Chapter 1

Radio and the Internet:
Mixing media to bridge the divide

Bruce Girard

At the beginning of the last century, on December 12, 1901, Guglielmo Marconi, demonstrated the communication potential of radio technology, transmitting three dots, Morse code for the letter "S", from Cornwall, England to Newfoundland in what is now Canada. Marconi's 1901 transmission is worth noting here for two reasons.

First, the innovations that accompanied this early radio transmission were the same ones that enabled modern broadcast radio. Technology advanced at the pace we grew accustomed to in the 20th century and only five years after Marconi's historic transatlantic broadcast, radio operators on ships in the Atlantic were surprised to hear a human voice emitting from the Marconi-built equipment instead of the dots and dashes of Morse code. Three years after that, the first regularly broadcasting radio station was transmitting news and recorded music programs every Wednesday night to a handful of pre-Silicon Valley residents of San José, California who had bought radio receivers before there were stations to listen to.

Second, the wireless communication afforded by Marconi's experiment was more than just a technological advance. It was also an important milestone for the rapid globalisation that was one of the most significant phenomena of the last century, and of the large-scale social and economic consequences that accompanied it. By today's standards, sending the letter *S* from one side of the Atlantic to the other is a modest achievement, but Marconi's transmission was the first real-time, speed-of-light, global communication. For those in the centres of global economic activity, it was a harbinger of the information society. For those on the periphery, it was the analogue precursor of the *digital divide*.

This chapter will first examine characteristics of the two information and communication technologies that feature in this book – radio and the Internet. We will look at the imbalanced global expansion of the Internet and some of the limitations that this imposes when applying North American or European models for its use in the less-industrialised regions, especially in rural areas. We will then turn to some of the characteristics that have enabled radio's success in the same regions.

The primary argument of this chapter, and indeed of the collection of chapters in the book, is that the combination of the Internet and broadcast radio offers a new and potent range of possibilities for development communication projects. The second section of the chapter looks at some of these projects, grouping them into three broad and occasionally overlapping categories:

- Projects which create or support networks of broadcasters;
- Projects in which the radio station serves as a gateway or community intermediary, providing mediated but effective and meaningful access to the *knowledge and information potential* of the Internet;
- Projects which use the radio/Internet combination to facilitate communication with migrant communities, providing mediated but effective access to the *communication potential* of the Internet.

Finally, there are some preliminary conclusions and suggestions for the way forward.

Internet for Development

A century after Marconi's transmission, the so-called *digital divide* occupies an important place on the agenda of governments, international agencies, and civil society organisations around the world. Over the past few years there have been countless seminars, studies and statements about it and various related issues such as *digital opportunities* and *Internet for development*. Governments have adopted national IT policies and liberalised the telecommunications sector to try to attract investment. Hundreds of new NGOs have sprung up in the last decade, first to affordably extend the network to civil society sectors in both industrialised and less-industrialised countries, and later to promote effective use of it. On the intergovernmental level many UN agencies, the G7 (later the G8) group of industrialised countries, the World Bank and several regional bodies have put ICTs and development high on their agenda. The World Summit on the Information Society, hosted by the International Telecommunications Union on behalf of the United Nations, is the latest and biggest international effort to focus international attention on the issue. Not surprisingly, the Internet has provided the most active forum for discussion of it – typing "digital divide" in Google's search engine returns about 459,000 references.[1]

The debates around the digital divide and Internet for development have focused uncovering new areas of global inequality and imagining new opportunities for development. However, with an enthusiasm for the new, these often overlook lessons learned in earlier efforts to understand and change other social, economic and quality of life divides that separate rich countries from poor ones. One of the most important of these is that *the reason people in poor countries do not have wide access to the Internet is because they are poor – the same reason they have inadequate water, education, healthcare, electricity, and transport*. And, while investment in the Internet could help them improve their lives, so could investment in water, education and healthcare.

A second similarity between the Internet and development issues such as education and healthcare is that local participation is essential if projects are going to address local problems or be attuned to local capacities. As Alfonso Gumucio points out in his contribution to this book (chapter 2), the history of development aid is strewn with the carcasses of "white elephants", massive projects that failed because they did not adequately consult with local communities. Telecommunications projects are not immune to the white elephant syndrome. We have all heard stories of communities unable to tap into the telecom wires hanging over their heads because of some minor regulatory or technical oversight, and of hugely expensive telecentres that fall into disuse because of a lack of maintenance skills or that are inaccessible to women because they fail to adopt gender sensitive training or management policies.

In the past decade the international community has expended tremendous effort and expense in telecom development. Major initiatives have been taken to encourage the privatisation of State telephone monopolies, to invite foreign direct investment in the sector and to introduce competition. The results have been impressive in certain areas, notably prepaid mobile telephony, which has experienced rapid take-up wherever it has become available – primarily in urban centres. There has been virtually no progress in making the Internet available in the least developed countries, especially in the rural areas.

While the numbers vary according to who is counting, a quick look at data shows how little progress has been made in extending the Internet to less-industrialised world. According to NUA, an Irish company that has been tracking Internet use surveys since 1995, there are 606 million people online in the world – about 10 percent of the world's population.

---

[1] In contrast, "social divide" turns up 3,900 pages and "economic inequality" 33,000 (February 2003).

Of these, 62 percent are in North America or Western Europe, home to ten percent of the world's population. The Asia/Pacific region accounts for almost 31 percent,[2] almost two thirds of them mostly concentrated in a few countries. Barely five percent are in Latin America. Sub-Saharan Africa, with roughly the same population as North America and Europe combined, has about one percent of the world's Internet users.[3] Sixty percent of US adults have Internet access, while in Africa, around one percent of the population is online – half of them in South Africa and *virtually none in rural areas*. And let us not forget that one third of the world's population has no access to electricity, billions have never made a telephone call, and there are nearly twice as many illiterate adults (98 percent of them in less-industrialised countries) than there are people online. Far from making progress in efforts to bridge the digital divide, the trends show growing inequality between the *info-rich* and the *info-poor*.

If the only way of harnessing the Internet's development potential is to bridge the *digital divide* by providing rural residents of less-industrialised countries with whatever level of service is enjoyed in the developed world, then we should not expect to succeed in our lifetimes. Moreover, even if we were to succeed, it would not solve the problem. Connectivity is the tip of the iceberg and below it lie many complex factors that impede the Internet's take-up by the majority of the world's population. Among them are:

- Illiteracy – UNESCO estimates that there are one billion illiterate adults in the world, approximately 25 percent of the total adult population. Most web content, especially development-oriented content, is written;
- Language – If you can read, can you read English? While there are more than 6,000 languages in the world, the Internet is dominated by English, with another dozen or so having significant presence. At least 20 percent of the world's population speaks languages which are almost entirely excluded from the web.[4]
- Content – You can read English, but can you find local, relevant or contextualised content?

While technology is important, escaping from poverty requires knowledge, and knowledge does not come from technology but from experience and **relevant and meaningful content**, digital or not. Content that explains useful agricultural techniques or the workings of local markets can be transformed into knowledge and contribute to increased production and better prices. Content about locally available traditional medicine or about nutrition can lead to longer and better lives. Content about rights, responsibilities and options can be both a prerequisite and a catalyst for democracy.

It is also becoming clear that the distribution systems for knowledge are most effective when building on the local information systems currently in use. These local systems are not made of wire or glass fibre, but they are human communication systems. This means that in addition to infrastructure, successful uses of the Internet will incorporate what Richard Heeks refers to as *community intermediaries*, institutions and individuals that use the Internet

---

[2] 70 percent of these are concentrated in three countries – Japan with 56 million users, China with 50 million and South Korea with 26 million.

[3] NUA Internet Surveys, September 2002 <www.nua.ie/surveys/how_many_online/>. Estimates of the number of people with access to the Internet vary widely depending on methodology and definitions used. NUA's figures, based on a compilation of many individual surveys, attempt to measure the number of people who accessed the Internet at least once in the previous three months, regardless of whether they have their own computer or Internet account. NUA's methodology is described at <www.nua.ie/surveys/how_many_online/methodology.html>.

[4] According to a study published by VilaWeb.com in 2000, based on Data from AllTheWeb, English is the most common language, with 68.4 percent of web pages, followed by Japanese, German and Chinese. French is in fifth place with 3 percent and Spanish is sixth with 2.5 percent <cyberatlas.internet.com/big_picture/demographics/article/0,1323,5901_408521,00.html>

and serve as a bridge between it and the community members. Community intermediaries come from the community itself. They can be midwives, teachers, agricultural extension workers, experienced elders or others with a formal or informal role in the local information system. The characteristics that make a good community intermediary include "proximity, trust and knowledge (including the ability to combine 'techknowledge' about ICT with 'context knowledge' about the environment in which it is used)".[5]

Thus, while the Internet is one route for accessing knowledge, direct access to its infrastructure is neither the only way nor, in most cases, the best way to use it for development. As community intermediaries, local radio broadcasters have shown strength in the past and, with the right strategies and policies, they can play an essential role in the future.

Radio

More than ninety years after the world's first station was founded, radio is still the most pervasive, accessible, affordable, and flexible mass medium available. In rural areas, it is often the *only* mass medium available.

Low production and distribution costs have made it possible for radio to interpret the world from local perspectives, and to respond to local needs for information. More than any other mass communication medium, radio speaks in the language and with the accent of its community. Its programming reflects local interests and it can make important contributions to both the heritage and the development of the cultures, economies and communities that surround it.

More than any other medium, radio is local. In Latin America, for example, while most radio is produced locally or nationally, only 30 percent of television programming comes from the region; with 62 percent produced in the United States.[6] Quechua, a language spoken by some 10 million people in Bolivia, Ecuador and Peru, is all but absent from the region's television screens, but in Peru alone an estimated 180 radio stations regularly offer programmes in the language. The same is true in Africa, where local radio stations produce their own programs and speak in the hundreds of languages of their communities.

Radio is also widely available. While there are only two telephone lines for every hundred people in Africa, there are twenty radio *receivers* per hundred – even in rural areas most households have access to a receiver. Radio *stations* are also common. Fifteen years ago there were only ten independent (non-State) radio stations in all of sub-Saharan Africa; now there are thousands, many of them located in small towns and serving rural communities. Rural residents, women, youth, ethnic and linguistic minorities and even children have benefited from the explosion of radio in Africa and can now see themselves reflected in the media for the first time. Latin America never had the same State domination of the radio, but it also experienced a boom of local and independent radio stations in the 1980s and '90s.

Long before the Internet popularised the notion of the convergence of media and telecommunications, local radio stations were fulfilling a role as a "community telephone" with several hours a day reserved for broadcasting personal messages, birth and death announcements, invitations to parties, ordering food and supplies from the store in the next village, calling for emergency medical assistance and even for receiving personal medical advice from the local doctor. Many radio stations were working in multimedia before that term was popular, too – often serving as a community hub, with communication activities including publishing, video production, and even operating cinemas.

---

[5] Richard Heeks, *Information and Communication Technologies, Poverty and Development*, 1999, Development Informatics: Working Papers, Institute for Development Policy and Management, University of Manchester <www.man.ac.uk/idpm/di_wp5.htm>.
[6] UNDP Human Development Report, 1999, p. 34.

In many rural areas radio is the only source of information about market prices for crops, and thus the only defence against speculators. It is used in agricultural extension programmes, is a vehicle for both formal and informal education, and plays an important role in the preservation of local language and culture.

While in some parts of the world we take radio for granted, seeing it as little more than an accessory for an automobile, in others it fulfils a variety of roles: it is the only mass medium that most people have access to; it is a "personal" communication medium fulfilling the function of a community telephone; and it is a school, the community's primary point of contact with the global knowledge infrastructure.

Radio has demonstrated tremendous potential to promote development. Relevant, interesting and interactive radio enables neglected communities to be heard and to participate in the democratic process. And simply having a say in decisions that shape their lives ultimately improves their living standards.

Next Generation Radio

Probably the four most important characteristics contributing to radio's success as a medium for development are: (1) its pervasiveness, (2) its local nature, (3) the fact that it is an oral medium, and (4) its ability to involve communities and individuals in an interactive social communication process.

While the first three are fairly straightforward, it is useful to clarify the concept of an *interactive social communication* in order to distinguish it from *interactivity*. The latter is usually applied to the Internet and refers to individual users' ability to interact with a website or directly with another individual or a company via email. Radio also offers this possibility, via the use of telephone call in programmes, open microphone shows, letters, etc. However, radio excels at stimulating *interactive social communication* within a community. A local issues programme, for example, informs listeners about a community problem and thus stimulates interactive communication among members of the community as they go about their daily lives (now unmediated by the radio), possibly leading to development of a common understanding of the problem and proposals for its resolution. As time goes on, these proposals can be fed back into the loop in the form of another radio programme, and further discussed, refined and acted on in the community.

The Internet is characterised by interactivity, and, technically, its potential in this area is far greater than radio's. It is also a store of useful knowledge and among its millions of pages there is a tremendous amount of information relevant to development issues. However, the barriers we have already looked at – access, literacy, languages, appropriate content – present overwhelming obstacles that will have to be overcome before most of the world's population will be able to surf the net to find solutions to their poverty.

Alternative models are being explored, including telecentres and cybercafés, mentoring projects, translation and text to speech software. Some of these are already making the Internet more accessible. Over the past few years a number of experiments blending independent local radio and the Internet are creating new models.[7] Similar experiments have also been undertaken in Africa, and donors are increasingly interested in the initiatives.

---

[7] Many of these experiments were presented and discussed at a pair of seminars supported by the Friedrich Ebert Foundation, one examining Asian experiences and the other focusing on Latin America and the Caribbean. See Converging Responsibility: Broadcasting and the Internet in Developing Countries, <www.comunica.org/kl/> and Mixed Media / Medios Enteros: Broadcasting and the Internet in Latin America and the Caribbean, <www.comunica.org/tampa/>.

In North America and Europe many radio stations offer their programming over the Internet, using "streaming" software such as RealAudio or Windows Media Player (including a growing number of Internet-only stations). Radio-Locator,[8] a website that lists radio stations on the Internet currently has links to more than 2,500 audio streams from stations world-wide. Many of these stations are merely extending their reach, using the Internet to make their programmes available to geographically distant listeners, but some are using the interactive capabilities of the Internet to provide value-added service to local listeners. A few examples of this are provided in Robert Ottenhoff's contribution about how public radio in the USA is using the Internet (chapter 5). While the value-added services described by Ottenhoff were designed for the USA, where many listeners have access to the Internet, they nevertheless provide ideas for innovative possibilities for using the Internet's interactivity to enhance radio's interactive social communication.

Development projects experimenting with radio and the Internet are emerging in very distinct environments and seeking to address very different sets of problems. In general these projects have taken the three main forms mentioned earlier in this chapter: projects to support radio networking and exchanges, gateway or community intermediary projects, and projects that link migrants to their home communities.

Networks

Radio networks for exchanging information and programming have been around almost as long as broadcast radio itself. In the United States, where commercial radio is the norm, CBS and NBC built national networks in the 1920s and 1930s. In countries where radio first emerged as a public or state service, it was a networked monopoly almost from the beginning. Later, when independent and local stations emerged (at very different times in different parts of the world) they too saw the advantages of networking information and programmes. Networks not only offer an economic advantage, since spreading the cost of programme production across several radio stations reduces the cost to each station, but they also permit a better and more complete service for listeners, incorporating, for example, national and international news and providing a distribution channel for third party programs. The problem was that, until very recently, the only infrastructure within the grasp of independent radio stations in less-industrialised countries was the postal system, slow and notoriously unreliable, especially outside major cities.

Despite the distribution problems, many networks did exist in less-developed countries, especially in Latin America, where independent alternative radio was invented more than fifty years ago. Initiated by Chasqui-Huasi in Chile and then taken over by the Asociación Latinoamericana de Educación Radiofónica (ALER – the Latin American Association for Radio Education), *Informativo Tercer Mundo* (ITM) was a weekly news programme distributed by mail on cassette tapes and based primarily on news from Inter Press Service, a global news service with a distinctly Southern perspective. Even though it was common for three to four weeks to pass between the time the news occurred and time the tape was finally aired, ITM was a fresh change to the normal international news carried by the stations, which usually consisted of reading news stories from newspapers bussed in from the capital (and often at least a few days old), or by retransmitting the news from the international short-wave services from Europe or the United States.

On a more global scale than ITM, the Developing Countries Farm Radio Network (DCFRN) has been operating a distribution network since 1979. In its earlier years DCFRN produced radio programmes and mailed the cassette tapes to stations in Africa, Asia and Latin America. Later the cassettes were replaced by scripts, which broadcasters could more easily adapt to suit local needs, languages and programme formats.

---

[8] <www.radio-locator.com>

Long before the Internet was widely available a few small radio projects were using computers and modems to network radio stations. As early as 1987 a project based in Central America was sending a weekly radio news bulletin from the Salvadorean guerrilla station, Radio Farabundo Marti, to campus and community stations in Canada using a 2400 bps modem connection over an international telephone line. Once the bulletin reached Canada it was redistributed to stations via fax and a pre-Internet commercial email system.

By the mid 1990s the Internet started to become more widely available and the Agencia Informativa Púlsar began serving Latin American stations out of Quito, Ecuador (see chapter 11). The first major initiative to link independent radio stations via the Internet, Púlsar began operating in 1996, sending a daily text-only "rip and read" news bulletin to forty-eight subscribers. Introduced at a time when Internet connectivity was still difficult in the region, donors, existing networks and associations, and even the agency's few subscribers were sceptical. By the time it ceased operations five years later it was offering a variety of services, including 15 to 20 news items every day and full audio for stations that had the capacity to use it, to more than 2,500 subscribers in fifty countries. Scaleability was one of the most important characteristics of the Púlsar experiment – stations with poor connectivity could receive the daily text bulletin by email, while those with better access and equipment could choose to receive audio clips or to download the full audio news bulletin from the website.

Internet news exchange projects also emerged on the national and global levels. Kantor Berita Radio 68H is an Indonesian radio news agency established in 1999, not long after the end of the authoritarian Suharto regime (see chapter 10). Suharto had banned independent news programs and obliged the country's thousands of radio stations to carry an official newscast. Suddenly able to broadcast news, radio stations were unprepared. The only network was the government's, as were the only trained radio journalists. The 68H news agency stepped in to support and broaden the country's fragile democracy. Like Púlsar, 68H also began modestly, with fourteen member stations exchanging several one-minute audio programmes each day via the Internet. However, Indonesia's Internet infrastructure is not up to the challenges of its geography, with 200 million people scattered across an archipelago of 17,000 islands and 68H now uses a low-cost satellite channel to distribute its programs from the capital, with the Internet primarily used for receiving programmes from member stations. By the time 68H celebrated its second anniversary, it was already Indonesia's preferred news source, reaching 20 million listeners all over the country.

Initiated in 2000 as a joint project of Panos (London) and One World, *InterWorld Radio* commissions journalists to file reports on economics, the environment, science and technology, human rights and social change and makes them available via email or on the web (see chapter 12). Its services include both daily summaries of news stories and regular features. InterWorld Radio's programs are intended to be equally suitable for radio stations in the North and South, although its claim to be a "global" service is a qualified one, since its services are only offered in English.

Technically, InterWorld Radio tries to provide something for everyone. If you have a bad Internet connection, you can get daily text summaries of its programs by email. If you have a highspeed connection, you can download broadcast quality versions in either MP3 or RealAudio format, and if you just want to listen online, lower quality *streaming* audio is available, also in either MP3 or RealAudio format. With digital technology, offering a variety of formats takes very little time and effort and helps ensure a wider distribution of the programmes.

Gateways

Making a streaming audio signal available on the Internet is a way of extending a radio station's reach; gateway projects do the reverse, using the radio to extend the reach of the

Internet. In the same way that a single cybercafé or telecentre with a few computers can be an efficient way of increasing the number of people connected, providing access for dozens of people with only a few computers, a radio station with thousands of listeners that makes active use of the Internet can address the problem of access to the Internet's wealth of information with a tactic of *digital multiplication,* multiplying the impact of its Internet connection.

The UNESCO-supported *Kothmale Internet Project* in Sri Lanka is considered from two different perspectives in this book (see chapters 6 and 7). Kothmale is one of the best-known examples of a radio station adopting the role of a gateway or community intermediary between its listeners and the Internet. Located within Kothmale Community Radio, a semi-autonomous radio station located in an agricultural region, the Internet Project has two main components: a community telecentre, with a dedicated line; and *Radio Browsing*, a daily two-hour radio programme in which broadcasters take the Internet to the community by surfing the web in search of answers to listener queries. Sifting through the Internet's terabytes of data, *Radio Browsing* finds information that is useful to the communities and then interprets it – making *useful* information *meaningful*. It plays a role that is part search-engine, part librarian, part journalist and part translator (English is the language of the Internet, but not of most Sri Lankans).

Kothmale's *Radio Browsing* model puts the technology on centre stage, raising its status from back office research tool to virtual studio guest. At times this can seem needlessly distracting – reading URLs on the air or listening to the sound of webpages downloading is not engaging radio. However the decision to make the technology feature almost as prominently as the content is related to one of the *Radio Browsing* model's primary objectives to promote the use of the Internet. In addition to listening about the Internet, listeners are also encouraged to visit the station to access it directly via the public access computers located there. While Kothmale is best-known for its model of blending the Internet with radio, preliminary evaluations indicate that it has been more successful at promoting Internet use. As one observer remarked, "the reality of the place is considerably more impressive than the hype!"

Throughout the less-industrialised world there are hundreds of lower profile examples of stations taking on a gateway function. Some of these do little more than download news from CNN and other international sites, but a growing number are discovering the potential of the Internet and actively searching for and repackaging information to match local development needs. In Latin America, for example, it is common for magazine-format programmes to receive questions from listeners, research them, and then provide advice on the air. Research resources are whatever is available – a fifteen year old encyclopaedia set, a local agricultural extension worker, a health clinic – now the Internet is replacing the outdated encyclopaedia and supplementing local expertise.

A Peruvian experiment is planning something similar in conditions where local radio stations do not have access to even a basic community library, much less the Internet or a telephone. The radio stations will be equipped with short-wave radio transceivers enabling them to communicate with the Intermediate Technology Development Group's (ITDG) office, located in the provincial capital many hours away. Using the transceivers they will relay questions from the community to ITDG, who will research them using whatever sources they have available, including not only the Internet but also indigenous expertise and experience available in the communities. Answers and advice will be sent back to the station and also included in a database which will be available on the web and distributed on CD ROM to radio stations and other information centres in the communities that are equipped with computers. In this way the database will be not only a living record of the questions and answers most sought out in the communities, but also a tool for collecting, ordering and sharing local knowledge.

Of course, while the possibilities are increasing, many problems will have to be overcome before radio will be able to realise its full potential as a gateway. In their contribution to this book Attias and Deflander (chapter 4) detail many of the barriers that must be overcome by broadcasters in West Africa attempting to incorporate the Internet into their work. Access to infrastructure, cost of equipment and use, language and lack of appropriate and meaningful content are among the familiar factors that complicate efforts to incorporate the Internet into programming, but there are others, many of them more complex and more deeply rooted in culture and society. These include social hierarchies, inflexible administrative structures of the radio stations themselves, and cultural differences that make it more difficult to use the Internet. For example, the icons on a webpage that make it *intuitive* to one user, may be a code that has to be broken by a another user with a different background and set of cultural symbols.

On the positive side, the barriers faced by a radio station are much easier to overcome than those by individual users simply because the reward is greater. While individual users might find it difficult to get training and impossible to have content produced to serve his/her particular needs, training, support and even customised content is more readily available to radio broadcasters. Attias and Deflander propose solutions that include national "flagship" stations with expertise and access to the Internet. These centres would repackage and redistribute content to other stations, using whatever means is available, including conventional means such as cassettes and CD ROMs distributed by mail. The Russian Rural Information Network, described by Nancy Bennett in Chapter 9 proposes another model for supporting and simplifying local broadcasters' work by centrally packaging information for further processing at the local level according to specific community needs.

Communication with migrants

While the above initiatives build on expanding the reach of the Internet through traditional and geographically defined communities, the configuration and location of communities is also changing, creating new needs and opportunities. Radio and the Internet are playing a role here, as well.

With an estimated 75 million short and medium term international migrant workers and their dependants in the world today, international migration is both a consequence and a driving force of globalisation. Most of these workers retain, or would like to retain close ties with families and communities in their countries of origin.[9] These ties, enhanced and supported by the use of ICTs, make a significant contribution to development in a number of important ways.

On the one hand, migration has an important economic impact. Twelve years ago migrant workers sent a total of $65 billion home – $20 billion more than the total amount of official development aid at the time. In many countries money sent home amounts to one of the largest single sources of foreign currency, often *the* largest.

Perhaps of even greater value than their financial contribution, migrant communities also contribute their knowledge and expertise to the development of their communities, often using the Internet. Quipunet[10] and the Lanka Academic Network[11] (Lacnet) are two Internet-

---

[9] Those who stay behind also want to communicate and one of the main reasons people in developing countries start using ICTs is to communicate with family members who have migrated. See, for example, the work of Ana Maria Fernandez Maldonado in which she argues that one the main factors behind the growth of Internet in Peru is the desire of residents to communicate with the more than one million Peruvians living in the United States.
<www.bk.tudelft.nl/users/fernande/internet/Barcelona.pdf>.
[10] <www.quipunet.org>
[11] <www.lacnet.org>

based projects that have sought to make the Diaspora's resources available to support educational and development projects in Peru and Sri Lanka respectively.

Radio stations often play a role linking migrant communities with their homes and cultures. Stations in the home country will broadcast news from migrant communities, even to the point of maintaining correspondents in important migration destinations. In some cases migrant communities secure a few hours a week on community or multi-lingual stations in their new host country and broadcast programmes with news and cultural content from "home" mixed with content related to the new environment. New information and communication technologies are expanding the possibilities.

More than a decade ago, predating the Internet's appearance in the country, emigrants from the Kayes region of Mali living in France maintained regular contact with Kayes Rural Radio as a way of getting news from home. When the station faced a sudden financial crisis brought on, in part, by the sudden loss of donor assistance from Italy, the support group quickly went to work printing leaflets and raising money to keep the station going. Working together with the station, the group also came up with a novel idea for making money – a fax machine was installed in the station and the residents in France were able to pay a fee and have their faxed messages read out over the radio station.[12] A similar experience is discussed in the chapter on emerging developments in radio message services in Mexico (chapter 13). Radio stations located in rural areas without telephone service have always provided a messaging service, dedicating up to several hours per day to broadcast personal messages to and from people who may live many hours or even days from each other. The addition of the Internet to this "airwave mail" service extends its reach and its usefulness for linking migrants and communities.

Webcasting is becoming increasingly common, with thousands of radio stations world-wide making some or all of their programming available over the Internet. While there are few webcast listeners in developing countries, an increasing number of stations are making their programmes available. *Radio Ondas Azuayas*[13] in Cuenca, Ecuador, a country that has seen 10 percent of its population leave in the past two years as a result of an economic crisis, directs its webcasts at Ecuadorians in the USA and Spain. In addition to informing them of local events, the station also maintains a voicemail box in the United States. Listeners to the webcasts can record messages which are then sent to the station as audio files via the Internet and broadcast over the air. In this way emigrants can not only listen to the station, but actually participate in programming.[14] Also Ecuador-based, *Callos y Guatitas* (chapter 14) uses radio stations in two countries, the Internet and a satellite to facilitate a weekly interactive programme linking Ecuadorian migrants in Spain with their home communities.

The way forward

Like the ship radio operators in 1906 who were surprised to hear a human voice over their Morse code equipment, rural inhabitants in some of the remotest parts of the world are now tapping into the digital world via their radios.

---

[12] See Pascal Berqué, "The Hard Lesson of Autonomy: Kayes Rural Radio," in Bruce Girard (ed) *A Passion for Radio*, Black Rose Books, Canada, 1992. An electronic edition of this book is online at <www.comunica.org/passion/>.

[13]

[14] There are a number of services that offer free or low-cost voice-mail numbers in European, North American and a few Asian countries. A person living in the USA dials a local phone number and records a voice-mail message which is automatically forwarded to the subscriber's (in this case a radio station) email account as a .wav file for broadcast.

The 21st century challenge is to strategize the best formulation for ensuring the benefits of the Internet reach the digital deserts, where affordable access to the technology is not available and where effective use faces a series of cultural, linguistic and content-related challenges. Knowledge for development research has highlighted the imperative of spreading access to information resources. Building and improving ICT infrastructure will be an important element of a strategy aimed at making information *available*, but a successful strategy must also focus on ensuring that information is *meaningful* within an existing knowledge infrastructure. Radio broadcasters throughout the world are becoming aware of the role they can play in this.

There are many lessons to be learned from the contributions to this book. It is clear, for example, that the blending of old and new communication and information technologies has the potential of making a valuable contribution to development and democracy. It is also clear that there is no single model and that like all development communication projects, there are basic principles that must be kept in mind.

Technology is not necessarily the barrier

As we will see in the examples highlighted in this book, access to new ICTs need not be understood to be *the* significant barrier to participating in an information society or even to using the Internet for development. There is no need to wait until access to the Internet is universal before capitalising on the development opportunities it offers.

We should not underestimate what can be done when limited technology is combined with determination and imagination (nor should we underestimate the levels of determination and imagination available). ICTs are adaptable and if basic tools and knowledge are available, people will find a way to make the technology serve their communication needs. Adaptability and decentralisation are the fundamental characteristics that have made radio so enduring and effective because they have allowed for different approaches to its use in terms of range, interactivity and content, enabling it to integrate so effectively with existing social communication networks and practices.

Rather than convenient one-size-fits-all type solutions, radio ICT projects should emphasise adaptability and decentralisation, choosing, for example, technological solutions that are scaleable – allowing users (both radio stations and listeners) to define and refine levels of sophistication and interactivity depending on communication needs, practices and the level of access that is available to them.

Technology is not a panacea

Technology can play an ambiguous role in the pursuit of goals such as pluralism, decentralisation and democratic development. The initiatives discussed in this book all aim at promoting these goals, but it is easy to identify uses for the technology that could efficiently deprive local communities of their autonomy and limit pluralism on the airwaves. In the United States, for example, the introduction of digital satellite technology that enabled relatively low-cost radio networks was accompanied by a frenzy of purchases that has seen thousands of independent stations absorbed by a handful of networks.[15] Formerly independent stations have replaced local programming with network programming in a move that has limited the diversity of the nation's radio. The same is happening in Argentina, Brazil, Peru and many other South American countries.

---

[15] One third of US radio stations changed hands between 1996 and 1999. In the more regulated UK market, the four biggest commercial radio groups owned only one third of the private stations but accounted for 70 percent of total revenues, with smaller groups and independent stations struggling to break even.

Fifteen years ago *rural radio* in Africa was not local. It was a model of State paternalism in which programs were produced by experts in the cities and beamed to "ignorant" peasants in the countryside on the State radio frequencies. This has changed and rural radio is now local and participatory. However, it will be sadly ironic if the introduction of network technologies results in the emergence of a new commercial paternalism. Similarly, while emerging models of community multimedia centres offer the promise of democratic development, it is a promise that can easily be corrupted if adequate policies and practices designed to keep them responsive to community needs are not in place.

Harnessing knowledge for democratic development

The injection of the Internet's digital DNA is already changing the nature of radio and will undoubtedly mean that the radio's next generation will be a new species, with a different sound and a different way of relating to its community. The projects discussed in this book offer some insight into what that might be like in the developing world, but they represent only the first few steps in the transformation of the two media. There are tremendous opportunities for broadcasters but in order to take advantage of them we will have to experiment and to develop visions that respond to the distinct needs and desires of our communities.

It has been said that the Internet is a window to the world – offering an view that encompasses a wealth of knowledge and information. Local radio is a mirror that reflects a community's own knowledge and experience back at it. The convergence of the two just might offer us the most effective avenue we have yet known to combine research and reflection in order to harness knowledge for democratic and sustainable development.

> > > – < < <

Bruce Girard is a researcher, writer and educator active in development communication and communication rights issues. He was the founder of the Agencia Informativa Púlsar and of Comunica, a network focusing on the use of new ICTs by independent media in the South. He has lectured on broadcasting, information and communication technologies, and communication rights in more than 25 countries. His other books are *A Passion for Radio,* an edited volume of stories from community radio around the world, and *Global Media Governance*. <www.comunica.org>