Hunter Economic
Development Corporation

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Brendan Egan
Inquiry Secretary
Wireless Broadband Inquiry

Introduction
The Hunter Economic Development Corporation (HEDC) is a peak body whose mission is to develop an economic, commercial and social environment necessary to ensure sustainable growth of the Hunter region.

One of the HEDC's activities over the last two years was to attract telecommunication carriers to the region. To date there have been several carriers visit and discuss their plans for the region but no substantive outcomes have been achieved.

In late 2000 the HEDC was approached by a Canadian Telecommunication company which proposed the rollout of a broadband cable HFC network in the cities of Lake Macquarie and Newcastle. If the proposal comes to fruition it would represent a $170million investment in the region. The next six months should see if the project moves ahead.

Locally two other carriers have emerged in the region. Ipera and Soul Pattinson Telecommunications (SPT) both deliver to different segments of the market. Ipera has an optical fibre loop around the Newcastle CBD, while SPT delivers services through its retail arm, Kooee, essentially reselling Narrowband services. SPT itself provides a broadband microwave radio network servicing regional TV stations.

Other activities carried out by the HEDC were to stimulate the up-take and on-line services to all rural communities. This has been extremely successful with seven communities receiving funding from NTN to establish telecentres. Also several of these centres will be part of the NTN and NSW State Library Rural Link project which provides two-way satellite services and two 11megabit radio links based on 802.11b[1] technology to another two Rural Link members in the local township.

In representing issues for the region, wireless broadband technology would be an effective way to deliver "last mile" infrastructure especially in the rural area of our region. The "last mile" is the infrastructure required to deliver services to the users home. In the case of broadband it can be prohibitively expensive for the user, particularly a private home, and the carrier won't provide the infrastructure because it will not realise a return on investment.

For years communities in the Hunter have endured sub-standard infrastructure for the services currently delivered on twisted pair cables. In areas outside rural townships eg

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[1]IEEE 802.11b A Medium Access Control and Physical Layer specification for wireless connectivity for fixed, portable and moving stations within a local area. IEEE 802.11b also provides a mechanism for authentication and encryption.

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greater then 6kms, anecdotal evidence suggests that some of the cable has been in the ground are more then 50 years; this in many cases makes the cable sensitive to the elements. The end result of this is poor Internet connection speed typically 20 Kbps as compared to metropolitan speeds of 45 Kbps to 50 Kbps for dial-up modems.

Further compounding these problems, Pair Gain Systems (PGS) and Remote Integrated Multiplexers (RIM) are installed extensively throughout the Telstra Customer Access Network (CAN) in regional and rural areas. These technologies prevent customers taking advantage of broadband technologies such as ADSL.

So if you could deliver what is provided in metropolitan areas, to communities in the bush (ie more than doubling the speed) this would represent significant improvement for many people.

Wireless Spectrum
Looking at the geographic break up of spectrum allocations, it would appear that Sydney and the Hunter are grouped together. Portioning off spectrum would be an advantage to local telecommunication carriers operating in the Hunter region as it would give them the opportunity to obtain this spectrum.

Most small carriers operating in the region would welcome some concession to allow them the opportunity to extend their service reach. The main obstacle would be financing the purchase of the spectrum. This again reduces the ability for the small carriers to expand into new areas of the region.

It is interesting to note that telecommunications carriers that do own spectrum aren't using wireless technology in these regions to provide broadband to small communities. Therefore local telecommunication carriers are essentially locked out from competing in this market.

It would be an advantage if the geographic areas or footprint defined by the ACA for spectrum allocations could cater for carriers operating in rural and regional areas.

To address the financing issues for local carriers in obtaining spectrum, a subsidy from government to assist local carriers who are willing to invest in regional and rural areas, would have positive outcomes for the business and the wider community.

Technology Delivery Modes
The combination of wireless and power line technology may be a way of delivering the "last mile" in the bush. This technology uses the power line lead-in to the home to deliver the broadband service. Many carriers around the world are employing this technology and achieve data rates up to 52 Mbps. Typically delivery to households would be much less eg 1.5 Mbps to 6 Mbps.

Wideband CDMA may be part of the answer for regional and rural areas in delivering broadband services as it can provide data rate of up to 2 Mbps. However, the technology

may not be suited for all applications. Telstra as part of a future network upgrades for 3G could replace existing CDMA base stations to provide this service.

Fixed Wireless Access (FWA) is another effective way to deliver broadband over the "last mile" in rural areas. Currently Unwired Australia has the spectrum to deliver this service.

Broadband delivery effect on economic growth

Telecommunication companies will not come to regional and rural areas unless there is something attracting them to these areas. Usually this is a large corporate customer or a project which may be heavily subsidised through government funding eg. NTN or BARN project.

It has been my experience working in regional development that the larger carriers tend to cherry pick in regional towns targeting call centres, corporate and government sectors. In some of these cases infrastructure is provided for these customers, but the carrier does not seem interested in delivering to the broader community.

Most telecommunication carriers want a good return on investment in the shortest time frame possible. Unless the mind set by carriers changes, regional and rural area will fall further behind in "last mile" broadband delivery.

This has an impact on business wanting to expend or relocate to regional and rural areas. The cost of delivery of broadband or upgrading of services makes it costly. Some companies won't relocate for lack of network security. This forces them to move to a larger centre. The result is loss of jobs and potential jobs to these areas.

To make it more attractive for businesses to operate or relocate to rural and regional areas where broadband is not available at costs equal to metropolitan prices, a grant or subsidy could be provided. This would have a direct benefit to regional/rural areas economic growth in growing and retaining jobs. Similar subsidies have recently been provided to households and businesses through the $150 million extended zone tender where free satellite equipment was installed for eligible areas

Competition/Regulatory regime

In regional and rural areas, carriers willing to invest in a Broadband infrastucture need a period of moratorium on competition to allow time for them to establish themselves. This could be achieved through an application process to government in consultation with local government and region development organisations. Financing for such activities could come from proceeds set aside from the next sale of Telstra. Part of the process could involve a demand aggregation exercise and tendering process.

Because of Telstra's market dominance in the rural areas of the Hunter and the absence of real competition, Telstra has no reason to provide enhanced services other than to fulfil their Universal Service Obligation (USO).

Other comments

One of the main problems with the slow growth in broadband and Internet is a lack of effective demand. This can be attributed to lack of knowledge on its benefits to business, or those who may be interested find is too costly or it just isn't available. If a carrier does come to a small town, the dispersed nature of businesses in rural areas makes it difficult for carriers to deliver their product and service eg they may need radio option to deliver and because of licensing issues with spectrum there are very limited options available for delivery.

Suggestions /Recommendations

Opportunities do exist in regional and rural areas for carriers licensed to provide fixed wireless systems. The proposal is to present a case to them that makes it worthwhile for them to invest in the area. A number of options could be suggested:

- Demand aggregation is one way of mobilising local communities

- Providing grants to local communities already seen through some NTN projects

- Providing government subsidies to telecommunications carriers for the partial offsetting of Broadband infrastructure rollout costs

Conclusion

We have seen a recent announcement by the NSW Premier Bob Carr on how the NSW government will address delivery of broadband to the education sector. They will utilise NSW government infrastructure, for example NSW rail optical cable, Transgrid's optical network as well as other carriers to provide 2 -10 Mbps services to approximately 2600 sites in NSW.

The federal government through NTN funding and the NSW State Library is delivering satellite and 802.11b radio technology to 90 location in rural NSW. This bandwidth will potentially be made available to a total of 270 Non Government Organisations (NGO).

In keeping with reality, I believe that residents of rural areas will always be behind their city counterparts in being able to access the newest and fastest technologies. However, rural communities have legitimate needs for Broadband services and they should have some choices in the matter. Governments have a responsibility to ensure that mechanisms are in place that enable all Australian communities to be included in being able to access Broadband services on a equitable bases no matter where they reside.

Eddie Bernard
ICT Project Officer
Hunter Economic Development Corporation