, EARPTO, UNDP, ITU	To include comprehensive framework for the new institutional structure
Strengthening of the ICT and public relations functions of the community	Enhance visibility, mobilization and co-ordination capacities of EAC Secretariat	Human capacity development plan & communications strategy in place	**EAC Secretariat**, ITU	Identified by EAC Leadership as a priority issue
Establishment of regional professional ICT association	Professionalizing the sector and enhanced mobilization	Acceptance of concept by key stakeholders and resource availability	EAC Secretariat, **National ICT Associations**, EARPTO, & ITU	

ANNEX XIX

Summary of recommended actions, with timelines and budget

No.	Actions	Deadlines	Indicative budget (USD)	Remarks
Short-term (up to end of 2007)				
1.	Adoption of interconnection guidelines	April 2007	30 000	
2.	Establish mechanism for regional licensing	July 2007	40 000	To include interviews with Ministries of ICT, Finance & NRA's
3.	Permanent secretariat for EARPTO	July 2007	150 000 (1 year)	Mainly salaries and logistics
4.	Converged, technology-neutral licensing	July 2007	30 000	
5.	Strengthening of the communications and public relations functions of the community [39]	July 2007	110 000 (1 year)	Mainly salaries & Consultancy for communications strategy
6.	Restructuring of EAC Secretariat to strengthen the ICT unit	September 2007	300 000 (1 year)	Assuming direct-or-general level
7.	Direct Interconnection (and intra-regional roaming) for licensed operators	September 2007	100 000	Actual infrastructure costs borne by operators
8.	Study of regional traffic patterns and development of a strategy to decongest the regional links	September 2007	100 000	A special purpose vehicle company could build the upgrades
9.	Harmonized spectrum management strategy	September 2007	70 000	Based on preliminary ITU study
10.	Establishment of a Regional Internet Exchange Point (RIXP)	September 2007	100 000	Including equipment
11.	Development of a comprehensive universal access and service strategy	September 2007	50 000	
12.	Development and harmonization of policies/regulations on VoIP	September 2007	23 000	
13.	Legal grounding for EARPTO	December 2007	50 000	Possibly through treaty amendment
14.	Comprehensive study on traffic projections and tariff analysis	December 2007	100 000	
15.	Migration to digital broadcasting	December 2007	70 000	Based on Phase I study – spectrum management

[39] This function can be performed through a public relations staffer (full or part-time), or through outsourcing. An assessment of the EAC PR requirements would be needed to arrive at such a decision.

No.	Actions	Deadlines	Indicative budget (USD)	Remarks
Medium term (1-3 years)				
1.	Harmonization of ICT policies	April 2008	100 000	
2.	Common position on restructuring for ICT development within AU	April 2008	50 000	
3.	Harmonization of regulations	July 2008	100 000	
4.	Development and harmonization of selected laws (e-legislation)	July 2009	100 000	
5.	Development and harmonization of internet policies & regulations	July 2008	100 000	
6.	Development and harmonization of e-applications/e-strategies	July 2008	100 000	
7.	Collection, analysis, harmonization and dissemination of ICT statistics	July 2008	100 000	Can be modelled along the SCAN-ICT platform-ECA
8.	Completion of Lake Victoria emergency communication project	July 2008		Study supported by SIDA
9.	Establishment of regional professional ICT Association	July 2008	150 000 (1 year)	Including wages, office and logistics
10.	Regional broadband communications masterplan	July 2008	150 000	
11.	Capacity development plan	December 2008	Continuous	May require skills gap assessment
12.	Construction of the EASSy cable	December 2008	280 m (east)	To be borne by cable owners
13.	Upgrading of all cross-border links to fiber	December 2008		Determined after feasibility study
14.	Completion of the EABs backhaul	December 2008		To extract from on-going IFC study
15.	Incorporate and launch multi-stakeholder organization	December 2009		
16.	Creation of a common regulatory authority	December 2010	300 000	A migration strategy to be developed and agreed
Long-term (beyond 3 years)				
1.	Regional backbone infrastructure (EARII) operational			
2.	Multi-stakeholder organization fully functional			
3.	Vibrant regional professional ICT association in place			

Before implementing a specific action, a comprehensive costing would be needed.

ANNEX XX

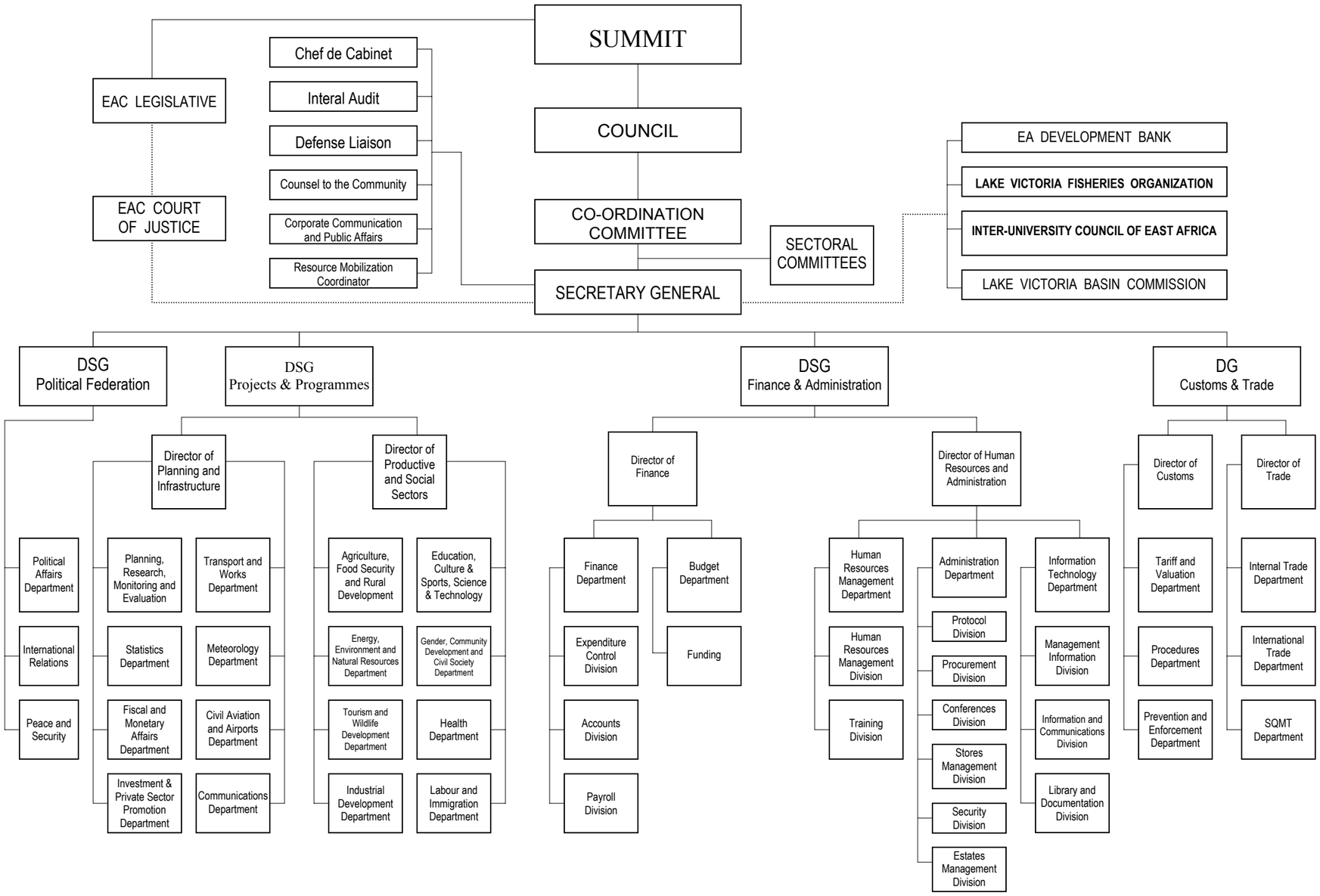
Proposed timelines for institutional restructuring

No.	Proposed actions	Deadlines	Responsibility	Remarks
Phase I (Strengthened EAC Secretariat + EARPTO Secretariat)				
1.	Develop communications & PR strategy for the EAC	May 2007	EAC Secretariat	
2.	Appoint a communications/ PR officer or consultant	July 2007	"	
3.	Designate National ICT coordinators/ focal points in Member States	July 2007	ICT/Telecom Ministries	
4.	Establish ICT directorate within EAC Secretariat	September 2007	EAC Council	
5.	Elevate ICT directorate to be headed by Director-General	July 2009	"	
6.	Agree on need for and location of EARPTO Secretariat	May 2007	EARPTO Congress	
7.	Adopt budget for EARPTO Secretariat	May 2007	"	
8.	Establish and launch EARPTO Secretariat	July 2007	"	
9.	Recruit executive officer for EARPTO Secretariat	July 2007	EARPTO/EAC Secretariat	
10.	Create a Web portal	July 2007	EARPTO Secretariat	
11.	Mobilize resources to finance the budget for EARPTO Secretariat	Continuous	EARPTO	
12.	Formalize relationship between EAC and EARPTO, say through a treaty	September 2007	EAC Secretariat	
13.	Give legal mandate to EARPTO	December 2007	"	
14.	Enter into formal agreement between EAC ICT Directorate and EARPTO on management of latter's Secretariat	December 2007	EARPTO	
15.	Common position on restructuring for ICT Development within AU	Continuous	EAC Secretariat	
16.	Establish regional professional ICT Association	July 2008	"	

No.	Proposed actions	Deadlines	Responsibility	Remarks
Phase II (Semi-autonomous multi-stakeholders organization)				
1.	Enter Formal Agreement with Member States to establish the organization (e.g. through protocol)	July 2008	EAC Secretariat	
2.	Adopt constitution of the organization	December 2008	EAC Council	
3.	Decide on the domicillium of the organization	December 2008	"	
4.	Incorporate and launch organization	July 2009	EAC Secretariat	
5.	Appoint board members for the organization	July 2009	EAC Council	
6.	Conduct staff/skills requirement for organization	July 2009	Management/ EAC Secretariat	
7.	Adopt budget for the organization	July 2009	EAC Council	
8.	Recruit CEO for the organization	July 2009	Board	
9.	Develop communications strategy for organization	September 2009	Management/ EAC Secretariat	
10.	Recruit staff for the organization	December 2009	Management/Board	
11.	Develop corporate procedure manuals and internal regulations	July 2010	Management/Board	
12.	Mobilize resources to finance the organization's budget	Continuous	Management	
13.	Develop 5-year strategic plan for organization	December 2010	Management/Board	
Phase III (Common regulatory authority)				
1.	Adopt common policies, regulations, and legislations	July 2009	EAC Council/EARPTO	
2.	Develop, negotiate and adopt migration strategy	December 2009	EARPTO/EAC Secretariat	
3.	Creation of a common regulatory authority	December 2010	EARPTO/EAC Secretariat	

ANNEX XXI

Organization structure of the East African community



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