

Come Together: African Universities Collaborate to Improve Bandwidth



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The Internet is essential to a modern university. This is particularly true for African universities, which need access to up-to-date information, as well as opportunities to collaborate with colleagues around the world and publish content online. Yet African universities pay dramatically more for Internet access than comparable institutions on other continents.

Participants at the Conference on African Research and Education Networking and Infrastructure, held 14 and 15 November 2005 in Tunisia, developed a multifaceted approach for collaboration. The conference, held just prior to the World Summit on the Information Society (WSIS), was convened by the Association of African Universities (AAU).

“This event brings together groups that do not normally get together,” says AAU General Secretary Akilagpa Sawyerr. “We have at this meeting people from not only universities and other research centres, but also the private sector, Internet service providers, officials [from the International Telecommunications Union], government people, and donor groups.”



AAU General Secretary Akilagpa Sawyerr

“What has brought us all together here is the feeling that we have had enough of the problem and it is time to move together,” he adds.

More than 100 participants attended the event, which was supported by Canada’s International Development Research Centre (IDRC), the Partnership for Higher Education in Africa, the Swedish International Development Agency, and the World Bank Institute (WBI). Participants focused on ways to improve the connectivity of African universities by addressing the issue at the campus, national, regional, and continental levels.

The early promise of connectivity

“To promote collaboration and access to information,” Mozambique’s Minister of Science and Technology, Venâncio Massingue, told conference participants. “African pioneers brought the Internet to their universities and to the continent.” These pioneers imagined that Internet access could be vitally useful for information-strapped universities and post-secondary institutions. They were right: during the 1990s, access to the Internet spread from one African campus to another. At the same time, “scientific publications began to be available on the Internet and people began to see a vision for how universities in Africa might be enabled through access to scientific publications,” says Steve Song, Manager of IDRC’s Information and Communication Technologies for Development (ICT4D) programs in Africa.

However, a stumbling block to realizing this vision arose: the cost of access. As Bob Hawkins, a senior education specialist at the WBI, points out, “the average African university pays 50 times more than the amount a North American university pays for Internet access.” Moreover, the bandwidth available to the average African university is less than that available to a single home in North America, despite high demand. Even within countries, there are large disparities in access costs.

The reason?

“African universities are prime targets for Internet service providers,” says Song. “As individual consumers they were being charged extremely high prices.” The high cost of connectivity restricts access to information, hinders the process of research, and limits opportunities for virtual collaboration.

A solution?

Universities that have formed consortia have been able to negotiate lower prices. In Ecuador, for example, universities have realized more than 70% savings in international bandwidth costs by creating a national university consortium. “The money saved was used for improving institutional structures,” says Enrique Peláez Jarrín, Executive Director of Consorcio Ecuatoriano para el Desarrollo de Internet Avanzado.



Steve Song, Manager of IDRC's Information and Communication Technologies for Development (ICT4D) programs in Africa

Capitalizing on economies of scale

The Conference on African Research and Education Networking and Infrastructure was structured to share experiences and discuss how to improve connectivity at the campus, national, regional, and continental levels.

At the campus level, says Sawyerr, “the concerns are to help build capacity and infrastructure. Also vitally important is the question of bandwidth.” Capacity building involves increasing ICT training, nurturing communities of practice, and improving staff retention. Conference participants also identified basic physical infrastructure, strategies for dealing with power shortages, and improved understanding of the various connectivity options (e.g., wireless, fibre optic, etc.) as key issues.

“At the national level, research education networks (NRENs) have proven to be a useful instrument that has been tried successfully in the world, but is only starting in Africa. There are only eight

NRENs,” comments Sawyerr. NRENs allow universities and research institutions to exchange information and to collaborate in research.



Emmanuel Tonye, the Université de Yaoundé, Cameroon

Emmanuel Tonye, professor at the Université de Yaoundé in Cameroon, explains: “Some universities have more resources than others — for instance, teachers, equipment, content, or material for training. If we have the possibility of increasing our bandwidth, that will create the opportunity for us to share our resources between different universities [through NRENs]. That will allow us to finally have efficiency in all our universities.” In fact, the conference provided an opportunity to learn from the experiences of several campus networks. Godfrey Chikumbi, a student interested in helping form a NREN in Zambia, commented: “This conference has taught me about the challenges that other countries face. You learn from them, and then you think: it’s not unique what you are facing. Other people have gone through this process and you learn how they overcame many obstacles.”

UbuntuNet Alliance: A new regional network

Regional bodies can help achieve significant economies of scale when negotiating for bandwidth and can help represent universities in various geopolitical forums. The UbuntuNet Alliance, a new regional research and education network, was launched at the conference. The Alliance, which represents universities from Kenya, Malawi, Rwanda, Mozambique, and South Africa, will attempt to purchase a stake in the East African Submarine System (EASSy). IDRC and Sweden’s Royal Institute of Technology supported the group’s development.

The Bandwidth Consortium is another regional network. This coalition of 11 universities recently concluded an agreement with the satellite service provider Intelsat to expand bandwidth capacity for its members at approximately one-third of the cost. The African Virtual University manages the Bandwidth Consortium, which involves institutions in Ghana, Nigeria, Kenya, Mozambique, Tanzania, and Uganda. The consortium is a collaborative project of the Partnership for Higher Education in Africa.

Referring to the pan-African approach, Sawyerr states: “We have found that in the course of discussions, there was much new information emerging. It’s important to bring together all information available and put it in a place where it can be accessed by everyone who needs to use it.” To this end, the AAU will serve as a central repository of best practices and other relevant information.

At the conference's conclusion, all agreed that the AAU was a key convener of events, clearinghouse for information and resources on African research and education networking, and lobbyist.

Future vision

The task of bringing Africa’s universities up-to-speed is urgent. Without access to the latest information — and to opportunities for knowledge-sharing — “the best of Africa’s scholars and



Venâncio Massingue, Mozambique's Minister of Science and Technology

technicians will seek opportunities elsewhere,” says Massingue.

“African universities need to produce agile, forward-looking thinkers who are aware of the national needs and global trends,” he emphasizes.

“We live in a world where economic growth is driven by ideas,” adds IDRC’s Song. “And many of those ideas are incubated at universities...they are the place where there is energy, space, and time for ideas to generate. Without the bandwidth, those ideas won’t achieve the kind of critical mass and reach that they could otherwise.”

“The opportunity exists now to put African universities back where they should be. For African universities to claim the Internet as their rightful domain for innovation, for creativity, and for the promotion of social and economic growth.”

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