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Services, content and capacity-building

Background Paper – Session Four

1. BACKGROUND

At the World Summit on the Information Society (WSIS), held in Geneva in 2003 and Tunis in 2005, leaders from Africa and around the globe recognized the significant role of Information and Communication Technologies (ICTs) as a catalyst to help achieve the UN Millennium Development Goals (MDGs) and agreed to a set of specific targets, including goals for ICT connectivity and applications, to be achieved by 2015¹. These goals were also emphasized by African Leaders as part of the African Information Society Initiative² (AISI), the “Accra Commitments for Tunis 2005” and have since been reinforced by the African Regional Action Plan on the Knowledge Economy³ (ARAPKE), under the aegis of the African Union and the UN Economic Commission for Africa. The ability of nations to deploy, harness and exploit the opportunities offered by ICTs to advance socio-economic development depends on the presence of appropriate infrastructure, relevant applications and skills. Attention should be paid not only to the provision of infrastructure, but also to the content, applications and services that are provided over it. Similarly, capacity-building is also vital to ensure that Africa produces a skilled and ICT-savvy workforce that is ready to participate fully in a globalized information economy and society.

Suitable applications (including e-government, business, health, education, agriculture, environment etc) can promote access by more of the population, including remote rural communities and disenfranchised groups. However, without the local development of solutions, applications and content taking into account the different languages and cultures of the continent, the value of new infrastructure cannot be fully realized. ARAPKE specifically calls for the development of sectoral e-strategies in areas such as health and education, as part of national ICT strategies. The Tunis Agenda acknowledged that “*ICT applications and content aimed at the integration of ICTs into the implementation of poverty eradication strategies and in sector programmes, particularly in health, education, agriculture and the environment*” need more attention and greater resources⁴.

2. PURPOSE OF THIS PAPER

Africa faces many challenges in providing universal access, content, applications and services to its citizens. This Background Paper reviews some of the steps that multilateral institutions and governments have taken in addressing these issues, and describes some of the applications and content, which will have an impact in improving the lives of Africans. Finally, the paper concludes with a set of actionable recommendations for development partners and host governments to undertake, including implementation of comprehensive

¹ WSIS Geneva Plan of Action.

² www.uneca.org/aisi

³ <http://www.uneca.org/aisi/docs/ARAPKE.pdf>

⁴ Paragraph 23f, WSIS Tunis Agenda for the Information Society.

capacity-building programs, encouraging entrepreneurship and soliciting funding for these activities.

3. SUMMARY OF THE EXISTING SITUATION

Services such as health, education, commerce and agricultural trade lend themselves to applications that can facilitate their delivery and improve productivity and revenues. Such services are mostly data-intensive and would benefit greatly from the availability of broadband infrastructure. Existing narrowband infrastructure that is more widely available (such as mobile telephony, radio and TV) must also be leveraged. As stated above, such applications must respond to local needs and be developed in collaboration with grassroots communities so that they have a vested interest in ensuring their sustainability. There is considerable evidence of innovation and progress in this area:

- In the area of health, ICTs are increasingly providing relevant, cost-effective solutions in the provision and delivery of many basic services. Handheld devices, for example, are now being used to gather and transmit basic health information at the local level in Uganda and Mozambique, while telediagnosis is being used in remote clinics to transmit X-rays and digital photographs to experts at central hospitals. Rwanda has already connected two hospitals to the Ministry of Health in a telemedicine project and two further rural hospitals are being outfitted. In Burkina Faso and Burundi, remote communities now have access to medical databases and ongoing training in the fight against HIV/AIDS through a combination of WiMAX local loops and VSAT infrastructure funded by the Global Digital Solidarity Fund (DSF)⁵.
- In education, locally-led, “bottom-up” initiatives are multiplying across the continent to introduce ICTs into schools and communities to aid teaching and learning. Lessons from these local initiatives are informing current national policy development in at least 38 countries. At the same time, multi-stakeholder regional initiatives (such as the NEPAD e-Schools initiative and SchoolNet Africa) are helping to connect African schools to the Internet and to each other to enhance learning opportunities. At the higher education level, National and Regional Research and Education Networks (NRENs) are enabling collaboration between researchers. Notable examples include TENET in Tanzania, and the UbuntuNet Alliance in Eastern and Southern Africa. As ICT access spreads, there is an increasing need for locally relevant digital education content. Through participation in initiatives such as the African Virtual University⁶ and the Information Technology Centre for Africa⁷, African universities are taking the lead in building distance education applications relevant to African learners.
- In agriculture and natural resource management, digital technologies offer real promise in promoting “precision farming” with accurate and up-to-date weather forecasts, early warning systems and earth observation. So far, encouraging progress has been achieved in establishing online agricultural market information systems, such as DrumNet and the Kenya Agricultural Commodities Exchange (KACE) in East Africa and TradeNet and Manobi in West Africa. In Rwanda, the Kids Weather Watch will engage schoolchildren to participate in weather collection and reporting on a national scale, linking this into the school science and technology curriculum.
- In trade, ECA with support from the Canada Fund for Africa have launched the ICTs, Trade and Economic Growth initiative in Egypt, Ethiopia, Ghana, Senegal and South Africa for the use of ICTs as a catalyst for increased trade and as stimulant for economic growth. In addition, ECA and the Canada Fund for Africa in cooperation with the Government of Finland have provided support to:
 - the Arab Maghreb Union to develop a regional platform on e-commerce;
 - ECOWAS and UEMOA to develop harmonized legal frameworks on e-commerce; and

⁵ www.dsf-fsn.org

⁶ www.avu.org

⁷ www.uneca.org/itca and www.epolafrica.org

- the Sahelian countries (Benin, Burkina Faso, Mali and Niger) to operationalize their sectoral strategies.
- Most governments have implemented IT systems for Public Financial Management and backend accounts/payroll processing, but few have yet built other intra-governmental services, partly due to the lack of pervasive broadband networks in government. Now, more countries are prioritizing the promotion of broadband infrastructure and this picture is changing. The Government of Kenya expects to save millions in communication bills by using VoIP between all of its offices, while the Government of Lesotho has cut back on paper and messengers, and decreed that notifications for all executive meetings should be available only online. The Rwandan Cabinet and Parliament hold their meetings online. The GAINDE⁸ System in Senegal and the Community Network Services Limited (GCNet) in Ghana help remove physical bottlenecks and speed up trade and clearance procedures for users and the business community, while protecting government revenues and improving transparency. With support from ECA and the Canada Fund for Africa, the East African Community (EAC) has put in place an e-Government strategy for adoption by three of its five member countries (Kenya, Tanzania and Uganda). Moreover, in order to encourage the use of ICTs in the delivery of public services to citizens by African countries, ECA, through the Canada Fund for Africa, launched the Technology in Government Awards⁹ (TIGA) in May 2007 as an annual event.

4. CHALLENGES AND OPPORTUNITIES

Challenges affecting ICT penetration and the contribution of ICTs to socioeconomic development in Africa include language, illiteracy and restrictive regulatory frameworks. ICTs offer new tools and techniques for delivering services to citizens and improving trade and communications. However, citizens cannot become effective drivers of demand, if they are unaware of the potential benefits these new tools can bring to their lives. Citizens, particularly in rural areas, need to be educated as to the applications and services available and empowered to come up with locally relevant applications to satisfy their needs. "Grassroots innovations" have yielded many success stories of the effective and relevant application of ICTs to the needs of poor and disadvantaged groups and the creation of local solutions to local issues.

E-government strategies are also lacking or weak in many countries. Important applications and services could include:

- a) Information from government to citizens and organizations (e.g., early warning systems, access to forms and regulations);
- b) Information from citizen to government (e.g., submission of information, feedback and citizen 'voice'); and
- c) Information from government to government (e.g., budgetary, political and M&E).

The rapid advancement in the mobile technologies and the ease of their use, coupled with falling prices in both equipment and services, make mobile telephony the ideal tool to bridge the digital divide in Africa. Mobile telephony offers many applications for development and can reach the majority of people and Small, Medium and Micro Enterprises (SMMEs), so its impact is enormous. This has spurred the advent of m-commerce (mobile commerce) and adoption of ICTs by the local business community in several African countries.

In order to make initiatives more sustainable, training and capacity-building must be top priorities. Africa needs a skilled workforce that can develop local goods and maintain the infrastructure efficiently, as well as ICT-literate users that can generate demand and pay for products and services and savvy entrepreneurs that can launch ICT-enabled businesses, sustaining local economies and creating jobs. Capacity-building strategies must take a holistic approach and include basic training in ICT skills at all levels of education, as well as entrepreneurship and business development courses, in addition to specialized ICT training. This approach is followed by ITU, which, through its Centres of Excellence (such as the

⁸ www.gainde2000.sn

⁹ <http://www.uneca.org/tiga/>

African Advanced Level Telecommunications Institute or AFRALTI¹⁰ and its sister-project in French-speaking African countries - the École Multinationale Supérieure des Télécommunications or EMST), has supported the development of capacity in ICTs among African decision-makers. These Centres of Excellence have also made their training equipment, facilities and premises available for ICT training to school leavers, through the delivery of Cisco Training Programs such as CCNA, CCNP and Cisco Network Security. The Centres of Excellence have also become regional ITU-Cisco Academies, making them into fully integrated ICT Solutions Providers. Through its Internet Training Centre Initiative (ICTI), ITU has helped raise awareness and capacity for the use of ICTs among youth groups in Africa.

Government also has a role to play in creating an ICT-adept entrepreneurial base, by ensuring favorable regulatory and policy environments in areas such as intellectual property protection, taxation regimes and business registration processes and procedures. ECA, with support from the Canada Fund for Africa, has organized a series of workshops on Access and Regulation in Central, Western, Eastern and Southern Africa, aimed at building the capacity of policy-makers, regulators, legislators, the private sector, civil society and academia in the elaboration of strategies and guidelines for legal and regulatory frameworks. In addition, since 2004, the Government of Canada, in cooperation with ECA, has offered over 300 fellowships to senior African policy-makers to participate in an e-Government Study Program organized annually in Ottawa to enable African participants to experience ICT applications in action within the Canadian government.

Target Groups

Young people are eager adopters of the new technology and must be systematically targeted in order to build skills and to encourage them to develop innovative and interesting content and to pursue innovative and entrepreneurial job paths. Special attention must be paid to the needs of women and girls to ensure that ICTs do not exacerbate existing gender inequalities. Notably, the availability of credit (e.g., micro-finance and small loans for SMMEs) is a critical requirement for women to enter ICT-related businesses. Given that the majority of Africans are dependent on farming for their livelihoods, it is clear that farmers and traders are another particularly important target group, which also needs information and tools to empower them in selling and banking online. Rural telecentres, digital kiosks (for example, in post offices) or mobile phones can help provide access to information for farmers. ICT entrepreneurs need different types of support, including the elimination of bureaucracy for small business start-ups and further sources of small business finance, as well as more resources for basic and higher education.

Funding mechanisms

In order to take advantage of the opportunities offered by ICTs, innovative financial mechanisms are needed, as traditional financial mechanisms have shown their limitations. A variety of models need to be supported for financing applications and content development (especially from development partners), such as the 1% digital solidarity contribution promoted by the DSF. Small seed funding for technology companies can also promote the development of new applications. In state-supported services, governments need to allocate their own funds, supported by development partners where necessary. Public Private Partnerships (PPPs) offer useful opportunities for growth in e-government services, where the private sector would be invited to build applications in return for a percentage of the service fee charged by government (such as in the vehicle license renewal system under consideration in Botswana). The Universal Service Funds that are available in many African countries can also be used to cater for relevant training and development of appropriate applications for the population.

5. CONCLUSIONS AND RECOMMENDATIONS

Commitments from Government

- Support for the development of sufficient quantities (and quality) of ICT skills must be given high priority. Countries can undertake yearly needs assessment for ICT skills

¹⁰ <http://www.afralti.org/index.html>

requirement, review their educational systems from the elementary through the tertiary level and train teachers in order to mainstream ICT in education and ensure that skills requirements are met by 2012.

- Support the development of sectoral policies, promote innovation and entrepreneurship and deploy suitable applications and services¹¹ at the local, national and regional levels (through e.g. financial and fiscal incentives, a legal and regulatory environment conducive to investment and special support for SMMEs and start-ups).
- Support the development of a critical mass of ICT skills required by the knowledge economy, notably through the establishment of an ICT Centre of Excellence network in each sub-region of Africa and ICT capacity-building and training centres in each country, with the aim of achieving a broad network of inter-linked physical and virtual centres, while ensuring coordination between academia and industry by 2015.
- Adopt a national e-strategy, including a cyber-security framework, and deploy at least one flagship e-government service as well as e-education, e-commerce and e-health services using accessible technologies in each country in Africa by 2012, with the aim of making multiple e-government and other e-services widely available by 2015.
- Adopt and develop African languages in cyberspace by 2015.

Commitments from Development Financial Institutions (DFI) and the Private Sector

- Encourage a wide range of financial mechanisms, including incubator schemes, venture capital promotion (national and international) and investment funds, including micro-finance for SMMEs.
- Develop investment promotion strategies and provide support to business process outsourcing, research and development networks and software parks.

¹¹ Including e-government, e-education, e-commerce, m-commerce, e-tourism, e-health, e-agriculture and e-environment.