Rural Broadband
Reframing the debate

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The Plunkett Foundation and Carnegie UK Trust approach to rural issues

Founded in 1919, the Plunkett Foundation helps rural communities through community-ownership to take control of the issues affecting them. We have a strong focus on supporting the development and success of community-owned village shops across the UK; supporting the development of wider forms of rural community enterprise; and raising awareness internationally of the potential of community ownership for rural communities.

The Carnegie UK Trust was established in 1913. We work to improve lives by changing minds through influencing policy, and by changing lives through innovative practice. We have been actively involved in the development of community assets, and we have a long history of support for rural development. We are committed to ensuring that effective policy approaches are deployed to support rural communities.

This paper was written by staff at the Plunkett Foundation with assistance from colleagues at the Carnegie UK Trust. We would like to thank all of the case study projects referenced in the report for their support and insight. Particular thanks are due to Daniel Heery from Cybermoor Ltd and Chris Condor from B4RN.

Plunkett Foundation White Paper Series
The Plunkett Foundation White Paper Series aims to bring a fresh perspective to a range of issues affecting rural communities across the UK and Ireland. The series focuses on how rural communities through community ownership can take control of the issues affecting them.

The series is aimed at:
- Community activists living across the UK who are trying to make their communities better places to live and work
- Policy makers with an interest in rural communities and community-ownership
- Support organisations with an interest in rural communities and community-ownership

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INTRODUCTION

This is the first in a series of Plunkett Foundation White Papers. It is a joint paper from the Plunkett Foundation and the Carnegie UK Trust – two organisations which have worked together for over 90 years on a range of rural issues across the UK and Ireland.

The paper aims to bring a fresh perspective to the issue of high speed broadband access in rural communities across the UK and Ireland. It does not seek to provide an in-depth policy analysis or a detailed explanation of broadband technology and approaches – this has already been done by others. Rather, the paper aims to bring a new angle to the rural broadband debate – focusing on how rural communities, inspired by the range of remarkable opportunities that high speed broadband can offer, can take greater ownership and leadership of this agenda in a range of different ways and play a central role in the provision of broadband services in their local area.

EXECUTIVE SUMMARY
Rural Broadband – Reframing the Debate

The challenge of helping rural people access high speed broadband should not be underestimated. Larger distances to travel and a more dispersed population mean that rural communities often not only have difficulty accessing broadband services; but where they can access them they are often of poorer quality and more expensive in comparison than in urban areas[1].

Rural communities are becoming increasingly frustrated with the broadband infrastructure available to them[2]. Many fear that high speed broadband provision will follow the same pattern that mobile phone access in rural areas did, in that access is patchy, and where there is access, it is often poor quality. A concern is that – despite the significant attention now being paid to this issue by governments, regulators, private business and communities – some rural areas across the UK and Ireland will not get sufficient broadband services to play a full part in 21st century life. Under current UK Government plans only around 90% of homes will have access to high speed broadband by 2015.

A handful of pioneering rural communities are tackling this challenge head on by setting up a range of innovative community-led broadband enterprises. A leading example is Cybermoor Ltd[3] in Cumbria. Some rural communities are seeking to stimulate demand from within their communities to attract better services from private sector broadband providers while others are engaging in local authority led plans for broadband investment in their local areas. While this paper focuses on community-led solutions, we acknowledge that the approaches may not be possible or suitable for all rural communities.

For many rural communities, solving the issue of high speed broadband provision can feel like an impossible problem. Due to the perceived complexity of the current technical broadband solutions, too few rural communities are being inspired at present to solve the broadband conundrum that they are facing. The knock on impact is that rural

communities are not getting access to the community services that they want and need. As ever-increasing speeds of broadband provision become available in urban areas this problem of 'digital exclusion' is only going to be exacerbated for those remote rural communities who have little chance of accessing high speed broadband services in the short to medium-term.

The issue of rural broadband, we believe, is not only a technology question. It's about a fundamentally different way of connecting up for rural people and rural communities. Technology is a way of delivering this change.

The current model for community broadband support is highly dependent on those individuals and organisations with an in-depth knowledge of broadband technology. These highly knowledgeable people are often also responsible for trying to co-ordinate support to communities to come together to solve the broadband problem. However, this model, we believe, does not work for many rural communities as it assumes that those with technical knowledge are also able to deliver the whole range of different types of support needed by rural communities. Instead, a range of different support is needed from a range of specialisms in order to give rural communities the best chance of success.

The Plunkett Foundation and the Carnegie UK Trust believe that governments and markets alone cannot meet the high aspirations of rural communities. Rural communities themselves, particularly in remote rural communities where distances are greater and the population more dispersed, must play a central role in achieving the services that they require. Therefore there is a need to reframe the rural broadband debate. We need to change from the current top down approach, where broadband solutions are not obvious to communities, to an approach that focuses on inspiring rural communities with what is possible using high speed broadband. A handful of community-led models are already in existence and working successfully across the UK, Ireland and internationally.

The critical question that needs exploring further is how to empower rural communities to take a more active involvement in their broadband future. A key component to addressing this question is making the community enterprise models available to rural communities more

accessible both in terms of technology and in terms of the language used to describe them. It is also equally important to clearly explain to rural communities the range of ways in which they can influence their digital future outside of community-ownership and community enterprise approaches.

A basic premise of this paper is that a significant number of rural households, rural businesses and rural communities will not have access to good quality high speed broadband based on the anticipated level of deployment by governments and the market unless they take action themselves. This action, to a large extent, will require rural communities to take ownership in different forms of broadband networks and/or online services and ownership of their digital futures overall.

In the future we believe that there will be three types of 'community-ownership' within the context of rural broadband:

- Those who own the network and the services provided on the network;
- Those who own the network but do not deliver services;
- Those who own the services but do not own the network

To achieve greater levels of community ownership of rural broadband services – in whatever format – a number of issues need to be addressed. Here is a summary of our conclusions:

1.Inspire communities
Demand for high speed broadband services must be stimulated by rural communities who are inspired by what they could achieve if they had access to broadband. Once this has been done, a community then needs to decide how to going about achieving it.

2.Improve accessibility
The accessibility of models that rural communities can use to introduce or improve high speed broadband services must be improved. This means that the language used to talk about the development and delivery of broadband services – from the technology used to the models adopted – must be appropriate and easily understood by everyone. There are also valuable lessons to be learnt from other established community ownership models.

3.One place to turn to
It's vital that rural communities know who to turn to if they want to take control of the issues of broadband provision in their area. This can be achieved by creating a partnership of people and organisations that are best placed to serve their needs – from technology and enterprise specialists to community development and rural development specialists.

4.Don't overwhelm
It's important that communities are given the most appropriate information for the stage of development they are at; overwhelming communities with information on the entire process when they are in the initial stages is counterproductive, and could discourage them from pursuing it further.

5.Explore new service models
Communities need to think creatively about using new and existing digital technology to deliver services. To do this, communities need to review what already exists alongside identifying what additional services communities need.

6.Explore innovative funding models
Communities will need access to finance to take control of high speed broadband whether they are going it alone or partnering with the public and private sector. Emerging funding models like community shares, Public Works Loans and finance through the Big Society Bank should be supported and encouraged and European funding through Rural Development Programmes and European Regional Development Funds should be explored.

A set of detailed recommendations is provided at the end of the paper.

Why broadband matters to rural communities

The issue of broadband access touches virtually all aspects of rural life. Lack of or poor quality broadband affects the ability and agility of rural economies to grow and be resilient and the services and quality of life rural people have access to. It also stifles the creative use of such technology for enterprise and service innovation in rural areas.

The availability of high speed broadband in rural communities opens up a range of opportunities for local government, business, communities and individuals to do things differently which were not previously possible. These opportunities are set out below under the four interconnected headings of rural economies, rural services, rural people and the 'unknowns'.

1.1 Rural economies
Increasingly there are problems running businesses in areas where broadband services are slow or limited. High speed broadband clearly opens up the potential for a range of economic activity that can contribute to rural economic growth including:

- The opportunity for various forms of entrepreneurship, creators and co-creators of enterprises and community services;

- Micro enterprise creation;

- Opportunities for the creative industries.

An example of this creativity has been the development of the Flying Shepherd Project[4] which uses drone technology and the broadband capacity developed by Cybermoor Ltd to provide a sheep monitoring service to upland farmers.

1.2 Rural services
The cost of delivering many services – both public and private – in rural areas is generally higher than urban areas due to greater distances and a more dispersed population[5]. As a result many rural people do not have access to the same level of services as people living in settlements of

higher populations. High speed broadband provides an opportunity to change this. Service providers are increasingly seeking to rewire the services they deliver due to the costs involved in current service delivery models; the opportunities for innovation that new technologies are opening up; and there is a requirement to be more responsive to local needs – whether this is driven by the move to localism or the personalisation agenda.

This may lead to a better level of services being available to rural people. Certain public services in particular appear likely candidates for transformation through new approaches that high speed broadband opens up:

- Health and social care services – the economics of health care provision will become increasingly pressured in the coming decades due to the higher costs of health care required for an ageing population. Access to high speed broadband potentially enables rural people to stay for longer in their own homes which has benefits for the individuals involved (being closer to friends, family and wider support networks) and public service providers (lower costs).
- Educational services – schools, further and higher education institutions and lifelong learning centres are increasingly providing educational services and opportunities online. High speed broadband access is needed to maximise these opportunities.

Access to high speed broadband can also allow communities to explore creative opportunities for community service delivery and can also open up new opportunities for private service providers. It will allow rural communities to seek a different relationship with private providers. It could also address issues such as lack of choice and the connected issue

of the higher costs of rural services. It opens up opportunity for internet-based service providers that can address gaps in service provision. It also allows new markets to be created for online or streamed television, music and films.

1.3 Rural people

As service providers move increasingly to new ways of delivering services using the opportunities provided by new technology there is a significant risk that social exclusion and rural isolation could increase. In accepting that not all people get access to high speed broadband, we're also accepting that social exclusion will increase for some and those rural communities without access will become places that not everyone will be able to live and work. This is a fundamental challenge.

1.4 The unknowns

Arguably the most exciting potential uses for high speed broadband in rural areas have yet to be dreamt of. High speed broadband provides opportunities for creative rural economies, innovative rural services and ambitious rural people. We don't know what these uses will be yet but what we do know is that history shows that new models of communication lead to innovation and entrepreneurship.

Rural broadband provision in the UK and Ireland

The key issues facing rural broadband access and provision across the UK and Ireland, in summary, are:

- Broadband is becoming an ever more important part of rural life. 70% of households in the UK subscribe to a broadband service[6].

- Many rural areas currently have access to only basic or limited broadband services – in England 23% of rural households have no or limited (less than 2Mbps) broadband[7].

- Many rural areas even when above the 'limited' level (2Mbps) have insufficient broadband to deliver basic services such as BBC iPlayer.

- Many rural people and communities risk being left behind in gaining access to high speed broadband, as current plans from the UK Government commit to only 90% coverage by 2015[8].

- The gap in aspirations between what communities want from their broadband service and what the government and the private sector are able to provide will need to be addressed by communities themselves – wholly or partially.

- There is a deep rooted connected issue of lack of mobile phone signal in rural areas, particularly 3G services – although the forthcoming deployment of 4G technology will help to bring about some improvements in this area

A range of approaches and interventions to improving broadband access are being taken forward by the UK and Irish Governments and the devolved governments of Scotland, Wales and Northern Ireland. While plans are underway, their impact on broadband provision in rural areas is to some extent currently unknown as delivery is in early stages.

What these plans have in common is:

- The understanding that it is a significant challenge delivering broadband in rural areas;
- A recognition that policies and actions need to be put in place to address the market failure of broadband provision in rural areas;
- An acceptance that due to budget constraints governments will not be able to commit the full resources required to bridge the broadband divide;
- An acknowledgement that there will be a reliance to varying degrees on rural communities to address this gap themselves.

Building upon this final point, the Scottish Government and Welsh Government have specific plans and activities for supporting community-led broadband development, while the UK Government has a Rural Community Broadband Fund under the Rural Development Programme for England. These policies acknowledge the fact that government plans will not deliver high speed broadband to all rural communities. While these are important steps in the right direction in enabling communities to develop their own broadband infrastructure, more support is needed to stimulate community action in rural communities across the UK and Ireland.

A detailed review of broadband policies across the UK and Ireland is included in appendix A.

"Industry is telling us that by 2015 more than 50% of the population will have access to very fast broadband – at least 70 Mbps. We can also expect that most of the rest of Irish homes will be able to access broadband which, by today's standards would be considered very good quality. However, we face a major challenge because 15-30% of the population will continue to have basic broadband service only, as the case for commercial investment in rural areas is very challenging."

Pat Rabbittee, TD, Minister for Communications, Energy and Natural Resources for the Irish Government (May 2012)

The opportunity for community ownership and community enterprise to reframe the rural broadband debate

The Plunkett Foundation and the Carnegie UK Trust believe that a community ownership and enterprise approach can help to reframe the rural broadband debate, and enable a number of rural communities to benefit from the high speed broadband services that they may otherwise not have access to. At the same time, it may of course not be possible or preferable for all rural communities to set up community enterprises and some may chose to work with public and private sector options where these exist.

The Plunkett Foundation has been involved in developing rural co-operatives, social enterprises and community-owned businesses since 1919, and has played a key role in helping to bring about a significant increase in the number of community shops trading in the UK – from fewer than 20 in the early 1990s to nearly 300 today.

Through this work the Plunkett Foundation has developed an 'enterprise development curve' which sets out how community-ownership and community enterprise development takes place. It has been developed on the basis of the real life data relating to the growth and development of various forms of rural co-operatives, social enterprises and community-owned businesses. These phases are as follows:

ONE	TWO	THREE
Pioneers phase	Development phase	Mainstream phase

The Pioneers phase is characterised by highly resourceful and entrepreneurial individuals who will do whatever it takes to make their community enterprise a success. The Development phase is where communities learn from the pioneers and change and adapt their

models to fit their communities' needs. At this point, a range of models are tried and tested with great success and also some failure. At the end of the Development phase a range of robust and resilient enterprise models have been developed that can be adopted by other rural communities, ensuring they avoid having to reinvent the wheel. At this point, a community enterprise model can enter the Mainstream phase – and become the accepted way a rural community addresses an issue it is facing.

Three factors are needed for the development of community enterprise models to move through the development curve:

- **Access to finance:** The availability of the level of finance required to become established and begin to trade. This typically comes from a range of funding sources and funding types.

- **Access to business support:** This is often sought from a range of support providers and the availability of affordable and accessible support is essential for community enterprises to move their ideas forward. Business support can be in the form of helplines, mentor arrangements, generalist business support and specialist community enterprise support.

- **Access to inspiration:** By this we mean communities need to be inspired to believe in what they can achieve together through community enterprise.

Community broadband is currently in the Pioneer phase of development, where a range of innovative community broadband enterprises have been established. However, inspiration is currently insufficient in the current rural broadband debate and more needs to be done to inspire more communities to take action in this area – showing them exactly what can be achieved with access to high speed broadband and how their lives and businesses might be improved.

Communities can also learn from the development of other forms of community enterprise including how to structure and govern a community-led business, such as community renewable schemes or energy co-operatives; and from the roll out of other communications technologies such as DSL and mobile phones, which will provide an indication of what level of high speed broadband service they might anticipate the market delivering in their area.

However, the community broadband sector faces the additional challenge of the fast-changing nature of broadband technologies, which means that the broadband needs of communities – and the opportunities available to them – can also change rapidly.
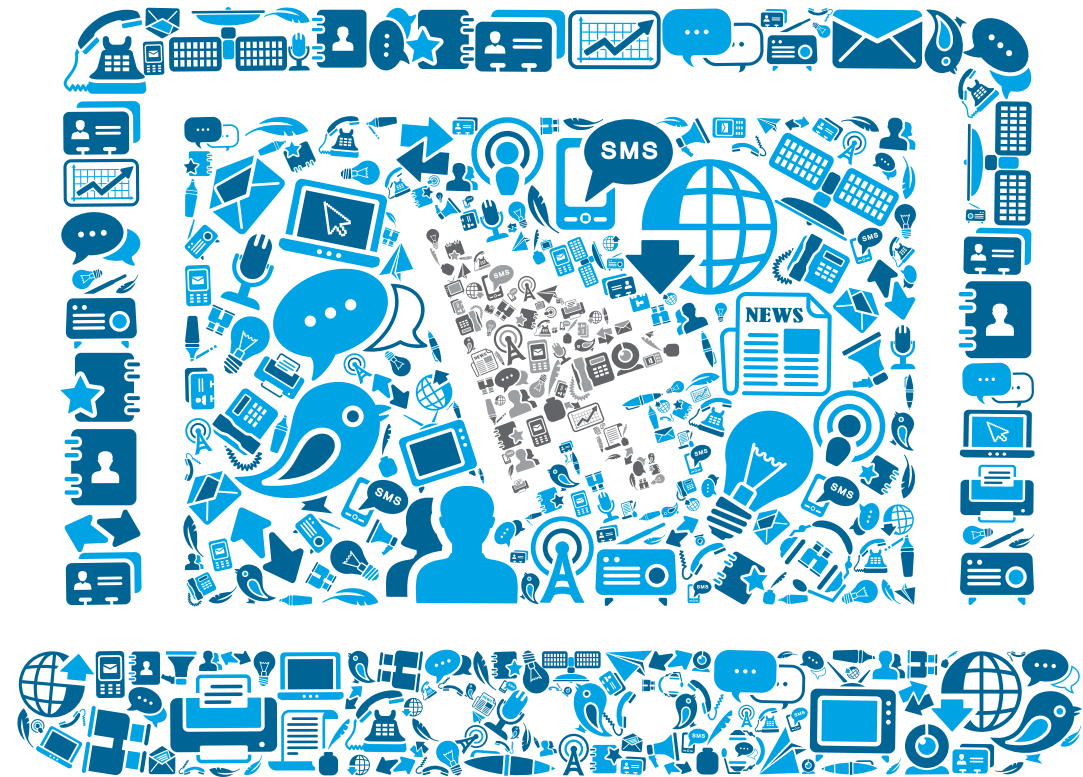
CHAPTER FOUR
The support needs of community broadband enterprises

A key consideration when looking at the development of community enterprises in their many forms is the 'support ladder' approach. This essentially has similar aspects to the housing ladder – you need to be on the first rung to get on the second rung, and so on. Getting rural communities on to the first rung of the support ladder is a key challenge, but one that can be tackled through extensive promotion and awareness raising work over a sustained period of time.

The support ladder progression will look something similar to the following for most rural communities:

The enterprise operates successfully, diversifying where appropriate and thriving for the long term.
A rural community enterprise is formed, raises finance and becomes ready for trading.
They embark on a support programme and undertake pre-start up work.
They become aware of available support, which increases their confidence and belief that they can take on the challenge of setting up and running a community enterprise.
Rural communities realise that they themselves can tackle the challenge they're facing, rather than wait for someone else to 'save' them.

Key aspects required to move rural communities up the support latter include:

- Access to inspiration (visible examples of successful community action);
- Promotion and awareness raising of models and support;
- Community capacity building including belief and confidence building;
- Volunteer, staff and people management;
- Access to finance (grants, loans, equity, community investment) particularly in relation to purchasing or accessing assets;
- Choosing the right legal structure and governance arrangement;
- Business and financial planning;
- Marketing and promotion of the enterprise.

In order for rural communities to have confidence and believe they can tackle a whole range of complex issues themselves – like access to high speed broadband – the full range of support must be available. This must include help to inspire rural communities to take action themselves, and the follow up support necessary to help rural communities through the full journey towards setting up a community enterprise.

However it's critical that the right level of information is provided at the right stage. To provide a comprehensive package of guides, toolkits and other resources covering the entirety of rural broadband when communities are at the initial stages of exploring the issue is very likely to overwhelm people and could well put them off.

Applying this thinking to the issue of high speed community broadband, we believe that an effective toolkit should include some of the following aspects:

4.1 Inspiration and stimulating demand
The more that rural communities are aware of the opportunities for rural services, rural people and rural economies, the more interest there should be in communities taking control of broadband access.

Raising awareness of community ownership possibilities is an important part of this process. The media is generally supportive of the 'community self-help angle' and community broadband enterprises have been successful in gaining significant levels of coverage (Cybermoor Ltd appearances on BBC Breakfast and the One Show, B4RN article in the Farmers Weekly for example). This coverage needs to increase and be sustained in order to significantly raise awareness of what is possible through community broadband in rural areas.

4.2 Capacity building

To help local communities build confidence in their ability to tackle the broadband challenges in their area it is extremely useful for them to hear about other communities who have achieved something similar, through case studies, films and so on. This approach has been critical for the development of community shops across the UK.

A number of rural communities across the UK, and further afield, have taken action to develop their own broadband infrastructure.

Examples include:

- Cybermoor Ltd (Cumbria, England) - http://www.cybermoor.org

- Broadband for the Rural North (B4RN) (Lancashire, England) http://b4rn.org.uk

- Angus Broadband Co-operative Ltd - http://angusbroadband.co.uk

- Lothian Broadband (East Lothian, Scotland) - http://lothianbroadband.coop

- Great Asby Broadband (Cumbria, England) - http://www.greatasbybroadband.org.uk

- Wray Community Communications (Wray, Lancashire) - http://wraycomcom.org.uk

- OnsNet (Neunen, Netherlands) - http://www.onsnetnuenen.nl/

Further information on the broadband projects in each of these communities is provided in an accompanying case study document. Other critical support that communities can benefit from at this early stage includes information on the next steps to take, such as how to undertake community consultations, how to arrange public meetings, how to form a committee and so on. Communities should also be given reassurance that once they have gone through these steps, they will be provided with information and support about what to do next and who can help them with this.

4.3 Choosing a community ownership model

Our analysis is that there will be three types of 'community-ownership' within the context of future rural broadband:

1. Those who own the network and the services provided on the network;

2. Those who own the network but do not deliver services;

3. Those who own the services but do not own the network. Communities will need help and support to determine which of these models is most suitable for them.

4.4 Developing partnerships

Partnerships can bring significant strengths to community enterprises and the issue of rural broadband provision more widely. Communities will need, for example both rural development and community enterprise support organisations to develop community-owned and controlled models that are viable for the long-term. They will also need technical expertise from individuals and organisations that can create and deliver innovative technological solutions.

For some communities, developing partnerships with private and or public sector partners will be critical to whether or not a successful community broadband enterprise emerges and then thrives in the long term. For example, some public services, such as schools networks, have significant IT networks and some of these could potentially be used by communities as building blocks for establishing their own broadband infrastructure. Great Asby for example in Cumbria has developed wifi broadband that connects with high speed fibre broadband connections at the village school.

Community broadband partnership models can include:

- Community-public sector partnerships;

- Community-private sector partnerships;

- Community-private sector-public sector partnerships.

A leading example of a successful community broadband enterprise using effective partnerships with both the private and public sectors is

OnsNet[9] in Nuenen, Netherlands. A partnership approach was built into the development of OnsNet from the start. Key partnerships were created with both public and private sector organisations that could see the opportunities for innovation that the high speed broadband network could provide.

4.5 Selecting a broadband technology
There are a range of technological options for closing the digital divide currently facing rural communities across the UK and Ireland. Clearly each option has different benefits; principally the broadband speed available and the services which can be delivered via it; and different challenges, principally the cost of putting in place the technology.

For many rural communities with no access to basic broadband, access to a 2Mbps service would be transformative in the short term and therefore reliance on current government and private sector deployment plans is sufficient. However, it is clear that as public service providers and private businesses move increasingly to online delivery models, rural communities will need more than the basic level of service to be part of this communications revolution.

Communities will need support in order to determine which technological solution is most appropriate for their area and their needs.

The Independent Network Cooperatives Association (INCA) has produced a technological hierarchy in their comprehensive Beyond Broadband publication[10] which examines the different technology options available. INCA recommends that communities should exhaust all possibilities to provide the 'best' broadband network it can before settling for a lesser one. This is important, as technical solutions need to be future-proofed where possible otherwise plans will need to be continually reviewed and broadband technology updated in order to keep up with the fast pace of digital developments.
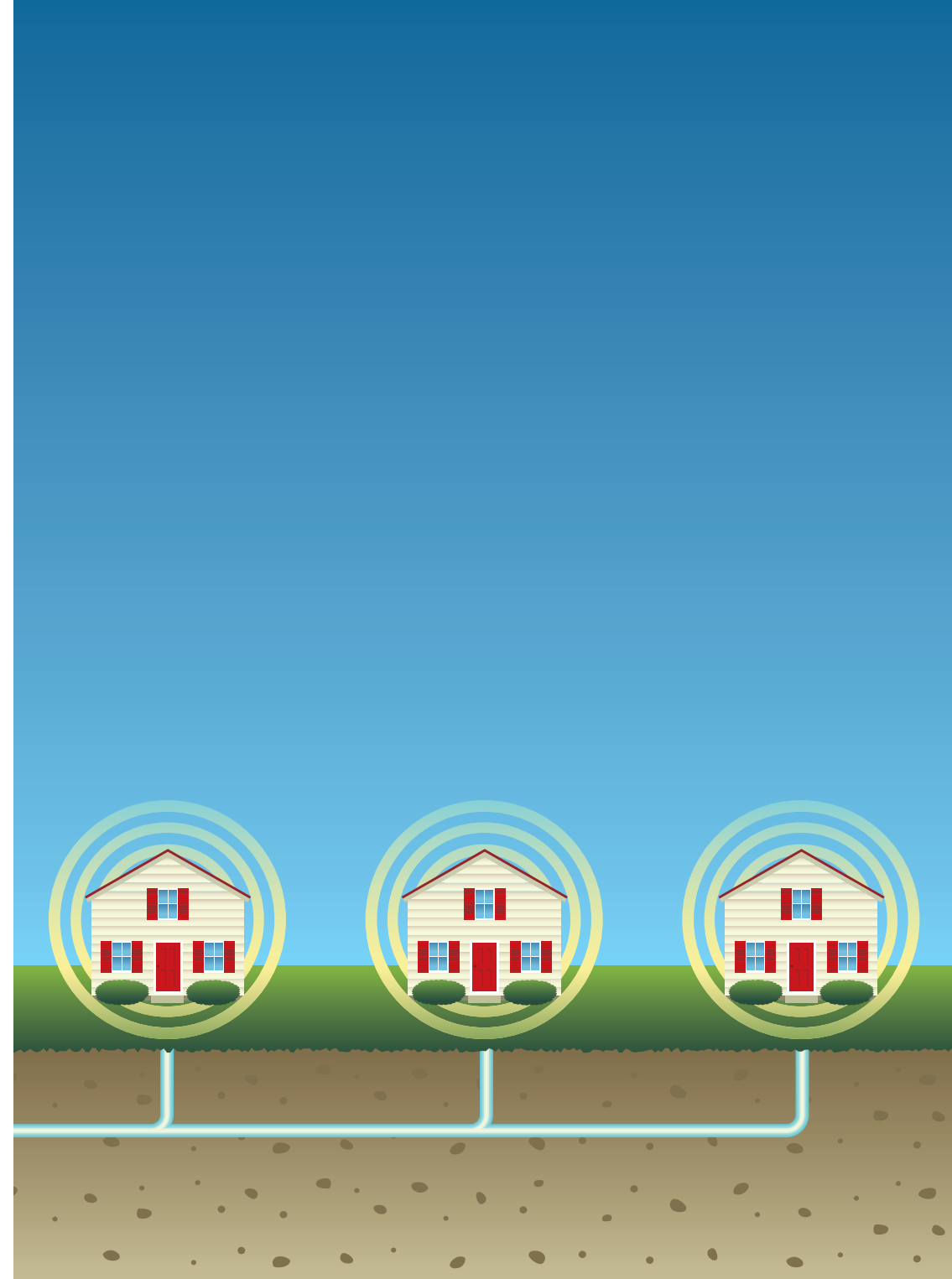
Conditions clearly depend on each community but INCA argue that in descending order the desirability of technologies are:

Technology	Brief description
Fibre to the Premises	Fibre cables are connected directly to individual homes and businesses therefore providing the highest speeds possible. Both Cybermoor Ltd and B4RN are laying fibre. Whilst being the best technological solution, it can often be the most expensive to put in place.
Cable networks	High speed broadband can be provided through cable networks which also run cable television services. Cable networks are only developing in urban areas and those rural areas with a high and concentrated population.
Fibre to the Cabinet	Fibre cables are laid from telephone exchanges to street cabinets, with the links to homes and businesses then being via copper or existing telephone lines.
Long range wireless	Using ariels mounted to homes, this is a common technology for a number of existing community broadband enterprises such as Cybermoor Ltd and Great Asby Community Broadband.
Asymmetric Digital Subscriber Line (ADSL) and related technologies	Used to provide first generation broadband over copper lines. It provides limited broadband capacity, particularly for those furthest away from the cabinet.
Satellite	A form of wireless technology that provides broadband access via satellite over wide areas but speeds and usage restrictions are key issues. Usage is relatively high in Ireland and has also been used in the Highlands and Islands.

Technologies at the top of this list provide the highest speeds and the greatest flexibility and ease of upgrade in the future, and therefore are more desirable for communities than those at the bottom. However, broadly speaking the better the broadband required, the higher the cost of putting it in place. The solutions that provide the weakest improvement in broadband speeds, however desirable for some communities in the short term, are likely to be in need of upgrading or replacing in a relatively short period of time.

CHAPTER FIVE
Summary and recommendations

High speed broadband is of significant importance for the future of rural people, services and economies. There are a range of stakeholders, with an interest in or responsibility for issues connected to broadband access - including rural people, communities and businesses, public services and local, regional and national government. These stakeholders may have differing views, priorities and interests but it is important that they work together on an issue that is of fundamental importance for the future of rural communities.

Key recommendations:

As outlined in the introduction to this paper our key recommendations are:

1. **Inspire communities**
2. **Improve accessibility**
3. **One place to turn to**
4. **Don't overwhelm**
5. **Explore new service models**
6. **Explore innovative funding models**

This requires actions by a number of different groups and our specific recommendations are as follows.

Recommendations for rural communities:

- Learn from those communities which have already taken action in this area – both across the UK and Ireland and internationally.
- Learn from other forms of community enterprise – whether these are community-owned services, community renewables or energy co-operatives.
- Learn from the roll-out of previous telecommunications technologies, such as DSL and mobile phones to develop a better

understanding about whether the market is likely to provide a high speed broadband solution in their area.

- Create partnerships with the public sector and the private sector when it makes sense to do so.
- Start with the best possible technical solution and work backwards.

Recommendations for local authorities and local public sector:

- Encourage, support and partner community broadband enterprises. Upfront investment in high speed community broadband, both in time and resources, could help to deliver significant savings in public expenditure in the future.
- Consider how their own IT infrastructure might be developed or built upon by rural communities seeking to develop the broadband infrastructure in their areas.

Recommendations for national governments:

- Have a clear strategy and commitment to providing long-term support for the development of community broadband solutions particularly for those rural communities at risk of not getting high speed broadband.
- Consider how they can help to inspire communities to take the lead on this issue and tackle the rural digital divide.
- Ensure that when rural communities do decide to take action in this area then they have access to the necessary community development support, financial support business advice and technical expertise.

Recommendations for rural and community enterprise support organisations:

- Create partnerships between communities, support organisations and technical expertise to blend the best skills mix possible.
- Help communities wishing to develop the broadband infrastructure in their area to make links with similar projects in other parts of the UK in order to help share the learning and be inspired.

Recommendations for the telecommunications industry:

- Work with rural communities wishing to develop a high speed broadband solution in their area to build broadband networks which meet communities' needs.

PHOTOS: b4ruralnorth

PHOTOS:
Daniel Heery/Cybermoor Networks -
Fibre to the Home in rural Cumbria

APPENDIX A
UK and Irish broadband policies

The deployment of high speed broadband is a complex policy issue with regards to the devolution settlement in the UK. The UK, Scottish, Welsh and Northern Irish Governments all have their own programmes and policies in this area.

UK Government policy
UK Government policy in relation to rural broadband is focused on their twin pledges:

- 90% of households will have access to a minimum level of service of 2MBPS by 2015;
- The ambition to have the best superfast broadband network in Europe by 2015.

To achieve this, the UK Government has committed £530m through Broadband Delivery UK (BDUK), part of the Department for Culture, Media and Sport to fund broadband rollout. Subsequently a £20m Community Broadband Fund was developed by the Department for Culture, Media and Sport in partnership with the Department for Environment, Food and Rural Affairs to support up to 50% of the costs of a community broadband scheme. Local authorities have been encouraged to submit bids for broadband funding which are expected to be matched on a local authority level. Local authorities can also apply on behalf of rural communities in their area for the Community Broadband Fund. A second funding round opened on 10 May 2012[11]. It is a competitive fund for communities looking for next generation access (at least 24mbps) in the most remote rural areas unlikely to be reached by Local Authority plans alone. It will offer a £300 grant for every home passed by a community-led next generation access broadband scheme but it must be matched with private funds.

Four pilot rural broadband areas were announced in October 2010. These areas were parts of Cumbria, the Golden Valley in Herefordshire, North Yorkshire and the Highlands and Islands[12]. North Wales was later

added as a fifth pilot area. In recent weeks Cumbria County Council rejected the only two bids that it received for broadband roll out in the county[13].

Alongside this work local authorities in England were requested to submit a broadband plan to BDUK by February 2012. All but two local authorities have done this (North and South Tyneside are developing plans outside of central government funding)[14]. By the end of April 2012 broadband plans should be finalised and the procurement phase should have started. A relatively small number of local authorities have begun this process with the remainder having either submitted their plans or have had their local broadband plan approved. It is understood that if areas fail to meet deadlines then a national project will act as a backstop[15]. In Scotland, procurement plans are due in March 2012. The Highlands and Islands and Wales are in procurement. Northern Ireland already meets the 90% superfast broadband target.

The Department for Culture, Media and Sport has also committed to ten 'Super-Connected Cities'[16].

According to the latest Ofcom research, the average broadband speed in May 2010 was 5.2MBPS. This was an increase from the previous year where the average speeds were 4.1Mbit/s in April 2009.

On 25 April 2012 the Cabinet Office announced a new 'Digital Advisory Board' chaired by the UK Digital Champion Martha Lane Fox[17]. The Cabinet Office Minister, Francis Maude, when announcing the board said, "The impressive expertise and experience on the Digital Advisory Board will help us achieve our challenging goal of delivering all services digitally so they are cheaper, simpler, clearer and quicker and easier to use"

Devolved government policies

Broadband Delivery UK (BDUK), a unit within the Department for Culture, Media and Sport, is responsible for managing the UK Government's broadband funding. Individual projects are the responsibility of local authorities and the devolved governments. Devolved governments in Scotland, Wales and Northern Ireland have each developed their own broadband strategies and plans, at different levels, independently of the activity being undertaken by the UK Government.

Scottish Government

The Scottish Government, in January 2012, published *Scotland's Digital Future – Infrastructure Action Plan*[18] which outlined a "commitment to a world-class, future proofed infrastructure that will deliver digital connectivity across the whole of Scotland by 2020." It included details of four critical programmes to meet this ambition. These included achieving a step change in digital infrastructure by 2015, achieving world class infrastructure by 2020, demonstrating and delivering innovative and local solutions and increasing take up and stimulating demand. Through demonstrating and delivering innovative and local solutions, the Action Plan highlighted that this "may include a community-based approach to provide access for remote communities, building out from the national infrastructure backbone." A seed fund is planned for 2012 to support this programme.

Welsh Government

The Welsh Government has established a Broadband Support Scheme[19] which provides funding for the purchase of "alternative broadband solutions" where telecommunication companies have not been able to provide a service. Individuals, communities, SMEs and third sector organisations can apply. The Welsh Government has also set up a Next Generation Broadband Project for Wales[20] which aims to give everyone in Wales access to next generation broadband, a minimum of 30 Mbps, by 2015.

Northern Ireland Assembly

Northern Ireland has one of the best broadband coverage and average speeds across the UK and Ireland. Despite this, many rural communities are still missing out[21] on high speed broadband.

Ireland rural broadband policy

A range of government policies and interventions have been announced or are underway in Ireland. The main policies and interventions are outlined below.

The Irish Government in 2005 announced a EUR25m Group Broadband Scheme[22] aimed at bridging the digital divide for small rural communities who were at risk of being left behind in the digital revolution. Around 40 projects were approved to receive the funding.

Next Generation Broadband – Gateway to a Knowledge Ireland[23] aimed to set out a strategy for accelerating the transition to Next Generation broadband. The Irish government role in this was to:

1. Promote private sector investment;

2. Ensure optimal regulation;

3. Provide innovative spectrum policy;

4. Provide targeted government action, where necessary.

The *National Broadband Scheme* in Ireland aimed to deliver broadband to certain target areas in Ireland where broadband services were deemed to be insufficient[24].

The work of the *Next Generation Broadband Taskforce* is being completed and final report prepared. This will feed into a new National Broadband Plan for Ireland which will be launched later this year.

The Irish government has established a *Rural Broadband Scheme*[25] which was set up to enable a basic level of service to individual premises that are not able to access services from existing business service providers. This is being led by the Department of Communications, Energy and Natural Resources in conjunction with the Department of Agriculture. The Irish Government opened up an application process which closed on 29 July 2011. 5,000 applications were received and 3,700 qualified for the scheme.

High-speed connectivity to all second level schools was recently announced which will take place between now and September 2014. The Irish Government is also drafting a new *National Digital Strategy* which aims to be completed by end of the year. The objective is to put in place a blueprint for digital adoption in Ireland.

COMMUNITY BROADBAND CASE STUDIES

Cybermoor Ltd (Cumbria, England)

About Cybermoor
Cybermoor Ltd was the first rural broadband co-operative in England and it provides a broadband service to rural communities in Cumbria, Northumberland, Scotland and Herefordshire. In addition, the community website it operates connects together the geographically dispersed residents of Alston Moor and provides a forum where residents can discuss a variety of local issues and benefit from travel text alerts. Most recently, residents have started benefiting from telehealth and telemedicine services.

The Cybermoor project was launched in Alston, Cumbria, in 2001 with funding from the "Wired up Communities" UK Government initiative. In 2003, Cybermoor Ltd. was set up to move the project towards sustainability. In 2010 Cybermoor completed the installation of its own wireless backhaul connection over a distance of 40 miles with a capacity of up to 375 megabits per second. It has recently launched a Community Share issue[26] to build a next generation fibre to the home network. Cybermoor Ltd as a turnover of £250,000 and all profits are reinvested in the business. It has 6 full time equivalent employees, 10 volunteers and 360 members.

Cybermoor Ltd is located in an area with a recent tradition of developing co-operative and social enterprises to address challenges that the community is facing. Sixteen such enterprises exist in the parish including Nenthead community-owned shop and a community-owned snowplough.

What problem were they trying to fix?
Existing businesses in Alston Moor were hampered by the availability

of only dial up internet. This choked off potential opportunities to sell their products and services online and impacted on business productivity. Cybermoor aimed to improve the attractiveness of Alston Moor as a place to locate businesses and work from home.

How was the problem identified?
Concerns over poor or no internet access were identified through discussions with local businesses and an analysis of the key features that businesses are looking for in a local area when deciding where they should locate. It was clear if nothing was done about it, Alston Moor would continue to struggle to attract and retain businesses.

Was a partnership approach taken?
The local parish council, Alston Moor partnership, business associations and schools were involved in the project, as were a range of other local groups and volunteers. Cybermoor Ltd developed early on a large group of members and a smaller steering group. The steering group then became the Board of Directors for Cybermoor Ltd. As new projects are launched, community based project groups are established.

How was funding accessed and were initial cost estimates correct?
The initial funding for Cybermoor Ltd came from the UK Department for Education and Skills through the Wired-up Communities programme. This enabled the project to begin in October 2002. While the original budget changed over time there was enough slack in it to be able to cope with contingencies. Since the initial funding allocation Cybermoor has earned income from a range of projects and services including being a Department for Health Social Enterprise Pathfinder. More recently Cybermoor has issued a community share offer to raise capital for rolling out next generation fibre to the home broadband.

What impact has Cybermoor Ltd had?
In an evaluation report as early as 2004, it was clear that Cybermoor Ltd was already having significant impacts on its rural community in three main areas:

1. Strengthening the local economy
2. Promoting community cohesiveness
3. Reducing reliance on private cars

By 2004 it provided 670 homes (out of 938 in the area) with a computer, with free support for 3 years and free dial-up internet for the first three months. Since then a wireless broadband service was also developed, and had 325 subscribers in 2004, rising to 365 in 2012. 47 Cumbrian residents have benefitted from telehealth services and patients are now seen remotely via video link. 32 % of individuals in the area now do some sort of work from home, compared to 7 % nationally. House prices initially increased by 25 %, as people sought rural homes with good connectivity.

How has broadband technology changed since the project was launched?
The first Cybermoor network used WiFi and equipment which operated in the 2.4Ghz spectrum which was low cost and very scaleable. However, when BT introduced broadband into Alston in 2005, home routers also used this spectrum and began to cause interference. A decision was made to switch to new equipment from Proxim which operated in a different frequency and offered greater reliability in 2006 and customers were gradually switched over to the new system. As Cybermoor developed a long term vision for the future, it was recognised that fibre to the home was the most sustainable long term solution and work started on a project to lay fibre in 2010, with a handful of properties connected. More properties are currently being connected as Cybermoor implements a project to connect 300 properties.

What is the cost of the broadband equipment?
The Proxim wireless equipment costs about £350 per property plus a configuration and installation charge of £100. When the additional cost of wireless base stations and management software are added on, this totals approximately £600 per property. Fibre can cost a similar amount if it is deployed in a built up area using overhead cables, but in more remote areas the cost can rise to £2,000 per property and higher when the cost of digging trenches for cables is included.

Broadband for the Rural North (B4RN)[27] (Lancashire, England)

About B4RN

B4RN is a community fibre network and community co-operative in Lancashire offering fibre to every home providing 1,000 megabit (1 gigabit) future proof connection. The purpose of B4RN is: "To take a new approach to the ownership, financial and deployment models used traditionally, and still proposed by, telecommunications companies. These models invariably leave rural areas outside of the scope of economic viability for the telecoms companies, and have helped to create the Digital Divide between rural and urban Britain."[28]

The detailed design and business plan developed by B4RN shows that the first phase, including the core network which will also serve Phases 2 and 3, will cost £1.86 million. This includes the costs associated with:

1. Setting up the company as a telecommunications provider
2. Buying the necessary equipment
3. Training members of the community in fibre installation and fusion splicing (a high tech, in demand skill)
4. Building the network
5. Setting up the necessary administrative and support structures

Phase 1 covers 8 parishes and the core network is being built at the moment. There is no fixed timescale, as the project is developing and growing organically, but Phase 1 is expected to be complete within a year.

B4RN has recently undertaken a community share issue to raise community investment. Potential customers do not have to buy shares to get a connection, but B4RN advocates that the more people who invest in this network the faster it will be built with the available funds. The people behind B4RN strongly believe that the digital revolution would have passed them by if they had not taken action themselves.

"There is no hope for many of us in this area to get 'superfast' broadband so we are doing it ourselves. This is not a big company from 'outside' doing it, it is us, the rural people of Lancashire."

They believe that the success of the project will depend on the support and engagement of the community. Community members can buy shares, subscribe to the service, volunteer time and skills, offer access to their land, attend the meetings, and help to spread the word with their fliers, posters and stickers.

What problem were B4RN trying to fix?

BARN is looking to provide services to primarily rural upland areas where broadband access is currently very poor or non-existent. It is also an area where there is currently very limited mobile phone coverage.

It had been apparent to the local community for a number of years that they would end up on the wrong side of the digital divide. They began taking action in 2003 by developing wifi networks and satellite services. These have plugged a gap but have been unable to sustain the community's needs over time. Frustrated by the fact that the market did not appear likely to deliver a high speed broadband service in the short to medium term, the community began making plans for a fibre network three years ago. The B4RN initiative is the result of these plans.

Was a partnership approach taken?

Key partners for B4RN are local parish councils and the individual people in the eight parishes they initially plan to connect. Through this they have developed a network of active volunteers illustrated by a video[29] on the B4RN website showing the long line of people with spades at the inaugural dig. They got involved to improve their businesses, their quality of life and stay connected. There is a general feeling amongst the community that they don't want their rural area to simply become a 'dormitory' for nearby urban areas.

How was funding accessed and were initial cost estimates correct?

B4RN has received around £5,000 from the Forest of Bowland AONB but apart from this they have received no additional external funding. They have raised investment from their local community through community shares and the first shareholders are funding the core route of the network. The cost of the original phase 1 is £1.86 million, but the infrastructure put into it makes it possible to serve a much larger area at lower cost. Additional properties will increase the profit made by the community and this profit can be used by B4RN for more connections to

help more people. They are now in the process of beginning the second round of community shares to get enough money to finance the rest of phase 1. B4RN feel confident that once people start seeing digging happening they are more likely to invest. They believe they have a very strong business case and they are confident that they know how much they need and when they need it. So far their estimates have been correct. As this is the first network of its kind they had nothing to work from for predictions, and are working from their own plan. The technology is fibre to the home, with no copper phone lines or wifi. It will deliver 1,000 megabits per second at the start and this can be increased from gigabit to terabit if needed in the future.

What impact has B4RN had?
Simply be embarking on the B4RN initiative, those leading the project have created a groundswell of support from local communities. The result of this has been to create new networks of people, and this has had positive knock on impacts. Hundreds of people in the area have been newly motivated to help themselves, and are now doing so. Technical training has already been undertaken and local people are laying ducting. New skills are being learnt, and potential jobs created (currently all volunteers). National and global recognition for the project has been received, with B4RN members representing rural broadband practitioners at Brussels and acting as moderators on online forums. B4RN has also been recognised with the Internet Hero award at the ISPAs[30], the project has a significant following online and has had lots of support and encouragement from peers and from Neelie Kroes, Vice President of the European Digital Assembly[31].

About Lothian Broadband
Lothian Broadband Limited is a new co-operative company which has been established to provide better broadband services in East Lothian. It is part-financed by the Scottish Government, the European Community Tyne-Esk Leader 2007-2013 Programme and Garvald and Morham Community Council.

What problem were they trying to fix?
Garvald and Morham in East Lothian is a sparsely populated rural area. It covers 50 square kilometres and has a population of 570 in 330 residences. In 2005 it had no broadband and seven years on in 2012 the service still continues to be poor with a number of premises having no access at all. Local businesses have been affected and some have been forced to leave the area. Some children are unable to complete their homework which is either set online or required online access to complete it. Services such as iPlayer, Facebook and Skype are unable to be used. Lack of, or limited, broadband is also preventing people from being able to work from home.

Lothian Broadband aims to reverse the digital divide and employ local experience, skills and facilities to provide a next generation broadband system to parts of rural East Lothian. Lothian Broadband's challenge was and is to meet this demand by providing a network capable of delivering high speed broadband that will be flexible and scalable enough to be extended to more people as demand increases. They also believe that broadband solutions must also be future-proofed to meet inevitable speed increase requirements well into the next decade and beyond.

How was the problem identified?
In 2004 Garvald and Morham Community Council conducted a survey of residents that revealed a real and pressing demand for simple access to broadband. At that time, there was no digital access to the internet via local telephone exchanges. The only service was slow and expensive dial-up.

Around 50 people signed up and a service was established as Lothian Broadband Co-operative. This has been running successfully ever since

with subscriber numbers fluctuating between 45 and 50 as people move in and out of the area. There is currently a waiting list for broadband services. Similar problems have been identified in neighbouring communities. Dunpender Community Council (East Linton), Gifford Community Council and Pencaitland Community Council have all indicated their interest in collaborating with Garvald and Morham to extend the network to cover these areas as well. The residents of East Linton and Pencaitland were surveyed and a strong demand for fast improved access to broadband established.

Was a partnership approach taken and if so who was involved and how?
Partnerships have been developed with both local communities and local public sector organisations. Agreements in principle have been reached with the neighbouring towns of East Linton (population of 1,740) and Gifford (population of 808) to expand broadband services into these communities. Market surveys were conducted in these communities, technologies and equipment were identified and a comprehensive business plan was devised to extend the area that the enterprise covers to approximately 150 square kilometres. Following recent network upgrades this service extension will be the next objective for Lothian Broadband Co-operative. The Community Council within Pencaitland (population of 1,671) Community Council has subsequently carried out a broadband survey and if the results of this survey illustrate sufficient demand then Lothian Broadband Co-operative will to extend the service to Pencaitland also.

How was funding accessed and were initial cost estimates correct?
In 2005 the scheme successfully obtained public sector grants, mainly from East Lothian Council and LEADER, totalling £25,000. This paid the initial network technology that was subsequently upgraded to an 8Mbps landline ADSL backhaul by wireless. All maintenance and other work such as new installations that have occurred since then and prior to the setting up of the Lothian Broadband Co-operative have been self-financed from subscriptions to the service. In 2011, LEADER funding of €200,000 (£171,060) was agreed in principle and should be available shortly for core activity. In addition, funds of some £22,000 have been made available via Garvald and Morham Community Council from a variety of sources, partly from accrued network subscription revenue and partly from

the Crystal Rig local wind farm "Community Fund". It is envisaged that extension to incorporate the towns mentioned above and other locations will be funded from subscriptions, installation fees, the issue of bonds and shares. It is projected that the Lothian Broadband Co-operative will become entirely self-financing in the post-development phase.

Cost projections have always proved to come within budget. In part this has been due to good management, in part due to falling costs across the industry particularly for equipment, in part due to favourable negotiation on prices and discounts, but largely because of very detailed costing and planning in the preparation of project projected budgets.

What impact has it had (measurable economic or social benefits)
The main impact is that it has put in place an organisation and infrastructure that can provide benefits in the long term to the communities it services. They strongly believe that they can continue to develop a high quality network capable of serving the communities for the next decade and beyond.

Lothian Broadband believes that the broadband service it provides is helping to tackle some of the economic, social, cultural and educational challenges caused by a lack of adequate access to digital communication and information networks. These disadvantages are acutely felt in East Lothian with an adverse impact on a range of issues including new business start up, job opportunities, property values, social cohesion and tourism. Half of Lothian Broadband subscribers run small businesses from home and many had previously contemplated leaving the area due to inadequate internet access. Other benefits include a reduced need to commute, the ability to shop online, opportunities for students to access materials and undertake research online, families being more able to connect via Skype, and online services from local authorities and other public service providers being made more accessible. The company has also developed a village website (www.garvald.org.uk) which is now run and maintained by the local community.

Lothian Broadband has not attempted at this point any formal impact evaluation. It provides one full time and two part time paid roles which have been created alongside five part time voluntary roles. They use local contractors and suppliers where possible to support the local economy.

Lyme Regis Development Trust, Dorset (England)

The UK's largest community-owned wifi network has recently launched in Lyme Regis. Lyme Regis Development Trust (LRDT)[33] has this network for the Lyme Regis Fossil Festival.

Using technology pioneered in Spain, which uses long distance wifi antennas to connect remote communities, LRDT and partners the Natural History Museum have created a wifi network all along Lyme's famous Jurassic coastline.

The free wifi means visitors to the Festival with smart phones can make use of LRDT's pioneering digital technology and download geological maps, and an amazing 'augmented reality' app, which scans the surrounding area and pulls up points of interest.

WiSpire[34], Norfolk (England)

Many of the tallest landmarks in Norfolk villages are the network churches. WiSpire is a wireless internet service provider, backed by the Diocese of Norwich and Freeclix an independent ISP based in Norwich, which is putting wireless broadband transmitters and receivers on top of these churches and using them to connect up communities that previously had no or low quality broadband. Subscribers who previously were lucky to get one megabit-per-second download speeds are now able to access speeds of up to 8Mbps.

CLANNET[35], Yorkshire, North Lincolnshire and Suffolk (England)

Formed in 2004, CLANNET (Community Local Area Network) was developed originally to provide wireless broadband to the North Yorkshire village of Biggin. Prior to CLANNET being developed, most of the surrounding villages only had dial up internet access and very few people had access to any form of broadband. Today CLANNET now provide broadband, email and web services to Biggin, a number of communities in the Vale of Mowbray (Yorkshire), Nun and Moor Monkton near York, Aylesby near Grimsby (north Lincolnshire) and Tatingstone near Ipswich (Suffolk) . All except Tatingstone have fibre connections providing speeds of between 10 and 40 megabits per second. After originally operating as a Community Association, CLANNET became a limited company in 2011.

OnsNet (Neunen, Netherlands)

OnsNet[36] is a community owned high-speed fibre network that enables truly next generation services and access. OnsNet has received global recognition and communities around the world are attempting to replicate the model.

OnsNet is a pioneering community co-operative serving almost 8,000 households in Nuenen, near Eindhoven. It is an open network created in a partnership between the town's housing association, the Dutch government and civil engineers.

Currently it runs at 10 Mbps speed but it is a simple software setting to upgrade to 100 Mbps. Other local projects are already looking at 1,000 Mbps.

The project connects 8,000 premises and is connected to a town infrastructure. There is now a 96 % broadband take-up within Neunen. The network was put in place extremely quickly. The contract was signed in June 2004 and the build was complete before Christmas. The build time of the network was just three months.

The idea originated in a housing corporation in Nuenen called 'Helpt Elkander' (translates as 'Helps each other'). It began providing elderly residents with voice telephony services. They then looked at supplementing this voice telephony service with video services. When doing this they realised that they would need fibre broadband to do this. It was apparent very early on that residents were very interested in what broadband could do for them. As the broadband network was developed, a co-operative model was designed in which each resident was guaranteed a share in the network.

The Dutch Ministry of Economic Affairs agreed to subsidise the project to level of €800 per household. This ensured that residents have free services for one year and after than they pay a regular monthly fee.

It provides significant social benefits primarily by allowing people to participate more fully in their community. A great example of this is that people who are unable to go to church can watch live transmissions of the local service from their home.

US Ignite, United States

Recently U.S. President Barack Obama has signed an order to make the approval process for broadband network development on roads and government property smoother, easier and simpler.

"Building a nationwide broadband network will strengthen our economy and put more Americans back to work. By connecting every corner of our country to the digital age, we can help our businesses become more competitive, our students become more informed and our citizens become more engaged." *President Obama, June 2012*

The Federal Government owns about 30 percent of the US land, roads and over 10,000 buildings. The new order should make things simpler. It will help ensure that government departments and agencies develop a single process to approve the development of broadband infrastructure. The Department of Transportation will make sure that a 'dig-once' policy is in place. Therefore when new roads are being built, the construction teams should include the empty pipes that can house fibre cables instead of having to dig this up again.

The White House also announced that nearly 100 partners—including more than 25 cities as well as corporate and non-profit entities—will join with more than 60 national research universities to form a new public-private partnership called "US Ignite[37]."

Below are details of some innovative community broadband enterprises from the US:

Choo Choo Gig[38], Chattanooga in Tennessee (United States)

Chattanooga is a city in the south east of the United States. It is located between Atlanta, Nashville and Knoxville. The city has recently developed a 'smart grid' approach and is providing 1GB fibre to the home network for all residents. Chattanooga's community-owned electric utility EPB[39] is installing a 100% fibre to the premises network.

Recently the city has become home to major corporations including Volkswagon and Amazon who were attracted by the city's digital infrastructure.

EPB was founded in 1935 and was originally a community-owned electric co-operative providing energy to the area. EPB expanded into telecommunication and internet services in 1999. In 2007 the company directors approved a fibre to the home initiative that aimed to generate new jobs, improve services to their energy customers and provide benefits including high speed broadband to every customer in its trading area. In November 2009 it was awarded $111 million from the US Department of Energy to speed up the build and implementation of the smart grid. The network is now the most powerful communications network in the world and is available to every home and business in EPB's 600 square mile trading area.

ECB's mission is "to enhance the quality of life in our community by providing energy, communications and related services reliably, efficiently and courteously at the lowest reasonable cost." As a community-owned company their aim to help and improve their communities to access high quality products and services at a reasonable cost.

LusFiber – Lafayette, Louisiana (United States)

Lafayette is a city of around 125,000 in Louisiana.

LUS (Lafayette Utilities System) Fiber[40] is Lafayette's community-owned telecommunications system. It provides video, internet and phone services to homes and businesses over a 100% fibre optic network.

LUS Fiber began in 1998 as a fibre system to improve how Lafayette Utilities System's business operated. According to their website it has since then grown into a, "Catalyst for local economic development, education innovation and enhanced video, internet and phone services for residents and businesses." In 2005 residents voted by 62% to 38% to approve bond funding of the new fibre network. In July 2007 over $110m in bonds were issued to fund the LUS Fiber project. By 2010, the network was complete providing fibre broadband services to the whole of the city.

UTOPIA (Utah Telecommunication Open Infrastructure Agency) – Utah (United States)

The Utah Telecommunication Open Infrastructure Agency[41], known as UTOPIA, is a group of 16 cities in Utah in the United States that joined together to form a community owned fibre broadband network. The network brings fibre to the home to the 16 cities which have a combined population of over 500,000. UTOPIA's 16 member cities are: Brigham City, Cedar City, Cedar Hills, Centerville, Layton, Lindon, Midvale, Murray, Orem, Payson, Perry, Riverton, Tremonton, Vineyard, Washington, and West Valley City.

UTOPIA was formed to provide critical telecommunications infrastructure to the cities' residents.

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community rural broadband communities enterprise high areas support services development need access government models digital technology service area local uk network speed private challenge sector approach people believe enterprises fibre significant providers available help ownership deliver across building capacity established innovative best public move england foundation provision critical work governments process generation solution model plans right national change delivering individuals business economies networks appropriate online organisations next delivery develop partnerships important used information developed fund using phase finance authorities cybermoor technical speeds possible technological debate current policy partnership action level infrastructure community-led higher solutions debate inspired provided key place bussinesses different range technologies social future costs order provide needs achieve existing new increasingly stage recommendations many issue policies department

The Plunkett Foundation helps rural communities through community-ownership
to take control of the issues affecting them. It does this by:

- Helping rural communities to set up and run community-owned shops with a range of partner organisations;
- Supporting rural communities to establish a wide range of other community-owned rural services;
- Promoting and supporting the development of community food and farming enterprises;
- Advocating and raising awareness amongst policy makers, support organisations and rural communities themselves of their ability to take control through community-ownership of the issues affecting them.

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The Carnegie UK Trust works to improve the lives of people throughout the UK and Ireland, by changing minds through influencing policy, and by changing lives through innovative practice and partnership work. The Carnegie UK Trust was established by Scots-American philanthropist Andrew Carnegie in 1913.

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