



BROADBAND CONNECT AND CLEVER NETWORKS:

SUPPORTING INVESTMENT IN SUSTAINABLE BROADBAND

INFRASTRUCTURE

DISCUSSION PAPER

Response from [loddon mallee health alliance](#) and the [Regional Broadband Project](#) funded by Community Demand Aggregation Broker conducted through Loddon Mallee Region 2004-2006.



Summary

It is our recommendation that Connect Australia determine that the objective for utilisation of the \$1.1 billion funding is to facilitate access to competitively priced telecommunications infrastructure that supports “triple play” (voice, data and video) in regional and rural Australia. The funding models need to cater for new infrastructure and application development as well as effective sharing of existing and planned infrastructure and applications. This will enable a variety of organisations to provide the non-metropolitan Australian population and business environment with competitively priced services that exploit the technology to enhance economic and social development and deliver transformational change.

Some of the organisations may need a level of subsidy to be encouraged to provision new infrastructure while others may need a level of subsidy to be encouraged to share existing infrastructure. However, there should be no implied or real preference for one technology over another in relation to subsidy levels or volumes – rather the subsidy levels should relate to the services provided to the end user as they match points along the triple play spectrum, e.g. voice, data, video.

Additionally, consideration needs to be given to the development and exploitation of “backhaul infrastructure” within regional and rural Australia, to enable smaller Internet Service Providers and Application Service Providers to deliver their specialised applications anywhere in Australia at metropolitan comparative prices. Lack of reasonable access at an affordable rate to backhaul services can be an inhibitor to the provision of innovative solutions in remote and rural areas.

Another factor for consideration is the overlap between existing and potential subsidy programs which can result in multiple layers of infrastructure being installed (and subsidised by different levels of government and programs). For example, a doctor’s surgery could receive a subsidy for the establishment of a satellite broadband connection, a pharmacy could receive a similar subsidy, and a small business could also receive a subsidy – if all three are in the same building, the result could be three satellites on the roof! By encouraging complementary and collaborative approaches to service provisioning by service providers, this could be avoided.

Another major consideration is how to ensure that users are able to make most effective use of the services that are delivered – ranging from how to choose a service provider to how to evaluate one package against another, to how to exploit the application for the benefit of their business and/or their community. Access to relevant and timely education and training is imperative to ensure that the investment made by governments, businesses and householders delivers transformational benefits.



Q1. How can the design and delivery of Broadband Connect be optimised to achieve long term sustainable quality broadband solutions for regional, rural, and remote Australians?

Learning from the success of the existing HiBIS scheme, the evolution of the program needs to consider a number of potential enhancements:

- *separate wholesale and retail subsidies that would enable a provider in a newly “broadband enabled” area to offer to share their infrastructure with other providers at a fee.*
- *access to backhaul infrastructure*
- *structured subsidies that start with provision of basic service but increase as services move to triple play*
- *focus on effective use outcomes and deliverables*
- *reward collaborative as well as competitive outcomes*
- *look to innovative business models for providers (normal business model for metropolitan providers based on numbers of customers is not applicable in regional and rural Australia)*
- *LMHA supports sectoral based approach rather than individual businesses and households*

Q.2 What means can/should be used to encourage further capital investment in infrastructure that will support competitive networks and services under Broadband Connect and beyond?

Identify and quantify where capital investment is required to meet known demand and extrapolate to five years based on best practice implementation. Subsidy should also apply to development and exploitation of backhaul infrastructure. Look at other capital intensive investment models where governments and/ or private sector organisations provide initial funding with the returns being deferred for some years.

Q.3 How can Broadband Connect funding be structured to provide the best incentives for investment?

Have a wholesale and retail level, have some payment on installation and implementation of individual service, and some payment at 12 months and 18 months as more services are delivered, and/or contract renewal.

Minimise the funding of “pilots” – proceed on the basis that if a pilot works in one geographic area it will work in a similar geographic area.

Q.4 Is terrestrial or satellite the most appropriate means of delivering broadband in regional, rural and remote areas?



Why does a technology need to be defined as “most appropriate” – the measurement of effectiveness (or otherwise) should be on the deliverable. For example, Voice over Internet Protocol (VOIP) is not effective over satellite.

Q.5 Can satellite be delivered as competitively as terrestrial services?

Probably not – but in some cases/areas it may have other advantages. However, the issue is the deliverable - the application or service - not the infrastructure used to deliver it.

Q.6 Should participating providers be required to commit formally to service the areas they identify in registration applications?

Yes – with some degree of “commercial in confidence” protection to ensure that they have time to implement their service.

Q.7 Should annual renewal of funding agreements specify timeframes for commencement of services in areas of greatest need?

Who defines greatest need? How? Is it need for a basic service (i.e. any broadband Internet service) or a comparable competitive service with a regional centre and/or a metropolitan environment?

Q.8 Should a system of prioritised funding for services connected in areas of greatest need (beyond what has been provided under the HiBIS two tiered incentive structure) be introduced?

How is greatest need determined? By whom? What criteria? Is it more than population remoteness? Do not want to continue the “distance disadvantage gap”.

Q.9 What can be done further to overcome barriers to capital investment in sustainable technologies in less commercially viable regional areas?

More of HiBIS with a regime of collaborative access to, and share of, existing infrastructure – e.g. multiple satellites on same building is not necessarily a positive outcome.

Can lessons regarding overcoming barriers be learned from other capital intensive development projects, e.g. roads, ports, power?

Q.10 How can the high cost of some technologies be reconciled with increasing customer expectations for higher speeds and usage allowances especially in more remote areas?



Not sure of the connection between cost of technology and increasing expectations. They are not dependent upon each other. Customer expectations will rise consistently with delivered benefits and the availability of and desire for new applications and services. Cost of technology should not be an inhibitor to providing opportunities in regional and remote areas. Different models need to apply to establishment of initial infrastructure compared with either adding capacity to existing infrastructure or implementing more advanced technology.

Q.11 Should it be mandatory for program participants under Broadband Connect to provide additional information as listed below as a condition of registration?

While all of the items below appear sound, their provision could cause a competitive advantage to be destroyed so the information would need to be handled sensitively.

- intended further service areas (with approximate dates of commencement of supply)

Yes – dates of commencement need to be confidential or areas “reserved” for a time period. Dates of commencement should not be too far ahead allowing any one provider to “reserve” numerous areas at the exclusion of other providers. The number of areas reserved at any one time need to be restricted.

- the viable geographic reach of broadband services from central transmission points for service delivery

Only estimates are possible for wireless deliverables without a property by property analysis which could be time consuming and very expensive for a potential provider to determine prior to commencement of a service.

- technical barriers limiting the application of providers’ technology in regional communities

Not sure what this means – does it refer to latency in a satellite situation, or non line of sight impacts for wireless, distance from an exchange?

- the capacity of providers’ technology to support varying types of broadband traffic and use

Yes

- the range of service speeds providers’ technology would be able to support

Yes

- the capacity of providers’ technology to provide services now and to accommodate new developments such as increased speed, usage and applications in the future



Yes, within the bounds of commercial confidentiality

- the particular relevance of the technology to other communication services (for example, capacity to be used also for supporting mobile telephony services)

Yes

- a summary of the broad nature of technology they employ; and

Yes

- anticipated timing and target areas for their technology deployment in regional Australia

Yes, within the bounds of commercial confidentiality

Q.12 On what basis would you argue that certain specific technologies will have the most impact on the delivery of regional broadband services in the next three to five years?

We would consider that because of scalability, future proofing, and long term cost stability that could underpin significant economic development Fibre to the Home has the most potential impact. We do not anticipate that the investment will be made by any provider or source of funds to enable that to occur nationally. State/Local government planning rules for new estates could assist in achieving this to some extent.

Q.13 How would you compare the effectiveness of these technologies to others in the market place?

Fibre to the Home would position all potential consumers to benefit from all Broadband technologies.

Q.14 To what extent will broadband technologies be able to augment capacity to meet rapidly expanding consumer expectations or higher bandwidth and more advanced applications?

Viable provider options have to include capacity and throughput upgrades as well as access to triple play.

Q.15 Can complementary technologies provide better solutions for delivery of services in regional Australia?

Possibly with support of subsidised collaboration by service providers.



Q.16 What innovative approaches should Broadband Connect adopt in its program design to utilise these technologies most efficiently and effectively?

The program could give “extra” points/credits (subsidies) for collaborative approaches to utilise existing infrastructure; seamless integration with existing services; and focus on outcomes rather than only inputs.

Q.17 What capacity do existing technologies have to accommodate the introduction of new developments, such as increased speeds, usage and other applications?

Try to preclude provider end games with short term focussed programs – e.g. minimum contract 18 months with 18 month option – sunset clause and “out” management of providers.

DCITA funded resource (DAB) could provide ongoing management relationship of providers – responsibility passed to state government and/or local governments. Encourage upgrade paths without penalties.

Q.18 Should the current system of incentive payments to providers for the supply of broadband services be retained?

Yes – with notice taken of other questions/answers and comments.

Q.19 Would an up front method of payment be more effective?

No – that would only attract multiple levels of infrastructure – not implemented services and effective use by regional and rural businesses and householders. Incentive needs to be tied to usage – notion of “pipe” not good enough; needs to be loaded with applications.

Q.20 How else could the method of payments to providers be adjusted to achieve more satisfactory outcomes for providers and people living in regional, rural and remote Australia?

We suggest an initial payment to provider to cover infrastructure subsidy, and then a payment made when real services are delivered, which may be six months (but no longer than twelve months) later.

Focus on and in each region (or LGA) may be different. Should (or could) the infrastructure ownership/management pass to the local government or collaborative groups of local government? Local government councillors need education on the value and benefits of broadband to enable them to promote its uptake.

There could perhaps be greater collaboration between federal and state governments’ programs regarding provisioning and subsidising infrastructure.



Q.21 Should funding be provided:

- based on the number of customers connected?

yes – individual customers, number of users, numbers of users /sq kilometre /LGA; ratio in region; population, industry sector spend.

- the number potential premises with potential access?

no – not unless there is a wholesale and retail payment split and management of the arrival of new providers

- a combination of both methods?

possibly

Q.22 If funding was based on the number of premises with potential access should it then only be provided for infrastructure?

No – infrastructure by itself will not deliver transformational change.

Q.23 How can methods of payment under Broadband Connect be better structured to ensure that providers are not overcompensated for the supply of broadband services?

If payment is based on each actual implementation how can there be overcompensation – unless the incremental cost to provide second and n services is negligible in relation to the first service.

If providers operate on a threshold approach at least partial compensation could be withheld until the threshold number is reached. Full payment should relate to actual service delivery not capacity to deliver services.

Minimal payment should relate to the provision of wholesale capacity. Maximum payment should relate to the provision of services to end users.

Ensure multiple funding programs do not subsidise multiple infrastructure by enforcing recognition of existing infrastructure and encouraging collaborative approach by subsequent providers.

Q.24 Should the current HiBIS threshold model for speed and usage be maintained at existing levels under Broadband Connect?

A secondary level could also apply, as well as a pathway to greater capacity. Care needs to be taken to ensure that there can be some degree of parity of services and service levels between regional and metropolitan areas rather than just provision of an entry level Broadband service being accepted.



Q.25 Should the model be retained with increased minimum speed and/or usage requirements?

Two tier system is needed. Areas that have no access now need to have capability of moving to entry level including triple play.

Q.26 Should two separate minimum speeds with two subsidy levels be introduced?

Where there is incremental infrastructure required to provide second level.

Q.27 Do threshold requirements need to be expanded to accommodate other issues such as latency?

Does this mean accommodate a “limitation” of some technologies to ensure they are part of the landscape? Does it only apply to satellite? Does this mean that at least some satellite services are mandated? Does this mean that it has been determined that only satellite services are applicable to some parts of regional Australia? Does increasing the speed incrementally minimise the impact of latency? Does the speed have to double?

Q.28 Should the Broadband Connect Stage 1 price caps be retained under Stage 2?

Probably – but taking into account other comments.

Q.29 Should a greater range of price caps be introduced than the two currently available?

Where multiple funding programs have the potential to create multiple satellite installations on the same building (or within very close proximity) rationalisation of infrastructure subsidy should apply. Incremental costs to deliver multiple “site” benefits should be taken into account. Shared utilisation of existing infrastructure should be facilitated across funding programs with recognition of the need for security between sites.

Q.30 Should the current funding cap level of 60 per cent continue under Broadband Connect?

The funding cap level should be no more than 30 per cent to any one provider at the retail level. If there were to be a wholesale level a different split may be required recognising that multiple providers can install infrastructure for DSL, and that wireless and satellite providers could also wholesale services (especially where currently registered wireless providers have to become licensed carriers to be HiBIS accredited).



CLEVER NETWORKS

It is envisaged that Clever Networks will fund a new broadband brokers' role to build on the current DAB Program which expires on 30 June 2006.

Q.1 Considering the current DAB program structure – involving State, community and sectoral brokers – is the current arrangement the best model for catalysing broadband developments in regional, rural and remote Australia or how should it evolve?

Where existing programs are delivering infrastructure to regional and rural areas the take up of Broadband has been as expected – however there are two areas that need to be improved:

- A) *initially prior to an individual or businesses taking up a newly available service there needs to be timely access to an independent source of information regarding the relevant benefits of any particular service or technology. Many towns, communities and regions do not have access to information technology services expertise within a one hour drive.*
- B) *prior to and concurrently with the uptake of new services, education and training on the planning for and implementation of household and business processes to bring about benefits from Broadband Internet need to be accessible.*

Q.2 What role can/should brokers play in promoting core facilitating the effective use of broadband applications in order to enable communities and businesses to capture the transformational benefits of broadband?

Bring local knowledge and exploiting access to training and education resources – through RTOs, through RTCs, through ACCs, and/or through Victorian State Schools facilities prior to local services becoming available (dependant upon rollout timetable); be conduit for any proposed rollout, “sign off” the supplier has canvassed and tapped into local knowledge.

Q.3 What other resources or programs should the brokers be aware of in this role?

Most recent infrastructure roll outs and current footprint of available infrastructure, state and local government contracts, state and federal funding programs. Broker should cover a geographic territory and be the conduit for “intelligence” relating to current and proposed projects and should provide input into Clever Network decision making regarding acceptable requests for funding.



Q.4 Should the broker role include an increased focus on “effective use” outcomes and, if so, how can this best be achieved.

Absolutely yes. Targeted and timely education and awareness raising activities for types of applications – e.g. farm management, GIS, remote management

Q.5 Should uptake and effective use of broadband by specific groups be targeted and, if so, which ones?

Groups could include Associations and industry groups (Farmers’ Federation, CPAs, Chambers of Commerce, and Progress Associations) not only as potential users of common tools but as leverage into wider communities. We don’t see these groups as being recipients of funding in their own right but as champions in their sectors and recipients of training and education regarding the benefits of Broadband Internet to their constituencies. Brokers could play a significant liaison role with these groups.

Q.6 How might the brokers play a role in facilitating/supporting community-wide connectivity and community-wide (cross-sectoral) networks?

They could operate as per the DAB process, i.e. on the ground involvement within the communities and involved with all stakeholders.

Q.7 Should future demand aggregation activities be focussed in areas that have yet to receive terrestrial Broadband services under HiBIS to support the delivery of the new Broadband Connect program?

There is still work to be done regarding effective use of newly implemented Broadband Internet services concurrently with areas that have yet to receive any services. However, if there is no identifiable and quantifiable demand in a particular area, it should not be attempted to be forced.

Q.8 Are health, education, emergency services and local government the appropriate services for Clever Networks to target?

Perhaps should look at connectivity between these groups and optimisation of utilisation of existing infrastructure for either common or shared services. Other interest groups may also be relevant – co-ops, farming groups. There could be incentives to move away from a model of individual organisation ownership of infrastructure to a usage model.

Q.9 Should there be priorities within this group?

LMHA would define Health as the backbone to the business case but recognises that other sectors and interest groups need to be in the stakeholder group. As



stated elsewhere, local councillors, economic development, planning staff and CEOs of Councils need to be educated about the potential benefits of Broadband internet, and how those benefits can be realised in their LGAs.

Q.10 What other sectors, if any, should also be considered?

Could look at the traditional sectors of Health, Education and Local Government, but through different slice – similar to life event approach to BEP, or business application.

Q.11 Should there be a focus on particular applications/sectors which will require and drive network or industry capabilities?

Yes. Building on effective use, looking to develop centres of expertise, perhaps a shared GIS application across a number of LGAs could be developed as a pilot project.

Q.12 What strategies could be incorporated into the program design to ensure that investment under Clever Networks provides the greatest holistic community benefit?

Involve the widest feasible stakeholder group (ensure major underwriters are in the project – health, education) and quantify benefits to be delivered. Local councillors need training to understand the benefits that Broadband Internet can bring to their communities and LGAs.

Q.13 Is there an ideal balance between infrastructure and application streams and, if so, how can it be identified?

Individual projects/applications require balance between new infrastructure and existing infrastructure and application benefits perhaps overlaid with geographic scope. More emphasis and focus by local government to understand and accept that Broadband is required and to influence the planning phase of new developments.

Q.14 What is the best balance between competitively determined and strategic investment funding?

Clearly it is a challenge to pre-determine a balance – however, if the underlying objective of Connect Australia (Broadband Connect and Clever Networks) is to assist with the initial funding for the provision of infrastructure to provide triple play capable Broadband Internet in a competitively sustainable manner to those parts of regional and rural Australia where there is quantifiable demand, can it be assumed that there is vision or expectation of what that would or could “look like”. Then by understanding what is currently in place, a gap analysis could



determine “what needs to be done” – some of this could be classified as “more strategic” than other parts.

Q.15 Would potential proposals be improved if the guidelines permit proposals which encompass both infrastructure and application aspects?

Yes – to ensure quantifiable deliverable; infrastructure by itself provides potential not actual benefit.

Q.16 What key strategic investments in broadband infrastructure have the potential to provide the best outcomes?

Universal access to backhaul at appropriate/relevant cost for long term utilisation

Q.17 Are there complementary sources of funding/contributions which should be considered in developing the guidelines for the Clever Networks program?

***State and local government programs/projects
Sectoral based funding
University based research
Privately funded research
R & D companies
Contribution (either monetary or in-kind) by applicant for funding. Consideration should also be given to cost minimisation for successful consortium by avoiding duplication of costs that were incurred to establish the project partnerships, e.g. the need to go to tender to establish best of breed products, or undertakings regarding intellectual property patents and/or ownership.***

Q.18 Should there be specified minimum broadband specifications (eg bandwidth, latency, etc) for Clever Networks and, if so, what should they be and how should they be determined?

Focus needs to be on outputs or outcomes rather than input, e.g. for VOIP all QOS and SLAs etc are needed. Any infrastructure needs to be capable of supporting triple play at a minimum.

Q.19 What steps/mechanisms can or should be incorporated, if any, into Clever Networks to enable regional, rural and remote communities progressively to transition to high / higher bandwidth networks?

Ensure that effective use education and awareness of new applications/uses is current, and that upgrades are affordable and transition plans exist without financial or time penalties.



Q.20 New technologies are showing considerable promise in providing broadband access to users well outside the current DSL limitations. What strategies should be adopted to encourage and support deployment of these new technologies, and to ensure newly emerged technologies are not precluded during the lifecycle of the program?

Focus on what people in different regions want.

Recognition that 40% of HiBIS installations up to October 2005 were satellite and wireless; deployment of DSL 2+ in some areas; trials by Telstra with Extel (up to 20 kms from exchange).

Strategies need to recognise convergence and “triple play” and combinations of technology rather than a particular technology as the only way.

Q.21 What supporting information should be required in Clever Networks proposals in order for their sustainability beyond the life of the program to be evaluated effectively, and what factors should be considered in determining sustainability?

Sustainability needs to be documented at three levels – the provider, the infrastructure and the application. The provider needs to define and document their ROI model and an exit strategy (sunset clause) which can be monitored by the funding body. Asset ownership of both the application and the infrastructure would determine some of the criteria for sustainability, e.g. maintenance, new release management. Equally the benefits to be delivered by the application/infrastructure should be documented and measured at agreed time lines. Initial proposal needs to include methodology to achieve this and define potential remediation. A proportion of the funding that is not infrastructure related could be withheld for progress payments based on delivered benefits criteria.

Q.22 For any new infrastructure created or made available, should there be specified minimum infrastructure access arrangements for parties other than infrastructure owners, such as a wholesale-rate for backhaul?

Yes, but also for shared access to establish a competitive service. There is a need to manage second and subsequent service provider arrivals to ensure “no free rides” to impede competitive edge.

There needs to be some discussion regarding asset ownership and accessibility of the infrastructure to other providers. Should ownership transfer to a level of government after a certain time frame, after a certain number of applications and/or users connected?

Q.23 How realistic is such a requirement, and how tangible are the likely benefits of the approach?



It may reduce the duplication of infrastructure in some areas which should release resources and capital to be applied to “disadvantaged” areas; need incentive for more than one provider to share costs which should result in more funds being available for other areas.

Q.24 How can an appropriate charging regime for such access be determined?

Charging model needs to be on a commercial basis with regard for regional, rural and remote implications of existing or short term competitive status. Need to ensure that providers do not “price out” their competitors by charging excessive rates for access. However, a time period of “exclusivity” should apply to providers of new infrastructure.

Q.25 What other program activities should be taken into consideration in determining Clever Network program eligibility and entitlement?

Leverage from any other \$ expenditure, Broadband Connect, Backing Indigenous Ability, State broadband programs and projects, Sectoral based funding projects, input from Geographic based Broker(s) and National Advisors for Health, Education, and Local Government. Bonus incentives could apply where projects include proactive collaborative links to other programs and projects. In kind contributions should have a quantifiable and realistic value applied.

Q.26 Having regard to the possible diversity of the activities under Clever Networks, what strategies can/should be considered?

***Sustainability of provider, application and infrastructure
Outcomes and deliverables
Asset ownership
Ongoing resources
Collaborative approach
Non silo approach
Location based components rather than only sectoral***