Development, **2006**, **49**(2), (86–92)
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www.sidint.org/development

Dialogue

Challenges and Opportunities of E-learning Networks in Africa

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ABSTRACT *Allam Ahmed and Williams E. Nwagwu examine global networks for e-learning networks, with particular interest on the characteristics of the structures adopted by African countries to participate in the new educational strategy, and how these structures are moderated by Africa's peculiar social and political characteristics. They look at the challenges and opportunities that e-learning networks face in Africa, and then finally suggest how the challenges can be met, in addition to also how the opportunities can be utilized.*

KEYWORDS *E-learning networks; ICT; education; knowledge transfer; digital divide; strategies; partnership*

Introduction

In 2005, the United Nations announced the launch of the 'Digital Solidarity Fund' to finance projects that address the uneven distribution and use of information and communication technologies in order to enable poor people enter the new era of the information society. According to the World Bank, the private sector invested US$ 230 billion in telecommunication infrastructure in developing world between 1993 and 2003 (The Economist, 2005: 9). In a similar development, Southampton University is the first UK university to announce the same year that it will make all of its academic and scientific output freely available and that its repository will in future be an integral part of its research infrastructure (MacLeod, 2005; http://education.guardian.co.uk/higher/sciences/story/0,12243,1398368,00.html).

ICT infrastructure in Africa

It is estimated that over the next decade, 30 per cent of the world's economic growth and 40 per cent of all new jobs will be IT driven (Vinay and Saran, 1998). Today, countries are increasingly judged by whether they are *information rich or information poor*. For SSA countries, keeping up with these changes, and involvement in research, are both vital. African countries recognize that much of their economic future will depend upon the understanding of the global technological forces at work and their long-term implications. However, the evidence also shows that the benefits accrued from the utilization of ICTs over the recent years have been inequitably distributed with SSA countries facing the prospect of being marginalized. This marginalization has afflicted a new form

of poverty, *information poverty,* within these countries. The world is beginning to divide between the *information rich* and the *information poor* nations (Ahmed, 2004). Walsham (2000: 105–109) argues that the industrialized countries of the world have been dominant in the production, development and transfer of information technology, and their interest in the use of IT/S in the developing countries has often been more concerned with the profitability of their own business enterprises than with any broader goals concerning the development of the recipient countries. Therefore, developing countries are posed with the challenge of either becoming an integral part of the knowledge-based global culture or face the very real danger of finding themselves on the wrong side of the *digital divide*.

Furthermore, the new ICT products and applications are frequently designed in ignorance of developing countries' realities, particularly SSA, and fail to address the needs of the most disadvantaged sections of the community (UN, 1998). As pointed out by Arunachalam (2000: 231–252), the gulf in the levels of science and technology between the developed and the developing countries will tend to widen further with the rapid expansion of the Internet in the West and the speedy transition to electronic publishing, and this can lead to increased brain drain and dependence on foreign aid of a different kind (knowledge imperialism). Castells (1998) provides evidence and argues that the use of IT in the developing countries is deeply implicated in the processes of social exclusion and that the 'fourth world', defined as including the areas of social deprivation in the developing countries, is increasing in size. The risks for developing countries are greater simply because they are less developed and are faced with the prospect of having to integrate advanced technologies while their economic development and infrastructure is not yet mature. The workers in these countries are susceptible to greater vulnerability as a result.

Global e-learning networks

Networking has been defined as an interconnection of entities that communicate among each other (Starkey, 1999; http://www.inpim.org/Resources/leftlinks, accessed 21 April 2005). The concept of networking in learning has been given greater weight with the discovery and sophistication in telecommunication systems, which facilitate the interconnection of people, organizations, countries, and so on. Learning network is about people who share knowledge with each other. In this regard, networking and system share common attributes, except for the fact that system often has a very undefined but very long life span. E-learning networks are typical networks.

However, e-learning networks today seem to have different configurations, which we may need to define in order to understand the emerging collaboration trend in e-learning in Africa. For instance, although partnership and partnering are related, Otite (2002) has highlighted the major and significant difference. Otite argues that partnering usually implies a continuous and synergistic relationship between or among organizations, institutions or countries, with the aim of creating or developing an infrastructure or service, assistance, or cooperation for the benefit of one or both of the partners. Using the cooperation agreements between a rural community in Delta State, Nigeria and Shell Petroleum Development Company (SPDC) regarding funding of education in the community, Otite showed that SPDC has established recyclable machinery from which youths in the community can draw funds for their education. SPDC has also signed an agreement to employ persons from the pool of the products of this project. Otite therefore conceptualized that such a relationship could be considered as partnering instead of partnership. On the other hand, Beebe (2003) has defined partnership as including '… many forms of relationship like one time donation, sponsorship or cooperation for sharing of information, working together to more deliberate cooperation and collaboration by joint planning, implementation and evaluation' (Beebe, 2003: 3). Although Beebe's definition shows that partnership did not develop from educational activities, the definition has implications for educational development. However, partnership and partnering are aimed at providing opportunities for mutual benefits and results beyond what any individual

person or organization can realize alone. However, while partnership might imply a one-time assistance, partnering has implications for enduring cooperation for mutual benefit. Gomes-Casseres (1996) has provided an insight into alliance and argues that an alliance is characterized by cooperative arrangements, which are governed by a formal, but incomplete contract, which, when interconnected leads to the development of a network (Gulati, 1998).

These definitions are very crucial to understand to the extent that they illustrate us the reconfigurations that are going on in the human community to meet human educational needs. Specifically, they demonstrate to us that e-learning networks today encompass, at different times or simultaneously, interconnections of partnerships, partnering and alliances, or a combination of them as an illustration of the willingness of the various public and private sector individuals and organizations to cooperate with local and international counterparts for mutual educational benefits. An examination of the global learning network structures generally show that they encompass arrangements that fit the various forms of the collaboration we have examined.

Learning networks exist today between public and private sectors, among institutions, between institutions and governments, businesses, industries, and associations, conforming to any or either of the collaboration forms we have examined. Table 1 illustrates with examples the different formats of the global learning networks. These network structures encompass at varying degrees the different concepts we have defined namely, partnering, partnership and alliances. We can also identify some factors that seem to motivate them, and they include workforce development, financial benefits, sharing of expertise, political gains, and prestige.

How is Africa plugging into this new reconfiguration in e-learning networks, and harnessing the new interest of the private sector?

E-learning initiatives

New forms of local and international collaborations are starting to emerge among countries and private and public sector agencies in Africa for the purpose of educational development. Despite imperfect access to ICT, African higher education institutions are embracing new forms of learning networks to respond to the challenges posed by a rapidly changing and increasingly interdependent world (Beebe, 2003). These include

African Regional ePol-Net node
African Virtual University (AVU)
The Association for African Universities (AAU) (2005; www.aau.org, accessed 9 February 2005)
International Centre for Insect Physiology and Ecology (ICIPE)
University Twinning and Networking (UNITWIN) Programme of the UNESCO
Education/Business Partnership
Africa to America Network
Typical products of their efforts are (1) Kenya Education Network (KENET), (2) the knowledge and learning partnership (KELP; www.cbdd.wsu.edu/network/kelp, accessed 5 January 2005) in South Africa, and (3) the NetTel@Africa.
World Health Organization and Massachusetts Institute of Technology
The Health Inter-Network Access to Research Initiative (HINARI)
The Access to Global Online Research in Agriculture (AGORA) scheme
The International Network for the Availability of Scientific Publications (INASP)
Biological Innovation for Open Society (BIOS)

Policies and strategies

The different examples of African e-learning structures and initiatives involve mainly higher educational institutions, and less of local private sector participation. The private sector initiatives such as those of Cisco (Cisco Networking Academy Program; www.cisco.om/lobal/IN/learning/cnap.hml, accessed 19 February 2005) and NeTel@Africa(http://www.nettelafrica.org/14/, accessed 2 February 2005) originate mainly from the developed countries, and the collaborators are often higher educational institutions. Furthermore, except probably the collaboration between Kenya and the United States (in KENET), there is

Table 1. *Global learning networks format*

Remote satellite campus strategy Many universities are beginning to establish satellite campuses far away from their main campuses in order to extend their educational services. The campuses may be established in other countries or in the same country. For example, Monash University in Australia has established a campus in South Africa.
Twinning Twinning can be defined as agreements between institutions in different countries to offer joint academic programmes such that courses offered within the programme are designed to be the same at either institution. Often one of the institutions will offer only part of the programme 1 year or more) – then students must transfer to the other twin to complete their programme.
Consortia Increasingly, we are having cross-border consortia, where a group of institutions pool their resources together for the purpose of offering education services.
Spin-offs and outsourcing The concept of spin-off is developed from economics, and is concerned with the setting up of a subsidiary as a separate corporate entity through the issuance of shares in the subsidiary to shareholders of the parent company. Some spin-offs are created through leveraged buyouts by the subsidiary's present management. A practice that is often influenced by profit motive, academic institutions now offer for-profit educational services to both their immediate and other communities or country. 'Outsourcing' is used to describe a situation where someone who is not on the university payroll manages the whole or part of a specific university function.
Partnership between producers and providers of service There is an increasing partnership between producers of e-learning objects and providers of the e-learning services, and this sometimes results in academic services. For instance, Microsoft Inc. has entered into several partnerships with service providers such as Blackboard.
Partnership between producers and academic institutions Large corporations sometimes partner with academic institutions to offer credits, which are acceptable by the academic institutions. For instance, Cable and Wireless Virtual Academy has a partnership with Global Technology University in the United States to offer training in aspects of information technology.
ICT-producers offering academic credits An increasing trend in educational activities necessitated by the development in e-learning strategies is the offering of academic credits and training by ICT producers. A typical example is the Microsoft Certification Programme, which graduates of even renowned institutions and disciplinary areas are expected to obtain in order to be regarded as professionals.
Franchising In this arrangement, an institution in one country, say United States, approves another institution in another country, say in Nigeria, as a partner in offering certain educational programmes. This strategy follows the centre–periphery arrangement in which bigger and reputable institutions sell the services of a smaller institution by accrediting or approving the smaller institutions to offer some of the courses for which the big university is renown.

Source: Beebe (2003) and Thrift (2002).

also less presence of cooperation involving developed countries and their African counterparts. Also, African e-learning structures are mainly consortia involving mainly African institutions. There is however, the French-speaking countries' programme on occupational health called *Recherche et la Specialisation en Saute a Travail* (FORST, 2005; www.bib.fsagx.ac.be/tropicultura/pdf/v22nsp, accessed 5 April 2005) which links some selected African countries with McGill University in Canada and Lille University in France. The network partners developed content for a new post-graduate diploma progamme in ICT/Telecommunications Policy and Regulation while at the same time developing the software for an online learning management system. There is some evidence of twinning and franchising, the *Reseau Africain de Formation a Distance* (RESAFAD, 2005; www.resafad.org, accessed 12 February 2005) which offers teacher training programmes right from France to some French-speaking African countries such as Benin, Burkina Faso, Guinea, Mali and Togo, is a typical example.

Consortia among African institutions and developed countries institutions seem to favour the French-speaking Africa. We can also infer that higher educational institutions seem to be at the forefront of e-learning networks in Africa. Furthermore, African e-learning network strategies seem to favour consortia because consortia are usually not-for-profit, but often require pooling of resources together in order to achieve stated objectives. Spin-offs and outsourcing, partnership between producers of ICT objects and providers of educational services and academic institutions, are profit-oriented. For-profit transnational investment in partnership for e-learning in Africa does not seem to be attractive to the public and private sector institutions of the developed countries.

Opportunities

Online knowledge has distorted geography by shrinking distances and removing access barriers. Networking (subscribing to focused knowledge content), Specialized Forums, Interest Groups and e-Conferences offer extraordinary means for knowledge transfer and partnership. In a recent paper by UNECA, Hamel (2005) argues that online or e-knowledge is the best thing ever to happen to African nations. Indeed, Internet provides a bonanza of knowledge. It is the new revolutionary instrument for accessing knowledge. Knowledge portals and online knowledge searching and knowledge sharing have grown fast and have considerably broken the isolation of most SSA countries.

Scientists in SSA countries can now freely access hundreds of scientific and professional journals, papers, documents, encyclopedias, reports, presentations and lectures. This represents a considerable progress in comparison with the situation prevailing only a few years ago. Still today, the electronic and print versions of journals are not necessarily equivalent, and there are good reasons for making them different. However, according to Cetto (2001) most actors in the world of scholarly documentation (authors, editors, librarians and readers) seem to agree that the printed copy is still useful and should be kept for a long period of time (if not forever), while the electronic version has become essential and should be used also to develop new services for end-users.

Some global ICT developments around the world, which have the potentials for boosting e-learning networks in Africa. For instance, The United Nations established a Task Force on ICT to find new, creative ways of spreading the benefits of ICTS and avert the digital divide. The Task Force comprises of the private, public, civil society, the scientific community and leader of the developing and transition economies. Also, the World Summit on Information Society developed from the initiative of the Plenipotentiary Conference of the International Telecommunications Union (ITU), and endorsed by the UN General Assembly as an effective means of assisting the UN to achieve the Millenium Development Goals. By providing the platform where governments, UN agencies, private sectors and civil society come together to develop a common vision and understanding, the Summit promises to increase the partnership for e-learning. The Global Knowledge Partnership is

another project worth mentioning. It is a network of networks with diverse member base from all sectors in both developed and developing countries. Members share information, resources, and knowledge as tools of equitable sustainable development. Also, we could identify the International e-Development Resources Network (IeDRN), which has the identification of the need to assist developing countries and emerging economies to formulate e-strategies as one of its aims, as part of their goals towards developing the information society.

At the Africa regional level, New Partnership for African Development (NEPAD) (2005; http://www.nepad.org/2005/news, accessed 5 April 2005) has also set up an ICT Task Force, in addition to the Africa e-Commission, and the African Information Society Initiative (AISI), which has developed the National Information and Communication Infrastructure (NICI). There also exist sub-regional initiatives such as the West African Telecommunications Regulators Association (WATRA), which serves as a consultative and collaborative body and structure for the regulation of telecommunications delivery. In the same vein, the Monetary Community of Central Africa (CEMAC) has given serious consideration of ICT as a force in their regional integration programme. In Southern Africa, members of the Common Market for Eastern and South Africa (COMESA) have formed an Association of Regulation of Information and Communications of Eastern and Southern Africa (ARICEA) to coordinate, deliver, improve and harmonize the ICT sectors.

Challenges

Many African countries have grappled with the protracted political challenges. High-handed military regimes and other forms of undemocratic governments, high level of official corruption and mismanagement of public funds, among others, are common characteristics of most African states. In addition to issues related to security of investment and continuity of initiatives, the ability of individuals to buy the educational services of developed countries' universities might be limited.

There are many strategic challenges and serious concern that electronic resources are inaccessible to SSA countries as they simply do not have the technological infrastructure to receive and distribute them effectively. Key issues at the higher institutional level include regulatory challenges of the telecommunications and IT policies, human resource development factors, the question of quality assurance, among others.

In a networked world, the opportunity cost and risk for a developing country lacking sophisticated IT capabilities and means of effective interaction with the global economy could be substantial, with growth and development being seriously affected (Weerawarana and Weeratunga, 2004). Thus, the decisions governments make relating to IT strategy and policies broadly, and in particular to procurement, the setting and adoption of standards, investment in technology, and training and skill development can have grave consequences for the future well being of their people.

Conclusion

As the world shrinks and globalization becomes an increasingly important determinant of the economic, social and political conditions in countries and regions around the world, simple pragmatism would imply a need for greater cooperation on a global scale. The penetration of ICTs into the technoscientific world, including groupware and telephony, is accompanied by the development of skills among researchers that makes working across geographical distances and timezones increasingly effective.

E-learning networks could provide alternative strategies for cost sharing and for leveraging access to educational services. Kinyanjui (1998; www.col.org/speeches/edi.africa98.htm, accessed 5 March 2005) has suggested that more meaningful and productive collaboration is required between developed and developing countries if the expectations of Africa regarding increasing access to education through e-learning and other forms of distance education strategies is to be achieved.

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