

Improving CTN's Broadcast Reach

through Mobile Phone Technology and Other Recent Broadcasting Innovations

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Section One: Innovative Broadcasting Networks around the World

Introduction

Many community radio associations and networks have evolved over the past 70 years. They operate internationally, regionally and nationally; have different missions and goals; have different business models; provide different services, and use a wide variety of technologies, depending on local contexts, infrastructure, and availability of finance. New digital technologies and mobile phones have over the last 20 years diversified networking options, leading to the creation of new networks, new kinds of networks, and the expansion of existing networks. In most countries where there are flourishing community radio sectors, there are also national networks and associations, and it is generally acknowledged that networks and associations are critically important to development and eventual sustainability of community radio.

There are many reasons to create networks, and there is no one networking model. Broadly, networks can be grouped into two categories:

- **Associations or forums** whose primary aim and core function is lobbying and advocating on behalf of their members. The best known of these is AMARC, the World Association of Community Radio Broadcasters. Organized into five regions—Africa, Asia Pacific, Latin America, Europe and North America—AMARC has over 4,000 members. Most of these are community radio stations, but AMARC also embraces community media federations and other stakeholders.¹ An example of a national network is the Community Media Association in the UK, comprising mostly community radio stations, but also community print and television initiatives.²
- **Programming networks**, which make and distribute programmes, and which are the primary concern of this section.

The two kinds of networks are often combined, with associations or forums also making and distributing programmes. An example of successful combination is the South African National Community Radio Forum (NCRF). Formed in 1993 to lobby and advocate on behalf of its members, the NCRF today also serves its approximately 100 member stations through training and organisational development. It also runs a programming network, the South African Community Radio Information Network (SACRIN). SACRIN is a satellite transmission and receiving system that links community stations across the country. It allows stations to download and broadcast health and development-related programming simultaneously – effectively creating a networked national listenership. It also allows stations to upload questions from callers, so that SACRIN can host panel discussions. In this way, local issues and questions can be addressed in a national forum.³

In addition to operating SACRIN, the NCRF plays another important networking function. It is currently establishing decentralised “hubs”, comprising stations in different parts of South Africa, grouped according to region and language. One activity of the hubs is to market groups of stations to advertisers, on the basis of combined – and therefore substantially increased – audiences. Similarly, Peru’s national radio association, *Coordinadora Nacional de Radio*, has an intermediary agency to represent its members in the provinces to national advertisers. In each instance, the association (network organising body) receives a percentage of advertising revenue to cover overheads and costs

¹ For more about Amarc, see www.amarc.org.

² For more about the Community Media Association see their website – www.commedia.org.uk.

³ For more about the NCRF and SACRIN, see www.ncrf.org.za

of producing adverts, and the balance goes to the stations. In order to sustain SACRIN, NCRF charges external agencies for both use of its satellite infrastructure and for airtime on member stations, and stations receive a percentage of the income, based on audience size.

These examples raise two issues:

1. Interdependence – networks are crucial to sustainability of their members, but must also sustain their own operations. In countries where community media are better off, national associations can earn a fair percentage of their income from membership fees, but almost all also receive grant support and/or public funding. They also seek other ways of generating income, including programme production, airtime sales, renting studios and transmission infrastructure, and selling Internet streaming services to members.⁴ Problems and tension arise where networking agencies (the institutions coordinating and managing networks, and also making and distributing programmes) start to compete with their members for scarce resources.
2. Networks are not radio stations, and therefore do not “own” airtime. This means that they must “buy” airtime from radio stations. In the commercial world, transactions are generally relatively simple: the radio station has rates, and costs the value of “canned” programming before purchase. In the world of development, however, where missions and goals are involved, and where community radio stations are cash strapped and struggling, the issues are less simple.

Programming networks can be both vertical, in which programming is developed and distributed from a central source to a number of stations, or horizontal, in which radio stations make and share programming with each other, either directly or through a centralised system. The key and most cost-effective technology today for horizontal networks is the Internet, but to use it, stations must either own or have access to computers and Internet connections – and more importantly, the skills and resources to use and maintain them.

In some countries, programming networks distribute programmes to different kinds of stations – public, commercial and a variety of local independent and community (NGO, religious, community). Sierra Leone, like most other countries, has a vibrant and mixed broadcasting environment, comprising the full range of stations. This presents exciting opportunities for networking. For networks like Cotton Tree News that want to work with community radio stations, there are some important considerations.

Content

Commercial broadcasters are driven by profit; public broadcasters must air programming in the public interest, and therefore have some social obligations; community radio stations have powerful social motivations. Owned and controlled by communities, and guided by missions that speak of empowerment and development, community radio stations are emancipatory participative life-forces in communities.⁵ What this means for networks is that a one-size fits all programming for commercial, public and community radio stations will not necessarily work.

The content and format of programmes aired by community radio needs to be different from that of other radios. It must take into account local social and development issues, local needs and interests,

⁴ The UK's Community Media Association generates income by selling Internet radio streaming services to its members.

⁵ Community Radio, Some Philosophical Questions, by Matu Nguri (unpublished paper, edited by Grace Githaiga, 2009).

local preferences, languages and culture. Participation, development, emancipation and localness mean community radio stations are a highly complex “target” or “client” group for networking agencies.

There is another issue that complicates content provision. Community radio stations’ concerns include sustainable community development, HIV/AIDS, gender, education, the environment, democracy and human rights, local government accountability, small enterprise development – the myriad development needs experienced in communities and included on the international development agenda. This would seem to make community radio stations easy targets for programme sponsorship by international and national NGOs and government development agencies, and many networks are tapping into this income. However, there is also resistance by local stations who find programming is often provided in styles and formats that their audiences don’t like; scheduled for airing at times dictated by the networking agencies (usually peak listening times to maximise audiences) and in languages their audiences cannot understand. Stations also argue that networking agencies take too big a slice of sponsorship income to cover their own production and overhead costs, and do not properly value stations’ audiences and airtime, without which the networks would not survive. These are fundamental issues of power relations, partnership and buy-in that many networks struggle to confront successfully.

Capacity and infrastructure

Most community radio stations are poor, live a hand-to-mouth existence, are managed and staffed by volunteers with varying degrees of skill and understanding, and are ill-equipped. Networking agencies are often quick to provide minimum infrastructure (that will serve their own interests), and many community radio stations bristle with satellite dishes and modems. But no amount of networking will solve the issues of content, capacity and financial sustainability.

Partnership

It is partly the issues discussed above that have led to the cross-over between associations/forums and content sharing networks. Community radio associations, whose aims are to build community radio sectors and stations, are far more likely to share the missions and values of their members, and are therefore potentially in a better position to provide programming that meets the needs of their members’ communities. Programming networks run by associations are also usually accountable to their members, there are regular consultations with members about programming policy, content and sharing of income – and feelings of mistrust and inequality are far less likely to arise.

Networking for development

A World Bank Institute study of the development of community radio in five countries identified nine ways in which national associations and networks can support community radio stations. They can:

1. Represent members in negotiations with government and lobby on their behalf.
2. Represent stations in negotiations with other bodies such as performing rights organizations and advertisers.
3. Provide advice on license application and renewal procedures.
4. Provide or arrange for training and technical assistance for member stations.
5. Produce training materials for use by members.
6. Facilitate the exchange of news and programs.
7. Coordinate solidarity actions and campaigns to defend stations under pressure from political or financial interests because of their programming;
8. Mobilize support for stations from donor organizations.
9. Provide spaces for debate, exchange of experience, cooperation among stations etc. by organizing meetings, publishing newsletters, websites, and so on.

While the majority of the above functions – with the exception of Number 6 – the exchange of news and programmes – are not generally what programming or content sharing networks are really about, many content sharing networks, and arguably the most successful ones, combine content with training, technical assistance, mobilising resources and finance, advertising and sponsorship, and equipment support.

Case Study 1: Salam Watandar, Afghanistan

Origins and background

Salam Watandar is an independent programme production and distribution unit that produces and distributes programming to a network of 37 stations in Afghanistan. The unit was started in 2003 by the international media development agency Internews, with support from USAID. Salam Watandar is part of a larger Internews project, which includes initiating and supporting independent local and community radio stations across the country. By 2008, Internews was supporting 37 stations, and the number was set to grow in 2009.⁶

Partnership / arrangement with stations

Support includes finance (seed funding and core costs for a period), equipment, and management, journalism and broadcast training. The stations sign a Memorandum of Understanding in which they agree that Internews retains ownership of the equipment for the initial broadcast period and is obliged to provide technical, training, and other support for 12 months. In return, the stations must comply with quality broadcasting requirements, keep proper financial records, report regularly to Internews, and broadcast Salam Watandar's news and current affairs programmes during peak listening hours.

Programming

Salam Watandar broadcasts 14 hours of programming every day. The programming includes documentaries and interviews produced by Salam Watandar staff, and music and content from external sources, including programmes made by independent producers and by the network of stations.

⁶ Most of the information from this section is drawn from interviews conducted by Jean Fairbairn with staff of Internews and Salam Watandar in 2008/9 for *The Business of Changing Lives: Community Media Sustainability Manual*, by Jean Fairbairn (Internews, Washington, 2009).

Distribution and reception

The stations receive the shows through standard digital television satellite decoders and rebroadcast them over local transmitters. From studios in Kabul, the signal is uplinked via the Russian AM-1 satellite to Milan, where it is multiplexed into a DVB (Satellite TV) bouquet and retransmitted on the Hot Bird 6 satellite. Hot Bird 6 reception equipment is cheap and readily available in Afghanistan.

Business model

A key challenge for Salam Watandar is to be able to develop a business model that generates sufficient income to survive as an institution and that continues to contribute to developing and promoting media democracy.

The present business model is one of interdependence with the network of stations. To generate income, Salam Watandar must have access to the stations' airtime and audiences (estimated at 12 million people or some 35% of the population). For the stations, Salam Watandar is a reliable source of high-quality international and local news, information and entertainment programming catering to local audiences.

Through the arrangement with Internews, Salam Watandar is also a source of ongoing development support, with Salam Watandar staff providing training and technical support. Salam Watandar does not take on a lobbying and advocacy role, which is the function of the Afghan community radio association, Nai (www.nai.org.af).

Located in Kabul and with extensive international and national connections, Salam Watandar is able to market programmes to business and NGOs wanting access to the audiences reached by the 37 stations.

Early on, generating income was relatively easy, with a host of international and national bodies eager to advertise and sponsor programmes – particularly during the 2004/5 elections, the first after the 2002 United States-led military invasion to topple the Taliban regime. However, these income streams have proved unreliable and volatile – there are fat years and lean years, depending on the political and military climate. In addition, Salam Watandar today faces a more competitive media environment, with a number of new television and radio stations competing for sponsorship and advertising.

In accordance with the agreement with stations, Salam Watandar must distribute a percentage of its total income among the network of stations. In 2008, Salam Watandar was distributing 68% of its total advertising and sponsorship income among the stations. The balance of 32% was split between Salam Watandar (22.7%) and Internews (9.09%) to cover overhead costs.⁷

Salam Watandar uses a simple 'rates card' for the stations, dividing them into tiers of large and small stations. Stations with an estimated audience of more than 100,000 people receive a higher percentage of advertising income than those with fewer than 100,000 people.

Benefits

The financial benefits for stations are clear. The war, distance, isolation and fractured communications infrastructure make it difficult – in some cases, impossible – for Afghanistan's local radio stations to tap into a potentially lucrative advertising and programme sponsorship environment.

⁷ Interviews with staff of Internews and Salam Watandar conducted by Jean Fairbairn in 2008.

There are also clear benefits for stations in terms of quality – many stations do not have the financial resources, international and national contacts, skills or equipment to make programming of the quality produced by Salam Watandar.

Concerns and issues

- Stations have not always been happy with the amount of income received, and want a larger cut.
- Stations are tied into broadcasting a number of hours, but the income varies depending on the military and political situation and Salam Watandar's ability to find advertising and sponsorship in a volatile market.
- Evidence suggests that some stations do not air programming as agreed (at peak hours). To monitor compliance, Internews/Salam Watandar have had to put in place a complex and expensive monitoring service.
- Some stations would prefer to air Salam Watandar at times of their choice, arguing that peak hours are also their 'golden' hours in terms of sponsorship and advertising.
- The absence of rigorous audience research, either at national or station level, makes it difficult for Salam Watandar to appeal to advertisers.

Case Study 2: Kantor Berita 68H, Indonesia

Background and origins

Generally referred to as 68H, Kantor Berita 68H is Indonesia's only independent radio news network. The agency was launched in 1999 after the death of the dictator Suharto the previous year. Despite media restrictions under Suharto's repressive 'New Order', there were about 800 radio stations, potentially reaching some 20 million people across all parts of Indonesia. Mostly poor, hand-to-mouth operations, the stations broadcast a diet of state-controlled news and music. Without capacity – sometimes even the will – to produce independent news and current affairs, they struggled to adapt to the new freedoms. The aim of 68H was to fill this gap.⁸

With the support of the Center for Advanced Media (C@MP) and the Media Development Loan Fund, in Prague, 68H developed an Internet news service, sending compressed audio files to stations that had the capacity to receive them, and the interest in broadcasting the content. Audio comprised both national newsfeeds from a central production centre and local news reports from stations. Independent and reliable news drew immediate audiences, and soon radio stations from all over Indonesia were signing up. The terrestrial Internet service soon became clogged, and today 68H reaches some 650 stations, mostly via satellite transmission.

Programming

Initially broadcasting mostly news, 68H today broadcasts a variety of news and development programming. It also has interactive capacity through a toll free number through which listeners can interact with studio guests and with each other.

⁸ Information for this section is drawn from a variety of sources, including the chapter by Santoso and Martin Halla in, *The One to Watch: Radios, New ICTs and Interactivity*, edited by Bruce Girard (Food And Agricultural Organisation, Rome 2003).

Partnership / Arrangement with stations

As with Salam Watandar, the relationship with stations is interdependent. 68H recognises the stations' need for both national and locally-oriented news and information programming. It also recognises their need for development, and plays an important role in building stations' capacity and providing training and training materials. However, the primary focus of the network is news and other content, and development support is not contingent on the stations' airing 68H's programmes. 68H generates income from advertising and programme sponsorship, and a percentage of this goes to the stations. Each station's share is based on their audience, their profile and the amount of 68H programming broadcast, and for many of the smaller and more distant stations, the arrangement with 68H is lifeline to their own sustainability.

68H also seeks donor funding to strengthen both stations and the independent local radio sector. The benefits of this for 68H are obvious – they rely on stations to both broadcast their news and other programming reliably and efficiently. They also rely on stations for the information and news feeds that keep their service relevant and local.

Distribution and reception

Initially an Internet service, 68H now mostly distributes programmes via satellite.

Business model

When 68H was launched, the intention was that it should become self-sustainable – then taken to mean independent of its 'founding' donors and donors in general. Ten years on, 68H builds donor support into its business plan.

The business model is mixed, including diverse services and diverse sources of income. Well marketed and successful, 68H is still attractive to donors, and continues to receive grant support to subsidise both its news service and its development work. This year, 68H won the prestigious King Baudouin International Development Prize, which also comes with EU150,000. With a vast audience, 68H is also attractive to advertisers and programme sponsors, and it is also starting to realise this potential.

In addition to advertising, 68H also broadcasts public service announcements, which are another important source of income. As noted above, 68H is popular with the donor and NGO community, and many use the agency to disseminate messages about health and hygiene, democracy, HIV/AIDS and the environment. These announcements are a win-win for 68H, in that they both generate income and promote 68H's democracy and development goals.

The network has grown extremely rapidly. 68H has registered as a business entity, and is jointly owned by management and employees and the Institute for the Study on Free Flow of Information (ISAI), its founder organisation. The service has grown from a tiny network of 10 stations and a handful of staff to a network of 650 stations served by 120 staff in Jakarta and 100 correspondents scattered throughout the Indonesian archipelago. In addition to its Indonesian service, 68H also runs a regional service, Asia Calling, which provides news from Southeast and East Asia in both English and Indonesian. It is broadcast on 80 stations throughout Indonesia, Cambodia, the Philippines, and East Timor, reaching as far as Australia and covering topics ranging from news, business and sports, to security, terrorism, democracy and the environment. 68H also runs a small radio station in Jakarta. Named Green Radio, the station focuses on environmental development.

Issues and challenges

68H's success is based on its independence. The key challenge for 68H is balancing growth and the need to boost advertising income with holding true to their public service mission.

Case Study 3: Coordinadora Nacional de Radio in Peru

Origins and background

Founded in 1978, the Coordinadora Nacional de Radio (CNR) is one of Latin America's oldest community radio associations. CNR has 76 members, comprising 49 radio stations and 27 production centres.⁹ Radio plays a key role in reaching Peru's 29 million people, who live in a vast country including deserts, rainforests and the Andes mountains.

In addition to 2,000 licensed radio stations, there are hundreds of unlicensed broadcasters. The majority of the stations are private and commercial. Many of these are national networks: programming is produced from a central station and distributed through repeater stations across the country. The result is that programming on most stations tends to be national, and focused on the capital, Lima. Peru also has some 200 community radio stations, broadcasting to mostly rural audiences. The stations vary in size and structure: some have 20 or more paid staff members and broadcast over substantial areas, others are volunteer-run stations broadcasting to villages or districts.

Business model

Like Internews/Salam Watandar and Kantor Berita 68H, CNR combines programme production and dissemination with capacity development of its members, and generating income for economic sustainability of both its members and itself. It has three services:

- A national network news service, which prioritizes news from the interior of Peru. News, programmes and information are generated and produced by member stations and then sent to Lima and packaged for national distribution. In this way, CNR reverses the traditional news flow from Lima to the interior. Local news, from the provinces, is CNR's niche.
- Training in management, production, and technical staff of its member stations; and
- Advertising, an advertising agency and programme production. CNR sells advertising on network programming to cover its own production costs and overheads. It also runs an intermediate advertising agency to represent its local members to national advertisers based in Lima. In addition, CNR produces radio for external clients from government, civil society, and the private sector. CNR's rural network, which reaches poor and marginalised communities, makes it extremely attractive to government departments, NGOs and the international aid community.

The intermediate agency was necessary because small stations located outside major cities found it difficult to capture advertising. Advertisers, largely based in cities, find it easier to work with networks than with hundreds of small stations. At the same time, advertising agencies were charging exorbitant commissions, which community radio stations could not afford. By grouping stations, CNR is able to spread the commission.

⁹ Information on CNR is based on articles by Bruce Girard in *The Business of Changing Lives: Community Media Sustainability Guide*, by Jean Fairbairn (Internews, Washington, 2009) and *The One to Watch: Radios, New ICTs and Interactivity*, edited by Bruce Girard (Food And Agricultural Organisation, Rome 2003). Bruce Girard is Director of the Fundacion Comunica www.comunica.org. Comunica has a wealth of information on community media, community radio, and ICTs.

Programming

Programming includes two daily national newscasts, regional newscasts for the north, south, and Amazon regions, a national daily one-hour program of analysis and interviews and a half-hour national sports programme. Through its programming, CNR aims to promote debate issues like democracy and development and to ensure that the issues of decentralization, poverty, peace, and the environment are present on the national public and political agendas.¹⁰

Issues and challenges

As with all the networks described above, CNR's sustainability depends on sustainability of its member stations. The quality of CNR's service depends on the capacity of member stations to identify and produce news and programmes. It is for these reasons that CNR places capacity building and economic sustainability so high on its agenda.

¹⁰ Bruce Girard, in *The One To Watch*, and in *The Business of Changing Lives: Community Media Sustainability Guide*.

Section Two: Expanding CTN Population Coverage

Current population coverage

The estimated total population coverage of CTN programming is 5,246,366. All the numbers quoted in this section are based on the 2004 population census, and then corrected to reflect the population growth from 2004 to 2008. Figure 1 below illustrates CTN's current news coverage, broadcast from Radio Mount Aureol (RMA) in Freetown and its 10 partner community radio stations.

Please note that this represents the best-case scenario, that is, when all affiliate stations are technically and financially capable of broadcasting CTN programmes.

The coverage map is plotted in 'rainbow' mode to distinguish between stronger signals close to the signal source, which attenuate with distance from the source. The key in the upper left hand corner illustrates the meaning of each colour in the plot. Signals weaker than 8.8 s-units are not plotted. The weakest signal that listeners should be able to receive with a low-quality or makeshift radio receiver is plotted in blue. Where coverage appears spotty, a fieldworker would have to assess the strength physically to be certain.

Population coverage figures correspond to areas with signals of at least 8.8 s-units. The areas with broken coverage (where the plots are spotty) are not included. The estimated population coverage of each of the current partner stations, using corrected 2004 census data, is listed in table 1.

Figure 1. Current CTN coverage

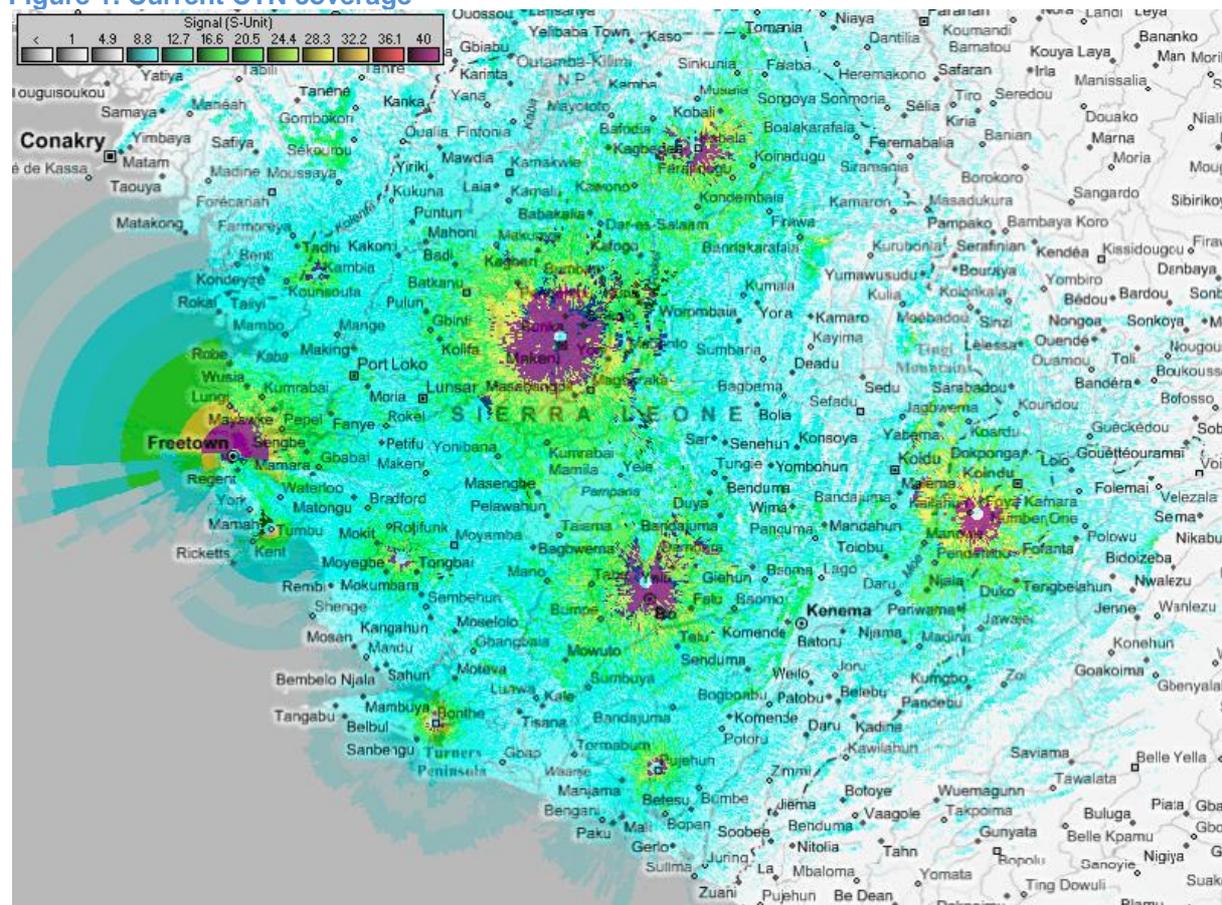


Table 1. Estimated population coverage for each of the current partner stations, based on 2004 population census and corrected to reflect population growth for 2008

Station	Estimated population coverage (corrected for 2008)
Mount Aureol	1,680,426
Tombo	236,304
Bonthe	79,700
Moyamba	179,771
Bo	1,099,576
Pujehun	185,939
Kailahun	664,036
Makeni	1,823,888
Bumbuna	67,594
Kabala	131,071
Kambia	127,785

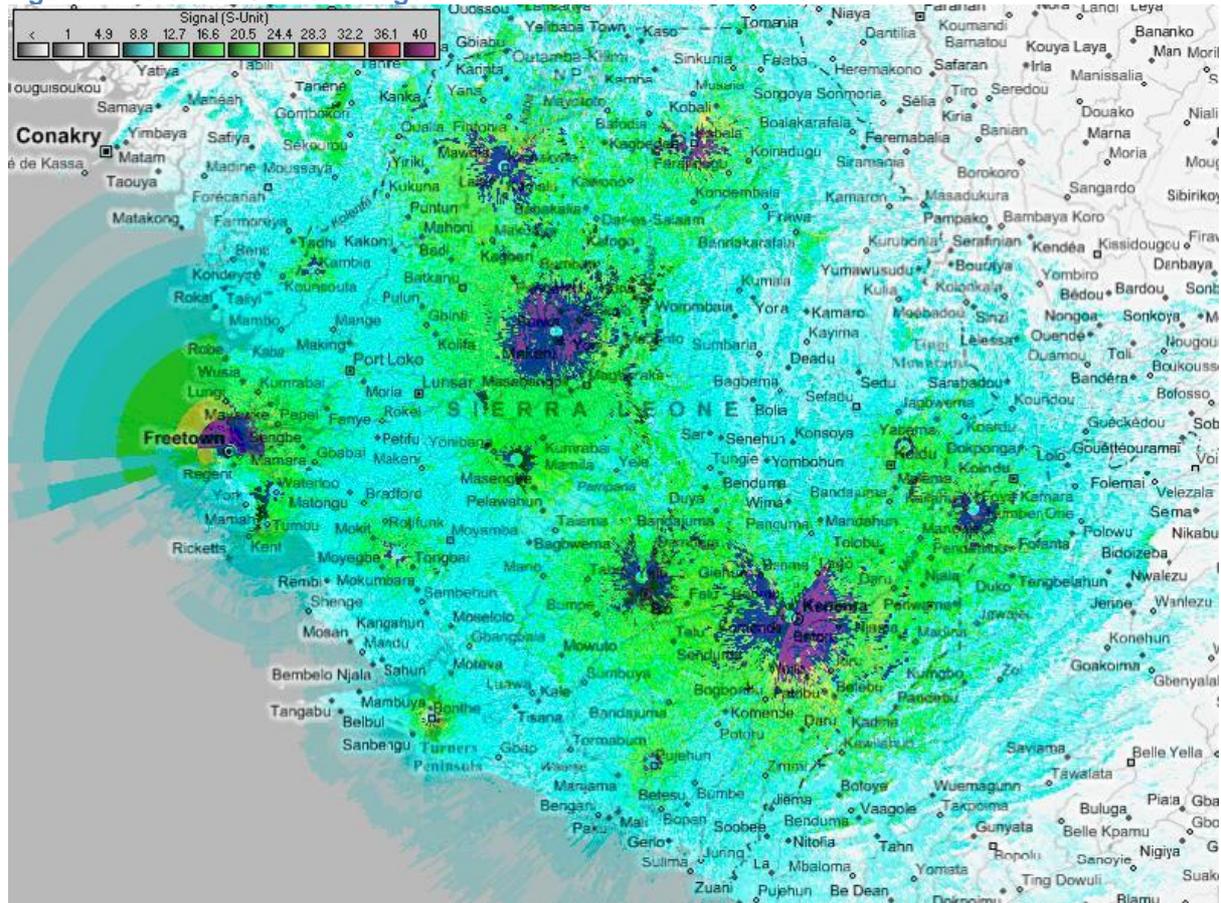
Potential coverage with additional partner stations

CTN wishes to extend its population coverage and one option is to install downlinks at four more community radio stations. Potential stations include Eastern Radio in Kenema, Eastern Radio in Koidu, Radio Gbafth in Mile 91 and those stations in Waterloo and Kamakwie. The resulting increase in coverage is not dramatic, as illustrated in Figure 2. The stations at Mile 91 and Koidu are only transmitting at 100 watts. Waterloo coverage is redundant with existing Mount Aureol and Tombo coverage. Much of Koidu is already covered by the station at Kailahun and Mile 91 is already covered by Radio Mankneh in Makeni. The exception is Eastern Radio in Kenema, which broadcasts on 1000 watts, and a partnership would greatly increase coverage in an otherwise uncovered district.

Table 2. Estimated gain in population coverage for each of the new partner stations

Station	Estimated population coverage (corrected for 2008)	Estimated population gain
Mile 91	168,155	0
Kenema	719,745	338,905
Koidu	34,515	0
Kamakwie	199,391	7,377
Waterloo	1,420,822	0

Figure 2. Potential CTN coverage with five new affiliate stations



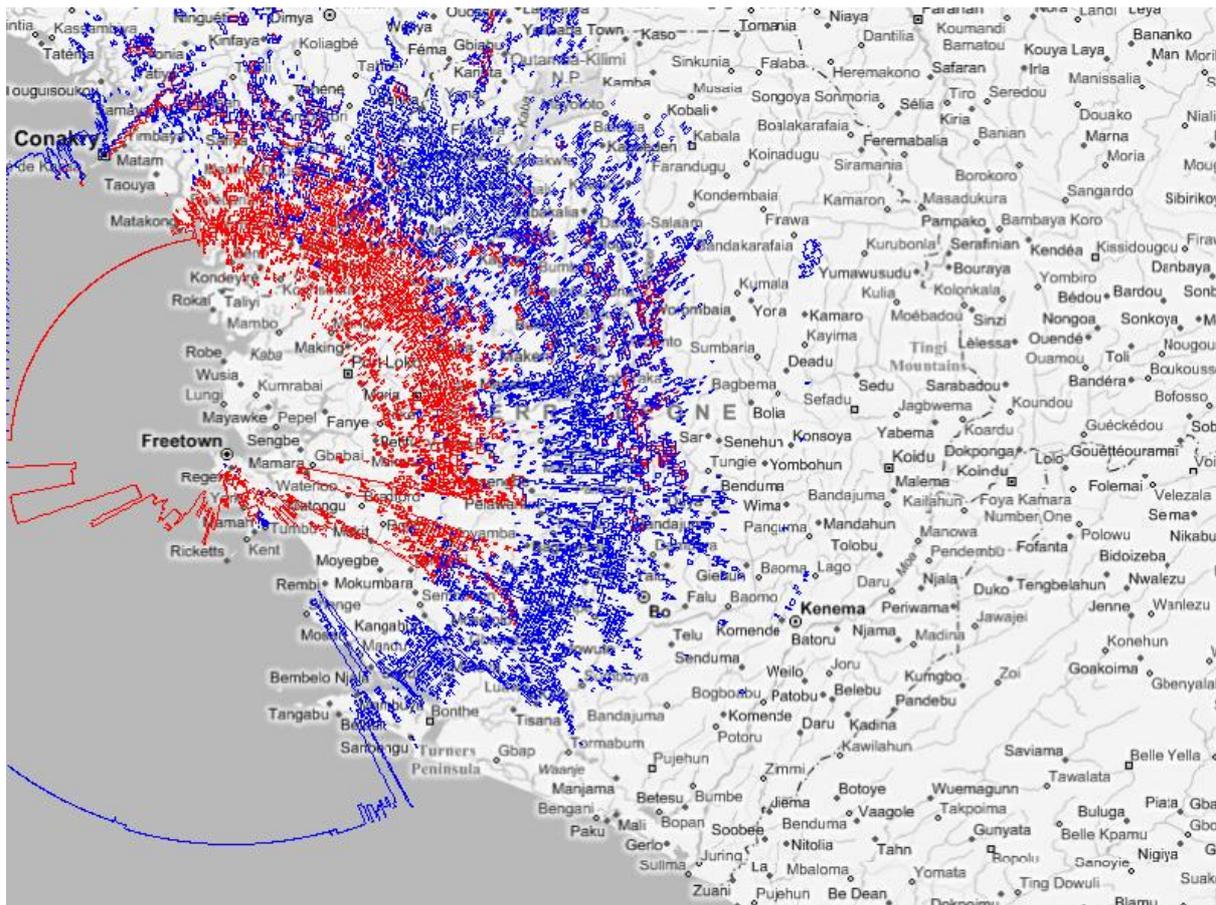
Broadcasting from Leicester Peak

Another option, suggested in David Stanley's technical report, is to explore the possibility of broadcasting CTN's coverage from Mount Leicester (the highest mountain in the Western Province) rather than from the current site on Mount Aureol. Figure 3 below juxtaposes the edge of Mount Leicester's coverage versus the edge of Mount Aureol's Coverage. The edge of CTN's coverage broadcast from Mount Aureol is plotted in red and the edge of CTN's potential coverage if broadcast from Mount Leicester at 1000 watts is plotted in blue. The increased coverage is significant and an estimated 934,044 more people could listen to CTN from the Leicester peak signal.

Assuming that all of CTN's partner stations were indeed broadcasting the 6 hours of broadcast programming – the net gain from broadcasting from Leicester peak would only be an additional 18,072 listeners (since those living outside Mount Aureol coverage can currently access CTN programming from the radio stations in Moyamba, Bo, Makeni, Tombo). These 18,072 listeners live in the chiefdoms of Dibia (Port Loko district) and Malal Mara (Tonkolili district), which are now only partially covered by Radio Modcar in Moyamba.

These 18,072 listeners would not be enough to warrant investing in the Mount Leicester installation. However, this analysis began with the assumption that all the CTN partner stations are broadcasting 6 hours of CTN programming, which we know to not be true. The majority of coverage overlaps are between the Mount Leicester and Makeni signals. However, Radio Mankneh in Makeni was only broadcasting 1.5 hours of CTN programming each day when CTO visited the station in August. There is also significant overlap between Radio Modcar in Moyamba and the Mount Leicester signal. However, Radio Modcar was not broadcasting at the time of visit because of a broken generator.

Figure 3. Mount Leicester versus Mount Aureol coverage



There are a few technical difficulties related to installing a CTN transmitter on Leicester peak. Installing the microwave link from Mount Aureol to Mount Leicester should be straightforward since RMA's current mast is high enough to have direct line-of-sight with Mount Leicester's. However, David Stanley explains in his technical report that the generators are overloaded and the power supply is limited at the moment. Since his report, David has organised a new NPA power line to the site, funded by the BBC World Service, to increase the generator capacity. He says, "The NPA power line is being installed at the moment. There are a few logistical difficulties, but it should be ready soon. This is not the complete solution to the sites power problems, but it will help."

The site is also in need of a new antenna system and CTN could join the consortium with SLBC/S, BBC and Capital Radio, and solicit funds for the new antenna system. Progress has been complicated by the SLBS/C transition and they are still waiting to see what happens with the bill. The current antenna system is owned by SLBS and was funded by DFID, but the consortium has not yet approached DFID for additional funds to replace the antenna.

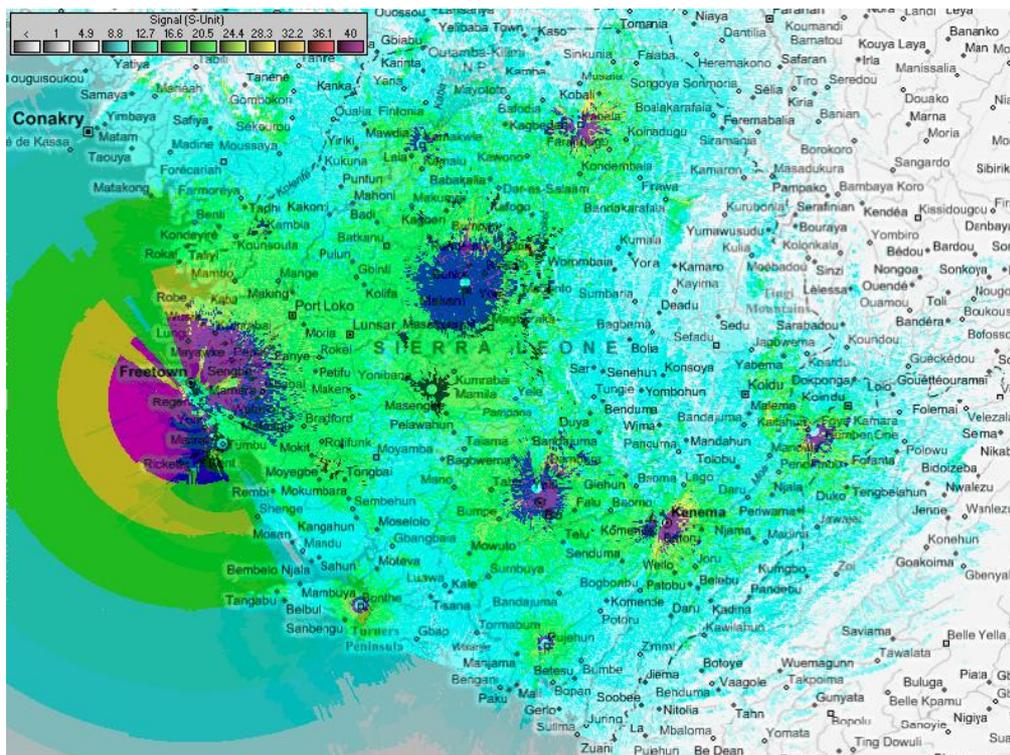
Table 3 outlines the expected costs related to broadcasting from Leicester Peak, provided by David Stanley. The first grouping of costs is for the shared antenna system. If CTN were able to fund a good part of the shared antenna system, some of the cost could likely be offset against the rental charges (subject to SLBS agreement). The second grouping is the cost to set up a new 1kW transmitter and combine it into the shared system. The coverage plot in figure 3 was generated using a 1000 watt transmitter atop Mount Leicester, but according to David Stanley, CTN could continue to use its 300W transmitter to save a bit of money, and there would still be a significant improvement in coverage.

Table 3. Costs related to moving to Leicester Peak

			Total \$
High gain shared antenna system			
Broadband 8 arrowhead dipole antenna system 25kW 9.3dBd	1	10815.00	10815.00
Feeder cable 1 5/8"	100	30.60	3060.00
Connectors, earth kits and clamps for feeder	1	2500.00	2500.00
Installation costs for antenna system	1	5000.00	5000.00
		Total	21,375.00
CTN Equipment			
Sira combiner	1	12986.00	12986.00
Radio link system	1	8300.00	8300.00
Equipment rack	1	1500.00	1500.00
1kW transmitter system	1	7442.00	7442.00
Misc items	1	1000.00	1000.00
Installation costs	1	2000.00	2000.00
Shipping costs	1	1000.00	1000.00
		Total	34,228.00

Figure 4 plots the entire CTN coverage if CTN were to broadcast on a 1000 watt transmitter from Mount Leicester, as well as build relationships with four potential affiliate stations (in Kenema, Koidu, Kamakwie and Mile 91).

Figure 4. Potential coverage if broadcasting from Mount Leicester with four new affiliate stations



Replacing current satellite links with FM links from Mount Leicester

At the start of our research, we had hoped that broadcasting from Mount Leicester would enable surrounding community radio stations to receive the FM broadcast and repeat the programme on their own frequency, thereby extending the broadcast coverage and eliminating the need for costly satellite or microwave transmission to these stations.

Figures 5 through 11 illustrate the signal reach from Mount Leicester to the surrounding partner stations. Mount Leicester is plotted on the left of each plot, and the partner stations are plotted on the right (reads 'wanderer' in each plot). A green line on the earth's surface represents receipt of a strong signal above 3 dBs. A yellow line represents a moderate signal between 3 and -3 dBs. A red line means that the signal is too weak or absent.

A glance at the plots below indicate that Makeni and Moyamba are the only partner radio stations that will be able to receive and repeat an FM transmission from Mount Leicester. In all cases, the strength of the signal is not necessarily the problem. Rather, it is the curvature of the earth or an obstruction (in the case of Tombo) that prevents the signal from reaching the affiliate station.

Figure 5. Leicester-Bo Link

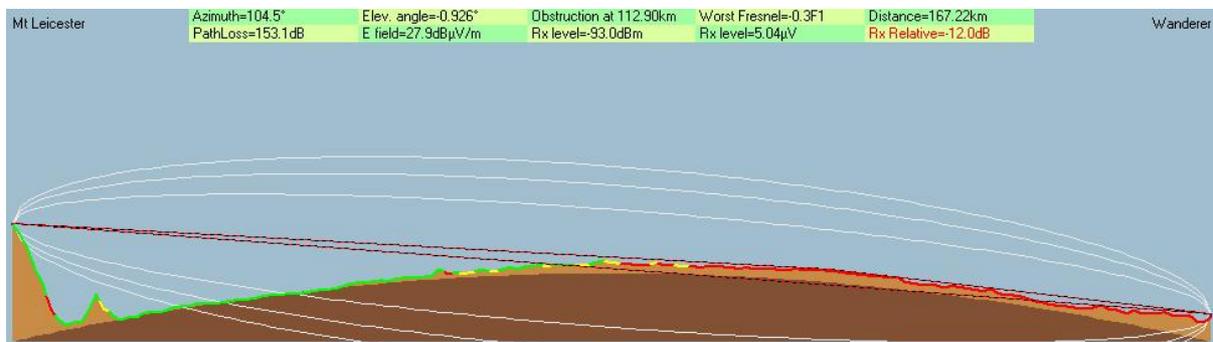


Figure 6. Leicester-Bonthe Link

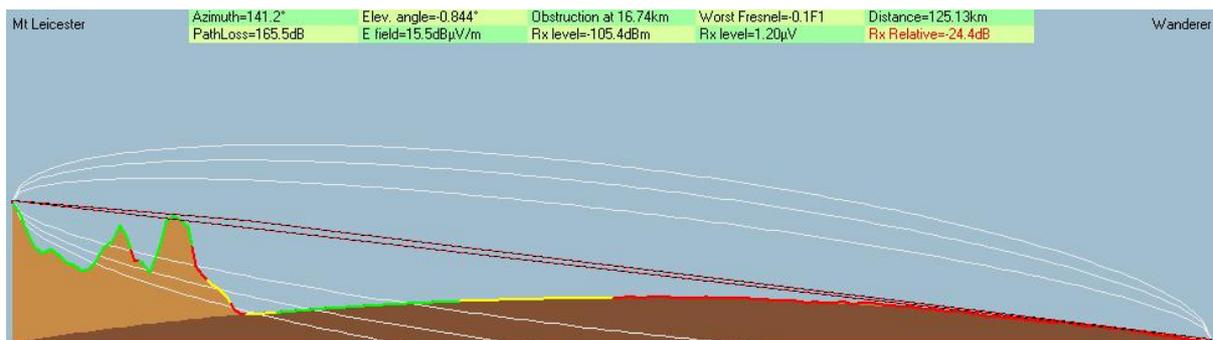


Figure 7. Leicester-Kambia link

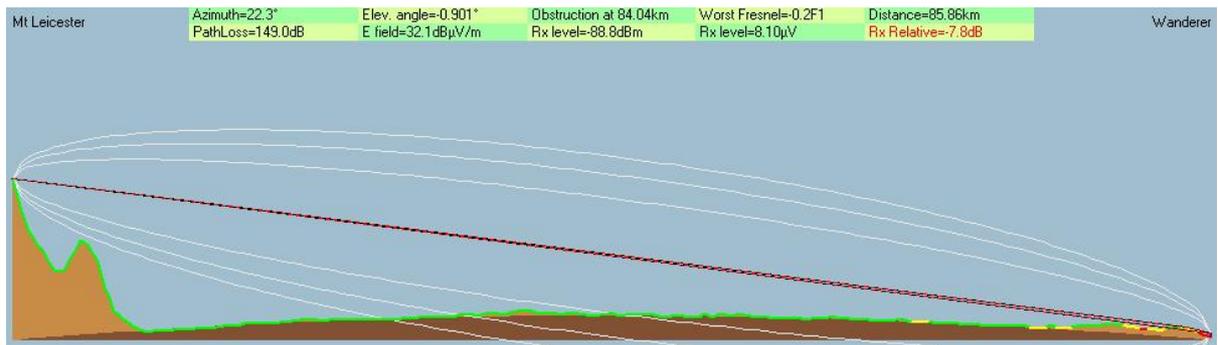


Figure 8. Leicester-Makeni link

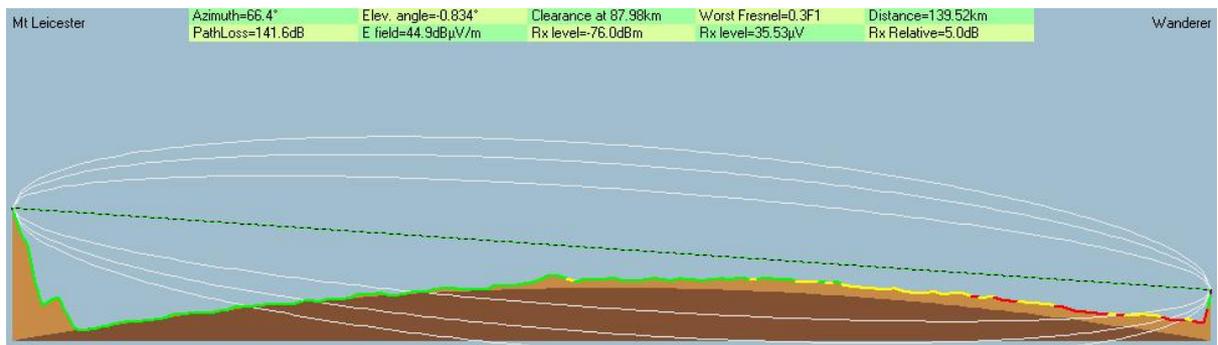


Figure 9. Leicester-Mile 91 link

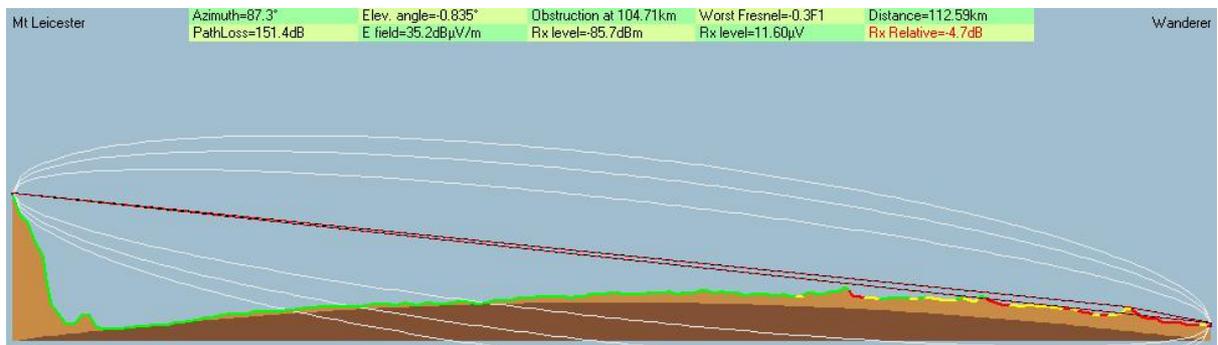


Figure 10. Leicester-Moyamba link

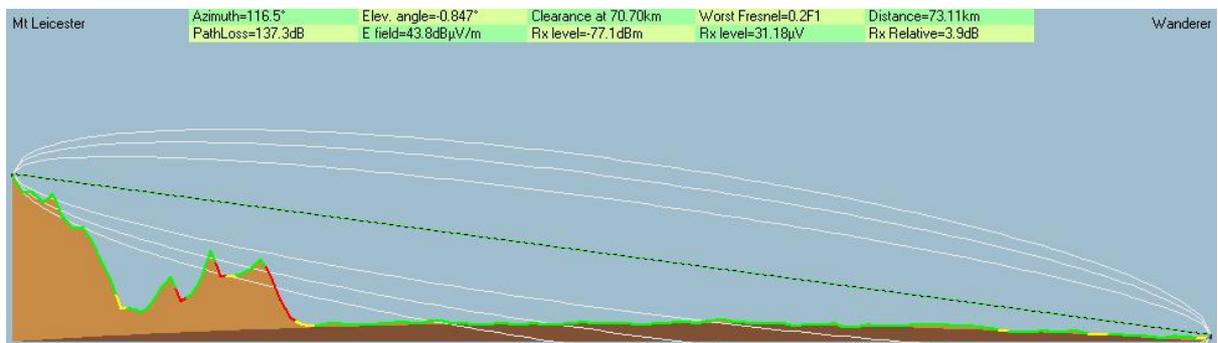


Figure 11. Leicester-Tombo link



Replacing current satellite links with FM links from Makeni

A similar analysis to that above indicates that the 1000 watt transmitter in Makeni should be strong enough to reach both Bumbuna and Mile 91. If CTN programmes were broadcast six hours per days from Makeni, there is no need to install separate receiving infrastructure at these locations. Refer to figures 12 and 13 below. Practical tests on site should be performed to confirm the simulation.

Figure 12. Makeni-Bumbuna link

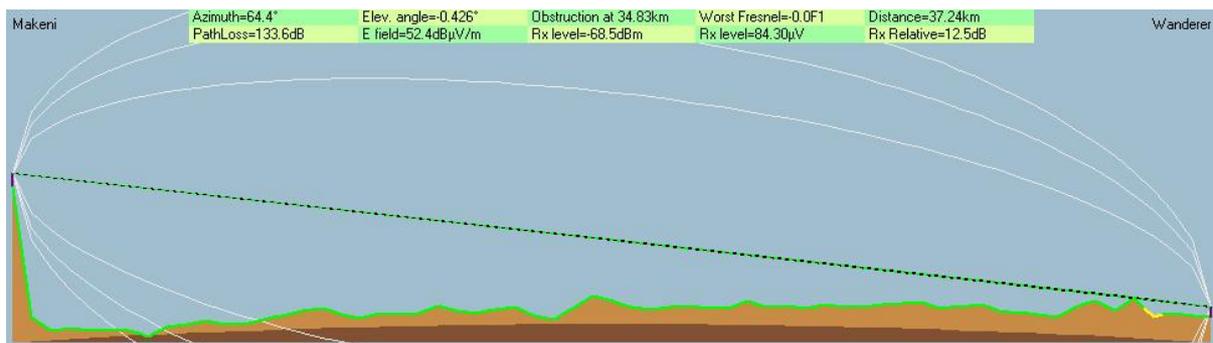


Figure 13. Makeni-Mile 91 link



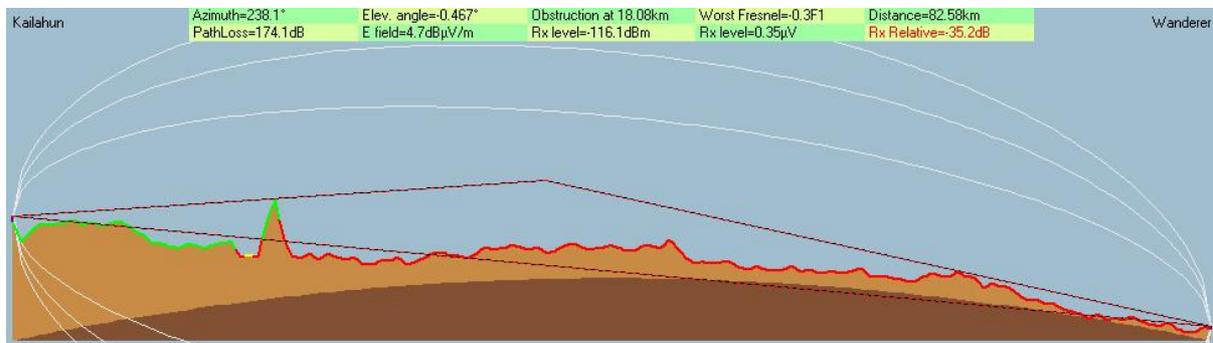
Replacing current satellite links with FM links in the Eastern Province

In Sierra Leone's recent history, much of its troubles have originated in the Eastern province, near the Guinean border. Therefore the Eastern province is of strategic importance and we hope that CTN coverage can be extended in this province by building relationships with the Eastern Radio in Kenema and Koidu. We had initially hoped that one strong transmitter in this region could reach all three

stations (Kenema, Koidu and Kailahun), which could in turn repeat the broadcasts on their own frequencies.

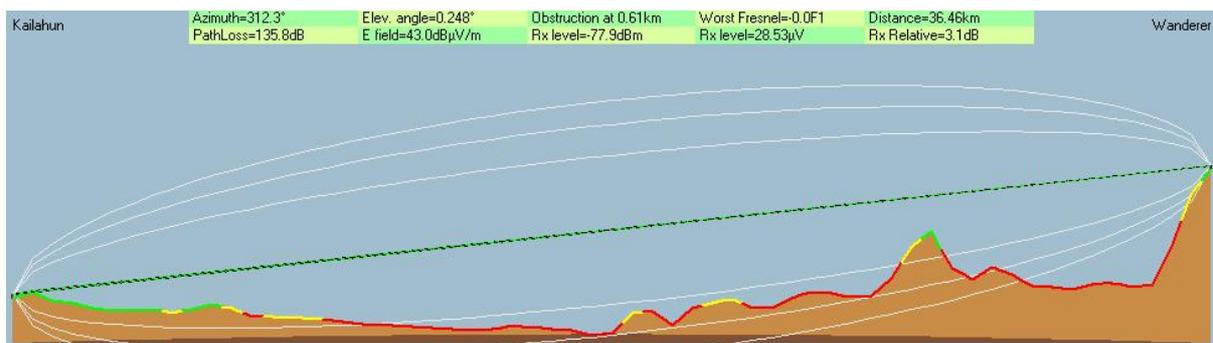
The software analysis indicates that a relatively tall obstruction (and significant distance) between Kailahun and Kenema makes it impossible to link these two stations directly.

Figure 14. Kailahun-Kenema link



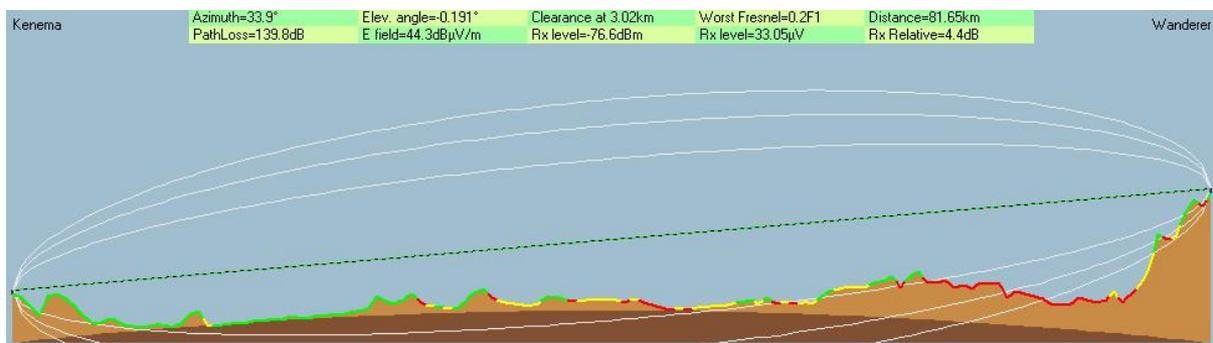
However, a 300 watt transmitter broadcasting from Kailahun could reach Koidu – and vice versa.

Figure 15. Kailahun-Koidu link



The 1000 watt transmitter in Kenema can reach to Koidu, according to the computer simulation, but the two stations are currently linked by GSM telephone line, suggesting that the FM signal is not strong enough in practice. The 100 watt transmitter in Koidu certainly would not be strong enough to reach as far as Kenema.

Figure 16. Kenema-Koidu link



Therefore, with the current situation, it is not possible to link all three of the Eastern Province stations together with one transmitter. The most promising solution would be to install a 1000 watt transmitter in Koidu, which is at the highest elevation of the three. It may be possible to reach both Kenema and

Kailahun (bypassing the obstruction between Kenema and Kailahun). Figures 17 and 18 illustrate these links.

Figure 17. 1000 watt transmitter in Koidu reaching to Kenema

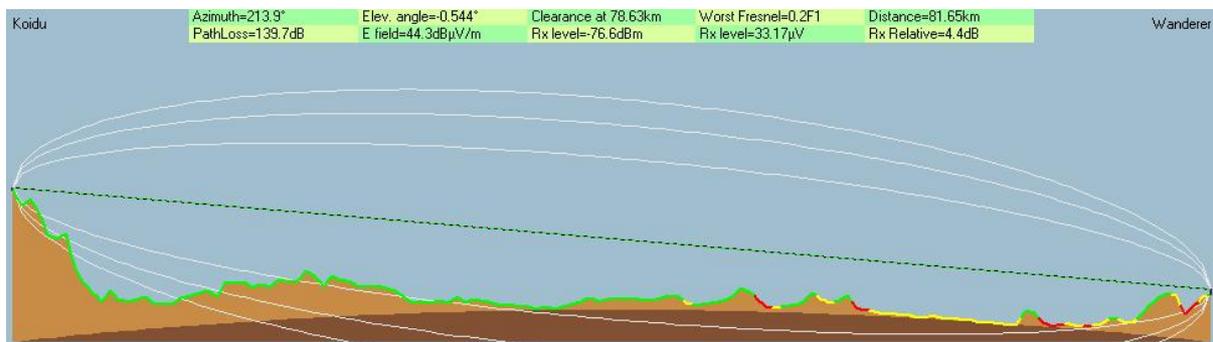
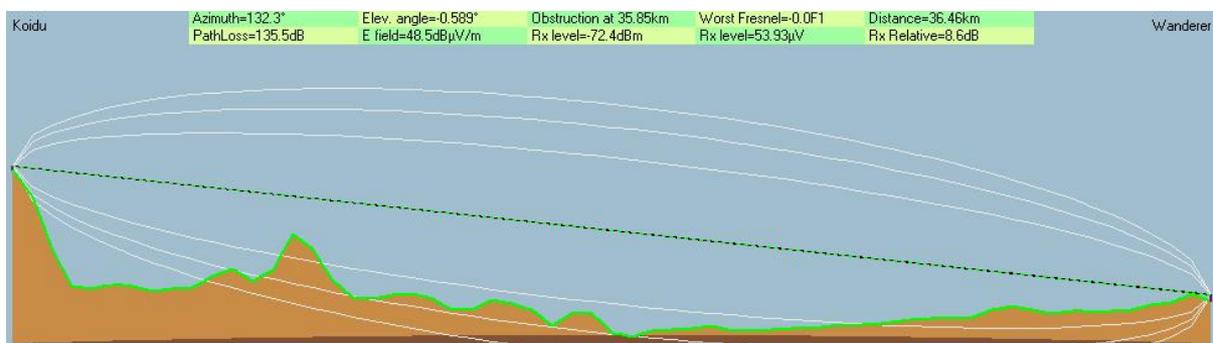


Figure 18. 1000 watt transmitter in Koidu reaching to Kailahun



Recommendations

CTO and DRP believe that the best way to increase CTN population coverage is to strengthen existing relationships with partner radio stations and build relationships with any additional community radio stations that are interested in CTN programming. It is clear that no one partner station will want to or be able to broadcast all six hours of CTN programming, so partnering with radio stations with some redundant coverage would be beneficial.

Each potential partner station should be interviewed to determine their financial sustainability and they should submit financial reports and programming schedules to CTN on a regular basis. While the station's population coverage is of strategic importance to CTN, it's financial sustainability and its enthusiasm and desire to broadcast a significant number of CTN hours is of even greater importance. As suggested in the review of other innovative radio networks around the world, CTN should negotiate contracts with partner radio stations on an individual basis.

CTN should not depend on FM links to replace satellite or microwave links when the source station is not controlled by CTN. For example, if Bumbuna did not have its own satellite downlink, it could still pick up CTN programmes from Radio Mankneh's FM transmission in Makeni. But Radio Mankneh is only broadcasting 1.5 hours of CTN a day, thereby limiting Bumbuna listeners. Similarly, we don't want the station in Kailahun to be dependent on the station in Koidu, nor do we want Kailahun's programming hours and choices to be dictated by those of Koidu's station manager. Replacing the satellite or microwave link with FM transmission is only possible if CTN collocates its own transmitters

on a mobile operator's infrastructure and can guarantee that all six hours of programming is being broadcast every day. This option is discussed more in section four.

It seems wiser, in the Sierra Leonean environment where broken equipment takes weeks to repair or replace, to give the partner stations more options to tap into CTN programming than less.

CTN should open discussions with all its current and proposed partner community radio stations, but a handful should be prioritised. CTN should prioritise negotiations with Eastern Radio in Kenema because of the significant gains in population coverage. CTN should prioritise negotiations with Radio Mankneh in Makeni, due to its significant population coverage, to increase programming hours on the station. CTN should prioritise negotiations with Kiss FM in Bo, who is not currently broadcasting CTN programming. How can CTN make their news programmes more relevant and attractive to these station managers?

Section Three: Alternative Satellite Service Providers

A straightforward satellite solution is the most straightforward method of transmitting the CTN programmes from Freetown to the partner community radio stations. As discussed in section four, solutions on the mobile operators' microwave backhaul network may be more cost-effective depending on how CTN negotiates the advertising and sponsorship exchange. However, if CTN is not prepared to dedicate advertising space to the mobile operator, satellite is the best option.

The biggest problem with the satellite solution is poor maintenance of the satellite links. Partner stations often go weeks and months with no CTN programming simply because the mesh dishes have been misaligned during a storm and no one at the station knows how to realign the dish. David Stanley sourced the mesh dishes based on affordability and ease of maintenance. The mesh design should theoretically let the wind and water pass through the dish rather than misalign the dish. If the problem continues, CTN should consider a formal maintenance contract—such a contract could also include maintenance of community radio station transmitters.

VT Communications is the current satellite service provider and CTO researcher Deborah Miller met with Elsa Winterstein, James Stubbs and Tim Ayris to discuss their service offerings on Wednesday, 2 September. CTO has also approached representatives from SAB Technologies (Sierra Leone), European Datacomm (Belgium), Hextel Communications (UK), Bentley Walker (UK), Dash Telecommunications (South Africa), Intersat Africa (Kenya) and Link-sat Communications (USA) for bids. The competitive offers are detailed in the sub-sections below.

VT Communications

VT Communications in London, UK is the current satellite solutions provider. Hironelle is on a 6-month contract with VT Communications, can only offer 12-month contracts in the future. VT Communications will charge £16,000 to maintain the current satellite transmission for CTN and the ten partner stations.

VT is also available to discuss the terms of a maintenance package that would include a combination of regular maintenance visits to each site, as well as a number of emergency visits. The cost of the contractor, hired through VT, to visit one station outside Freetown for 1 day is at least USD 520. This cost covers the maintenance of the existing equipment but does not include the repairs or replacement of defective equipments. David Stanley is in Freetown approximately one week out of every six and would therefore be available for routine visits if scheduled in advance, but could not be relied upon for emergency/urgent visits. He does know some local people that could “help out” to keep costs down.

Monitoring the broadcasts of community radio stations has been a problem for CTN – and VT confirms that an in-built monitoring system is possible. A GSM modem could be installed within the downlink equipment and a text message sent over the GSM network if there is any loss of signal. This installation would cost approximately £3000 per site. If CTN is to go down the commercialisation route, monitoring is crucial, but this cost is prohibitive and it may be more cost-effective to build stronger relationships with community radio stations and correspondents to nullify the need for a costly automated system.

Intersat

Intersat has provided the most competitive offer.

Table 4. Cost of Intersat services

Description	Total
Main hub site in Freetown with 1 'C' band uplink of 64k on NewSkies NSS-7 satellite + unlimited remote downlink stations + 24x7 hours of unlimited broadcast	£12,000.00
NOC 'one-off' charge for hub site setup in Freetown	£1,000.00
Total:	£13,000.00

Intersat would like CTN to broadcast Intersat’s advertisement for bandwidth during its programme for a few days a week on an ongoing basis. They propose that CTN and Intersat decide the appropriate time limit per advertisement together. CTO has explained CTN’s current limitations on advertising while still broadcasting on UN transmitters, and Intersat assured us that they are understanding, flexible and described the advertising agreement as a “wish list”.

Intersat is currently negotiating maintenance costs and contracts with its contacts in Freetown, upon our request, in the likely event that satellites will continue to need readjusting and maintenance as they do now. However, CTO recommends that CTN establish a relationship with the local engineering companies itself – cutting out the middleman and reducing costs.

Deborah Miller at CTO has been negotiating with Mr. Azfer Nazir, chief operating officer at Intersat UK Ltd. His contact details are as follows:

Mobile: +44 7977 998891
Office: +44 20 8904 9043
e-mail: azfer@intersat.co.uk

SAB Technologies

Motorola recommended their local Sierra Leonean distributor, SAB Technologies, to CTO.

SAB Technologies proposed a Ku-band service on the NSS7 satellite to stream audio on a 64kbps mono channel. They proposed a host of investment in new equipment, including a 1.8 metre uplink dish with LNB and 5 watt BUC. He proposed that remote stations be equipped with 1.2 metre dishes with LNB 2 watt BUC so that the network can be easily upgraded to enable internet facilities at the remote sites, encouraging business activity and financial sustainability of the remote community radio stations.

The solution was more expensive than the current C-band service with VT Communications. CTO has asked him to provide a quote for the 64kbps mono channel on C-band and he has requested an additional day to submit his bid.

His Ku-band service quote is available to Hironnelle if interested on upgrading the communications service to allow for internet access at the partner community radio stations.

Deborah Miller has been negotiating with Mr. Rajiv Gupte. His contact details are as follows:

Mobile: +232 3388 6654

Office: +232 22 230 788

Fax: +232 22 222 683

Email: rajiv@sabsierralone.com and sab@sabsierralone.com

Dash Telecommunications

Dash Telecommunications has made a preliminary quote of ~USD 9600 per year on a 12-month contract, paid quarterly in advance.

However, this service is only possible if he can convert the uplink and remote antennas from linear to circular polarisation. He has an engineer in Nigeria and an engineer in Ghana, either of which he can fly into Sierra Leone to effect the changes, for less than the \$14,000 quoted by David Stanley. He will submit a quote for the cost of travel, labour and spare parts by 18 September.

Deborah Miller has been negotiating with the chief operating officer, Mr Sam Talbot. His contact details are as follows:

Office: +27 12 998 3053

Email: sam@dash-tele.com

Section Four: Using the Mobile Operators' Microwave Backhaul Infrastructure

While satellite is the most straightforward technology solution for transmitting CTN's programmes to its partner community radio stations, an alternative solution is to leverage the mobile operators' existing microwave backhaul infrastructure.

Leasing an E1

CTO approached all three mobile operators (Africell¹¹, Comium and Zain) and Comium is the most enthusiastic about partnering with CTN to lease an E1 of an appropriate bandwidth. While CTN only requires 64kbps bandwidth, the smallest offering on the network is 128kb. Comium charges USD 800 per month to lease the 128kb E1 from Freetown (hub station) to any partner community radio station in the provinces. This USD 800 would have to be paid for each site.

Satellite transmission is a tenth the cost quoted by Comium. However, they are keen to advertise on CTN's broadcasts to further reduce costs, so an agreeable arrangement could perhaps be negotiated. All the affiliate community radio stations could be connected through Comium's backbone network, with the exception of Bonthe, which is located on Sherbro Island. However, Comium expects to have coverage on the island by the year's end.

If CTN can talk Comium down to \$100 per month per site, with further concessions on SMS agreements to be discussed in the next section, then this solution begins to make sense. Furthermore, if negotiations with the station managers in Bo and Makeni are not fruitful, installation of CTN's own transmitters is the only way to increase CTN programming hours in these areas. CTN would then have to collocate its transmitters on Comium's infrastructure in order to power and maintain these links.

Collocation on Comium infrastructure

Several of the community radio stations preferred to air their own programming during CTN broadcast hours. Therefore, CTN may have to broadcast from its own transmitters in areas where no appropriate partner station can be found. Comium invites CTN to buy and co-locate its own transmitters on Comium infrastructure. Comium would lease the space on its tower(s), transmit the programme from Freetown and supply the power in exchange for advertising airtime. This could be an option in areas where the community radio stations are not willing to broadcast a sufficient number of CTN hours.

If CTN decides to broadcast on its own transmitters, it would have to apply for its own broadcasting licence from the IMC (\$10 for the application) and pay for the various frequency allocations from NATCOM (\$500 annual fee per transmitter). Strategic locations for CTN's own repeaters/transmitters may include Bo and Makeni because the current partner radio stations in these locations are not currently airing a sufficient number of CTN hours. A stronger transmitter in Koidu would be most beneficial because its high elevation would mean that a 1000 watt broadcast could reach as far as Kailahun and Kenema.

CTO and DRP do not recommend competing with local community radio stations that would like to broadcast CTN programming but are unable to do so due to financial difficulties. These stations should instead be supported so that CTN programmes can be broadcast on their transmitters.

¹¹ Africell bought Tigo on 28 July 2009 and is in the process of acquiring its network

One frequency assignment costs USD\$500. However, the NATCOM said it would not allocate the same frequency for each transmitter/locality. Rather, NATCOM would assign different frequencies for each transmitter/repeater in order to maximise government revenue. So if CTN installed 10 repeaters across the country, all streaming the same CTN news, the cost would be 10 X \$500 = USD\$5000 per year.

It may be possible to come to a more agreeable agreement with NATCOM, leveraging Hironnelle's non-profit status. Nevertheless, the annual licensing fees, the high cost of the transmitters themselves, fuel and fees to the mobile operator for collocation is enough incentive to minimise the number of CTN transmitters needed by fostering better relationships with community radio stations that already have licences, transmitters, facilities and security.

Comium MoU template

Comium often enters into collocation and advertising agreements with radio stations in Sierra Leone. While a MoU between Comium and CTN will be negotiated differently, the template may provide some insight into Comium's starting point in negotiations.

The template agreement for such an arrangement includes the following provisions:

1. Comium agrees to provide the radio station housing and electricity supply to the main transmitting station at Leicester Peak.
2. Comium shall broadcast a maximum of fifty (50) jingle spots per day, to be agreed with the management of the radio station
3. Comium talk shows shall not exceed three (3) hours monthly
4. Comium shall provide a permanent studio phone line for all programmes
5. Comium shall willingly provide additional revenue streams and business enhancement features such as premium tariff lines to the radio station
6. The radio station shall willingly facilitate joint promotional campaigns, such as premium SMS campaigns and events in partnership with Comium
7. The radio station shall willingly broadcast general news and information about Comium including but not limited to, regular updates on cell site launches, new products and service launches, etc.

Deborah Miller has been negotiating primarily with Mr Chady Slim, the technical director at Comium. His contact details are as follows:

Phone: +232 33 333 033
Mobile: 232 33 300 302
Email: cslim@comium.com.sl

Section Five: Alternative Mobile Phone Technologies

Foundation Hironnelle has already identified four major benefits of using SMS messaging to complement radio programme operations:

- Immediate audience feedback
- Understanding of audience needs
- Informs best use of spending on content production
- Secure funding through “proof of listenership”

Therefore this report does not attempt to convince Hironnelle of the case for mobile technologies, but will rather discuss the challenges, applicability and reality of mobile phone technology in the Sierra Leonean context. Any discussion of leveraging mobile phones to enhance communication with listeners and partner community radio stations should begin with a brief background on mobile phone ownership and usage in the country. The report then proceeds to explore the opportunities and challenges of cell broadcasting (SMS news) and dial-up radio.

Mobile Phone Ownership and Usage in Sierra Leone

Table 5 below shows the official estimates of mobile phone subscribers at the end of 2008 by operator. However, these numbers should only be considered rough estimates, as access to mobile phones is notoriously difficult to calculate. Not only are subscriber numbers rapidly growing, but the numbers do not reflect 1) access to shared phones or 2) individuals who own more than one SIM card. It is common for large families or villages, particularly in rural areas, to share a single SIM card and phone; while others may own more than one SIM card to take advantage of promotions, same-network rates and both networks’ coverage.

Table 5. Mobile phone subscriber numbers from ArcChart 2009 statistics

Operator	Subscriber numbers	Market share
Africell	572,000	39%
Zain	444,000	30%
Comium	318,000	22%
Tigo	131,000	9%
TOTAL	1,465,000	
% of population		26%

Therefore, the station managers at each of the surveyed community radio stations were asked about mobile phone ownership and usage in their communities. While the responses are not scientific evidence, they do provide some insight into how the station manager perceives the role of mobile phones in the community. Table 6 shows that all the station managers perceive mobile phone ownership to be very high in their districts.

Despite the 60-100% estimates of mobile phone access quoted by the station managers, analysis of the mobile phone subscriber numbers indicates that only 26% of people in Sierra Leone owned a SIM card. The high estimates provided by station managers may be biased towards the “urban”

communities in which they live, or they may be accounting for access to shared phones in a way that official subscriber numbers cannot.

Table 6. Station managers' perceptions of mobile phone ownership and usage in their local communities

Station	Mobile phone ownership	Mobile usage to contact station	SMS usage to contact station
Tombo	100%	People sometimes phone in, but if a person wants to speak for a longer period of time to put a problem across, they prefer to visit in person.	About 50-60% text message
Gbafth	60%	Lots of participation during phone-in shows and about 500 calls per month to the station manager	15-20%, but even literate people prefer to call and text only if the line is engaged. About 100 texts per month to the station manager.
Moyamba	75%	About 4-5% of all people in the community use their mobile to call in to the station	2-3%, but people prefer to call in to the station
Kenema	80%	Community members visit the drop-in centre in town to communicate with the station. People sometimes call on their mobile, but prefer to talk in person.	About 10%
Koidu		Community members walk up the hill to visit the station in person, they participate in call-in shows and call-in to request Kono-language music.	Illiteracy is great, so there are certain programmes that request people to text into the station – and many people can't participate.
Makeni	65%	Phone-in programmes are very popular. They also visit the station in person, call the station staff on their mobiles, or simply stop the station manager when they see him walking in town.	
Kambia	85%	Talking in person, calling the station staff on their mobiles and participating in call-in shows	Illiteracy is prohibitive for most, but there are some programmes that prompt listeners to text into the station.

Table 6 also indicates that face-to-face contact is still the preferred method of communication for most people. All the station managers said that listeners prefer to visit the station or the station manager's home in order to discuss an issue or provide feedback. However, phone-in programmes are very popular at all of the stations, and all reported good participation. Texting was the least popular way of contacting the station and only used as a last resort if the station line was busy or the station wanted to censor messages before reading them on-air.

Any gender disparity in mobile phone ownership could also be of concern. However, none of the station managers (of which 7 out of 8 were men) cited any gender disparity in owning mobile phones.

In Tombo, the station manager believes that mobile phone ownership is greater amongst women than men, because women depend on their mobiles for business. In contrast, the station manager of Radio Gbafth in Mile 91 said that ownership of the radio receiver is a problem in his community. More men than women have access to the radio, so he is producing more programmes on domestic violence and women's issues to promote open access to the radio. If female literacy rates continue to increase, SMS news may be one method of increasing access to information for women in particular.

Cell broadcasting – communicating with listeners via SMS

Background research on the demand for services over the mobile phone

An in-depth, statistically significant survey of listeners in the provincial areas of Sierra Leone was far outside the scope of this research. Therefore, we will begin this discussion by highlighting some of the key findings from CTO's previous research on the demand for SMS content and services in other developing countries that face many of the same information and communications challenges as Sierra Leoneans. In October 2007, the CTO administered more than 900 detailed user questionnaires in selected rural and urban locations of South Africa, Ghana and India, to people who had used a telephone in the last three months. The findings reveal which information people, in a sample of developing countries, want to be delivered.

Table 7 lists the information considered most important to users in each country, regardless of which technology is used to access it. People are using a combination of radio, T.V. mobile phone, internet and face-to-face contact to acquire this information. Across Ghana, South Africa and India, the survey results show that people prioritise information on news, health and education.

Table 7. Importance of types of information (ranked)

Information Type	Ghana	India	South Africa
Scale: 1 = unimportant; 2 = important; 3 = very important	mean	mean	mean
News	2.6	2.14	2.32
Information about training and education	2.51	1.87	2.5
Prevent and treat illness and disease	2.51	1.95	2.48
Market information	2.44	1.76	1.99
Availability and price of resources	2.35	1.9	2.01
Information on job opportunities	2.33	1.71	2.58
Weather information	2.3	1.24	2.44
Sport information	2.28	1.52	2.12
Information on new products and services	2.26	1.94	2.11
Entertainment information	2.21	1.7	1.91
Emergency support	2.18	1.7	2.24
Information about women's rights and support groups	2.13	1.44	2.36
Information from government	2.12	1.84	2.36
Availability of credit and financial services	1.92	1.59	1.9
Livestock management and animal health	1.77	1.09	1.81
Information about remittances	1.75	1.39	1.93
Crop management information	1.7	1.13	1.67
Travel information	1.67	1.5	2

N for Ghana = 321 to 325; India = 324; South Africa = 310 to 311

During the interviews, CTO asked how confident the respondents felt in the accuracy and reliability of their sources of information. In all three countries respondents held relatively less confidence in their sources of news, health and market information. This indicates that there may be some scope for encouraging people to use alternative sources and means of access, such as mobile devices, which are only rarely used to access information services currently.

While the needs in Ghana, South Africa and India differ from the unique needs in Sierra Leone, the research findings are nevertheless encouraging for entities interested in using an “alternative means of access” to deliver news. Moreover, the research suggests that an SMS news service could also incorporate information on health, emergency alerts/support and market prices in order to attract more interest, customers and sponsorship.

AI Jazeera SMS news on Africell

CTN would not be the first news provider to offer SMS services. The AI Jazeera Network announced the expansion of its global service, AI Jazeera Mobile SMS alerts, to Sierra Leone in partnership with the mobile operator Africell in May 2009. Information, be it sports results or important world news, is offered to subscribers as both “push” and “pull” services. In “push”, the subscriber receives the media content based on predefined triggers (set up over the phone or on an online personal profile). In “pull”, the subscriber requests information he or she wants on demand and the information is sent back, either by SMS (text message), pictures, MMS (video clips), over the internet, and/or by voice over the phone.

Subscribers can sign up for different categories of services (and must pay for each one separately). The current categories are:

- Breaking News: global political, financial and sports news
- Political News: international affairs and global economics
- Sports Alerts: football, cricket and motor racing
- Business and Finance

AI Jazeera is planning to extend its mobile services to the following categories soon:

- On-the-hour news
- Special coverage of sports events like tournaments, cups, and the Olympics
- Daily weather

Subscribers must sign-up for a minimum of 3 months and can expect to receive between 90 and 120 texts per month. SMS's are sent as the news occurs, so AI Jazeera does not guarantee a minimum number of texts (just as it cannot predict the news).

Table 8. Subscription rates for AI Jazeera SMS news service

Category	Contract duration				
	3-months	6-months	9-months	12-months	18-months
Breaking news	\$26.3	\$52.6	\$78.9	\$105.21	\$157.81
Political news	\$26.3	\$52.6	\$78.9	\$105.21	\$157.81

Sports alert football	\$20.55	\$41.10	\$61.64	\$82.19	\$123.29
Business and financial	\$26.3	\$52.6	\$78.9	\$105.21	\$157.81

It is important to note that despite Al Jazeera's reach to 25 million homes in sub-Saharan Africa and launch of its channel on Sierra Leone's ABC TV Africa, the renowned network still recognises the mobile phone as a powerful opportunity. Most Sierra Leoneans cannot access Al Jazeera news online or on television, so Al Jazeera must reach them with the only available end user device. Al Jazeera launched the service with a free 2-week trial period to attract customers, but there have been no published statistics on the uptake and success of the service in Sierra Leone to date.

Evidence from survey of community radio stations

The potential of SMS news was discussed with all the station managers in the community radio station survey. Each station manager was asked, "Would your listeners read SMS messages from the radio station about news, the weather, whether the medical clinic will be in the village, opening times of shops, market prices etc. if the station could send out such messages?"

The station manager in Tombo felt that a text message of 170 characters was too limited to convey all the information necessary. People would want more explanation and more information than the SMS could provide. The station managers at Radio Gbafth (Mile 91) and Radio Kolenten (Kambia) both felt that the service would be pointless because most of the population is illiterate and the radio station already broadcasts the news.

In contrast, the station managers at Radio Mankneh (Makeni) and Eastern Radio in Kenema felt that the service is a good idea, if it could be provided to listeners free-of-charge. However, the station manager and the CTN correspondent in Makeni noted that research needs to be done as to what kind of information people want to be sent to them in an SMS in order for the service to be effective.

SMS news cannot overcome language barriers in Sierra Leone. Although Saloneans speak a multitude of languages, English is the only written language. It is possible to phonetically write Krio (spoken by approximately 97% of the population), but this is not the tradition, and anyone who can read/write Krio would read/write English first.

Literacy issues

Several station managers cited illiteracy as a prohibitive factor in the proliferation of SMS communication. The most recent Human Development Report (HDR) was published in 2008 and cites 2005 statistics for Sierra Leone. The 2005 literacy rate, according to the HDR, was 34.8%. However, the 2004 population census included an analysis of literacy and school enrolment across the various districts of Sierra Leone and includes a more detailed breakdown of literacy across gender, age, regions and districts.

According to the census, 39% of the population was literate in 2004. Unsurprisingly, the younger age ranges exhibited significantly higher literacy rates than the older generations. The national literacy rate for men is 49% whilst that for women is 29%. However, with increased access to education for girls, the gender disparity is decreasing.

Table 9 below reproduces the literacy rates in each of the regions and districts by gender. The highest literacy rates are found in the western urban area (68%) and the town of Bo (64%). At 21%,

Koinadugu and Kenema districts have the lowest literacy rates, while Kenema district has the lowest female literacy rate at just 13% (followed closely by Koinadugu at 14%).

Table 9. Census literacy rates by region and district

Region/Local Govt. Area	All	Males	Females
National	39%	49%	29%
Eastern Region	31%	40%	22%
Kailahun District	32%	43%	22%
Kenema LG District	21%	30%	13%
Kenema Town	56%	67%	46%
Kono LG District	27%	35%	19%
Koidu Town	42%	49%	32%
Northern Region	31%	43%	20%
Bombali LG District	29%	40%	18%
Makeni Town	59%	71%	48%
Kambia District	32%	48%	18%
Koinadugu District	21%	30%	14%
Port Loko District	32%	45%	21%
Tonkolili District	30%	41%	21%
Southern Region	34%	45%	25%
Bo LG District	29%	40%	19%
Bo Town	64%	74%	55%
Bonthe LG District	24%	34%	16%
Bonthe Town	56%	65%	49%
Moyamba District	33%	45%	24%
Pujehun District	26%	36%	17%
Western Area	65%	62%	57%
West Urban Area	68%	76%	60%
West Rural Area	52%	62%	42%

Source: 2004 Population and Housing Census: Analytical report on education and literacy. Available at: <http://www.statistics.sl/>

A CTN SMS service could be easily marketed to the entirety of the country by broadcasting adverts during regular CTN hours. However, subscriber expectations should be limited to reflect the literacy rates of the regions. There is greater potential for the service in Kenema town, Makeni town, Bonthe town and the western area, where the literacy rates exceed 50% of the population. Therefore, the service needs to closely engage the correspondents and community radio stations from these districts from the start. As the service picks up, additional correspondents across the country can be engaged.

SMS services from VT Communications

VT Communications, the current shortwave and satellite service provider, can also offer a web-based portal to help CTN manage incoming and outgoing SMS communications with its listeners. Each SMS can be up to 170 characters. When a listener wants to send an SMS to CTN, he or she texts the message to CTN's in-country shortcode and is charged the cost of a standard SMS message on his or her network. However, CTN would be charged a monthly flat fee, in addition to the per text rates. The service would be offered on a 12 month contract.

There are 6 elements to VT's service pricing:

- | | |
|---|---|
| 1. One-off set up fee: | £250 |
| 2. Monthly service fee: | £50 (includes access to shared VT UK long code + two free keywords) |
| 3. Set up of shortcode or longcode: | availability in Sierra Leone is TBC |
| 4. Rental of shortcode or longcode: | availability in Sierra Leone is TBC |
| 5. Rental of keywords: | availability is TBC |
| 6. Cost of sending SMS texts (per message): | 7.1p to Sierra Leone |

Each SMS could be sponsored as a marketing opportunity for CTN to cover some of its own costs. An online forum can be created by importing the text messages automatically or copy/pasting those texts that are interesting into an online blog. CTN would simply advertise the SMS service over the radio broadcast and people who are interested in receiving the text message service text into the short code with a standard message.

SMS services from Comium

Comium is interested in working with Hironnelle to provide such an SMS news service and they already have the software portal to facilitate the management of incoming and outgoing SMS communications.

The first option is to offer the service on a subscription basis. Comium subscribers can sign up to receive one CTN news alert per day for 50 cents a month. The subscription fee can be taken out daily (1.67 cents per day) so that the subscribers do not have to pay the fee all at once. The revenue would be shared by Comium and CTN. Comium recommends launching the service – and then only providing a free promotional period if the take-up is slow.

If Sierra Leoneans enjoy the service, but are not willing or cannot afford to pay for the messages, CTN could bare the communications costs and seek sponsorship as part of its marketing activities to recoup the costs. Working with Comium would keep the cost of bulk SMS messages down, by pre-purchasing the text messages in bulk at a discount. Alternatively, if Hironnelle chooses to partner with Comium to transmit its broadcast programmes across the country, Hironnelle may be able to negotiate a certain number of monthly SMS text messages free-of-charge.

The disadvantage of this option is that only Comium subscribers will have access to the CTN SMS news service.

FrontlineSMS portal

FrontlineSMS is a free open-source software that requires a computer with Microsoft Windows 98 or later, 85Mb of free disk space and a mobile phone or GSM modem connected to the computer via serial, USB, infrared or Bluetooth.

Once installed, users can send and receive text messages with large groups of people through mobile phones on the GSM network. It does not require an Internet connection and CTN pays the local operator per SMS as usual. All phone numbers and records of incoming and outgoing messages are stored in the portal and messages can be sent to individuals, distinct groups or the entire database.

The software is being used by NGOs all across the world. For example, the Network of Mobile Election Monitors (NMEM) is comprised of regular Nigerian citizens, equipped with mobile phones, who volunteered to text election observations into the FrontlineSMS hub at NMEM headquarters. The text messages were then passed on to other monitoring groups and election observation authorities, including the EU, during the 2007 elections.

In Indonesia, the international development organisation Mercy Corps is using FrontlineSMS to send market price information to farmers, plantation growers and fishermen, most of whom live in remote areas. Mercy Corps collects current commodity prices from a team of information gatherers and then enters the data into the FrontlineSMS portal on a central computer. The data is sent to groups of producers, government officials and others working in the agricultural sector, according to the type of information they require – weather forecasts or prices of produce, fertilizer and pesticides.

CTN must pay its mobile operator the normal cost of an SMS. Table 10 displays the SMS tariffs for each mobile operator. The tariff is in US cents and the average weighted cost is calculated using market share statistics from the end of 2008. The table shows that because Africell has the highest market share (which is hotly debated in Sierra Leone), it can offer the total average cost of sending hundreds or thousands of SMS messages to listeners on a variety of different networks. CTN can take advantage of the same-network fares by classifying its contacts by network and inserting different sim cards into the phone when using the FrontlineSMS software.

It is important to note that without an agreement with CTN's mobile operator the ongoing costs of sending daily text messages to hundreds or thousands of people will be prohibitively high (see the far right column in Table 4). Over 500 people subscribed to the Mercy Corps service after the first five months, so Mercy Corps is now negotiating sustainable business models with local mobile operators.

Table 10. Mobile Operator SMS tariffs

CTN's Mobile Network to Destination Network	SMS tariff in US cents	Market share	Average weighted cost of 100 messages (based on 2008 market share figures)	Cost of sending 1000 SMS alerts each day for 30 days
Comium				
to Comium	5	22	\$6.56	\$1968.00
to other network	7			
Africell				
to Africell	6	48	\$6.00	\$1800.00
to other network	6			
Zain				
to Zain	5	30	\$6.40	\$1962.00

to other network	7			
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Recommendations

The fixed costs and per-SMS costs quoted by VT Communications is far too high to be competitive. FrontlineSMS allows CTN to control and manage SMS news alerts from its own studio, at no fixed cost, and at significantly less per-SMS rates.

There are very little start-up costs for this service. The real challenge will be organising CTN's staff, learning how to condense breaking news stories into 170 characters, marketing the service and managing the database and communications. Therefore, it is worthwhile to pilot the service before it is made commercial. The pilot project should be launched in a larger town with higher education and literacy rates to determine what information is most demanded by users.

The consensus among station managers is that the service must be free for the user. Our concern is that a free service is not financially sustainable. There may be some middle ground if CTN can classify its news alerts into free news and commercial news. Providing some of the news for free will ensure that a large database of listeners is developed so that CTN can benefit from listener feedback externalities. Free news should include emergency alerts and breaking news. Commercial news could be information on training and education, market prices, job opportunities, weather information and sports. A 2-week free trial period will attract customers and better inform CTN on the commercial viability of the service.

Section Seven of this report provides some recommendations for CTN's marketing strategy and CTN's SMS news service must be integrated into the new marketing department's agenda. SMS's can be sponsored by advertisers – reading “sponsored by” at the end.

At least one CTN staff person should be responsible for managing the database of subscribers, and more importantly, the subscriber feedback. FrontlineSMS users around the world use the texting software, not only to send messages to large groups of people, but also to collect and organise large amounts of data from a large number of sources. CTN can leverage its subscriber database to solicit feedback and opinions from its listeners. This staff person would also be responsible for providing the country manager with SMS evidence for donors.

The service can also be used in partnership with community radio stations, who have expressed their audience's desire for more local information. CTN can classify subscribers by geographic district and work with the community radio stations to SMS local news to geographic sub-sets of listeners – ensuring that SMS news are relevant to subscribers, while saving CTN costs.

The research showed that women sometimes have better access to the mobile phone than to the family radio set. CTN and its partner stations can send SMS alerts to women to notify them of important CTN radio shows on domestic violence, access to justice and other women's issues so they can ensure that they obtain access to the radio in advance.

One concern is that without a subscription cost, SMS costs will spiral out of control as subscriber numbers grow. If the pilot project suggests that Sierra Leoneans are not willing to pay for the service, but CTN goes forward with the service and bares the costs itself. CTN must set the budget first and then design the service (how many texts/per day/per week) around the budget.

Voice SMS

Voice SMS is similar to sending a text message, but can overcome widespread illiteracy in Sierra Leone to make CTN news accessible on the mobile phone. The service is new and our research uncovered two case studies in Malaysia and Uganda.

On the first week of its launch in February 2009, the Malaysian operator Digi carried 80,000 voice-SMS messages per day. As of August Digi was handling 200,000 voice-SMS messages daily. MTN launched the service in Uganda in August 2009 but has yet to publish take-up figures.

The service works on any GSM handset and can eventually work on all networks if all the operators negotiate interconnection tariffs. Until voice SMS is mainstream in Sierra Leone, CTN will have to work with one operator and its listeners will be restricted to that operator's subscriber base.

On a one-to-one basis, the service is simple. To send a message, the user typically dials "*" followed by the recipient's number, and leaves a message up to 30 seconds long (in any language they like). The mobile operator then sends an SMS alert to the receiver, who dials "*0*" to pick up the message. The exact keys and message longevity agreed upon in Sierra Leone may differ slightly.

Comium is interested in working with CTN to provide voice-SMS news services. They are technically able to provide the service on a one-to-one basis, but will need to test the service on a mass scale for a couple weeks, once discussions with CTN commence. Each message will be limited to 30 seconds.

Comium proposes that the cost of the service be borne by both the sender (CTN) and the receiver. The sender would be charged 5 cents per message and the receiver charged 5 cents per message. CTO believes that these figures can be negotiated down because Comium's technical director sounded a bit hesitant on the phone. They do not currently offer the service, so they had not worked through pricing strategies prior to our discussion. He originally quoted 3 cents charge for the receiver, but then reassessed himself.

That said, the cost quoted by Comium is not outlandish. Sending and receiving a voice-SMS message in Malaysia costs \$0.026 per message, remarkably lower than the 5 cents quoted by Comium. However, all telecommunications services in Malaysia are remarkably lower than services in Sierra Leone. The cost of a voice-SMS in Malaysia is 50% higher than the cost of a text SMS in Malaysia. The cost of a Comium voice-SMS is the same as a Comium text-SMS message. MTN subscribers in Uganda pay approximately \$0.04 for sending or receiving a voice-SMS.

A promotional period may be beneficial to introduce and attract listeners to the CTN voice-SMS news service. Digicel offered 10 free messages per day for two months in order to attract its customers in Malaysia. Ten percent of their subscribers tried the service within the first month, and 30 percent after five months.

Dial-up radio services

Evidence of demand from survey of community radio stations

A number of discussions with radio station managers were not about dial-up radio, but nevertheless, uncovered a strong case for the service. For example, in Makeni, the station manager has been getting calls after the "Good Morning Salone" programme, which airs at 7 a.m. Listeners enjoy the programme and ask him to repeat it during the day in case their fellow community members were still in bed at 7 am. In Bo, the station manager chooses not to air CTN programming because he would prefer to do the same type of shows in his district's native languages. Advertising access to repeat

programmes in a variety of languages on the dial-up service could address both these issues and be popular with listeners.

CTO/DRP believes that CTN should negotiate bespoke contracts with partner radio stations, so that each partner station commits itself to broadcasting a sustainable and mutually desirable number of CTN programme hours. Inevitably, different stations will want to broadcast different programmes, depending on the local relevance and language of each programme. Those programmes that are not broadcasted in a particular district or region should be uploaded to the dial-up platform and advertised on-air.

The business model is of utmost importance because airtime and battery power is costly to the user. All our research in the field suggests there would be no demand for this service if it the listener was charged for airtime. However, Radio Ndeke Luka's success with commercial dial-up radio proves that there is such a market in crisis-prone and information-hungry countries. The Central African Republic (CAR) ranks 171st on the human development index – just above Sierra Leone at 177 – but economic poverty is greater in CAR than in Sierra Leone, with a greater percentage of people living on less than one dollar per day and two dollars per day. Both countries face similar infrastructural and information challenges, and if people in CAR are choosing to spend their little income on news and information services, the relatively better-off in Sierra Leone may wish to do the same.

In addition, there are little to no start-up costs (part from organisation and planning) to launch such a service. Therefore, a moderate profit-sharing model should be negotiated with Comium, including a free trial period, and the service launched and tested.

Freedom Fone

Freedom Fone is dial-up radio's FrontlineSMS counterpart – but is still in the development and testing phases.¹² The system consists of an open-source Asterisk-based server and a web-based content management system written in open-source Ruby on Rails. The software allows the administrator to upload audio files onto the server, which are then available to callers through interactive voice response (IVR) menus. The listener can call the phone number and pay for the call themselves, or the listener can phone a special callback number or send an SMS to the system, and the system would then return the call at no cost to the user. The service was field-tested in Zimbabwe to provide sexual health information to teenagers. The greatest challenges were not software-based but rather power outages and congested mobile phone networks. Because Freedom Fone (nor any similar software) is available on the market today, CTN would have to partner with a mobile operator to implement the technology in the interim.

Dial-up radio in partnership with Comium

None of the mobile operators in Sierra Leone currently have the technological capacity to provide dial-up radio services.

¹² http://www.w3.org/2008/10/MW4D_WS/papers/kubatana.pdf

Comium is in the process of purchasing a platform that will allow them to provide dial-up radio services. They will be better equipped to discuss this possibility in two to three months time. The technical director confirmed that the pricing model would be based on per minute use and he made a preliminary quotation of 10 cents per minute. Again, this should be negotiated down and a profit-sharing model negotiated.

Conclusion

The SMS and dial-up radio news services all incur minimal start-up costs, mostly related to organisation and planning than any special equipment. However, unless a plan for the commercialisation and financial sustainability of the services are negotiated with mobile operators, the services could rack up considerable running service costs.

In all cases, demand for the service is unknown. SMS news is limited to those who can read, but also includes a host of positive externalities, including the ability to track listeners' interests and solicit feedback or other information (including election observations). A small-scale pilot project should be launched to test the demand for text-SMS, voice-SMS and dial-up radio services.

However, none of the services should be seen as a replacement to FM broadcasts – which will continue to reach a much greater and denser audience. They should simply be viewed as a supplementary value-added to the listener – and an opportunity for radio journalists to learn more about what issues in which languages at what times are most in demand.

Section Six: A Note on Internet Streaming and Podcasting

David Stanley explains in his technical report that streaming audio content via the internet within Sierra Leone should work well once the Sierra Leone Internet Exchange (SLIX) is fully operational. However, because internet access was limited to 0.2% of the population in 2007, online streaming would not penetrate a deeper market. Those same 0.2% internet users already have access to CTN's FM transmissions in Freetown, Bo and the other larger towns.

The real appeal of internet streaming is to increase CTN's donor and expatriate audience. For example, West Africa Democracy Radio (WADR) uploads all its programmes as podcasts accompanied by short summaries of the audio content.

The price proposal provided by VT Communications is illustrated below.

Table 11. Pricing for streaming media and podcasting with VT Communications

One-off set up fee	£500			
Satellite downlink, encoding of seed stream	£250 per month			
Streaming bandwidth/concurrent listeners	50 concurrent listeners	100 concurrent listeners	200 concurrent listeners	500 concurrent listeners
(pricing is per month)				
32 kbps	£70	£84	£91	£196
64 kbps	£84	£140	£161	£392
96 kbps	£133	£133	£238	£525
Storage costs for streaming:				
Gigabytes per month:	Price per month:			
1	£28			
2	£42			
5	£56			
Storage costs for podcasting:				
Gigabytes per month:	Price per month:			
5	£28			
10	£42			

50	£105
Notes:	
Each Gigabyte of storage is approx:	
Bitrate/second: Hours	
32 kbps	66.4
64 kbps	33.2
96 kbps	22.2

CTO believes that the audio files on the CTN website are more than sufficient to attract the attention and interest of donor organisations and expatriate Sierra Leoneans.

Section Seven: Alternative Shortwave Service Providers

How many are listening?

Whether or not to continue with any of the shortwave broadcasts, regardless of their price, is really dependent on an assessment of whether or not anyone is listening. Hironelle is uncertain of their shortwave listener numbers since CTN-awareness surveys cannot distinguish whether listeners access the programmes via FM or SW.

While in Freetown, CTO researcher Deborah Miller discussed with CTN country manager Samuel Turpin various methods of gauging the number of CTN listeners dependent on SW broadcasts. When Samuel arrived in Freetown, the CTN staff were reporting the shortwave news in exclusively English. Samuel swiftly corrected the situation – but it is interesting to note that CTN did not receive any calls or complaints from SW listeners who could no longer hear the news in their traditional language during this time period. It may be that SW listeners do not have access to mobile phones or telecommunications service, but all the station managers interviewed during our site survey reported mobile phone access figures between 60 and 100 percent.

Samuel requested VT Communications to broadcast Star Radio's Liberian programme on the Sierra Leonean frequency to assess whether there is any response from SW listeners in Sierra Leone. Any decisions concerning future SW broadcasting and contracts must take these "experiments" into consideration.

The shortwave market

It is important to note that VT Communications has a strong hold on the shortwave market. The BBC Atlantic Relay Station is operated by VT, as well as the Voice of America Relay Station in Moeping Hill, Botswana.

CTO approached a number of companies for alternative bids for shortwave service. VT Communications and Alyx-Yeyi (Belgium/USA) are the only competitive tenders. CTO also approached Radio Nederlands, which operates a relay station in Madagascar, but the shortwave transmission to Sierra Leone was not possible. The Voice of Nigeria transmits on a 350kW transmitter from Ikorodu, Nigeria, but they were not interested in broadcasting the CTN programme.

Sentech is South Africa's common carrier, the backbone of the Southern African broadcasting industry. It owns and operates a large number of terrestrial broadcasting transmission sites, including the shortwave site in Meyerton, South Africa, but the senior manager of corporate affairs, Mr. Joseph Claasen, has yet to revert with a competitive quote.

VT Communications

VT Communications is the current shortwave service provider. Transmission from the current site in Rampisham will be £134 per hour in the new contract.

Alyx-Yeyi/TDP

Alyx-Yeyi has over twelve years experience in broadcast transmission around the world. It is currently transmitting programmes from the Nigerian station, Aso Radio International, twice daily, from a site in Samara Russia.

Deborah Miller has been negotiating with Mr. Ludo Maes, whose contact information is as follows:

Phone: +32 33 14 78 00

Mobile: +32 477 477 800

Fax: +32 33 14 12 12

E-mail: info@transmitter.org; info@alyx-yeyi.com

Mr. Maes has requested one additional day to submit his proposal with competitive figures. He has promised CTO a bid by 16 September.

Recommendations for a CTN Marketing Strategy

Combining advertising mediums

This first section recommends that CTN look at its sponsorship and marketing offerings holistically. CTN will potentially have a number of mediums for marketing. Advertisers can choose between airtime on the FM radio broadcasts, the SW radio broadcasts, sponsorship of text-SMS news alerts, sponsorship of voice-SMS news alerts and advertising space on CTN's website.

CTN's new marketing department can therefore market a combination of sponsorship packages, as well as each medium separately. The array of marketing opportunities will distinguish CTN from competing broadcasters. Some example packages are created in Table 12.

Table 12. Example advertising packages

Package	Offering	Price (USD)
A	3 X 15s FM advertisements per week 1 X 15s SW advertisement 1 sponsored SMS per week 2X2 advert on upper right hand side of CTN homepage	\$XXX.00 per week
B	1 X 15s FM advertisement per week 1 X 15s SW advertisement per week 2 sponsored SMS's per month	\$XX.00 per month
C	1 X 15s FM advertisement per month 1 sponsored SMS per month	\$XX.00 per month

Charges for advertising

Advertising rates are difficult to assess in Sierra Leone. There are many small stations that charge very little for their airtime – often just enough to cover the cost of fuel for the generator. Charging similar rates will not lead to a sustainable business case for CTN, and could divert minute but precious advertising revenue from the community radio stations to CTN.

CTN would be the first broadcaster reaching a near-national audience. It is in a unique position to offer unparalleled exposure to advertisers and can therefore charge higher rates than competing commercial radio stations in Freetown.

CTN should also charge premiums for adverts

Code of Ethics

One of the first goals of the CTN marketing department should be to draw up a code of ethics for its marketing activities, in consultation with its partner community radio stations. Because CTN depends on the partner stations to broadcast its advertisements, the CTN code of ethics should reflect the strictest of the partners’.

Nearly all of the community radio stations surveyed indicate that they do not accept advertisements from alcohol and cigarette companies. The only exception is Radio Mankneh in Makeni (which also happens to be the most lucrative). Even if some of the stations wanted to accept alcohol and cigarette adverts, the station manager of Radio Kolenten in Kambia explained that “it is difficult to accept adverts from cigarettes and alcohol because the community would not like it.”

All the surveyed partner community radio stations would accept adverts from religious groups, but are not able to sell adverts, since they all run religious programmes free-of-charge to both Christian and Muslim groups. They would like to be paid for these programmes, naturally, but cannot demand payment because the programmes are so popular with listeners.

All the surveyed partner community radio stations accept adverts from political parties, but are quick to maintain that equal opportunity is given to all political parties. However, CTO and DRP recommend that CTN refuse political party adverts to avoid putting any of the partner community radio stations at political risk.

For example, Radio Gbafth is located in an APC stronghold and finds it very difficult to criticise any government policy or action without meeting opposition from the community. Broadcasting SLPP adverts may invite further trouble for the community radio station. Similarly, the officer in charge at Eastern Radio in Kono finds it very difficult to interrogate police and has been banned from the police station. Radio Bontico in Bonthe, an SLPP stronghold, was temporarily shut down after criticising the then-SLPP government. Radio stations located in ruling party strongholds will inevitably find it more difficult to criticise the government on-air and broadcast advertisements for the opposition.

Mile 91 (Tonkolili district), Kabala, Port Loko, Makeni and Kambia are APC strongholds – although Kambia is known to swing towards SLPP once in awhile. Kenema and Kailahun are both SLPP strongholds. While Bo, Bonthe and Pujehun split between SLPP and PMDC when PMDC broke away from the SLPP party. Kono voted SLPP two years ago during the presidential and parliamentary elections, but voted for APC councillors one year later. The political situation in each district is unique and the individual partner stations are best situated to negotiate political party advertisements.

Who is the market?

Although based in Freetown, CTN’s marketing department should remember that its target audience is national – and therefore its market is national. CTN’s marketing department should be organized accordingly. The majority of dedicated sales staff will approach companies and organizations in Freetown to sell airtime – and they should focus on approaching potential advertisers who would be interested in reaching a national audience.

These potential advertisers will likely be international donor organizations and NGOs who are operating projects across the country. The most forthcoming private sector advertisers will likely be communications companies.

Although the majority of advertisers will be based in Freetown, at least one marketing person should work with the marketing departments in the community radio stations who will sell CTN airtime in the provincial areas. The eastern towns are home to a competitive diamond trading and export industry,

Bo is the country's *gari* capital and internet cafes are beginning to pop up in every town across the country.

Advertising agreements with mobile operators need to be dealt with carefully. Advertising in exchange for collocation or other services, such as text/voice-SMS and dial-up radio, can be a critical way to reduce CTN costs. At the same time, many of the community radio stations are extremely dependent on the revenue from the mobile operators' advertisements, and CTN should not compete for this revenue and compromise their partner stations' sustainability. Our survey indicated that many stations are dependent on power from Africell in particular.

Working with partner stations' marketing departments

It makes sense to work with partner stations' marketing departments. CTN cannot support a fleet of freelance salespeople across the country and there is no need. Each of the partner community radio stations have some marketing capacity – and they can sell CTN airtime to advertisers in their communities, raising revenue for both the partner station and CTN.

However, CTN must be aware of the limited capacity of these stations. Most of the “marketing departments” are not departments, but rather just one person, sometimes assisted by a volunteer. Providing marketing training to one staff person from each partner station would build CTN's relationship with its partner stations and should result in increased advertisement sales. Integrating this training into CTN's own training for its new marketing department is one possibility. Table 13 details the market capacities of each of the partner community radio stations surveyed.

Table 13. Marketing capacities of partner community radio stations

Station Location	Marketing staff	Description of marketing activities and revenue
Kambia	Commercial Head	<ul style="list-style-type: none"> Sells advertisements to Africell, Zain, NGOs and once in a while the Union Trust (the only bank in Kambia). Request form service was not patronised. MoU with Talking Drum Studio who pays for programming on 6 month intervals. 1,500,000 leones income per month, which is just enough to cover the cost of fuel
Kenema	Staffed by the head of finance and one volunteer	<ul style="list-style-type: none"> Markets programme sponsorships, adverts and request forms. Request forms cost 500 leones each.
Kono	Staffed by officer-in-charge and one volunteer	<ul style="list-style-type: none"> All the mobile operators buy airtime and Africell provides power in exchange for advertisements NGOs sponsor programmes when they implement projects (only in the dries) No business in the rainy season -- less than 700,000 leones revenue In the dries, the station can make up to 1 million

Makeni	Two staff persons	<ul style="list-style-type: none"> Advertising is marketed and sold to local business people and mobile phone operators Accepts cigarette and alcohol adverts Unlike the stations in the southern and eastern province, the station manager says that income is not affected by the rainy season. Estimates 2.5 to 3 million income per month.
Mile 91	Station manager responsible	<ul style="list-style-type: none"> Concern Worldwide currently sponsoring a programme for its Wild Bush Fire Campaign to teach people how to avoid wild bush fires. Station manager has also proposed a programme on domestic violence to the US embassy and is waiting for the stamp of approval. There is one bank in the community and that bank sponsors a programme for 2,200,000 flat yearly fee. The programme invites the community to the bank and explains how the bank account and lending process works. 1,500,000 leone per month in the rainy season when there are almost no adverts or programme sponsorships. About 2,500,000 per month for the rest of the year. No mobile companies advertise.
Moyamba	Deputy station manager responsible	<ul style="list-style-type: none"> Currently only one sponsored programme NGOs likely to sponsor more after the rainy season 1 million per month in rainy season 1.5 million the rest of the year
Tombo	Station manager responsible	<ul style="list-style-type: none"> Mobile operators are habitual advertisers Two local banks (Ecobank and FIB) occasionally advertise to keep people informed about their services. Estimates 500,000 leones advertising revenue per month Markets mobile charging service - charge 500 leones per mobile and earn ~15,000 leones per day

A revenue-sharing model

The community radio stations are key players in CTN's marketing activities. Without access to a powerful transmitter, CTN is more dependent upon the local station to ensure the programs are broadcast and heard.

We have referred to 68H, the network of 663 radio stations in Indonesia throughout this report. In its business plan, 6 minutes are reserved for advertising in every 30 minute program. Currently, 30% of these slots are used, bringing in enough revenue to cover two-thirds of their operating costs. The network would be self-sustaining with a utilization rate of 50%.

International and local NGOs take advantage of the network's audience size (20 million) and reach to run public service announcements, which the network likes because it spreads important message while bringing in significant revenue. For example, the Indonesian National Commission for Human

Rights ran its non-violence campaign on the network since it could reach many conflict zones. A Muslim youth organisation ran a campaign for religious tolerance.

For 68H a sustainable business model means sharing the advertising revenue with the member stations. The amount shared is determined by rules reflecting the station's profile, so each is determined separately. They report that this provides significant income for struggling stations.

Another source of income is from international broadcasters including RadioSBS in Australia, Radio Hilversum in the Netherlands and Deutsche Welle in Germany.

To summarize, here are lessons to consider, drawing from 68H:

1. Leverage the stations as valuable partners that can strengthen CTN in multiple ways. Their staff can help CTN marketing staff by selling CTN advertisements in their local communities, raising income for both their local community radio stations and CTN.
2. Treat each station individually, as they each have different assets and constraints.
3. Share revenue that would not be earned without them. The revenue sharing model can be based on population coverage and the number of CTN hours broadcast and can be negotiated individually with each station.
4. Remember that your audience is their audience and CTN broadcast programmes must always be relevant to their audience.

Frequent communication and monitoring

Once CTN accepts advertising, monitoring of its broadcasts across the country is critical to ensure that all advertisements are being broadcast and CTN upholds its end of the advertising agreements.

To monitor its partner radio stations in Sierra Leone, Search for Common Ground (SFCG) hires "independent monitors" in each locality and SFCG provides them with a radio and some financial support. Each monitor gives monthly feedback to SFCG – whether or not its programme was broadcast, the time and day of broadcast and reasons why programmes could not be broadcast. A similar model can be easily implemented by CTN. CTN's correspondents can be engaged as "independent monitors" and should provide daily feedback on the broadcast of CTN's programmes and adverts.

Frequent communication with station managers is another crucial element of building relationships with the partner community radio stations and ensuring that CTN programmes and adverts are broadcast. In the case of SFCG, the station managers are keen to contact SFCG whenever there is a problem, because there is some expectation of support from SFCG to help fix the problem. SFCG is also the founder and coordinator of the Independent Radio Network, in which all station managers participate and collaborate.

Monitoring the broadcasts automatically can be built into the technical solution, as briefly discussed in VT Communications' offering in section 3, but this service is prohibitively expensive.