Radio, ICT Convergence and Knowledge Brokerage: Lessons from Sub-Saharan Africa

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Abstract This article examines the changing role of radio for development in sub-Saharan Africa as 'new' Information and Communication Technologies (ICTs) increasingly enter the information landscape. Grounded in the empirical findings of a research programme – Radio, Convergence and Development in Africa (RCDA) – it explores the potential for convergent communication technologies to improve knowledge transfer and knowledge sharing between development actors at all levels. By drawing on research carried out as part of the RCDA programme, this article raises questions about the ability for radio broadcasters to act as 'knowledge intermediaries' in this context – brokering and translating information about development issues between international non-governmental organisations (NGOs), local NGOs, grassroots advocacy groups and local beneficiaries. It draws attention to the barriers impeding their ability to fulfill this role by highlighting issues related to ICT convergence, capacity, funding and 'NGO-isation'.

1 Overview

The importance of communication to transfer knowledge between development actors is long acknowledged as a key component of development programmes (UNDP 2001). However, in recent years, the vogue for 'knowledge sharing' and the massive expansion of digital technologies in the global South has thrust Information and Communication Technologies (ICTs)[1] into the spotlight. While radio remains the dominant electronic medium of communication throughout sub-Saharan Africa (Myers 2008), the use of 'new' ICT innovations by development actors is transforming communication for development on the continent. Promoters of ICT for development programmes argue that the convergence of new digital technologies with radio will enhance the ability for ICTs to contribute to development outcomes by facilitating two-way flows of knowledge. However, sceptics argue that this is a functionalist view of technology (Thompson 2004), one that obscures the structural elements of development and underdevelopment, such as political economic influences, the digital divide and 'NGO-isation' (Alvarez *et al.* 1998).[2] By drawing on the findings of a recent research programme – Radio, Convergence and Development in Africa (RCDA)[3] – this article explores both the promises and the limitations of ICT convergence for development as it is happening 'on the ground' in countries throughout sub-Saharan Africa. It highlights, on the one hand, how ICT convergence is indeed reshaping the face of radio for development, creating new opportunities for broadcasters to act as 'knowledge intermediaries' – brokering and translating information about development issues, such as health, climate change and livelihoods, between international non-governmental organisations (NGOs), local NGOs, grassroots advocacy groups and local beneficiaries. On the other hand, it also draws attention to the contextual, technical and capacity-related factors that constrain the use of convergent technologies to facilitate knowledge sharing among development actors and to contribute to broader processes of social change in Africa.

To do so, we first introduce the subject of radio and ICT convergence, synthesising the opposing debates about the potential for convergent technologies to improve two-way flows of knowledge and information and promote participatory development processes. Second, we

discuss the RCDA programme and its findings in relation to these debates. We reveal new questions and insights about ICT convergence, both at the macro-institutional level and at the micro-level, where such questions are played out in the lived experiences and daily activities of local communities and development practitioners. We reveal the complex nature of convergence, whereby new ICTs are often enthusiastically embraced by NGOs, but are nonetheless subject to a host of difficulties, such as the digital divide and capacity, including financial, environmental and political constraints. A final section summarises some key implications arising from these findings with regard to the emerging relationship between ICTs, knowledge brokerage and development research.

2 Background

2.1 Perspectives on ICT4D[4]

The past ten years have seen a huge thrust in the promotion of ICTs for development, a trend that has led to many innovations in knowledge transfer and communication in development programmes (Tacchi 2006). A growing body of empirical evidence demonstrates that access to ICTs can facilitate a wide range of developmental goals in the fields of health, agriculture, climate change, conflict reconstruction and crisis recovery. Yet, as Heeks (2002) argues, despite an explosion of activity and scholarly writing on the topic, 'there remains an overemphasis on the technologies themselves, to the exclusion of other parameters' (p.1). Moreover, there is a striking contradiction between the potential for ICTs to address developmental challenges and the failure to harness them (Chapman and Slaymaker 2002). Technological advances are making ICTs ever more flexible, accessible and affordable for developing regions, with long-lasting batteries, and solar and wind power sources enabling the use of new technologies in remote areas without vast infrastructure. Yet well-established barriers related to cost, training, centralised infrastructure and capacity remain, often exacerbated by donor-led emphasis on 'one-size fits all applications to the digital divide' (*ibid.* p.vi). This contradiction underscores questions about the potential for radio and ICT convergence to enhance participatory development processes and knowledge sharing in sub-Saharan Africa. The notion that the current hype for ICT4D is rooted in unsubstantiated techno-optimism, where technology is increasingly proposed as a solution for complex development problems (Boyle 2002), underpins many of the critiques of ICT4D initiatives.

Part of the difficulty lies in the tendency to dissociate the technology from the development context, and to ignore the ways that new forms of communication are inextricably connected with older technologies and more traditional forms of communication that privilege face-to-face interactions. Critics of ICT4D programmes argue for an approach to ICTs that that looks at the blending of communication platforms and the convergence of old technologies with new ones. James (2004), for instance, calls for a 'paradigmatic shift' away from the idea that new digital technologies will replace other forms of communication, to an intermediary-based model that focuses on local intermediaries who blend technologies (new and traditional) to distribute information and share knowledge. Similarly, Girard (2003) argues that 'The blending of old and new communication and information technologies has the potential of making a valuable contribution to development and democracy' (p.11).

2.2 Radio and development in Africa

Despite the rise of new ICTs, radio broadcasting is the acknowledged leader in terms of mediated forms of communication in Africa. Community radio – i.e. radio produced by and for the community, independently of state or commercial interests – has a long tradition throughout sub-Saharan Africa, and is widely considered important as a tool for social change, participatory development and poverty reduction (Skuse 2005; Slater and Tacchi 2004). Low production and distribution costs coupled with widespread liberalisation of the airwaves in many sub-Saharan African countries have made radio the most affordable, pervasive and flexible mass medium available (Myers 2011). Furthermore, community-based radio has demonstrated a remarkable potential to facilitate development and social change agendas given that it speaks in the languages and dialects of its community and its programming reflects local interests and voices. Many people, especially in rural areas, continue to depend on the radio for diverse and everyday uses – from news of the latest innovations, to market prices, to advice on tackling agricultural, health and other developmental problems.

2.3 ICT convergence with radio

While radio continues to be the primary medium across most of the global South, communication technologies, such as satellite, internet platforms and mobile telephony are growing at an impressive pace (Myers 2008; Girard 2008). Major institutions, donors and development agencies have embraced these new technologies, promoting ICT4D programmes and streamlining ICTs across other development priority areas. There are several recent development initiatives promoting connectivity for rural radio stations, notably the Department for International Development (DFID)'s CATIA project (Catalysing Access to ICTs in Africa), the United Nations Educational, Scientific and Cultural Organisation (UNESCO)'s telecentre initiatives, the International Development Research Centre (IDRC)'s Acacia Initiative, and Radio Netherland's 'Informorac' project. Evidence of this enthusiasm is also seen at the World Bank, which established InfoDev, the Global Knowledge Partnership, World Links for Development, CommGap, the African Virtual University and a host of other initiatives (Pieterse 2010).

These new technologies, far from replacing radio in developing regions, are presenting new opportunities for broadcasters and listeners, and are offering a renewed promise to fulfil the vision of radio as a truly two-way medium (Girard 2007; Myers 2011). In the context of sub-Saharan Africa, the boom in mobile telephony, with Africa being the fastest-growing mobile market in the world (GSMA 2011), has facilitated the rise of radio call-in programmes and the ease with which listeners can now connect directly with broadcasters to give feedback, ask questions and have a say. Satellite technologies enable the transfer of information over vast distances in an instant, and in some cases allow news and information to reach people in a political environment characterised by extreme censorship. For example, in Zimbabwe, 'pirate' radio is beamed into the country from the US and UK via shortwave, satellite and mobile phones, providing space for information that criticises the ZANU-PF ruling party (Moyo 2010). Small but increasing numbers of broadcasters in Africa are now accessing the internet and are capable of enhancing their programming in diverse ways – from pursuing online training, to researching programme topics, to accessing international news and relaying it locally.

Thus, this convergence process has an exciting potential for the end users, or beneficiaries, of research – for example African farmers – not only to connect directly with knowledge intermediaries and experts (i.e. by calling in to specialised radio shows) but also to bring their own knowledge to bear in the development process by speaking to their peers directly over the airwaves. There is also greater potential for broadcasters themselves to engage with their audiences more energetically than before and to harness the technologies at their disposal to provide more and better coverage of development issues.

2.4 Radio broadcasters and knowledge transfer

For decades, radio broadcasters have acted as development knowledge brokers, often producing programmes paid for by international agencies that target key development themes such as health, migration, environmental sustainability and poverty reduction. The convergence of radio and new ICTs opens up opportunities and pathways for broadcasters to act as knowledge intermediaries, transferring knowledge in increasingly horizontal ways and providing access to information exchange. While there is enormous potential for radio broadcasters to harness new technologies to facilitate improved knowledge sharing and brokerage, very little is known about the best ways to achieve this. As a result, there is often a disconnect between technology drivers and the potential beneficiaries in developing countries, and further assessment of the technologies themselves and the social, political and cultural context in which they are embedded is required (Chapman and Slaymaker 2002). The RCDA research programme discussed below highlights these issues. It provides a body of empirical evidence pointing to the potential for convergent ICTs to enhance processes of knowledge sharing, while also drawing attention to the factors that constrain this potential in a variety of rural and urban settings throughout Africa.

3 RCDA research programme: new insights on ICTs and knowledge brokerage

The RCDA programme, which ran from 2009 to 2012, established a network of researchers from across sub-Saharan Africa and the UK to examine the impact of new digital technologies on the use of radio for development. Through a competitive grant-making process, 16 research

teams were funded to conduct research in 17 countries. They looked at the use of radio in conjunction with a variety of new technologies, including Freedom Fone,[5] Frontline SMS,[6] mobile phones, email and internet, and digital editing and production. The starting point of the research was the assumption that radio – especially when it is local, independent and participatory – can be a positive force for development. From there, researchers conducted field-based analysis with regard to the convergence of traditional broadcast radio with newer ICTs – particularly mobile phones and the internet – to ask, 'What does convergence mean on the ground? Is it emerging as a force for development in Africa?' For different research teams this meant different things. In Sierra Leone and Nigeria it meant looking at whether rural African women equipped with mobiles are better able to participate in the development process; in the Great Lakes region teams looked at diasporic populations and the extent to which convergence affects their engagement in the politics and development of their home countries; while in Mozambique and Mali it entailed asking questions about the quality of radio production of a developmental nature when new ICT tools are used and whether or not radio stations are able to tell better stories with enhanced interactivity. While a wide array of interesting insights about ICT convergence and development in Africa emerged through the RCDA programme, the next section draws on a selection of the findings and situates them in relation to the question of convergence and knowledge brokerage work.

As detailed above, the RCDA programme investigated various aspects of the convergence process in Africa, looking at new technologies that are impacting radio broadcasting – such as Freedom Fone, Frontline SMS, the internet and mobile phones – and at the sociopolitical and economic conditions, such as gender, migration, inequality, poverty and conflict, that influence that process.

3.1 Radio stations embrace new ICTs
From the findings of all these research projects several overall patterns emerge clearly. First, radio and other ICTs are indeed converging and merging at an ever-increasing rate, all over Africa. Mobile phones, especially, are playing a critical role in the daily experiences of Africans

today and can even play life-saving roles, as Wallace Chuma form the University of Cape Town found when he looked at the xenophobic and election-related violence in South Africa and Zimbabwe. Teams found that most radio stations on the continent have embraced computers and digital editing to some degree and even the smallest rural stations in the poorest and more remote areas of, for example, Sierra Leone or the DR Congo, will now have talk shows incorporating listeners' phone calls on a regular basis. Further, findings suggest that in instances where radio stations have embraced new technologies, there are indications that they are offering an enhanced service to their listeners that contributes to better outcomes in terms of health, livelihoods and other developmental challenges. For instance, in Northern Uganda, Henry Gidudu's team found that by adding automatic SMS (Short Message Service) texting to radio campaigns about HIV/AIDS prevention, people were more likely to come forward for voluntary counselling and testing than they did as a result of the radio campaign alone. In Ghana, Paschal Atengdem found that there was potential for better-targeted agricultural advice for rural radio audiences with the addition of Freedom Fone.

3.2 Convergence and the digital divide
However, the convergence process is happening slowly and is still subject to the well-documented digital divide. For instance, Pauline Bend of Panos West Africa found that in Burkina Faso and Benin, only 8 per cent of radio stations stream their audio content on the internet. We can contrast that with the vastly better-equipped country of South Africa, but even here, as Last Moyo's team found, the old disparities governed by geography, income and gender still prevail. The urban and commercial radio stations – normally the richer ones – are tending to embrace the internet and other convergent technologies much more than the poorer rural and community-type stations – which therefore reinforces the disparities of access for rural populations and minority language-users. Research teams show that cost is still a great obstacle for many – especially for women and for rural people. In Northern Ghana one of our teams found that barriers to participation were much more profound than just access: women and girls with low educational levels were much less likely to call in to a radio station than men

and boys of a similar income and educational level, even though they said they had the means to do so. This points to serious gendered self-confidence issues.

3.3 The question of capacity

Another observation that emerged during the course of this research programme has to do with the *capacity* of radio broadcasters to act as knowledge brokers. We observed that, in many cases, the expectations that many of us had of radio broadcasters often fell short of reality. Often, broadcasters are faced with significant constraints, and are expected to fulfil multiple and conflicting roles as development brokers, journalists, animators, producers and entertainers. Capacity-related constraints are often exacerbated by the fragile economic conditions under which radio exists – especially those radio stations that are designed to have a community, local and public service remit in poor and/or rural areas. Radio staff are often young, relatively uneducated volunteers. Stations themselves are typically shoestring operations, struggling to meet their overheads for lack of finance, subsidies or advertising revenues – the latter being particularly sparse in isolated rural or disadvantaged urban areas where the buying power of the audience is not sufficient to attract advertisers. Station managers are invariably courageous individuals, committed to serving the news and information needs of their listeners, but are often constrained not only by lack of finance but by many structural and political frustrations which often include overt, and not always benign, intervention from local and national authorities, high licence fees and taxes, unsympathetic regulation and outdated laws which often penalise rather than incentivise community radio. Add to this, the myriad problems common across much of Africa such as bad roads, lack of fuel and spare parts, lack of electrification, heat, dust, damp and violent storms (often capable of taking out delicate transmitters at a stroke), and the task of running a continuous and useful radio service begins to look distinctly thankless.

Another 'reality check' is related to standards of journalism. Nestor Nkurunziza's Great Lakes diaspora study found that despite having relatively easy access to a range of radio stations from their home countries via the web, Rwandans, Burundians and Congolese in Belgium and Canada still tend to turn to international broadcasters like RFI, the BBC and VOA[7] for news about their home region because these sources are deemed more reliable. Similarly, in Zimbabwe and South Africa, Last Moyo's team found that radio stations were unable to exploit the full potential of new media to enhance coverage of local news, not for want of the technological tools, but more often because they were understaffed and operated on shoestring budgets. Furthermore, there is often a lack of institutional support within newsrooms for integration of new technologies in terms of newsgathering, such that innovative uses of new technologies by journalists are often limited to only a few isolated individuals.

4 Discussion and implications of the findings

It is against this backdrop, of many and varied difficulties, that the role of radio broadcasters as knowledge intermediaries, and their use of new, digital ICTs, must be understood. It is important to examine our assumptions about what they can and cannot achieve within their constrained contexts, rather than focusing primarily on the potential offered by the technology itself. Researchers and development practitioners often expect broadcasters to quickly and adeptly take on an issue (e.g. climate change, HIV/AIDS, improved seeds) and translate it for their listeners, almost as if this were their duty, even sometimes expecting them to be grateful for the programme ideas. There is a marked tendency to regard radio as a service, which comes free of charge and ready-equipped – professionally and technically – to do our bidding.

Community radio, when it works best, does have a special connection with the grassroots and, for that reason has received considerable attention from international funders, NGOs and civil society organisations (CSOs) over the last 20 years or so (Myers 2011; Girard 2008). Such outside funding has created a wealth of useful development programming, from health-awareness soap operas, peace-building discussion programmes and informative farming phone-ins, to special slots for minorities and disadvantaged groups within the community to have their say (e.g. the disabled, language minorities, children, etc.). However, one consequence of this outside funding – which many community and local radios depend on – is a phenomenon which is dubbed the 'NGO-ification' of community radios (Manyozo

2009). This is when radio stations become so dependent on the sponsorship of programmes by NGOs that their daily schedules contain almost no talk programmes of their own creation, but are dominated by the 'woman's hour', 'farmer's hour', 'governance hour', etc. commissioned by the local and international NGOs and CSOs on which they depend financially.

For instance, because these broadcasts are often either pre-packaged (i.e. produced by an NGO outside the radio station itself) or commissioned along tight content and style guidelines, this phenomenon often serves to reduce the opportunities for local radio broadcasters to be creative and to remain genuinely in touch with their listeners. Broadcasters also have no incentive to investigate community issues themselves or to become specialists in the development topics that interest them – in other words no incentive to become true development journalists – because they know the money is with NGO-commissioned content. Furthermore, the danger is that no sooner a development topic falls out of fashion or the project cycle comes to an end, than that topic disappears abruptly from the schedules, often before the audience has had a chance to engage with it or to digest it fully. Station managers and broadcasters are therefore engaged in a continual dance to the funders' tune, and can become more concerned about anticipating the next development trends and buzzwords than about answering their listeners' questions and concerns.

These issues are often exacerbated by the multiple and oft-conflicting roles that radio broadcasters are expected to fulfil. They are, on the one hand, expected to act as knowledge intermediaries, compiling, translating and disseminating development information to their communities. In this role, they act as community communicators, rather than commentators or critics. On the other hand, they are often expected to fulfil the role as a community journalist, and enact the core tenets of journalism ethics, such as objectivity and autonomy. These roles are conflicting when development agencies and NGOs pay radio stations to produce informational programmes.

New technology enters the mix by opening up many possibilities but also carrying with it further challenges for broadcasters and their station

managers. It is not surprising, therefore, that overstretched broadcasters sometimes do not seem to embrace the new technologies put at their disposal with the enthusiasm that outside funders sometimes expect. Seen from a busy broadcasters' perspective, the shiny new box installed in their studio by an outside agency (perhaps a telephone hybrid or an internet modem), may be just another reminder of their obligations to their funder and a drain on their time and energy, rather than the exciting world of new possibilities that the funder imagines it to be. Where, before the introduction of Frontline SMS, a broadcaster may have been content to make and receive many unlogged phone calls from listeners per day, the new technology, which now enables him/her to log and preserve each communication and store the numbers of their callers, also involves more work and more reports to write. Much of this extra work is not the core function of radio broadcasters, nor the reason that attracted them to broadcasting in the first place. A young volunteer presenter is not necessarily interested in keeping meticulous and tedious records of who called into their programme, their age, sex and socioeconomic profile, which are often seen to serve the purposes of the research team or the international NGO who are interested in the data.

5 Conclusions
This article has attempted to situate radio and ICT convergence within longstanding debates about the promise of ICT4D. While new technologies hold clear potential to facilitate participatory development processes and improve knowledge exchange between stakeholders and beneficiaries, there are real constraints that need to be acknowledged and assessed in programme designs.

It is therefore incumbent upon researchers and those who are engaging with radio broadcasters as potential knowledge intermediaries to understand the realities and constraints under which most radio broadcasters in Africa exist. Further, new ICTs, like any technological innovation, must be viewed as neither good nor bad until they have demonstrated their usefulness in the hands of users over a period of time. The chances of research–communication partnerships that are genuinely sustainable will then be more likely to emerge. Crucial questions

about the best ways to integrate new technologies into traditional models for community-based broadcasting and development knowledge sharing and brokering remain. While the RCDA project is far from producing the answers to these questions, it does provide empirical insights about the extent to which convergence is actually happening on the ground and the reception and use of convergent technologies by content producers and audiences.

Notes

1 ICTs refer both to 'older' technologies such as terrestrial radio and 'newer' technologies, such as satellite, mobile telephony, and internet platforms.
2 Alvarez dubbed the term in her critique of feminist NGOs in terms of the depoliticisation and institutionalisation of social movements rooted in radical politics.
3 RCDA was implemented by Carleton's Centre for Media and Transitional Societies with funding from the International Development Research Centre (IDRC) of Canada.
4 Information and Communication Technologies for Development.
5 Radio stations use Freedom Fone to: archive shows for audiences to listen to on their mobile phones, interact with listeners via SMS, and conduct SMS polls to get audience feedback. See www.freedomfone.org (accessed 14 June 2012).
6 Radio stations use Frontline SMS to send SMS reminders to audiences about upcoming shows and to receive and log feedback. See www.frontlinesms.com (accessed 14 June 2012).
7 Radio France Internationale is based in France, British Broadcasting Corporation is the British public broadcaster, and Voice of America is the external broadcast institution of the US government.

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