Community radio is an immensely powerful technology for the delivery of education with enormous potential to reach globally. Opening up opportunities for the intended beneficiaries of development to participate in the utilization of this powerful delivery system, will enable disadvantaged groups to engage in evolving a development agenda, which can appropriately and adequately respond to their needs and aspirations.

In order to be truly of service to the underprivileged and rural poor, mass media such as radio must therefore create conditions and mechanisms that can provide people with genuine access to information. Such mechanisms will offer ways in which people can express their sentiments, opinions, views, dreams and aspirations, their fears and insecurities, their strengths and capabilities, as well as their potential for development.

Yet, high illiteracy rates and low levels of schooling among disadvantaged groups, especially women, in many developing countries continues to limit their ability to lift themselves out of poverty. Despite demands for increased education, the existing educational system is unable to respond to this need, which exists on such a massive scale. In particular, the formal school system in many poverty-striken countries is incapable of coping with the massive education needs of the rural poor. Consequently, disadvantaged groups continue to be consistently denied access to information, knowledge, skills and technology transfer.

In order to empower disadvantaged groups as equal partners in development, the limitations of formal and non-formal education are now being challenged. New ways to achieve mass education, that can be both efficient and effective, are being sought. In this context, radio, an effective telecommunications medium, was proposed at the UNESCO Education for All Forum (EFA), Jomtien in 1990 and Dakar in 2000, as one massive solution. Radio

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The activities within the COLME initiative will:

- Provide new skills in the use of technology for the disadvantaged.
- Address the issues of the digital divide and the goals of Education for All through the creative use of radio, educational broadcasting, and online education.
- Provide media models that will stress local participation and transfer of knowledge and skills and amplification or dissemination of local knowledge.
- Provide opportunities for disadvantaged groups to participate and benefit from new technology and media-based initiatives.
- Create a capacity for dialogue among government sectors, institutions and different interest groups.
- Promote and work in partnership with organisations involved with the Millennium Development Goals.
- Contribute to research and the body of knowledge that can be utilised by Commonwealth governments, organisations and communities by experimenting with and documenting new models for media and technology-based initiatives.
- Demonstrate technologies’ potential effectiveness with respect to priority issues such as literacy, child protection, gender, HIV/AIDS, basic education and life skills.
- Provide a means of sustainable employment and new skills for rural areas.
- Demonstrate to governments models that can aid in policy creation and/or change.
- Provide value-added expertise to work undertaken by INGOs, NGOs and governments in focusing on the Millennium Development Goals.

can cut across geographic and cultural boundaries. Given its availability, accessibility, cost-effectiveness and power, radio represents a practical and creative medium for facilitating mass education in a rural setting.

However, radio still continues to be an underutilized technology in education. This is especially surprising, because from a learner’s point of view, radio is user friendly, accessible and a well-established medium. From an educational provider’s point of view it is easy to set up, produce and broadcast programmes. After almost one hundred years of broadcasting history most nations of the world have more than a respectable level of engineering skills and broadcasting talent to apply the technology in education. In the last twenty years, radio has been greatly enhanced by the emergence of new technologies, which have opened up new opportunities for a variety of forms of delivery and access for both broadcaster and listener. For example, portable, low cost FM transmitting stations have been developed and digital radio systems that transmit via satellite and/or cellular are being implemented in many parts of the globe.

Internet streaming audio software technology has emerged recently to allow a global audience to listen the news from a distant country. And windup and solar radios have been developed thus freeing radios from expensive power sources.

COL is addressing the Millennium Development Goals with creative media, using radio, audio, video and e-learning activities, that fall under the banner of a programme called The Commonwealth of Learning Media Empowerment (COLME). COLME activities work directly with disadvantaged groups, allowing them to partake in the ICT revolution to address their own issues and also to demonstrate to local policy makers the possibilities of effective, low-cost solutions that aim at employment opportunities and skills development for the community and nation.
Overview of the Station

Radio is a very powerful technology that can allow large sectors of the population to be reached with information, quickly and economically. Due to national broadcast regulations in many countries, community radio stations have not developed. Also the cost of transmitters, infrastructures, and equipment, has placed most potential community broadcasters at a disadvantage, especially those in the remote rural areas. There is a distinct information gap to the rural corners of some countries resulting from the lack of service by national broadcasters who in some cases have weak or non-existent signal coverage. Under COLME, portable FM radio systems have been tested and implemented as part of media project work over the past three years. The station configuration that was first developed has, with input and data gathered from COLME initiatives in the field, have aided the manufacturer in altering the station to address the each community’s need. The station configurations range in price from three for five thousand dollars US including all elements, antenna, transmitter, console, mixer, microphones and CD and tape decks. There will be moves to decrease this price by competitors in the near future. The stations can run from 12 V DC or 120/240 AC.

Keys Elements to Success

There are number technological factors that are important in the initial needs analysis before a station can be considered. First the physical landscape must be conducive to an FM signal to reach the intended target audience especially if rebroadcast of the origin station signal is not possible due to cost or licensing regulations. If the landscape is mountainous then there will be difficulty in the signal reaching a large radius of users. Secondly, the station target audience must have radios or access to radios. Thirdly, there must a situation where there is a steady flow of content and a regular broadcast schedule. Fourthly, the station must be targeted to the local users so that they can directly relate to the content, language, and situations discussed.

In the feasibility stage before station implementation certain conditions must exist to improve the element of sustainability. In-country stakeholders are identified for each of the stations. Their role is to insure infrastructure is in place for FM radio and that all licensing and issues pertaining to community broadcasting are dealt with.

Another important factor is that the broadcasts are in languages that are used daily in the local community level. The national or regional stations do not have the capacity to aim linguistically or at the level of information detail for rural community issues. Community-based stations can be effective if well managed in providing information and training directly to the community. In the case of the COLME installed community station in Uganda, it was imperative that the station be able, by law, to rebroadcast
A Solar Station on the Move – Apac, Uganda

Apac (pronounced ‘apatch’), Uganda is located in the northern region of Uganda. This project was a cooperative effort with the Minister of State and Tourism, The Right Hon. Akaki, to work with community leaders to implement an FM radio station in the Apac region. The feasibility study revealed several limitations with the electrical infrastructure, which was not reliable. This was a result of load sharing throughout the country (Apac would not receive power for several days). The power was also not usable for electronic equipment due to the dramatic power fluctuations. Therefore, it was decided that in order to maintain a reliable broadcasting schedule and develop the station as a center point to community activities by different groups, Radio Apac would be operated entirely by solar power. This would free the project from the constraints of electrical situation and the tariffs associated with it.

A configuration was determined, in consultation with a solar distributor in Kampala, to allow the station to stay operational during the eighteen-hour broadcast day. Eleven solar panels and ten deep cycle batteries were installed at the station, which now provides lighting and all the station power requirements for daily broadcasting. A solar system also drives a VHF radio system, and a computer network. The VHF radio system provides a direct live to air device that can be used for interviews and events in the local community.

A second small solar system, which powers the retransmission, is installed 45 kms away from Apac at a high elevation, picking up the main station’s signal on 92.2 FM and retransmitting it on 106.5 FM. Therefore the station

Radio Uganda in the event of important political announcements. Therefore, among the technological upgrades in the design of the station, in addition to the interface for telephone calls, extra microphone inputs for group discussions, and a more powerful transmitter, a facility for radio rebroadcast of the national government station, (in Uganda, Radio Uganda) and international broadcasters (such as the BBC) was implemented.

The overriding factor to the success of these stations has been the proper community access and ownership, which was paramount in the initial project design. If the station is or becomes an integral part of the voice of the community and local interest groups have an equal say in the information that is disseminated via the station, then there is a lesser risk of failure in the long-term sustainability of the station. This can be achieved with good station management that works with community leaders and committees consisting of both political and community leaders. There is community participation and information input from local groups, NGO’s and community leaders. In essence, sustainability of a community radio station comes through good management and a good business model. These skills sets must be considered in the training scheme of any community radio effort.

The local stakeholders, with the aid of COLME, will provide ongoing evaluation of the stations via listener surveys and media expert evaluation. Workshops will be given in production and survey techniques that will aid broadcasters with improving programming to suit the needs of the community. Local broadcasters will be tapped to train in advanced broadcasting techniques and programme development that will improve community radio personnel. Portable tape recorders are used extensively in the field for information gathering.
signal now covers a radius of over 100 kms. A 64 Kbps data downlink via WorldSpace onto the station’s computer provides health and educational information. Also the service provides meteorological information for farmers in the local community that can be read on the radio after be received via the data downlink. This system is also being used in several development projects throughout Africa. The station has a rebroadcast facility incorporated for programmes from the national broadcaster as well as the BBC and WorldSpace.

A committee was organized and a station manager appointed. This person works directly with the community to create programming and allow the development of community involvement. Local training workshops with groups interested in participation in content were organized.

However, the station has to be run as a business in order to sustain itself. Income has to be generated to support the staff who maintain the station. Like any business model these skills have had to be acquired through training and in some cases trial and error. It is interesting that since the opening of the Apac community radio station, a number of other radio stations have started service within a 100 kms area of Apac. This is especially true in Lira only 45 kms from Apac. There has recently been a threat to the local stations by rebel forces in the north of the country that have been attacking towns and villages. Hopefully, this issue will not affect the Apac station and others nearby radio stations.

Conclusion

As seen by the Apac model, radio is an effective system for delivery of education to large numbers of people. It facilitates information exchange at the community level, acting as a “community telephone” and can be effective in literacy and formal/non formal education. Analogue systems for radio will be supplanted by digital broadcasting in the coming decade, however digital radio will pose issues including cost of radio receivers and renewal of broadcasting infrastructure. Analogue radio systems, such as the portable solution that COL and others have utilised in community FM radio initiatives, can be effective in delivering education to the masses without the high infrastructure costs associated with radio broadcasting. With community broadcasting not only can broadcasters focus on addressing local needs through their own produced programming, but also have the choice among a tremendous variety of quality educational content that is available via rebroadcast from national and international sources whether it is delivered via satellite or via the Internet. Rebroadcasting also should be balanced with the needs of the local community and the provision of appropriate and relevant programming content. Good management skills and a business model must be part of the initial training as a factor towards sustainability.

There is a marriage between the digital and the FM analogue systems that is taking place. The convergence also includes Internet streamed audio-based broadcasters that can effectively be employed by the community FM station in a rebroadcast mode. Will we be able to say in ten years that radio’s potential for educational delivery to millions of disadvantaged
groups has finally been realised? With the many varied formulas for convergence of digital and analogue technology and the vast selection of content and tools to create original culturally sensitive material for education at the community level, we state clearly - yes. But will the bodies that regulate frequencies for community radio initiatives reform regulations to reflect the current technological developments and pressing need for mass media to meet the goal for education for all in the next ten years? We can only hope. The next ten should see the harnessing of radio, analogue, and more so digital, as the powerhouse for delivery of education. Governments should be prepared to adjust broadcasting regulations to adhere to technological developments and realities, and also consider community based mass media delivery as an effective solution for improving a nation's human resource development towards the goal of Education for all.