

Pipes without Water – And Where Are the Pipes? Information and Communication Technologies in Africa

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No doubt about it, the spread of the Internet is an unprecedented success story in the history of communications. It has gained acceptance much faster than any other electronic medium before it. Radio needed 38 years to reach more than 50 million users, television 23, but the Internet only 5. While so far it has made its greatest strides in the rich countries of the North, it is often punted as *the* communication solution of the future in developing countries as well.

And that future has already begun. Doctors in Africa communicate with their colleagues and specialists around the globe, sending patient information and digital images for diagnosis when they do not have the equipment to come up with their own solutions. High school learners and university students are not bound by the confines of their under-resourced campuses and libraries; they meet in cyberspace to work on common research projects. Agricultural officers in the field can upload or have immediate access to vital data on the spot. Only with the help of the World Wide Web is it possible to get information out of and into countries where governments are closing down democratic space by banning independent media: Zimbabwe and the hugely successful online daily *ZimOnline* – operating from South Africa – is a case in point.

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The Internet with all its components and its various uses can indeed be a powerful tool, especially in poor countries: not just for the individual user, but more generally to promote development, good governance and democracy. That is why many in the business of development cooperation, not least media experts, have become fervent proponents of information and communication technologies as the key to solving most of the overwhelming problems faced by the poor majority in the world. They argue that only a rapid extension of access to information and com-

munication technologies (ICT) – Internet in particular – will provide citizens in developing countries with the information they need to successfully tackle their social, economic and political challenges and to participate in democratic decision-making. Every effort should be made to overcome the »digital divide,« and media development specifically should focus on the »new« media rather than the »old« – print, radio and television.

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This change of focus in media development circles (mainly in the North) towards the »sexier,« younger media sister is gaining momentum in the run-up to the United Nations' World Summit on the Information Society. In the process, some seem to be getting their priorities wrong, however. A few sobering facts should be kept in mind. It was none other than the UN's Economic Commission for Africa which warned as early as 1999 against ICT as a »cure-all« tool: »Africa has seen hundreds of information technology projects that are synonymous with pipes without water« (Raj 2000). In some cases, one may add, there are not even any pipes, an aspect we will touch upon a little later.

The Digital Divide – Some Hard Facts

Low-income countries are home to nearly 60 percent of the world's people but just under 5 percent of the globe's Internet users (ICT Policy Handbook). In 2004, Internet penetration in Africa was 1.4 percent (12,937,100 users out of a total population of 893,197,200), with the island states Réunion (19.3 percent), Seychelles (14.1 percent) and Mauritius (11.9 percent) leading the pack, followed by South Africa with 7.4 percent, and the Central African Republic, Democratic Republic of Congo, Ethiopia (0.1 percent each) and Liberia (0.04 percent) at the bottom. Europe, by comparison, has a rate of 31.6 percent, with Sweden coming in first at 74.6 percent (www.internetworldstats.com, updated December 2004). If the growth rate in Africa of 186.6 percent over the last four years continues, penetration will have reached 4.2 percent by 2008.

There are a number of reasons for this painfully slow progress. Africans are amongst the poorest people on earth and are spread out over vast areas; many live in villages with hardly any connection to the country's infrastructure – roads, water, sanitation, power or telephone lines. And even if available, they would not be able to afford access to whatever may be on offer, least of all to the »wonder tool.« As in other parts of the world, the problem is one of both absolute and relative costs. In Australia, for example, a user pays 1.1 percent of average monthly income for Internet access, while in neighboring Papua New Guinea the same service costs eight times the average monthly income.

The wealth divide between (potential) users is not the only reason for the digital divide. Access to the Internet depends not just on the availability of telephone lines (basic access) but, to an even larger extent, on their quality. For good quality Internet services huge investment is needed to allow for the inclusion of broadband technologies and the introduction of Integrated Services Digital Network (ISDN) lines. A typical Internet user needs 18 times more bandwidth than a typical telephone user, and the needs of Internet users are likely to increase with websites offering broadcasting and multimedia services.

Looking at the availability of capacity internationally, the 400,000 citizens of Luxembourg at present have access to more international Internet bandwidth than the whole of Africa. Growth in fixed lines infrastructure in Africa is slow and in some cases almost coming to a standstill, giving way to mobile telephones, which are often the more cost effective option but whose Internet connectivity is still being developed. The introduction of ISDN is proceeding at an even slower pace. All these factors increase the real costs of Internet usage in poor countries: In the United States access to a 512 Kbps bandwidth is around 50 US-Dollar per month – in Sierra Leone the same quality of service would cost a user 4,700 US-Dollar (ICT 2004)!

The laws of the market apply: the larger the number of customers, the fiercer the competition and the greater the chance of lower prices. About a dozen international companies – mostly the big telecom players – currently dominate the market for traffic between countries (the Internet backbone providers). That traffic is heavy on certain routes, such as the one across the North Atlantic, and diminishes to a trickle (with little room for competition, therefore) in Africa. The fact that these international companies have more than 90 percent of their hubs in North America makes the situation even worse: »Developing countries wishing

to connect to the global internet backbone must pay the full cost of the international leased line to the country providing the hub. (...) On the internet, the net cash flow is from the developing South to the developed North« (Yoshio Utsumi, Secretary-General of the International Telecommunications Union, quoted in ICT 2004). This subsidy to the North is estimated at between 250 and 500 million US-Dollar per year.

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There are no quick-fix solutions. Even the strongest political will to increase access to the Internet rapidly cannot bypass some hard facts. Pre-conditions for Internet use are the availability – and reliable supply – of electricity, telephones and computers. Nigeria and Uganda, for example, have an electricity consumption of 154 and 66 kilowatt-hours per capita; for the whole of Sub Saharan Africa (with South Africa making up the lion's share) the figure is 495 – for Germany it is 7,207 (UNDP 2004). In the whole of Sub-Saharan Africa 77 percent of the population still need to be provided with access to electricity, at an estimated cost of 270 billion US-Dollar (www.worldenergyoutlook.org). In Nigeria and Uganda there are five and two main telephone lines, respectively, per 1,000 people, in Sub Saharan Africa 15 – and in Germany 651 (UNDP 2004).

There are Technical Solutions ...

A number of models are on offer to extend Internet access despite all these discouraging facts and figures. To overcome the high costs of international connections even for national traffic (in most African countries an e-mail across town makes a long journey to North America or Europe first before arriving at its destination), local internet exchange points (IXPs) are suggested that allow a country to route its internal Internet traffic at national level. So far only six countries in Africa have such IXPs: South Africa, Zimbabwe, Nigeria, Mozambique, Egypt and the Democratic Republic of Congo. Another suggestion is to introduce »free services«: the Internet service provider (ISP) and the telephone company split the revenue from calls made to access the Internet between them.

This allows the ISP to waive the usual subscription fee, while the large amount of extra traffic will benefit the telephone company – provided, of course, that there is sizeable extra traffic. Given the thin spread of electricity and telephone lines, as well as computers, on the continent, this is by no means certain.

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The most popular approach is the establishment of telecenters following the success of Internet cafés in almost all African cities. In South Africa, for example, there are now 62 such telecenters, mostly in rural areas, each equipped with four computers with phone lines, a printer, a copier and a TV set, at a cost of 30,000 US-Dollar per center. Similar centers in less developed countries elsewhere on the continent come at a much higher price of up to 250,000 US-Dollar. Most of them are supported by foreign donors and unlikely to become economically sustainable. There is also a need for ongoing extensive managerial and technical training if the ambitious goals of such multi-purpose centers are to be achieved.

One technical solution to infrastructural access problems might be just around the corner: the Wireless Internet using wireless fidelity (WiFi) applications. WiFi creates a high-bandwidth network using certain radio frequency transmissions that cover short distances. Roof-mounted terminals would connect cells a few kilometers apart and provide wireless access to ICT. Proponents of this technology argue that it is cheap to implement, largely because it does not require traditional wire infrastructure, and can be used to extend the reach of telecommunications and »backbone« Internet connectivity at low cost. The idea seems brilliant and promising – given the success of cellphone networks (a basically similar technology) even in Africa, with 39 subscribers per 1,000 people (Germany: 727). In fact, progress is happening at a snail's pace. There are only a few projects on the continent, most of them still at the planning stage. The reason leads us back to the realities of a market-driven economy: cellphone networks all over the world, developing countries included, have been created on a commercial basis and are run for profit. WiFi – at this stage – does not offer profit potential, at least not outside urban areas.

... but Economic and Socio-Cultural Obstacles Abound

It is obviously extremely difficult to lay all the »pipes« needed for the delivery of electronic messages. And what about the users? How many – apart from the professionals mentioned at the beginning – are able (and willing) to use the facility, to »open the taps,« as it were? Children in rich countries grow up in a computerized environment, with their Gameboys, iPods and computers at home and at school. Those in poor countries will be lucky to find paper and pencils in their schools, let alone in their shacks. For the vast majority even a book (not a notebook) of their own to study at leisure would represent a quantum leap forward. A lot of ground – not just technically speaking – still needs to be covered in Africa and elsewhere in the developing world before the Internet can become a tool for what some politicians like to refer to as »the masses.« The clear priorities for most people at the moment are housing, security and basic education.

Finally, what about the »water,« the content of the Internet? Although there are over 6,000 different languages in the world and only about 470 million people speak English (as a first language), 90 percent of information on the web is stored in this language. There are efforts to customize search engines to other languages. Google, for example, recently introduced services in Afrikaans, Sesotho, isiZulu and Xhosa in South Africa that are offered on a strap line. However, after entering a search request in Xhosa, users will see exactly the same content as they did before – overwhelmingly English documents. Such »hegemony« not only inhibits access for most people in developing countries. It also contributes further to the globalization of the English language and Anglo-Saxon culture. Critics warn against what they call a second conquest of the Third World rather than the exchange of cultural values that was hoped for. They describe the Internet as an »electronic Trojan Horse.« And it is no gift horse either: increasingly substantial documents available on the net are not free of charge any more – these days, even the UN cashes in if you want to access its statistical material. No doubt the South could, would and will be able to contribute more quantity and quality to the worldwide electronic library. But will the North bother to take note when their poor cousins participate in the global dialogue?

Interactivity and Decision-Making: The Internet in Comparison

This leads us to the other celebrated advantage of the Internet: its interactivity. There is talk of electronic democracy, of e-governance and net-conferences – all promoting the participation of the people in governing themselves. Yes, interactivity does happen in myriads of chat rooms, you can attend countless electronic workshops every day, computers are used for voting (and the control of electoral procedures), lobbyists bombard politicians with e-mailed arguments. But does this really mean that people are taking an active part in decision-making processes? Not quite, and not even in the richest countries.

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Poor regions of the globe, such as Africa, have totally different concerns and priorities when they talk about empowering people. According to the UNDP's Human Development Report 2004, 31 out of the 36 least developed countries in the areas of health, water and nutrition, and leading in terms of global health risks such as AIDS, are situated in Africa (half of Sub Saharan Africa has no clean water, a third of the population is undernourished). Life expectancy at birth in Sub Saharan Africa stands at 46.1 years, in OECD countries at 77.2. You cannot administer vaccines via e-mail or provide clean water through the web.

The same, of course, is true for the traditional media such as radio. But they do make it possible to inform large numbers of people even in remote villages and in their own language about places and dates for a vaccination service in their area or to warn against the consumption of unboiled water. Radio – if properly used – can be a number of things. It is a »personal« communication medium fulfilling the function of a community telephone. It enables marginalized communities to make their voice heard and to participate in the democratic process: having a say in decisions that shape their lives will help to improve their living standards. It is also a school, the community's first point of contact with the global knowledge infrastructure. The plain fact is that people like and trust the

good old wireless: a study on two villages in Uganda with telecenters showed that Internet use among villagers was below 5 compared to 100 percent for radio (ICT 2004).

Africa-wide, out of 1,000 citizens at least 187 have a radio set. In Kenya, the number is 221, in South Africa 338, in Malawi 499, in Tanzania 406. Television is rapidly gaining ground with 152 sets per 1,000 people in South Africa and 113 in Zambia; the African average is 45. Radio in particular is also comparatively cheap. For example, a radio station in Mali broadcasts to some 100,000 people a year at a cost of 40 cents a listener (ICT 2004).

The vast majority of people in Africa (percentages vary between 80 and 99 percent) rely on information distributed by radio and television stations. Unfortunately, most of these services, especially those with nationwide coverage, are still state controlled. When the various liberation movements gained independence for their territories and moved into government they inherited a broadcasting system which had been controlled by the colonial masters and used as an effective tool to propagate their policies and keep subjects in their place. As it turned out, this was gratefully adopted as a welcome legacy by most of the new rulers. With slight variations in intensity and bluntness, listeners and viewers are still being fed an unbalanced diet of mostly government propaganda on state radio and television. If we are serious about promoting democracy, why not start with the most effective disseminator of information: the national state broadcaster?

Truly public broadcasters – made for the public, financed by the public and controlled by the public, independent from government, independently regulated and run in the interest of the people, not of the authorities – could play an essential role, especially in developing societies, by offering a common and open forum for all.

This broad appeal of public broadcasting as a credible, democratic and empowering medium is the reason why state broadcasters in Africa are »on the move«. There is now an official African consensus for »state controlled broadcasters to be transformed into public broadcasters (...) governed by a board which is protected against interference, particularly of a political or economic nature.« This is the demand made by the African Commission on Human and Peoples' Rights in its 2002 Declaration of Principles on Freedom of Expression in Africa. And the Commission is not a non-entity – it is the authoritative organ of the African Union (AU) mandated to interpret the African Charter on Human and Peoples'

Rights which is binding for all member states. As things stand, a nationwide information provider and discussion forum, independent of government and commercial interests, has much more realistic potential for promoting democracy than any telecenter or Internet connectivity.

In addition to the national broadcasters, commercial stations as well as local and community radio services are mushrooming in Africa. New technologies have made such services much more viable than before: an adequate on-air studio costs some Euro 12,000 for analogue or Euro 14,000 for digital equipment (which is technically more advanced but easier to operate); transmitters cost up to Euro 8,000, depending on capacity and reach. Successful community radio stations are more than providers of information and entertainment. They are public fora, centers for communal activities and motors for communal development. They make it possible for all sectors and organizations in the community to get their information, advice, good news, problems, queries and gripes across. They reach all income groups and speak all languages used in their coverage area. They organize regular studio and phone-in discussions on all sorts of subjects of concern to the community. They help look for a missing child or follow up on complaints about the police, service in shops or conditions at schools. They are democracies at work – controlled by community representatives and run mainly by volunteers from the community.

For their part, quite a number of commercial stations in Africa have spotted the gap left by the state broadcaster and offer not just the usual music and entertainment fare but also extensive coverage of current affairs, talk shows (phone-ins) and studio discussions on topical issues, and comprehensive reporting on political parties campaigning for elections. The less attention a national/state broadcaster pays to discharging its public duties, the greater the chance for private operators to offer an attractive and balanced program that appeals to large audiences (even though their coverage is usually restricted to the more densely populated regions). In countries where there is no political will to transform the state into a public broadcaster, commercial stations often present a more credible alternative.

Making Democracy Work – But Let’s Get the Priorities Right

All in all, then, things are indeed on the move – and in the right direction – as far as the media and communication are concerned. Civil society groups and media activists in many countries are busy lobbying for more democratic space and working towards the opening up of the airwaves to many different players and transforming the state broadcasters into truly public broadcasters. And their lobbying power is considerable, with broad civil society participation and informed input from many sources.

Their advocacy campaigns were instrumental in preparing the way for the 2002 Declaration of Principles on Freedom of Expression in Africa which expressly demands that states »encourage a diverse, independent private broadcasting sector« – both commercial and community. In turn, the Declaration now helps to put added pressure on individual governments that are dragging their feet and trying to hold on to their powers over the airwaves.

All these positive developments deserve the backing of countries with more wealth and experience in this field. Existing advocacy groups combined with money and expertise from the North can make progress. In Zambia, for example, a campaign over a number of years finally led to the adoption of legislation that provides for an independent broadcasting regulator and a public broadcaster. In Kenya, media activists were able to have an undemocratic broadcasting bill drafted by the Minister of Information withdrawn, and they are presently busy writing their own act. In Botswana, the regulator – through a consultative process and with extensive civil society participation – developed a broadcasting policy which aims to create a truly diverse broadcasting landscape.

What is needed are enabling policies and laws like these in all 53 African countries, not just here and there, as at present. Of course, this applies not to Africa alone. Similar processes are required also in other parts of the world: in Asia, in the Middle East, in Central and Eastern Europe. Obviously, putting the broadcasting sector on a firm legal footing is only the first step: the establishment of an independent regulator, the process of transforming state into public broadcasters, the setting up of community radio, the creation of an enabling economic environment for commercial media enterprises will require stamina and continuing dedication. And, as was demonstrated most successfully in South Africa, for example, it makes a lot of sense to have a two-pronged approach. Many community radio initiatives in South Africa did not just push and wait for legislation

to come into force. They got themselves ready to go in the meantime and started broadcasting with a bang as soon as it became possible (in 1994), all over the country. The same could be done in countries still under authoritarian rule. In Zimbabwe, for example, there are quite a number of groups eager to set up local radio stations, be they community or commercial, and they are only waiting for the day to go on air. The problem is that many members are full of enthusiasm but lack basic skills to run such stations. Why shouldn't they be coached by community radio stations in neighboring South Africa – on broadcasting, technical and managerial skills?

This is just one small practical example of what needs to be done. As usual, it is a matter of priorities. If all the attention is given to the sexy new area of ICT development, little time, energy and resources will be left to invest in making the classical media work for the people. No telecenter will ever be able to reach as many, as easily as radio can. If the development of radio (and TV) stagnates and Internet access increases – as slowly as seems likely under the circumstances outlined earlier – the gap between those with knowledge and information and those without will grow. The question then is whether the laying of a huge new network of »pipes« should be the focus over the next few years, or whether there are not more immediate gains to be made by filling the existing pipes with water that will help to grow the seeds of democracy.

This is not to say that the Internet should wait. It will and should be used as one effective means of communicating and getting access to information. It is a useful tool and should be treated as such – not as a fashionable gimmick, let alone a magic wand.

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