

3

## Regional Perspectives

# Progress and Issues in Financing ICTD in Africa

LISHAN ADAM

VISITING ASSOCIATE PROFESSOR  
UNIVERSITY OF STELLENBOSCH  
WWW.SUN.AC.ZA

*This paper looks at the issue of financing ICTs to support development in Sub-Saharan Africa. The author argues that ICT financing should primarily focus on the needs, aspirations, capacities and perspectives of the vast majority of poor people in Africa rather than on the dominant practice where ICT needs are articulated by ICT professionals with predetermined end products. The mainstream ICT financing mechanisms' debate should pay a great deal of attention to the needs of the poor and the question of "who is being served for what purpose" should be addressed when defining financial mechanisms and strategies. Financing ICT with a focus on poverty means scaling up ICT investment from the level of pilot projects to their integration in government services strategies - notably agriculture, education - and in support of the Millennium Development Goals. Such a spirit would be important to consider access to information and communication as a public good and move forward the Digital Solidarity Agenda agreed in the context of the WSIS.*

This document is based on the in-depth paper "Financing ICTs for Development with Focus on Poverty", by the author, available online at [wsispapers.choike.org/](http://wsispapers.choike.org/)

تتناول هذه الوثيقة موضوع تمويل تكنولوجيا المعلومات والاتصالات من أجل التنمية في إفريقيا جنوب الصحراء. ترى الوثيقة أن تمويل تكنولوجيا المعلومات والاتصالات يجب أن يتركز أولاً على الإحتياجات، التطلعات، القدرات ووجهات نظر الغالبية العظمى من الفقراء في إفريقيا بدلاً من التناول الحالي الذي يتولى في إطاره المتخصصون في تكنولوجيا المعلومات والاتصالات التعبير عن الإحتياجات، مع تحديد مسبق للنتائج. يجب أن يمتح الحوار حول الآليات الرئيسية لتمويل تكنولوجيا المعلومات والاتصالات أهمية أكبر لإحتياجات الفقراء وتحديد " لمن تقدم الخدمة ولأي غرض " لدى وضع آليات وإستراتيجيات التمويل. يعني تمويل تكنولوجيا المعلومات والاتصالات مع التركيز على الفقر ترقية إستثمارات تكنولوجيا المعلومات والاتصالات من مستوى المشروعات النموذجية إلى تضمينها في إستراتيجيات الخدمات للحكومات - بشكل خاص في الزراعة والتعليم - ودعماً لأهداف الألفية للتنمية. من المهم النظر إلى هذه الروح لدى دراسة النفاذ على المعلومات والاتصالات باعتبارها منافع عامة والتحرك قدماً نحو برنامج التضامن الرقمي المتفق عليه في إطار القمة العالمية لمجتمع المعلومات.

Este documento contextualiza el financiamiento de las tecnologías de información y comunicación (TIC) para favorecer el desarrollo en África Subsahariana. El autor sostiene que dicho financiamiento no debe hacerse a partir de soluciones predeterminadas, sino que debe estar enfocado a las necesidades, aspiraciones, capacidades y perspectivas de la gran mayoría de las comunidades pobres africanas. El debate sobre la inclusión horizontal de los mecanismos de financiamiento debería identificar, entonces, "quién está siendo servido y para qué propósito". Pensar el financiamiento de las TIC desde la pobreza debe implicar que la inversión en TIC trascienda del nivel de proyectos piloto hacia su integración en los servicios gubernamentales. En tal espíritu debería considerarse el acceso a la información y comunicación como un bien público global.

Ce document traite le sujet du financement des technologies de l'information et de la communication (TIC) en appui au développement en Afrique subsaharienne. L'auteur affirme que le financement des TIC ne doit pas se faire à partir des pratiques prédominantes; il doit viser par contre, les besoins, aspirations, capacités et perspectives de la plupart des communautés pauvres en Afrique. Le débat sur l'inclusion horizontale des mécanismes de financement devrait donc se préoccuper de "qui est desservi et dans quel but". Le financement des TIC axé sur la pauvreté, signifie que l'investissement doit aller au-delà du niveau des projets pilotes en faisant partie des stratégies des services. Cette vision devrait être présente au moment de fournir l'accès à l'information et à la communication en tant que bien public mondial.

## A brief overview

This brief overview looks at the issue of financing in information and communication technologies (ICTs)<sup>1</sup> in support of development in sub-Saharan Africa from two perspectives: 1) financing mechanisms aimed at supporting the information and communication needs of the vast majority of the African poor (for poverty eradication); and 2) mechanisms aimed at facilitating the exploitation of ICTs to increase national development and economic growth rates in the region. It argues that ICT financing should primarily focus on the needs, aspirations, capacities and perspectives of the vast majority of poor people in Africa rather than on the dominant practice where ICT needs are articulated by ICT professionals with predetermined end products. One way to maximize effective use of ICTs for economic growth and poverty alleviation is to systematically and deliberately integrate them into the next round of national plans and sectoral strategies.

Since pillars of sustainable development such as education, good governance, social equality, health and environmental protection are essential to the empowerment of poor people, investment in supportive backhaul and local backbone infrastructure, promotion of access to meaningful applications in these key sectors and advancement of innovation and research in ICTs are as important. Just as the catalytic effects of ICTs on poverty alleviation are the result of improved earning opportunities and empowerment of the poor, the entrepreneurship that underpins the capacity to use ICTs and to tailor them to local needs are likewise important.

For ICTs to make this impact on the majority of poor people there should be affordable access to them and sufficient human resources and technical capacity to create and use applications and content as well as an enabling policy environment that fosters entrepreneurship. Yet, it is important to take note of the fact that each country and community has unique sets of ICT needs and priorities. The needs are

---

1 ICTs in this paper comprise a spectrum of communication and information delivery tools as well as knowledge sharing technologies ranging from radio, television, film, and the press to people, systems, institutions and infrastructure supporting them.

extraordinarily diverse. Therefore adequate efforts are needed to design, prioritise and implement ICT programmes and reorganise resources and needs instead of relying on predefined “one size fits all” priorities.

Africa varies considerably and comprises 34 of the 50 least developed countries and 14 of the 32 landlocked countries<sup>2</sup> that are confronted with the most daunting economic, social and political challenges - high incidence of poverty, wider income inequality, internal civil strife and external conflicts, scourge of diseases including that of HIV/AIDS, high costs of basic infrastructure (including telecommunications), limited human and technological resources, dependence on a limited export market, debt burden, low productivity, acute vulnerability to natural and environmental disasters and, more importantly, over-dependence on foreign aid. Over 40% of the population in Africa earns less than USD1 a day - below the poverty line drawn by the World Bank.<sup>3</sup>

ICTs should be used to deal with these challenges along with the frameworks established by regional agreements such as the New Partnership for African Development (NEPAD). The NEPAD framework aims to improve the condition of African people by means of improved governance, prevention of conflicts, promotion and protection of democracy and human rights, restoration and maintenance of macroeconomic stability, extension of education and health services, and promotion of infrastructure development including ICTs.

Africa is the least developed region when it comes to ICT infrastructure. There is a wide and uneven disparity along the fault lines of social inequality including socio-economic status, age, gender, geographic location and ethnicity. The penetration of different technologies varies considerably - with broadcasting technology more disseminated than personal computers (PCs) and the Internet. Of the approximately 841 million people in Africa in 2003, it was estimated that only:<sup>4</sup>

---

2 Least Developing Countries Resources. [www.un.org/issues/m-ldc.asp](http://www.un.org/issues/m-ldc.asp)

3 See [millenniumindicators.un.org/unsd/mispa/mi\\_worldreg.n.aspx](http://millenniumindicators.un.org/unsd/mispa/mi_worldreg.n.aspx)

4 International Telecommunications Union (2004), *African Telecommunications Indicators, 2004 and estimates*.

- 1 in 4 had a radio (210 m)
- 1 in 12 had a TV (71 m)
- 1 in 33 had fixed lines (25 m)
- 1 in 16 had a mobile phone (51 m)
- 1 in 80 had access to a PC (10.3 m)
- 1 in 70 had access to the Internet (12.3 m)
- 1 in 360 had access to pay-TV (2.3 m)

Raising access to radio to at least 100%, television to 50%, phones to 20%, mobile phones to 50%, and computers and the Internet to 10% is required in order to achieve the same goals set in NEPAD's contract with the developed world, to contribute to poverty eradication and economic growth, and to support the achievement of the Millennium Development Goals (MDGs). This implies that efforts should be made to increase access to broadcasting technologies while making sure that all men and women including those in remote areas share the benefits of new interactive technologies widely. However, as access moves beyond radio and telephones to more strategic and interactive technologies like the Internet, costs will become higher, because resources are required to build broadband backbone infrastructure for the provision of network access, to pay for the electrical infrastructure that would make the ICTs work, to develop skills to keep all technologies working, to improve usage skills, and to increase literacy in order to read the content.<sup>5</sup> On top, Internet's rate of penetration in Africa has been recently declining compared to the explosive growth in the past decade; a suggestion that improving access to more interactive technologies in rural areas remains a challenging and expensive endeavour.

Bilateral and multilateral agencies, the United Nations bodies and foundations have played a key role in advancing the dissemination of ICTs in the region and fostering an enabling environment for the participation

---

5 Heeks, Richard (1999), *Information and Communication Technologies, Poverty and Development*. [idpm.man.ac.uk/idpm/diwpf5.htm](http://idpm.man.ac.uk/idpm/diwpf5.htm)

of the private sector in the delivery of services. Private sector investment was instrumental in the expansion of the cellular and Internet markets. Africa's mobile market has been the fastest growing market of any region over the last five years. The private sector has also played a key role in promoting ICT awareness, supplying hardware and software, providing training and maintenance of ICT equipment. Multilateral companies are also entering the field of ICTs for development in Africa.

However, the approach throughout most part of the 1990s was basically experimental and underpinned by the belief that the liberalization of the telecommunications sector and the empowerment potential of ICTs would overcome the major traditional constraints on development and allow countries to move quickly into an era of greater prosperity.<sup>6</sup> This was partly prompted by the integration of telecommunications into the rules of the World Trade Organization and the belief that market forces would lead to better access to infrastructure. However, it has become clear that liberalization or the imposition of free-market conditions onto the inequitable conditions in the region without redress programmes would simply reinforce the iniquitous status quo<sup>7</sup> or could lead to the transfer from public monopolies to private ones. It also showed that investment in ICTs is more than opening up the telecommunications sector or establishing telecentres. It requires regulatory capacity, political will, a competitive environment and a creative response to market failure. While mobile access grew tremendously due to limited regulatory oversight and the “pay as you go” business model that suited everyone, particularly the vast majority of African informal sectors, fixed line connectivity stagnated. The main lesson was that the barriers to ICT development in Africa are much wider than enabling policies and regulatory environments. The decade ended without making a dent in terms of universal access to ICTs and without actually attaining full liberalization and universal access in most African countries.

---

6 Wild, Kate. “Notes on ICT for development”, personal communication

7 Gillwald, Alison, “Policy and Regulatory Challenges of Access and Affordability”. [www.lirne.net/resources/netknowledge/gillwald.pdf](http://www.lirne.net/resources/netknowledge/gillwald.pdf)

Competitive markets represent one of the alternative options to promote universal service. However, there has always been a large segment of the African population whose needs are not met by markets. Africa has the largest segment of the population living below the poverty of line, with a weak purchasing power, so these people needs should be met by alternative financing mechanisms that extend beyond the borders of the market.

## Development strategies

Africa's ICT for development challenge extends beyond infrastructure. A recurrent theme that has been emerging from experience and the analysis of national e-strategies and position papers points to five key areas that should be taken into account when designing development strategies and financing ICTs:

*Promoting access to and empowering the vast majority of the African poor.* This implies raising access to radios to 100%, television to 50% and phones in rural areas to 25% to promote meaningful information and communications in support of the Millennium Development Goals over the next ten years. It demands the promotion of pro-poor radio programming, development and implementation of pro-poor broadcasting policies, building the capacities of independent media to integrate new technologies into the old technologies in order to increase access, and adapt globally/locally available information to the needs of the poor. Additional work is required in promoting universal service and encouraging policies that support experimentation with new bottom-up wireless technologies to build ad-hoc community networks that could be integrated into the broadcasting media.

*Facilitating the diffusion of modern and interactive ICTs by building regional, national and local backbone infrastructure.* This entails financing regional connectivity projects such as the East African Submarine Cable, South African Regional Infrastructure Initiative, COMTEL, East African Digital Transmission Project, Intelcom II, etc. to upgrade regional connectivity and public private partnership support for:

- Providing the right regulatory and policy framework to facilitate private investment in infrastructure and innovation in new technologies;
- Establishing Internet exchange points to keep local and regional traffic local;
- Promoting the building of dark fibre infrastructure at the level of municipalities;
- Rolling out a variety of broadband distribution networks including DSL, cable modem and terrestrial broadband networks to extend access further from traffic concentration centres, and expanding backbone access to rural areas using a mix of wire-line and wireless technologies;
- Building the backbone infrastructure for broadcasting and signal distribution;
- Building up supportive infrastructure such as rural electric grids.

*Investing in human capacities* particularly of development professionals and ICT experts so as to improve usage of ICTs and social appropriation while creating conditions for developing applications to solve development problems, fostering innovation and entrepreneurship.

*Mainstreaming ICTs in key development sectors* by integrating ICTs in agriculture, health, education and public sector strategies and systematically incorporating ICTs at project levels or at development plan levels.

*Supporting initiatives* that promote enabling policies and regulatory environments.

Based on the ballpark estimates above, African countries need at least USD 600-900 million of additional financing, which is well beyond what is available from the public, private and development finances and what could be achieved through development strategies integrating ICTs in order to make a dent on the information and communication capacities needed to achieve the MDGs within a shorter term. These resources should be available within the digital solidarity agenda specifically within the perspective of global public goods.

There is a growing consensus that African countries should heed to the creation and contribution to the Digital Solidarity Fund that was launched by the President of Senegal, as much as they should participate in the global debate on strengthening the effectiveness of existing financial mechanisms and the creation of new ones.

## The Global Public Good perspective

The global public good perspective provides a useful framework for generating additional resources for ICTs for development in Africa. The public goods framework posits that:<sup>8</sup>

“Extending access to the Information Society in developing countries is a global public good that benefits everyone because of the value of network externalities. The value of the global information network increases in value as more national networks and business and individual users are added. Since the global economy runs on global information networks to create a global marketplace, the private sector in developed countries stands to benefit from the extension of ICTs in developing countries and should help pay for ICTs for development as a global public good. Therefore, a Global ICT Fund should be established, similar to the Global Environmental Facility, which could raise funds through a global tax on microchips, for example. The proceeds of the Global Fund would be directed towards building information societies and economies in developing countries.”

Access to ICTs and knowledge in Africa meets these main characteristics of trans-national public goods. Universal access to ICTs “can be considered as a global public good in that it is theoretically and practically both non-rival [one person’s consumption of the good does not

---

8 Association for Progressive Communication, “Financing ICTD in Africa”.  
[africa.rights.apc.org/index.shtml?apc=29740se\\_1&x=30657](http://africa.rights.apc.org/index.shtml?apc=29740se_1&x=30657)

diminish the amount available to others] and non-exclusive [no one can be excluded from access].”<sup>9</sup> Moreover, access to ICTs and networks makes the delivery of a wide-range of services possible, thus enhancing other public goods. Likewise, access to ICTs and knowledge by the African poor is important for the international community, for both developed and developing countries.

The overwhelming financial burden for bridging the digital divide will not be adequately addressed by individual African countries or entities acting alone, but it will be best addressed collectively on a multilateral basis. It means that once a government begins to deliberately integrate ICTs into development plans (for example in integrated rural development that builds schools along wireless towers, or water distribution systems along fibre optics cables), there should be resources available to do that. The public good perspective provides a framework for securing resources to achieve integrated development in Africa where ICTs become one of the key constituents.

Therefore, the participation of African countries in global public good debates is essential. Historically, African countries were largely excluded from intergovernmental decision-making due to the limited technical and policy capacities, lack of financial resources and inadequate information and the inefficient working methods of the global governance system.<sup>10</sup>

## Other barriers

The ability of the African poor to improve their livelihood is not only limited by lack of access to ICTs, information and relevant applications in key sectors, but also by a complex web of constraints ranging

---

9 Accuosto, P. and N. Johnson (2004), *Financing the Information Society in the South: A Global Public Goods Perspective*.  
[rights.apc.org/documents/financing.pdf](http://rights.apc.org/documents/financing.pdf)

10 Commonwealth Telecommunications Organization and Panos London (2002), “Louder Voices: Strengthening Developing Country Participation in International ICT Decision-Making”. [www.panos.org.uk/resources/bookdetails.asp?id=1065&null=1002](http://www.panos.org.uk/resources/bookdetails.asp?id=1065&null=1002)

from unresolved problems of governance and injustice at the local levels to the dynamics of the global economic system.<sup>11</sup> The implication of policy and governance is far reaching. The quality of local governance does not only determine the characteristic of the policy and regulatory environment that ideally promotes optimum private sector investment and public and private sector partnership but also affects the extent to which resources are mobilised, thus ensuring that those resources invested benefit the people who need access the most. It is more likely to find limited access to ICTs in the most corrupt institutions or countries than in those with good governance structures.

African countries' participation in global governance issues and their access to trade and debt relief are critical for their improved participation in the information society. Financing the mainstreaming of ICTs in health and education will not make sense if the debt burden makes it virtually impossible for African governments to maintain adequate programmes of public education and health in the first place. Fairer access to trade will encourage optimum use and appropriation of ICTs. The deliberation on financing ICTs for development should therefore encompass a frank evaluation of the impediments associated with local governance, the global trade regime and broader debates on debt relief. Alternatively, debate on aid, debt relief and trade should also become ICT-conscious.

The recent commitment to debt relief for a number of African countries and to increase aid and trade undertaken by G8 countries could improve opportunities for poverty alleviation in the region. A joined-up thinking in mainstreaming ICTs in debt relief, aid and trade is required to maximize the benefits provided by these commitments. For example, a new school or a health centre that may benefit from debt relief should ideally integrate a solar panel for powering up future ICT equipment and an "e-ready" building; equally it will be cost effective to build an inter-city fibre network along with a new road network or a water distribution system that may benefit from increased aid.

---

11 Hewitt de Alcantara, Cynthia, "The Development Divide in a digital Age: an issue paper". [ftpservers.unicc.org/unrisd/outgoing/pp/tbs/hewitt.pdf](http://ftpservers.unicc.org/unrisd/outgoing/pp/tbs/hewitt.pdf)

On their part governments should encourage ICT financing with a focus on poverty.

### Governments should:

- Create an enabling legal, institutional and policy environment for increasing access to and effective use of available financing mechanisms;
- Remove barriers so that access as a “public good” will be available to everyone;
- Create innovative policy models that promote the participation of non-profit operators in the deployment of ICT infrastructure and the development of bottom-up ICT infrastructure using innovative wireless technologies;
- Embrace universal access strategies using locally available resources and innovative financing mechanisms such as universal service funds that employ methods such as the minimum subsidy auction or community-driven approaches such as rural cooperatives;
- Promote access to alternative and innovative financial resources including remittances. Remittances represent a significant resource and rely on moral contracts that promote the spirit of the public good;
- Design and implement development strategies that integrate ICTs within the spirit of public goods, for example, by promoting an integrated planning of ICTs with health, road, energy and other infrastructure at local levels;
- Support effective use of existing finances by enforcing proper management of resources;
- Encourage the participation of local researchers to develop and implement the concept of global public goods;
- Highlight ICT and access dimensions in the global debate on public goods and broader issues on financing development.

A well-crafted mix of old and traditional technologies adapted to local settings would be important. Similarly, financing mechanisms that bring a mix of effectively used traditional sources together with new mechanisms within the global public good and digital solidarity tag are essential. On the one hand, there is a need for greater coordination to align sources of finance with enabling policy environments and, on the other, new financing mechanisms within the public goods framework should be pursued to bridge the access gaps of those who are below the poverty line.

Governments play a key role in enriching development strategies with ICTs. Regional organizations such as the African Union and programmes such as NEPAD should also play a key role in studying new mechanisms and synchronizing existing sources of finance with enabling policy environments so as to enhance the impact of ICTs on most African people. ■