

RURAL ECONOMY AND CONNECTIVITY COMMITTEE
DRAFT BUDGET 2017-18; BROADBAND
SUBMISSION FROM BOB CORNISH

Introduction

This is a welcome opportunity to provide you with evidence from relevant experience. Its purpose is to help inform in the scrutiny of the Government's draft budget, and in particular to contribute to strategic thinking about the delivery of broadband. Whatever budget is set, it must be spent wisely.

Society and businesses are rapidly becoming "tech dependent". In order to halt the economic decline and depopulation of Scottish Rural Communities, success is essential in this mission. Observations and proposals are intended to assist in the establishment of policy.

Proposals arise from experience in community projects in rural Scotland and in industry. They have been influenced by attendance at your recent Committee Meeting on 30 November. These proposals are set out as:

- Some key principles
- Architecture and technology
- Governance – covering commissioning, monitoring and regulation
- Budget funding elements
- Suggested next step

The suffix provides some further detail of relevant experience so far.

Background

I live in Appin, Argyll. I am a Community Councillor, secretary to the Appin Community Trust and Chairman of the board for the new Appin Community Development Trust. I am a founding director of GigaPlus Argyll and was the Finance Director until June 2016. (I amicably resigned to prioritise time more intensively to other community programmes, but still retain close links.)

I am a recent retired executive with a past career in industry. My experience most relevant to broadband includes 10 years in IT. This was as a consultant with a major computer manufacturer and IT Director with an automotive and aerospace FTSE PLC, where I managed the installation and operation of an IT business system and private network to 45 locations.

Much of my evidence results from the following experience:

1. **Appin and Lismore** – I led the work with CBS which aimed to bring broadband to these two related communities in liaison with HIE
2. **GigaPlus Argyll** – my intensive participation with the aim of bringing wireless broadband to areas on Mull and Islay, and the communities/islands of Lismore, Jura, Coll, Colonsay, Luings, and Craignish and initially Appin, working with CBS (2013 to 2016)

3. **Holitec, Cyprus** - user experience as a subscriber to a successful 2000 + user wireless broadband network for rural communities in the Paphos and North-West Island region.

Some proposed key principles for provision of rural broadband

1. **Minimise the number of organisations involved:** In order to manage budgets, utilise funds efficiently, and standardize equipment, the number of organisations involved in the delivery of broadband should be minimised. The optimum would of course be one installer and network operator, and one overall governing body for Rural Scotland which would be responsible for commissioning and service level monitoring.
2. **Robust sustainable financial model:** Funds should be aggregated up within professionally led organisations. They should not be divided into small elements left to diverse or amateur organisations or communities which are more difficult to oversee or hold accountable.
3. **Broadband is an essential utility.** Infrastructure funding should be from public sources. The failure to provide it universally is a result of both market failure, and strategic failure in the way that BT and Openreach have been managed and regulated.
4. **No reliance on community enterprise for funding:** Under no circumstance should there be any reliance on community enterprise for funding. By its nature this relies on volunteers and “hero-champions” and is not sufficiently guaranteed. It is most certainly not appropriate for subscribers to be subject to a lottery based on whether they are lucky enough to live in a postcode which has abundant suitable skill and talent. In most cases the skills, knowledge, and capability to oversee a long-term sustainable broadband service are generally beyond community volunteers.
5. **Ongoing operations funding** should be provided from subscriber fees, at normal market rates. To avoid financial discrimination, particularly for deprived population groups, any deficit should be provided by public funding. This is likely to be minimal.
6. **Appropriate compliance:** Any installed network should comply with Ofcom and BDUK and state funding requirements and obligations, during sourcing, implementation and operations as appropriate. This presents its own challenges however.
7. **Transition of existing community-based projects:** Existing community-based projects should be given the option to become part of any new regime if appropriate and legally possible. The remainder should be left simply to run to the end of the contracted term, and then integrated.

Proposals for Broadband Architecture and Technology

The adoption of the principles above leads to two technical architecture options. The pros and cons should be pro-actively evaluated to decide which is the best solution for rural Scotland.

1. Extend from the local “outer limits” of the existing Openreach fibre network to properties using mixed complementary technology. Much of the technology and equipment is commercially available. It would be reasonable to expect this to be fast-tracked through any necessary R&D design and approval procedures, especially if Openreach is the installer/supplier. Although utilising an essential mix of technologies to meet requirements, the variety should be managed to a minimum and may include:
 - a. Smaller FTTC cabinets with some fibre to the property
 - b. Wireless to smaller cabinets
 - c. Wireless to the property.

This architecture option is likely to offer faster implementation, and avoids the need for establishing large-scale back-haul connections. The ongoing operational cost should not be significantly different. GigaPlus and the Cyprus Holitec networks would indicate that, operationally, these technologies can be commercially viable.

2. Superimpose an alternative architecture, parallel with Openreach, over wide areas based on such as wireless technology. Again, Gigaplus and Cyprus Holitec demonstrate that this is commercially viable.

This option does provide flexibility on infrastructure ownership, if there are advantages for it not to be owned by the commercial operator.

Implementation would likely take longer than option 1.

It requires the development of a sufficiently robust supplier in order to embrace the provision of a Scotland-wide service. Contractors are still small and embryonic and hence fragile as suppliers, with questionable long term sustainability. Consideration may be given to actively seeking a more robust and capable contractor and operator organization that is willing to work with the technology already proven by these small suppliers and operators.

Costs and build progress will be vulnerable to land-owners holding out for unreasonable compensation for hosting equipment, and the need to access large-scale fibre backhaul.

Both options should be seriously explored in more detail. With respect to technology, it must be accepted that any solution will require a mix of flexible technology to sweep up remaining properties. This is because there will always be those which cannot be reached by wireless due to topography or forestry, and those that are too remote for fixed wire.

Governance

Robust governance is required to ensure the delivery of specific rural community requirements. It should be a single body, with one set of defined processes and procedures, though may be structured regionally. The key responsibilities should include strategy development, commissioning, regulation and service performance monitoring. Conceptually it would be focused around a small but well skilled “heavyweight” team, built with the necessary experience of technology, project management and contractual and financial matters. As the roll-out reaches completion the team would be scaled back to manage just regulatory and performance matters.

This description of the governing body brings together a combination of some of the key roles from CBS, HIE and GigaPlus Argyll. This will create a more empowered lead organization which will be capable of more effectively delivering a wider and robust solution for Scotland.

Budget Funding Elements – some proposals

Funding would be required to cover 4 main cost areas.

1. **Revenue funding for a specific focused Scottish Rural Broadband Commissioning and Regulatory body or similar.** Initially this should be state funded during the project design development and implementation stages. The cost for this phase will of course again be minimised if economies of scale can be achieved, with a single supplier, single governing body scenario. A reasonable estimate would be in the region of £1- 2 million p.a. during commissioning and roll-out to cover salaries and expenses, plus a structured budget for outsourced professional advice. When operational, it would be reasonable for this to be scaled down and funding provided from a small annual subscription levy. Experience from GigaPlus indicates this should be less than £15 p.a. per subscriber.
2. **Capital funding for infrastructure equipment purchase and installation.** For option 2 type architecture, the GigaPlus experience indicates in the region of £1500 - £2000 per subscriber. Option 1 may well be more cost effective by achieving economies of scale, through more effective use of already installed and more local Openreach infrastructure.
3. **Connection revenue funding** to cover the connection of each property, in the region of £250. It is reasonable to expect this cost to be shared with the subscriber paying typical market rate. Any deficit should be funded from set up capital or direct grant to subscribers.
4. **On-going revenue** to cover any operational cost deficit which is not met by user subscription fees set at market rates. Experience from GigaPlus indicates this should be minimal or close to zero for option 2. Option 1 should also be close to zero.

The timing of spend should be budgeted according to project phases, which would

be defined by the governing body similar to the following:

Project Definition – governing body revenue
budget Outline design – governing body revenue
budget
Supplier and contractor evaluation – governing body revenue
budget Detailed design – capital infrastructure budget
Implementation roll-out – capital infrastructure and connection revenue
budgets Operation and review – on-going revenue budget (Scaled-down)

Suggested Next Step

At the recent committee meeting it was apparent that the scope and complexity of this topic is a considerable challenge. The meeting also demonstrated that there are people, who together possess the skills, knowledge and experience to explore and develop the best strategy and route to a solution. The suggested next step is to set up a focused work-team of 6 or 7 people to define a high-level strategy and the brief to be given to the proposed Governing Body. This team should include the representatives from the organizations which gave evidence at the 30 November meeting, plus one or two suitably qualified community representatives.

Bob Cornish
December 2016

Supplementary Detailed Background Evidence

Appin and Lismore

Appin

In late 2013 it was recognised that BT had not included Appin in plans for broadband roll-out. After consultation with Community Broadband Scotland a working group completed a survey and published a scoping report. This defined the current very poor ADSL performance and the community's essential needs for broadband (exhibit: Appin and Lismore Broadband – Appin can be provided). The report is thoroughly detailed, and was submitted to CBS, HIE and BT. Its highlights were:

Key statistics:

Population 500

Addresses 314

ADSL subscribers 215

Businesses 35

survey returns 105

Broadband speed is seriously below the rest of rural UK. Of 215 Appin ADSL subscribers 25% received less than 2Mbps download speed. Some addresses with no service did not participate. The remaining 75% receive between 2 and 6 Mbps. 90% of addresses received less than the average speed of for Argyll. This compared to the then UK average of 14.7Mbps, and 9.9 Mbps for UK rural average.

Broadband is essential for the sustainability of the communities 35 businesses. In addition 50% of households reported that broadband is used for work or business purposes.

The future viability of hotels and holiday rental properties is vulnerable to poor broadband.

Guests and renters require the option to receive the same service as at home. Even with satellite broadband this is not possible due to download caps and charges.

Broadband is essential for supporting younger people in education.

Mobile phone services are not an alternative. Over 40% of households reported an "outside no-spot" for a mobile phone service, and hence no ability to use this as an alternative. Local mobile phone services are still only at 2G level anyway.

For one postcode of 32 addresses, the average speed reported was 0.43Mbps, with some unable to receive any ADSL service at all. This is still the case.

Appin joined in the kick-off of the GigaPlus Argyll project. By late summer of 2014, Community Broadband Scotland and HIE advised that Appin would be "scoped-in" to the BT roll-out, and no longer included in GigaPlus. CBS continued to advise none of the Appin postcodes can be included in GigaPlus or any other non-BT publicly funded project in spite of BT failing to deliver to all post codes.

The service has not changed yet:

HIE has advised that current plans are for up to 3 FTTC cabinets to be installed. These will likely cover up to 6 postcodes. The first FTTC cabinet is scheduled to be live in February 2017.

The 4 worst served postcodes of 114 addresses have no planned improvement.

Attempts have been made to join the BT community partnership initiative with no result

Lismore

The Appin working party was asked by Community Broadband Scotland to carry out the same exercise for Lismore. This was quickly completed in early 2014, and again submitted to CBS, HIE and BT. It reported in a similar way, with the overall conclusion that Lismore is better served than Appin, but still well below average.

Lismore was included in the kick-off plans for the GigaPlus Argyll project. It is still included today, and remains “de-scoped” from BT. For further details see comments below relating to GigaPlus. (Exhibit: Appin and Lismore Broadband – Lismore can be provided.)

GigaPlus Argyll

Details of the GigaPlus Argyll project are available at the website www.gigaplusargyll.co.uk.

In summary the project is continuing forward, but has experienced significant unforeseen hurdles.

The project was structured with a steering committee/board made up from community representatives. Advice was provided by CBS, and during supplier selection by HIE, Atkins, and Farrpoint Consultants. It is not possible to fully detail the experiences or evidence in this short paper. The technical solution to be implemented would appear to be sound. The project was almost de-railed twice at the supplier contract stage. Also it has been seriously hampered by a confused business model, lack of skills and resources, poor planning and limited commercial awareness. Some communities suffered from serious over-ambitious expectations. The following outlines the time-line, problem areas and issues which should be overcome in future.

Time-line

April 2014 – project kick-off by bringing together several volunteer representatives from communities.

ITT issued late 2014

Preferred supplier selected May 2015

Contract signed 2015

Current Status

Still seeking full complement of suitable sites for main masts – some land-owners are holding the communities to ransom by seeking unaffordable rent

First subscriber expected first half 2017

GigaPlus problems and Issues

Supplier Contract - the project was almost de-railed twice. Firstly at the final supplier selection meeting HIE declared that BT has “scoped” back in 2 of the Gigaplus intervention area postcodes – cherry-picking.

Second, at the contract signing stage. In spite of a clear plan for contract signature by end of August 2015, CBS and HIE decided to accelerate the process without the knowledge of the GigaPlus directors. This was in response to a misunderstanding of grant funding deadlines. The Chairman, alone was advised to sign in June 2015.

This resulted in:

Omission of final contract detail review and negotiation.

The consequences are that GigaPlus is contractually committed to governance responsibilities it does not have the funding to meet in future.

Omission of a GigaPlus financial model, based on the contract terms to ensure its sustainability.

Omission of supplier due diligence led to.

The financial sustainability of the supplier was unknown.

The supplier attempted to operate with limited resources, and an absence of sound project management and reporting, even though this was raised as a potential concern during supplier evaluation.

Several of the GigaPlus directors resigned, with the remainder disillusioned. (The writer and the chairman worked intensively to keep the project on track.)

Time wasted as Gigaplus later attempted to re-negotiate some of the contract terms, but without success.

Business Model - the business model for GigaPlus was flawed. Following the contract a financial model for Gigaplus was quickly finalised which showed it would face insolvency. This was presented to CBS on several occasions with requests to help resolve the matter. By early 2016, there were several outstanding expenses which could not be paid, with no prospect of income. In addition, the ongoing contractual responsibilities required ongoing funding. A meeting was secured with CBS to address the matter in April 2016. GigaPlus was advised it should seek ways of achieving commercial income from the network as a community enterprise. Most opportunities had been signed away in the supplier contract. GigaPlus/CBS discussions are continuing with the goal of finding a solution. At market rates there was not sufficient operating margin to accommodate supplier profit and the on-cost of a robust governing body or regulator.

Skills and Resources – GigaPlus lost skill and resource (all volunteers) when the contract was unexpectedly signed in June 2015. The responsibility and workload fell unfairly on two remaining key volunteer directors, and a project manager. Also the supplier, AB Internet was recognised as being short of critical skill during the selection process. This has remained a problem through implementation, and manifested itself as delay and inadequate planning and reporting. This should have been a major topic of due diligence. It also highlights the fragility of relying on community resource.

.Cyprus Holitec

This network of over 2000 subscribers has been in existence for around 8 years and is a good entrepreneurial example of a simple low-cost service. It complements the hard-wired network of CYTA (Cyprus Telecomms). It provides a wireless based internet and TV service to rural properties and communities which cannot be reached by CYTA. The technology is similar to GigaPlus, using Ubiquity type equipment. Joining cost now starts at €260. The download speeds generally exceed the specified package “up-to” speed. 7Mbps is generally experienced, which is just adequate for HD TV transmissions. Subscription rates start at €25.50 per month. There are no download caps. The scheme will also accommodate switch on – switch off for holiday properties. The network is progressively upgraded to reduce contention and improve performance. It is generally reliable, though vulnerable to outages after thunder storms. The after-sales service reflects the nature of a small supplier with limited resources and informal processes. It has been vulnerable to un-cooperative land-owners.