Broadband Delivery Programme: Delivery Model

Broadband Delivery UK

May 2011

Our aim is to improve the quality of life for all through cultural and sporting activities, support the pursuit of excellence, and champion the tourism, creative and leisure industries.

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1   Executive Summary

1. Stimulating investment in the UK's broadband infrastructure is a top priority. The Broadband Delivery Programme covers the delivery of the Government's investment and policy approach to bring forward network infrastructure upgrades and to improve the accessibility of services in locations where there is a weak commercial investment case. Broadband Delivery UK (BDUK) has been created within the Department for Culture, Media and Sport (DCMS) to be the delivery vehicle for the government's policies relating to stimulating private sector investment using the available funding.

2. The primary purpose of this document is to provide a high level description of the delivery arrangements under which BDUK will carry out its activities to achieve its objectives as part of the Broadband Delivery Programme. This document is intended to enable stakeholders to understand and, as appropriate, agree with BDUK's approach.

3. BDUK has five primary goals:

    i)   To support economic growth in the UK, including in rural areas;

    ii)   To ensure this country has the best Superfast Broadband in Europe by the end of this parliament (2015);

    iii) To ensure delivery of Standard Broadband to virtually all communities in the UK within the lifetime of this parliament (2015);

    iv)   To ensure the efficient use of funding to deliver Superfast Broadband and Standard Broadband; and

    v)   To assist other Government initiatives which are dependent upon customers ability to access Broadband based services.

4. Residents and businesses (i.e. end-users) will be the beneficiaries of the Broadband Delivery Programme. BDUK funding will be used to stimulate investment in broadband infrastructure to deliver a greater access speed (data throughput) and quality of connectivity resources available at a wholesale level in the 'final third' of the UK. The market will be able to use these to help deliver the services demanded by end-users.

5. BDUK is responsible for the development and management of the overall approach to the delivery of projects. It acts as the conduit for the central Programme funds, development of any national approaches to sourcing, and the provision of support and guidance to local bodies. Local bodies are responsible for the development of Local Broadband Plans, the development and sourcing of individual projects, the involvement of local community groups, sourcing EU and local funding, and project delivery. The broadband policy team in DCMS is responsible for the development of the government's policy on broadband, creating a level playing field between incumbents and new providers, and the deregulation of access to infrastructure to facilitate Superfast Broadband. Devolved Administrations are responsible for determining the arrangements for developing and managing broadband initiatives in accordance with individual strategies for the development of broadband infrastructure in their nations which complement the work that is being done at a UK level.

6. The primary focus of BDUK is on stimulating private sector investment in the data transport and local access elements of the UK's broadband communications infrastructure in areas of the country that the private sector, by itself, will not deliver. Within this focus BDUK is seeking, through the development of local broadband projects by local bodies, to provide for outcomes in terms of the availability of wholesale broadband services. The contracts for broadband services to be let by local bodies with suppliers will provide for the capabilities in outcome terms (or equivalent) that suppliers are required to deliver for end-users.

7. Contracts are expected to include provision for Community Broadband Hubs where there is sufficient demand for them. A Hub is an infrastructure point within a community location

where communities or other private and public sector bodies could then take responsibility for extending the network capability further to individual homes. BDUK are exploring the specification of and testing of demand for options for community groups to assist in the delivery of Community Broadband Hubs. The Department for Environment, Food and Rural Affairs (Defra) and BDUK have set up a Rural Community Broadband Fund to allow rural communities to apply for help with small scale broadband projects.

8. The Broadband Delivery Programme is exploring the viability of a number of measures to assist in stimulating demand for Superfast Broadband. This will be based on working with other parties, e.g. the Race Online 2012 initiative which is seeking to recruit digital champions who can work within their community to help people get online. A significant proportion of activities related to demand stimulation actually falls under the heading of demand registration – i.e. encouraging consumers and businesses to notify their interest in Superfast Broadband retail services. BDUK is exploring the use of demand registration tools for local bodies to 'brand' to their projects and promote within their communities.

9. BDUK is working with four Superfast Broadband Pilot locations: Cumbria, Herefordshire, North Yorkshire and the Highlands and Islands in Scotland. These are testing a number of different aspects. For example, from how local bodies should approach working together, how to develop and structure comprehensive Local Broadband Plans to how to address issues that will arise during the procurement of broadband solutions. BDUK will select additional broadband projects in May 2011 to commence detailed development. This will start developing a more significant pipeline of projects and will signal to the market place confirmation that there is a significant opportunity here. Following this, BDUK will move away from 'rounds' of project selection. Instead, BDUK will operate a continuous process where local bodies will bid for funding within their own timescales.

10. There are a number of commercial models for the delivery of broadband services that local bodies can choose from. BDUK will be supportive of any commercial model that can be demonstrated to be value for money, and affordable for BDUK. However, examination of the different models and local bodies' general appetite for owning different delivery risks suggests that many will choose the model based on a simple subsidy of the private sector's investment gap funding for delivery of a project.

11. Early projects will lead their own procurement processes, and BDUK will work with these local bodies to identify the best ways to simplify and standardise procurement routes. BDUK will seek to put in place a procurement framework for the most common commercial delivery approach (investment gap funding) that further projects can call-off where appropriate. In addition, BDUK will procure a separate framework for local bodies to allow consumers and businesses to access broadband services through satellite where it is not economic to use alternative solutions.

12. The opportunity to be part of the delivery of broadband solutions should be attractive to the private sector. This will include organisations that are interested in the delivery of wholesale services, and organisations that may form part of their supply chain. Local broadband projects are likely to involve delivery of broadband solutions based on a mix of technologies. Service providers who offer retail services to consumers and businesses should also see opportunities in local broadband projects. BDUK aims to ensure that wholesale services offer a platform for competing retail service provision.

2   Introduction

2.1   Background

2.1.1   The UK Government's objective of stimulating private sector investment to deliver the best Superfast Broadband network in Europe together with increased coverage across the UK by 2015 is one of its top priorities. It has allocated £530m within the life time of the current parliament to achieve it, with the potential for an additional £300m up to 2017. These funds are intended to be used for stimulating investment in broadband rollout in those areas where commercial investment alone will not deliver it. The Government will invest in the telecommunications sector to bring forward network infrastructure upgrades and to improve the accessibility of services in locations where it would not otherwise happen because of the weak commercial investment case. This tends to be in rural and harder to reach areas, and where broadband infrastructure can make a vital contribution to the growth agenda.

2.1.2   Broadband Delivery UK (BDUK) is part of the Department for Culture, Media and Sport (DCMS) and is the delivery vehicle for the government's policies relating to stimulating private sector investment using the available funding. BDUK, together with the broadband policy team in DCMS, are responsible for the Broadband Delivery Programme.

2.1.3   Further detail of the Government's overall approach to broadband infrastructure is set out in *Britain's Superfast Broadband Future*[1].

2.2   Purpose

2.2.1   The primary purpose of this document is to provide a high level description of the delivery arrangements under which BDUK will carry out its activities to achieve its objectives as part of the Broadband Delivery Programme. This document is intended to enable stakeholders to understand and, as appropriate, agree with BDUK's approach.

2.2.2   It is expected that the Programme Delivery Model will evolve over time to take on board lessons learned from the Superfast Broadband Pilots, other local broadband projects, and developments in the market place for broadband suppliers (of wholesale services) and service providers (of retail services).

2.3   Scope

2.3.1   This document, the Programme Delivery Model:

- Provides an overview of BDUK's approach to delivery;

- Sets out the principles that BDUK will apply during its delivery approach; and

- Describes the different areas of activity that BDUK will undertake, and those areas which other parties will also need to fulfil in the delivery of the Broadband Delivery Programme's objectives.

2.3.2   It should be noted that by 'delivery' it is intended to mean what BDUK will do to facilitate and encourage actions by local bodies, communities, customers and suppliers. BDUK itself is not responsible for the actual delivery of broadband connections and services.

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[1] Britain's Superfast Broadband Future, Department for Business Innovation & Skills and the Department for Culture, Media and Sport, December 2010

2.4   Intended audience

2.4.1   The primary intended audience of this document are:

- Those directly involved in the Broadband Delivery Programme;

- Members of the Broadband Delivery Programme Board;

- Parties with responsibility for the strategy for, procurement of and/or delivery of broadband from Local Authorities, Local Enterprise Partnerships, Devolved Administrations, and Enterprise Agencies in Scotland;

- Suppliers, service providers and members of the supply chain for broadband and supporting services; and

- Community groups interested in broadband.

2.4.2   This document may also be relevant to other parties interested in the delivery and outcomes of the Broadband Delivery Programme.

2.5   Structure of this document

2.5.1   The remainder of this document is structured as follows:

- Section 3 sets out the vision and objectives of the Broadband Delivery Programme;

- Section 4 sets out the delivery principles that BDUK will use for the full development of its detailed approach to delivery, and the main methods through which it is expected that they will be achieved;

- Section 5 sets out the critical success factors for the Programme and how success will be measured;

- Section 6 sets out the overall approach to Programme delivery, including the roles and responsibilities of BDUK, and of local bodies;

- Section 7 sets out the activities that BDUK will undertake as part of Programme delivery;

- Section 8 sets out the approach to the development and sourcing of individual broadband projects through local bodies;

- Section 9 sets out the approach to stimulating demand for broadband services;

- Section 10 sets out potential roles for and the involvement of community based groups;

- Section 11 sets out what Customers should expect to result from the Broadband Delivery Programme;

- Section 12 sets out what the Programme delivery approach means for the supplier market;

- Section 13 sets out the commercial model for delivery, summarises the Programme sourcing strategy, and describes the approach to State Aid clearance; and

- Section 14 sets out the Programme funding held by BDUK, and the approach to sourcing additional funding to meet investment needs.

2.5.2   A glossary of key terms used in this document is set out in Annex A.

3   Objectives

3.1   Introduction

3.1.1   This section describes what the Broadband Delivery Programme is intending to achieve. It sets out:

- The goals and vision of the Programme; and
- The Programme objectives.

3.2   Goals and vision

3.2.1   BDUK has five primary goals:

i)   To support economic growth in the UK, including in rural areas;

ii)   To ensure this country has the best Superfast Broadband in Europe by the end of this parliament (2015);

iii)   To ensure delivery of Standard Broadband to virtually all communities in the UK within the lifetime of this parliament (2015);

iv)   To ensure the efficient use of funding to deliver Superfast Broadband and Standard Broadband; and

v)   To assist other Government initiatives which are dependent upon customers ability to access Broadband based services.

3.2.2   BDUK's vision for broadband is driven by the target set by the Secretary of State for Culture, Media and Sport: to have the best Superfast Broadband network in Europe by 2015. Also, it is set by the priorities set out in the Departmental Business Plans for DCMS, the Department for Business, Innovation and Skills, and the Department for Environment, Food and Rural Affairs (Defra).

3.2.3   The Government's current objectives and coverage of the Broadband Delivery Programme are for the period until 2015 but also recognise the goal set by the European Union to have 30Mbps available to all and for 50% access to 100Mbps by 2020.

3.2.4   Stimulating investment in broadband infrastructure in rural and remote areas of the UK is vital for ensuring that those areas are able to access opportunities for growth at the same time as more populated areas which will benefit from existing and currently planned private sector investment. Superfast Broadband is an enabler of growth. As described in *Britain's Superfast Broadband Future* it changes the way we do business, how we interact with people and how we access entertainment. It will offer better and more efficient channels for delivering public services, making them more accessible. It will reduce costs for consumers and enhance the capability of businesses to communicate and exchange information with their customers and suppliers.

3.2.5   The future state to be delivered through the vision comprises:

	Current	Future – 5 years time	Future – 10 years time
Customer (end user) experience	12% of premises unable to get a connection of 2Mbps	Virtually all communities able to have access to a quality home working experience (i.e. to get at least 2Mbps with the majority able to access more	Everyone able to access 30Mbps capabilities. 50% to access 100Mbps capability
Supplier market	Competitive broadband service provision in the existing market	Competitive broadband service provision, as far as reasonably possible, as the market for Superfast Broadband expands	Maintain a world class competitive and flexible market place capable of delivering future technologies
Network	Good network coverage but supplier plans for commercial provision of Superfast Broadband limited to two thirds of the market	UK has broad national coverage with the best Superfast Broadband network in Europe	UK continues to have the best Superfast Broadband network in Europe
Mobile broadband	Coverage limited outside large settlements. Spectrum not routinely traded / shared	Coverage outside large settlements improving. Spectrum trading and sharing increasing	Majority of UK land area covered. Spectrum reuse and sharing now routine

3.3   Programme objectives

3.3.1   The Government has the following objectives for the Broadband Delivery Programme:

3.3.2   **Objective 1**: To support economic growth in the UK, including in rural areas

3.3.3   **Objective 2**: To ensure this country has the best Superfast Broadband in Europe by the end of this parliament (2015):

- To ensure access to Superfast Broadband (through whatever medium) is extended to as great a proportion of communities in the UK as possible;

- To ensure the market place provides the ability for Customers to access Superfast Broadband at an affordable price;

- Where the private sector is unlikely to deliver similar services on a commercial basis;

- By May 2015.

3.3.4   **Objective 3**: To ensure delivery of Standard Broadband to virtually all communities in the UK within the lifetime of this parliament (2015):

- Where it is not economic to deliver Superfast Broadband;

- To ensure the market place provides the ability for all Customers to access Standard Broadband at an affordable price;

- Where possible, to allow for future upgrades to Superfast Broadband;

- By May 2015.

3.3.5 **Objective 4**: To ensure the efficient use of funding to deliver Superfast Broadband and Standard Broadband:

- For public funding provided within the UK;

- For public funding available through other (e.g. European) sources; and

- To encourage the leveraging of private funding.

3.3.6 **Objective 5**: To assist other Government initiatives which are dependent upon Customers ability to access Broadband based services:

- Where related regulation or policy is being amended;

- Where digital inclusion is being addressed; and

- Where local communities can become involved in the solution.

4   Delivery Principles

4.1   Introduction

4.1.1   This section summarises the delivery principles that underpin the Programme Delivery Model, and gives an indication of some of the activities that the Broadband Delivery Programme will undertake that will promote these. The principles are intended to ensure value for money and deliverability within the context of government policies and set out under the headings of:

- Facilitating local delivery:
  - Principle 1: Let local bodies lead on delivery;
  - Principle 2: Encourage a strategic approach to local delivery; and
  - Principle 3: Promote the involvement of local communities.
- Investing in economic infrastructure to maximise growth opportunities:
  - Principle 4: Maximise the impact on investment of available BDUK funding;
  - Principle 5: Mitigate the blockers to private sector investment in broadband infrastructure;
  - Principle 6: Maximise the deployment of, or upgradability to Superfast Broadband, where it is economic to do so;
  - Principle 7: Ensure no communities are left without potential access to broadband services;
  - Principle 8: Enable market driven solutions as far as possible; and
  - Principle 9: Facilitate the re-use of enterprise network infrastructure in which the public sector is investing.
- Maintaining an effective commercial approach:
  - Principle 10: Enable local solutions but guide and assist local initiatives as appropriate;
  - Principle 11: Maximise competition where appropriate;
  - Principle 12: Minimise aggregate transaction and delivery costs for the public and private sectors;
  - Principle 13: Achieve appropriate and affordable outcomes; and
  - Principle 14: Maintain compliance with regulations.

4.2   Facilitating local delivery

4.2.1   Principle 1: Let local bodies lead on delivery:

- Develop and manage a national programme approach within which local bodies can develop local approaches and take responsibility for ensuring the delivery of broadband services;
- Let Devolved Administrations in Northern Ireland, Scotland and Wales manage the co-ordination of local bodies in their areas in accordance with individual strategies for the development of broadband infrastructure in their nations;

- Provide guidelines on the range of activities required for the successful delivery of broadband projects ensuring that this covers the various phases through development of the project sourcing, implementation, operation and evaluation; and

- Facilitate network activity across local body project teams to ensure appropriate dialogue and sharing of best practice.

4.2.2   Principle 2: Encourage a strategic approach to local delivery:

- Set out clear linkages between the Commission's Europe 2020 Strategy[2] and the strategy for the Broadband Delivery Programme and how these relate to Local Broadband Plans;

- Ensure that Local Broadband Plans support the Best in Europe Superfast Broadband network coverage objective, and maximise the economic benefits to local areas;

- Provide guidance on the scope and content for the development of Local Broadband Plans by local bodies;

- Allow for the phasing of the delivery of projects under Local Broadband Plans where this means delivery of manageable and affordable phases within a consistent overall plan;

- Promote the understanding of a strategic approach to Superfast Broadband across the full range of local body roles and responsibilities. E.g. e-service delivery, social inclusion, economic development etc;

- Encourage local bodies to work together where this would increase the efficiency of the development and delivery of Local Broadband Plans; and

- Provide advice and guidance on making use of available or planned networks for public sector use.

4.2.3   Principle 3: Promote the involvement of local communities:

- Promote the inclusion of community based activities in Local Broadband Plans to be developed by local bodies;

- Provide guidance on the content of plans by community groups for localised involvement;

- Provide advice and guidance for local bodies to start stimulating local demand for Superfast Broadband; and

- Explore the viability of the provision and use of a Broadband Community Hub at a local level.

4.3   Investing in economic infrastructure to maximise growth opportunities

4.3.1   Principle 4: Maximise the impact on investment of available BDUK funding:

- Avoid substituting for private sector investment that would have occurred by investing public funds in areas which are less likely to become commercially attractive;

- Incentivise local bodies to maximise use of additional available funding, including EU structural funds and investment from local sources in the public and private sectors when developing projects;

- Stimulate investment in networks that offer wholesale access; and

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[2] *Europe 2020: A European strategy for smart, sustainable and inclusive growth*, European Commission, COM(2010)2020: http://europa.eu/press_room/pdf/complet_en_barroso___007_-_europe_2020_- _en_version.pdf

- Develop and encourage activities, including demand registration and stimulation, which will increase the commercial viability of private sector investment in local areas.

4.3.2   Principle 5: Mitigate the blockers to private sector investment in broadband infrastructure:

- Make the case for private sector investment easier by facilitating the deployment of new overhead infrastructure, the ease of agreeing wayleaves and the use of other utility infrastructure; and

- Work with Ofcom to ensure that there is a competitive market place to stimulate private sector investment.

4.3.3   Principle 6: Maximise the deployment of, or upgradability to Superfast Broadband, where it is economic to do so:

- Provide guidance and assistance to local bodies to maximise the outcomes that can be achieved from investment, within affordability constraints; and

- Provide guidance (e.g. standard requirements documentation) to facilitate investment in solutions which are durable and expandable and which recognises the synergies between mobile and fixed services (e.g. with shared backhaul and the offloading of mobile broadband data to the fixed network).

4.3.4   Principle 7: Ensure no communities are left without potential access to broadband services:

- Ensure that project proposals include the maximum number of 'points of presence' possible across a local area within economic constraints;

- Ensure that all possible technology solutions are explored to ensure that all communities have at least one potential solution; and

- Facilitate the sourcing of provision of broadband services to communities where direct investment in local infrastructure may be uneconomic.

4.3.5   Principle 8: Enable market driven solutions as far as possible:

- Develop high level requirements which are technology agnostic such that the market should decide the best solution – but within design constraints / standards for BDUK to achieve objectives related to the commercial sustainability and the future of the market place;

- Specify the high level requirements to encourage industry partnerships, making clear no one supplier is likely to meet all requirements;

- Make clear the role of mobile broadband coverage; and

- Provide advice on the procurement process for broadband projects to ensure that all potential technology solutions can be considered.

4.3.6   Principle 9: Facilitate the re-use of network infrastructure in which the public sector is investing:

- Work with the Cabinet Office Public Sector Network (PSN) Programme to encourage the re-use and re-usability of public sector networks which form part of the PSN;

- Ensure that best practice advice and guidance is disseminated from previous and current local body contracts for PSN and other wide area network projects; and

- Ensure appropriate linkages are made with other public sector investments (e.g. Grid for Learning and JANET) on a national and regional basis.

4.4   Maintaining an effective commercial approach

4.4.1   Principle 10: Enable local solutions but guide and assist local initiatives as appropriate:

- Ensure that small and medium enterprises (SMEs) and local suppliers can partake in the delivery of local broadband solutions.

4.4.2   Principle 11: Maximise competition where appropriate:

- Ensure a level playing field where possible to allow competition between suppliers within or across regions where there is capability and capacity and appetite in the marketplace – including SMEs and community suppliers as appropriate;

- Where one supplier has a temporary or permanent competitive advantage that is detrimental to the market place adapt the sourcing strategy accordingly;

- Avoid the creation of local monopolies where this would restrict competition in consumer choice and pricing; and

- Work with Ofcom to influence the regulatory environment as appropriate.

4.4.3   Principle 12: Minimise aggregate transaction and delivery costs for the public and private sectors:

- Promote materials and processes which minimise individual procurement costs;

- Help aggregate requirements on a cross locality basis where possible to minimise the number of procurements, while still responding to local needs and ensuring solutions are acceptable to stakeholders;

- Promote application of off-the-shelf products and business-as-usual processes for the supply chain as much as possible; and

- Facilitate the repeatability of projects.

4.4.4   Principle 13: Achieve appropriate and affordable outcomes:

- Seek optimal risk allocation between the public and private sector, while ensuring that it is acceptable and deliverable;

- Provide funding towards capital expenditure only. Ensure that solutions are economically viable and commercially sustainable in the long term; and

- Ensure solutions deliver what the end customer needs and will pay for and that suppliers can deliver.

4.4.5   Principle 14: Maintain compliance with regulations:

- Ensure consistency with State Aid regulations; and

- Ensure consistency with public procurement regulations.

5   Measuring Success

5.1   Introduction

5.1.1   This section identifies the critical success factors for delivery and looks at how success of the Broadband Delivery Programme will be assessed. It sets out:

- Critical success factors for delivery by the Programme and for delivery by local projects;

- A description of the Best in Europe scorecard that BDUK is developing; and

- Additional methods of measuring success.

5.2   Critical success factors

5.2.1   The critical success factors for the Broadband Delivery Programme are:

- Local and regional leaders are vocal, committed and actively supportive of the policy and local / regional broadband projects;

- Local bodies are willing to prioritise the development of projects and to resource project teams;

- Local bodies are willing and able to work together to increase the scale of projects where this would be more efficient, without resulting in slower development and procurement times;

- Local communities are able to usefully channel their interest and enthusiasm into activities which add to and enhance the outputs of local bodies in terms of achieving the delivery of broadband services;

- BDUK investment funding is added to by funding from EU structural funds and other sources, particularly local bodies;

- Suppliers and service providers are willing to participate in local projects, such that a competitive marketplace is ensured which provides demonstrable value for money and which has the capability to meet the flow of local broadband projects;

- Demand registration and stimulation measures increase the commercial viability of private sector investment;

- Solutions delivered are commercially sustainable over time;

- Solutions delivered provide for open access, offer a competitive range of services for end users, and, as appropriate, offer a clear upgrade path; and

- Residential consumers and businesses whose demand for broadband services are addressed by this Programme are satisfied that their basic needs for broadband access have been delivered.

5.3   A Best in Europe superfast broadband network

5.3.1   A Digital Agenda for Europe[3] sets out the enabling role that information and communications technologies (ICT) will have as one element of the European Commission's Europe 2020 Strategy. This includes two targets for Europe:

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[3] *A Digital Agenda for Europe*, European Commission, COM(2010)245: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF

- Fast broadband by 2020: broadband coverage at 30 Mbps or more for 100% of EU citizens; and

- Ultra-fast broadband by 2020: 50% of European households should have subscriptions above 100Mbps.

5.3.2   The UK's ambition is to have the best Superfast Broadband network and connected society in Europe by 2015. There is no single measure which will demonstrate whether we have been successful. We need more to look to the overall effects of the network, for residential consumers, for businesses, and for the way we think about communications.

5.3.3   We will be proposing a range of indicators against which to measure the UK's broadband network, and to compare it with those in other European countries. This will be in the form of a scorecard with four over-arching themes – Coverage and take-up, Speed, Price, and Choice. This is a similar approach to the scorecard used by Harvard University's Berkman Center in its February 2010 report *Next Generation Connectivity*[4].

5.3.4   The fields within each theme are summarised in Figure 5.1 below. For many of these fields it is appropriate to use composite measures to reflect the breadth of issues involved in measuring performance. The overall presentation of results is expected to remain in this simplified form, albeit with details of the specific indicators used publicly available.
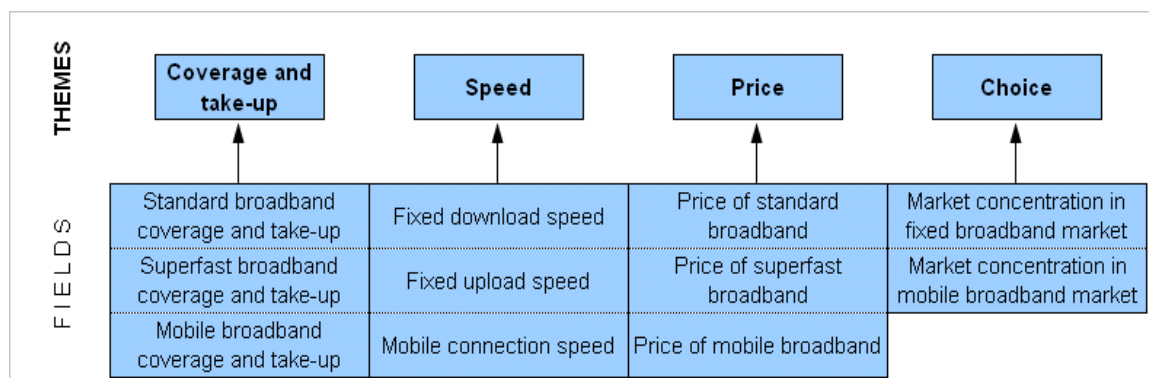

Figure 5.1: Format of Best in Europe scorecard

5.3.5   Within this format, the scorecard is intended to retain some flexibility, allowing observation of the UK's position each year, while permitting the precise detail of the data used to evolve in line with emerging technological developments, and available data. For example, there is currently little comparable data available on mobile broadband. This situation is expected to change rapidly as mobile broadband increases in prevalence. Therefore these fields are included in the scorecard even though they may be unpopulated in the short term. A further strength of this approach is that it will allow the adoption of any new data sources that become available, rather than being tied in to data that may no longer be the best available in future years.

5.3.6   The Broadband Delivery Programme is discussing with Ofcom and with the Broadband Stakeholder Group how to define the detailed indicators to be monitored within the fields in the scorecard. It is intended that all data should be publicly available, to ensure transparency, and that data should be consistent and comparable between countries. The scorecard also needs to be consistent with a longer term path to the EU 2020 targets. Where possible information from data sources will be readily cascaded down to allow comparisons within the UK at local body level (with an urban/rural split).

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http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/Berkman_Center_Broadband_Final_Report_15Feb2010.pdf

5.4   Benefits measurement framework

5.4.1   Given that the roll-out of Superfast Broadband is likely to happen within a short period of time, the lessons to be learned from early local broadband projects, in terms of the economic effects, need to be identified quickly. Therefore, a monitoring and evaluation framework is needed to produce information about the outputs that can inform both the approach to the subsequent wider roll-out of Superfast Broadband and any longer term evaluation of the intermediate and final outcomes that might be implemented in the future.

5.4.2   BDUK and Defra have jointly commissioned the development of a usable analytical framework based on a robust and coherent set of indicators. This will also include guidance for local bodies on the use of this framework. The framework will allow monitoring to be undertaken on a consistent basis across the country, and is intended to be finalised in the second quarter of 2011.

6   Programme Delivery Approach

6.1   Introduction

6.1.1   This section summarises the overall approach of the Broadband Delivery Programme for the delivery of its objectives.

6.2   Overview of approach

6.2.1   The Broadband Delivery Programme is governed by a Programme Board which is chaired by the DCMS Senior Responsible Owner for the Programme. Its membership includes representatives from: the Department for Environment, Food and Rural Affairs; the Department for Communities and Local Government; HM Treasury; Ofcom; Race Online; Northern Ireland Office; Scotland Office; Wales Office; and the Local Government Association. On policy issues, the Broadband Delivery Programme Board also reports to a cross-Whitehall Ministerial Group on Broadband.

6.2.2   BDUK's primary role is to govern and assure the delivery of policy through supporting and providing funding for local bodies to undertake local broadband projects. Local bodies will pull together local requirements, communities and initiatives to procure, govern and assure the implementation of broadband solutions. This will involve local bodies entering into contracts with suppliers and service providers for the delivery of broadband solutions who will deliver new/improved services to residential consumers and businesses. Devolved Administrations may elect to undertake these roles where it is appropriate to do so.

6.2.3   The Broadband Delivery Programme is being delivered primarily as follows:

- BDUK is responsible for:
    - The central co-ordination of the Programme;
    - The development and management of the overall approach to the delivery of broadband projects;
    - Primary liaison and co-ordination with industry stakeholders;
    - Acting as the conduit for, and assurance of the use of, central Programme funds;
    - Any national approaches to sourcing; and
    - Providing support, guidance, information sharing and a toolkit for local bodies.
- In England, local bodies are responsible for:
    - The development of Local Broadband Plans;
    - The development and sourcing of individual projects;
    - The involvement of local community groups;
    - Sourcing EU and local funding;
    - Ensuring compliance with State Aid provisions and, if applicable, applying for clearance in exceptional circumstances;
    - Project delivery; and
    - Informing Ofcom of local communication needs and shortcomings in service coverage.
- The broadband policy team in DCMS is responsible for:
    - Development of the government's policy on broadband;

   o Creating a level playing field between incumbents and new providers; and

   o Deregulation of access to infrastructure to facilitate Superfast Broadband.

- Devolved Administrations are also responsible for:

   o Developing and managing broadband initiatives for their own nations which complement the work that is being done at a UK level;

   o Co-ordination of local government in their areas; and

   o Managing funding allocations within their territories.

6.2.4   The term 'local bodies' covers any public sector body that will be developing local broadband projects for the delivery of broadband services. They may be of any constitution as long as they are representative of the communities they are intending to serve and can demonstrate the constitution, capability, governance and independence to manage a local broadband project and associated funding. However, it is anticipated local bodies will primarily be English Local Authorities, working alone or jointly, and potentially some English Local Authorities working together in Local Enterprise Partnerships.

6.2.5   Figure 6.1 below illustrates the relationships for the delivery of broadband solutions under the Broadband Delivery Programme. This shows that the nationally led Programme translates into local broadband projects led by local bodies, and that the delivery of broadband solutions is undertaken by the private sector.
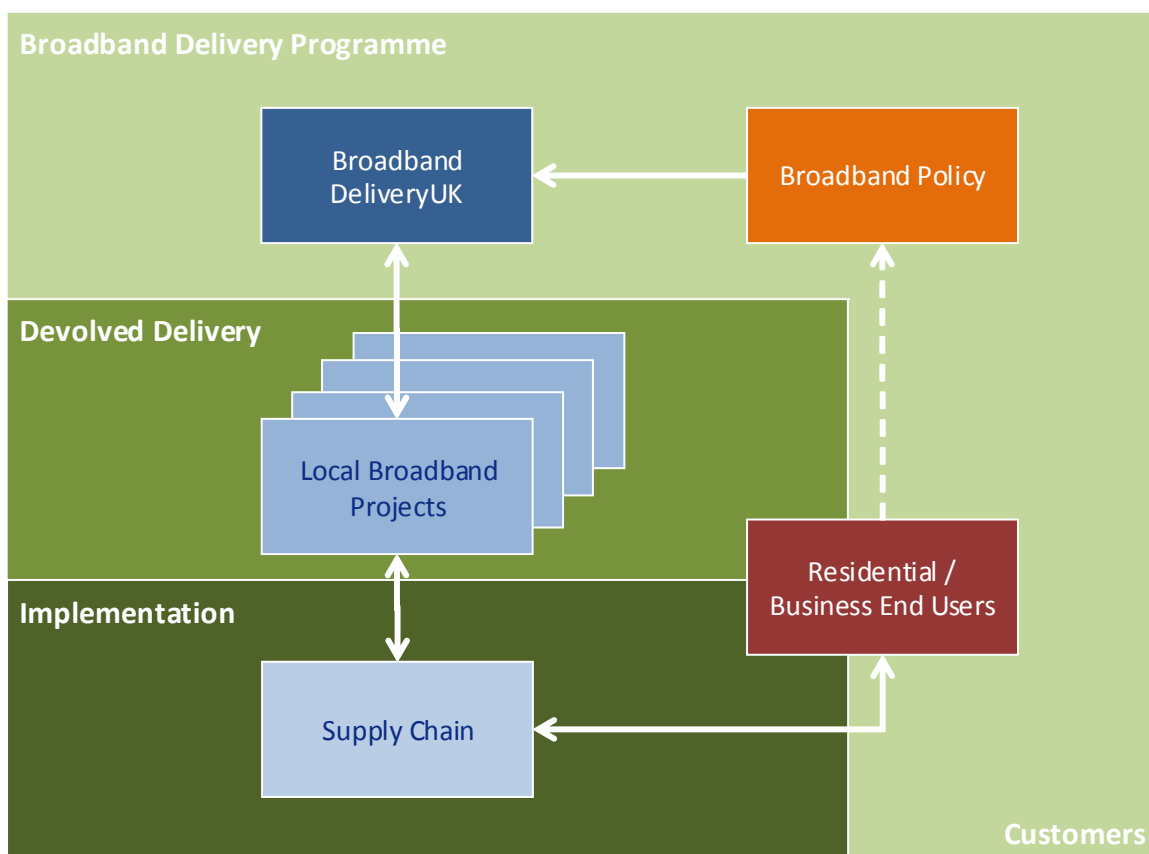

Figure 6.1: Simplified Programme Delivery Model relationships

6.3   Programme milestones

6.3.1   The timescale for the implementation of the Broadband Delivery Programme is from 2010/11 to the end of 2014/15. Additional funding is also available to provide the option to extend delivery of the Programme to 2016/17 if required.

6.3.2   The key milestones for the Broadband Delivery Programme are:

Date	Milestone	Description
Autumn 2010	Theoretical Exercise	An exercise involving suppliers to inform BDUK's approach to the delivery of improved broadband in remote areas[5]
October 2010	Pilot Selection	Selection of 4 initial Superfast Broadband Pilot locations to inform aspects of the delivery approach
April 2011	Commence Superfast Broadband Pilots	First Pilot to commence procurement
May 2011	Project Selection	Selection of additional broadband projects
Q3 2011 onwards	Project Selection	Selection of further broadband projects to commence from this date onwards
Q3/Q4 2011 onwards	Commence Projects	Additional projects to commence procurement from this date onwards. Projects will commence procurement as they are ready
November 2011	Report	Report setting out the lessons learned from Superfast Broadband Pilots and the Government's approach to investment in broadband until 2015
Q2 2012 onwards	Commence Implementation	Implementation of broadband infrastructure upgrades resulting from first Pilots to commence, with activities starting on other projects as they complete procurements
September 2012	Review	Statement on any significant revisions to the Broadband Delivery Programme
May 2015	Programme objective date	This is the date by which the main Programme objectives should be achieved

6.3.3   The milestones will be updated with planned dates for BDUK's framework(s) in due course.

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[5] *Broadband Delivery UK Theoretical Exercise – Conclusions and Lessons Learned*, December 2010, http://www.bis.gov.uk/assets/biscore/business-sectors/docs/b/10-1330-broadband-delivery-exercise-conclusions.pdf

7   Programme Level Activities

7.1   Introduction

7.1.1   This section summarises the activities that BDUK and the broadband policy team in DCMS will undertake as part of the Broadband Delivery Programme.

7.2   BDUK activities - overview

7.2.1   BDUK has been set up by government as the delivery vehicle for the government's policies to work with local bodies to stimulate private sector investment in broadband infrastructure in rural and remote areas of the UK. In respect of Northern Ireland, Scotland and Wales, BDUK will work with the Devolved Administrations to provide support for and contribute funding to individual strategies. BDUK's key areas of activity are set out in the paragraphs below.

7.2.2   **Delivery model and sourcing**. BDUK have developed the Programme Delivery Model as set out in this document. This has been based on the conclusions and lessons drawn from the BDUK Theoretical Exercise, discussions with stakeholders, and BDUK's engagement with suppliers and service providers in the market place who have expressed an interest. It is expected that the Programme Delivery Model will continue to evolve as we learn lessons from the Superfast Broadband Pilots, from engagement with local bodies on other projects, and as the market place develops.

7.2.3   The delivery model is based on the premise that broadband projects will be delivered at a local level by local bodies. BDUK will not dictate what local bodies should or shouldn't do, but has set out a framework that local bodies are advised to follow, starting with the development of Local Broadband Plans. BDUK will provide central co-ordination of the Broadband Delivery Programme, and collate measurement of the Programme's achievements.

7.2.4   BDUK will provide advice and support to local bodies in developing and sourcing their projects. This will include the provision of a toolkit of guidance and template documentation, together with the development and management of an on-line portal for local bodies to access and share information. The aim here is to minimise the effort needed on projects, to re-use and share information, and to ensure a suitable level of consistency across projects. It will be important for local bodies to contract for broadband solutions in a manner which minimises the effort required by suppliers and service providers to bid for and deliver solutions. Whilst the intention is to allow for the flexibility to cater for local needs and situations, local bodies should be procuring solutions which are similar to those being deployed in the private sector by suppliers and service providers. The development of bespoke solutions for part publicly funded contracts is neither desirable nor required.

7.2.5   BDUK has developed an overall sourcing approach to Programme delivery. This allows local bodies in early projects to lead their own procurements, with BDUK support to develop a standardised approach. For subsequent projects, BDUK proposed to create supplier frameworks from which local bodies can call-off broadband services. If the early projects demonstrate that there is insufficient competition in the market place then BDUK will consider putting in place overarching bilateral contracts with suppliers, with provisions to ensure a degree of sub-contracting where appropriate. BDUK will also procure a framework contract for local bodies to call-off broadband services for a limited number of customers for delivery by satellite technology. BDUK's sourcing approach is discussed further in section 13.

7.2.6   **Project pipeline management**. Local delivery means a series of local broadband projects. BDUK will seek to manage the pipeline of projects to ensure that it matches the availability

of funding for the Broadband Delivery Programme and also the capacity of the marketplace.

7.2.7   The selection of projects within the Broadband Delivery Programme started with the four Superfast Broadband Pilot locations: Cumbria, Herefordshire, North Yorkshire and the Highlands and Islands in Scotland. It is intended that these Pilots are to test a number of different aspects – from how local bodies should approach working together, how to develop and structure comprehensive Local Broadband Plans, to how to address issues that will arise during the procurement of broadband solutions. The Pilots are continuing to develop and work alongside BDUK, and have proved to be a useful source of information which BDUK has been able to use to help shape its approach. The selection and commencement of additional broadband projects are not dependent upon the testing of delivery solutions in the Pilots.

7.2.8   BDUK issued guidance in March 2011 for local bodies to follow when submitting proposals for the selection of an additional set of local broadband projects for BDUK funding, with the selection process planned to complete at the end of May 2011. This will start the development of a more significant pipeline of projects and will signal confirmation to the market place that there is a significant opportunity here. After this date, BDUK will move away from 'rounds' of project selection. Instead, BDUK will operate a continuous process where local bodies will bid for funding within their own timescales.

7.2.9   Not all projects that will deliver broadband solutions to rural and remote areas are within the direct ambit of the Broadband Delivery Programme. There are existing Superfast Broadband projects (e.g. in Cornwall) and potentially future projects (including some projects involving the procurement of public sector enterprise networks) that do not require funding from the Broadband Delivery Programme. BDUK will endeavour to share useful information from and with these projects so that the local bodies can benefit from each other.

7.2.10 **Demand and registration**. The level of demand from businesses and residential consumers can have a significant impact on the commercial viability of and hence the level of investment in broadband infrastructure. Demand for broadband services translates into the take-up of broadband packages from service providers, who in turn purchase wholesale access and services from suppliers. The ability to stimulate and register potential demand for broadband services prior to seeking bids for broadband solutions will reduce the level of public investment required. BDUK is pursuing ways to provide demand registration tools for local bodies to use during the development and early stages of sourcing. Once contracts for broadband solutions are awarded then local bodies, suppliers and service providers will be responsible for activities to convert potential demand into actual demand. Demand and registration is discussed further in section 9.

7.2.11 **Market environment**. The willingness and capacity of suppliers and service providers to participate in the procurement and delivery of local broadband projects is a key area. BDUK will co-ordinate the input of market place views and seek to address concerns in relation to the Programme. The Programme is in regular contact with the Broadband Stakeholder Group, and has an open door for any interested supplier of service provider to discuss issues.

7.2.12 **Funding**. A key role in the national delivery model for BDUK is as guardian of the Broadband Delivery Programme funding. BDUK are responsible for the allocation and distribution of the funding of the Broadband Delivery Programme to local bodies and Devolved Administrations. It is intended that the bulk of funding will be provided to local bodies and Devolved Administrations to contribute towards the capital investment required for the implementation of broadband infrastructure by suppliers. This is an important lever that BDUK has to encourage local bodies to work within the national approach. Local bodies are expected to source additional public funds to compliment this, including accessing EU funding and other local funding. Funding is discussed further in section 14.

7.3   Project selection

7.3.1   The selection of a project by BDUK means confirmation of a project's eligibility to receive funding from the Broadband Delivery Programme. The core part of a proposal by a local body will be a completed Local Broadband Plan, which is described further in section 8.3. As this is an important gate for local bodies to proceed through, BDUK will require that Local Broadband Plans are well developed. Also, that they include an appropriate assessment of the full needs of and benefits to the local area through meeting the Broadband Delivery Programme's objectives for broadband coverage.

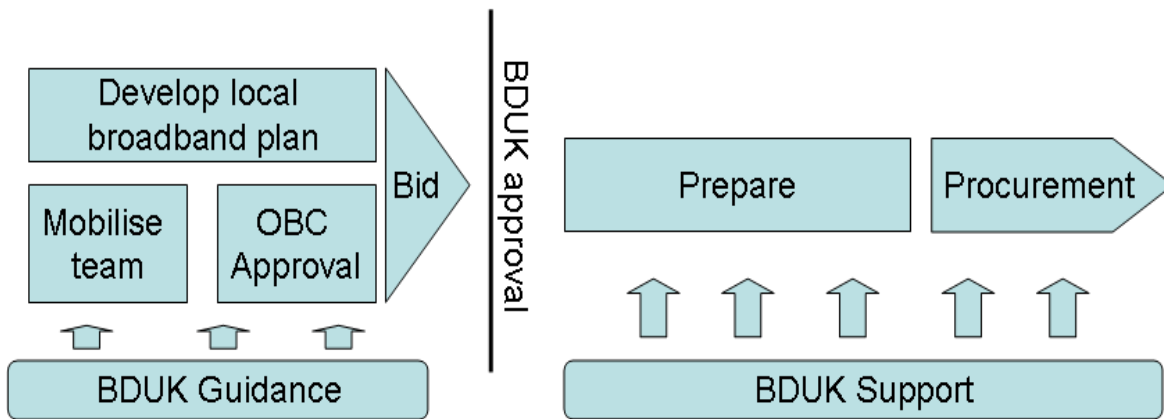7.3.2   The project selection process is outlined in figure 7.1 below.

Figure 7.1: Project selection process

7.3.3   BDUK expects that for project selection the following will be required:

- A sufficient level of depth of development of a Local Broadband Plan, including confirmation of the scope of the Plan;

- The Local Broadband Plan should include an indication of the level, timing and phasing of the funding that may be required for delivery of the full Plan;

- As part of the Local Broadband Plan the local body should have completed an outline business case (OBC) for the (or for a) project for which a firm funding contribution is being sought from BDUK, with a clear statement of what is required and the basis on which it has been estimated;

- Sign off by the local body's (or bodies') governing group(s) or responsible executive in terms of assured commitment to the Plan, including approval of the outline budget for the project team and identification of key resources; and

- Demonstration of stakeholder engagement and risk assessment.

7.3.4   In selecting a proposal, BDUK will also assess the 'deliverability' of a project – i.e. that the local body has the basis for a project team that will be able to deliver, and that key issues around the Local Broadband Plan and individual project have been addressed or are capable of being addressed.

7.3.5   Project selection will also be dependent upon the availability of BDUK funding. In terms of the funding requirements for a local broadband project, a proposal should include:

- An estimate of what funding will be required for the Local Broadband Plan to deliver full broadband coverage that meets the government's objectives for the Broadband Delivery Programme, together with a statement of any assumptions that underpin this;

- Details of the sources expected for the provision of public funding, and

- Where a Plan is being delivered through a number of phases, a statement of the firm amount of funding that is being requested for the initial investment. This should include details of other funding sources (e.g. from EU structural funds and other local sources – i.e. that demonstrate the level of commitment and importance local bodies attach to the project).

7.3.6   Where a proposal for a project is selected, BDUK will expect to agree the amount of funding that will be expected to be made available for the local body to commit to in a contract with a supplier. The amount may be refined as the project is developed, and a final amount will be formally committed to by BDUK when bids from suppliers are developed in order for the local body to complete a full business case (FBC) and to proceed to contract award. BDUK will sign a Funding Agreement with the local body that will confirm the funding for the project, its timing, and the conditions on which it is being made available.

7.3.7   For funding of the remaining elements within a Local Broadband Plan, BDUK expects to agree an overall amount in principle. Availability of this future funding will be subject to it being made available within specified timescales, the local body demonstrating that future commitments will provide value for money, and that the funding is used as specified in the Local Broadband Plan. Where variations from the Local Broadband Plan are needed then agreement from BDUK will be required. It may be that the level of funding that BDUK can commit to for future phases is less than the total required. This will be determined by the affordability of Local Broadband Plans as BDUK tries to balance funding across different areas. Future funding commitments will also be subject to the availability of BDUK funding being constrained due to changes in the priorities of the Broadband Delivery Programme as determined by Ministers.

7.3.8   BDUK will be seeking to approve Local Broadband Plans in their entirety, so that local bodies do not need to re-bid a Local Broadband Plan for each phase or project. However, BDUK will expect to undertake some assurance activities before each release of funds and the beginning of subsequent phases or projects.

7.4   Working with local bodies

7.4.1   Local bodies are expected to provide and fund their own project teams for the development, procurement and delivery of broadband projects. BDUK will provide a range of support, tailored to the needs of individual projects. This includes:

- Access to BDUK's online Local Authority Resource Centre, which is detailed further below. This includes access to guidance and template documentation, examples of project information on other projects, and a means of sharing questions and knowledge with other project teams;

- Access to the BDUK programme team – including the ability to answer commercial, procurement and technical issues;

- Participation in project governance (this may include a non-executive role on the project board);

- (For some projects) support at a senior level in terms of a 'critical friend' for projects;

- Use of BDUK as an issue resolution/escalation point for issues that require a national resolution;

- Assurance of agreed documents or positions;

- Approval for certain documents or positions; and

- A single point of contact for project teams to co-ordinate interaction with BDUK.

7.5   BDUK – local body agreements

7.5.1   Once a project has been selected, BDUK will expect to enter into the following formal agreements with the English local body (or lead local body if a project is jointly led).

- Shortly after project selection, a memorandum of understanding will be agreed. This is intended to be a general statement of commitment at a senior level by both parties of the intention to develop and procure/source the local broadband project (or at least an initial phase, if applicable);

- As the project progresses, further detail can be added at a working level which is supplementary to the memorandum of understanding in terms of more specific responsibilities of both parties, and the timetable for achieving delivery of broadband services. This will include confirmation of the funding envelope for the provision of BDUK funding; and

- At Full Business Case (FBC) stage of a project by a local body, BDUK will issue a Funding Agreement Letter which will set out the final agreed amount that BDUK will fund and the terms of the funding. This is discussed further in section 14.4. Details of the general funding terms that are expected to apply will be available in the Broadband Project Toolkit so that any relevant terms can be addressed in procurement documentation during a procurement process. A draft Funding Agreement Letter should be sought prior to the selection of preferred bidder in any procurement process, and before dialogue is closed where a local body is using the competitive dialogue procedure in a procurement.

7.6   Local Authority Resource Centre

7.6.1   BDUK online support for local bodies will be delivered through the 'Local Authority Resource Centre' which is managed by BDUK. This is a web based electronic resource currently based on the commercial 'Huddle' platform that will provide a wide range of guidance, information, and networking support for Local Authorities. It also includes a facility to encourage networking between Local Authorities to explore issues, identify solutions and share best practice. Huddle should be accessible from a standard web browser. Local bodies will be able to request password based access from BDUK.

7.6.2   Key areas within the Local Authority Resource Centre include:

- Dedicated areas for each local body to upload and share documentation and information, and provide contact details for projects. This can include projects which are selected by BDUK, planned projects, or any other relevant projects or initiatives;

- Access to guidance and standard documentation and templates developed (or approved) by BDUK (see the Broadband Project Toolkit below);

- Areas to share broadband examples of best practice;

- Updates from BDUK on the Broadband Delivery Programme; and

- Links to useful information.

7.7   Sharing information and experiences

7.7.1   In addition to the Local Authority Resource Centre, BDUK will work with local bodies to ensure that understanding and lessons learned can be shared, and to provide details of how specific issues are being addressed. This will include events to which local bodies will be invited, which will be held in a variety of locations around the country. Some will be

aimed at larger audiences, and some at smaller groups. They could take the form of briefing sessions or workshops.

7.7.2   In addition local bodies are encouraged to talk directly to each other to share information and experiences, using contact details that should be provided in the Local Authority Resource Centre.

7.8   Broadband Project Toolkit

7.8.1   To support local bodies undertaking broadband projects, BDUK is developing a toolkit (guidance, standard documentation and templates) that will provide material from the development of a Local Broadband Plan, through to the procurement or sourcing phase and up to monitoring of the delivery phase. The toolkit will be available through the Local Authority Resource Centre for local bodies to access. Where relevant, copies of material will also be made available for general access on BDUK's webpage.

7.8.2   The aim of the toolkit is to provide material so that local bodies can understand what it is they should be developing, and to provide standard documentation and templates so local bodies can minimise the effort required to progress projects. In addition, the use of standard documentation should facilitate the participation of suppliers and service providers during a procurement phase by ensuring consistency of approach on projects. There are some elements of material that BDUK will regard as mandatory to use, i.e. where local bodies are advised to seek approval from BDUK to change any provisions. It is intended that these will be limited in nature, and are likely to relate to constraints such as in relation to funding and State Aid approval. Although it is intended that the standard documentation will provide flexibility to cope with different approaches and issues, local bodies will be advised to minimise any other changes they make to standard documentation.

7.8.3   The contents of the toolkit will be built up over time using content newly developed by BDUK, adaptations of existing material to make them suitable for re-use, and materials that are developed by BDUK working with Pilot projects and other early projects.

7.8.4   The toolkit will contain the following sets of material:

- Guidance on developing a Local Broadband Plan;

- Guidance on market engagement;

- Guidance to assist in the development of projects, including developing a business case;

- Standard procurement documentation and templates;

- Guidance on demand stimulation and details of how to access a tool for demand registration;

- Guidance on modelling needs (e.g. information and mapping of broadband not-spots, local public infrastructure and geo mapping);

- Guidance on accessing information from BT Openreach which may be needed for due diligence by bidders during a procurement process;

- Guidance on commercial models;

- Guidance on technology issues;

- Guidance on community engagement; and

- Advice and templates for State Aid applications.

7.9   Modelling material

7.9.1   BDUK has built a geo-spatial model containing details of broadband infrastructure. Elements of this will be available for local bodies to use. Further details of the basis on which this is available, and details of any required licensing provisions are available from BDUK. It is intended that this model will benefit local bodies as follows:

- To support development of the Local Broadband Plan, the model will provide a model of broadband speeds in an area, including the location of not-spots and slow-spots;

- To support State Aid appraisal the model will identify a baseline of the applicable areas for State Aid eligibility purposes, prior to further analysis by the local body;

- To inform the assessment of supplier bids and to support full business case development, the model will support the estimation of indicative costs for a given coverage solution at an aggregate high level (however, the indicative costs are dependent upon model assumptions and any estimates should be regarded as a comparison model); and

- To support local bodies in providing information to bidders for due diligence during a procurement process. This will include details of existing infrastructure (e.g. locations of cabinets and ducts) that companies have provided to BDUK, subject to a local body entering into a confidentiality agreement with BDUK.

7.9.2   The information BDUK can supply to support the development of Local Broadband Plans includes:

- Numbers of total premises (homes and businesses) in a local authority area;

- Details of 'not spots' < 0.5Mbps and 'slow spots' < 2.0 Mbps broadband speed;

- Number of premises connected to BT exchanges (including where BT have made announcements for broadband coverage); and

- Number of premises with installed Virgin Media coverage.

7.9.3   Local bodies will still need to model any specific features that they want to address, and to consider different coverage scenarios. In addition, local bodies will have to supplement the model with details of available public sector networks, the results of demand registration undertaken locally, current footprint and published future coverage plans of local suppliers, and other local information not included in the model.

7.9.4   Where bidders in a procurement process will require due diligence information (at their own cost) from BT Openreach to support their bids, BDUK will facilitate a route for local bodies to provide for access to this.

7.10   Broadband policy activities

7.10.1   *Britain's Superfast Broadband Future* sets out a number of policy interventions aimed at ensuring that there is a favourable policy and regulatory environment for investment in broadband infrastructure and wherever possible lowering costs and barriers to investment. While the policy and regulatory interventions are applicable in general to all investment in broadband infrastructure, it is also intended that they should support the delivery of broadband rollout in areas receiving support from BDUK.

7.10.2   Recognising that civil engineering is a major proportion of the capital cost of any broadband deployment the government has taken steps to encourage infrastructure sharing, including:

- Ofcom is introducing Passive Infrastructure Access as a new remedy in the wholesale local access market following a finding that BT and KCom have significant market power. BT has submitted reference offers for access to its ducts and poles and these are being

considered in an industry consultation process. The government is following this process closely and hopes for a pro-competitive outcome; and

- In February 2011, the government hosted a seminar with participation from the telecoms, electricity and water industries together with regulators and other interested parties examining the practical issues associated with utilities sharing infrastructure. The workshop reinforced the government's view that while there are significant practical issues that need to be addressed, there are models for sharing infrastructure that can be beneficial to all concerned and certainly helpful in extending the reach of broadband networks. The government will continue to work with the industry and regulators in the development of sharing of infrastructure in particular working on revised guidance.

7.10.3 In addition to sharing of infrastructure the government is developing its proposals for allowing new overhead deployment and aims to bring these forward within the next few months.

7.10.4 Competitive providers also identified business rates and sub-loop unbundling (SLU) as issues that needed further examination and policy roundtables have been held with the industry, regulators and other government departments on these subjects in January and February. A note of the 11 January business rates roundtable is available on the DCMS website[6]. It was agreed that the government would continue to work with industry, with the Broadband Stakeholder Group facilitating the work, to examine whether amendments or clarifications to existing guidance might be made in the light of evidence to be presented by the industry. In particular it was agreed that the case for applying differential rates to the 'final third' as compared with the rest of the country should be considered.

7.10.5 The government has also continued to work with the industry to understand the economics of SLU. This has been available as a product for a number of years but has not been widely used within the UK to date. One of the conclusions of the recent roundtable held with the industry and Ofcom in February 2011 is that more demand has emerged for SLU, including potentially in relation to BDUK funded projects. However, there is disagreement within the industry on the pricing of SLU and this has been formally referred to Ofcom which will adjudicate within four months.

7.10.6 In addition to these specific policy interventions which have the potential to support BDUK funded projects directly, the government is also pursuing the range of other policy interventions contained in *Britain's Superfast Broadband Future* including looking at ways to promote broadband take-up and whether updated guidance to local authorities on issues impinging on broadband deployment such as planning and street works might have the potential to support increased broadband deployment both in urban and rural areas.

7.11 Links with other government policies

7.11.1 Race Online 2012 is an initiative with the aim to have everyone online by 2012. It is looking to achieve these aims through a network of partners, and its work includes building awareness of the benefits of being online, development of skills and knowledge to get online as well as encouraging companies to offer cheap packages for computers and internet access.

7.11.2 To help people be aware of the benefits of being online and to give people the skills to get online and make the most of it, Race Online 2012 are developing a network of Digital Champions who will volunteer to do this within their community. It is expected that there will be benefits through linking the demand stimulation activities of local broadband projects funded by BDUK and the work of Race Online 2012. For example:

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[6] http://www.culture.gov.uk/images/publications/FiberOptic_Notes_11Jan11.pdf

- Ensuring that there are digital champions in areas where broadband infrastructure is being funded by BDUK;

- Ensuring that the digital champions are aware of the broadband projects in their area;

- Ensuring that community groups are aware of the Race Online 2012 resources that they can use;

- Developing joint events; and

- Signposting citizens to each other's websites to ensure a consistent customer journey.

7.11.3   The Broadband Delivery Programme is also discussing with the Department of Health and the Department for Education the opportunities and benefits for individuals to access services over Superfast Broadband, particularly for individuals in rural and remote areas.

8   Local Delivery Approach

8.1   Introduction

8.1.1   This section describes the activities that local bodies will undertake and what is required from them for the development of local broadband projects.

8.2   Activities for local bodies - overview

8.2.1   In line with the government's agenda on localism, local bodies are encouraged to lead the development, sourcing and delivery of broadband projects in their areas. BDUK will work with local bodies to provide support, advice, and, as appropriate, a contribution to funding to ensure that delivery projects are developed and successfully completed. The key areas of activity that local bodies are expected to undertake are set out in the paragraphs below.

8.2.2   **Development and procurement**. Local bodies will be responsible for developing the overall broadband plans for their areas where government intervention is necessary, applying for funding from BDUK if required, and undertaking a procurement (or other sourcing activity) to select a private sector partner to deliver broadband services. Activities here include:

- Developing a Local Broadband Plan;

- Engaging with local communities and business to encourage and harness interest in participation in broadband projects;

- Developing, or facilitating the development of, broadband projects pursuant to the Local Broadband Plan;

- Project management;

- Providing and resourcing a project team;

- Sourcing (including conducting a procurement as required for a private sector provider) for broadband services within a project; and

- Ensuring that projects are developed within State Aid rules.

8.2.3   **Communities and demand stimulation**. Local bodies should engage with local communities to identify local needs and to make use of local help and enthusiasm where practical. This is discussed further in section 10. In addition, helping to stimulate demand before bidders are engaged can increase the commercial attractiveness of a project. This is discussed further in section 9.

8.2.4   **Re-use of public sector enterprise networks**. Local bodies should identify where it is possible to leverage on the value of existing planned investments in infrastructure or services which provide enterprise networks for public sector use. This is discussed further in section 12.9.

8.2.5   **Implementation support and delivery assistance**. Local bodies will be responsible for contract management of the delivery of services. This should include monitoring and evaluating the process and outcomes of the project, and sharing information and experiences with BDUK and with other local bodies for future projects.

8.2.6   **Funding management**. Local bodies will be responsible for identifying, securing and managing funding to support the delivery of services. Activities here include:

- Bidding for BDUK funding (by English local bodies) and identifying other sources of funding (including EU structural funds and funds from local sources); and

- Financial control and audit of public sector funding invested in projects.

8.3   Local Broadband Plans

8.3.1   The Local Broadband Plan is a set of documents that will set out the vision for broadband in an area and the plan for how this coverage will be achieved. It is a necessary part of any bid from local bodies for BDUK funding. Guidance is set out in the Broadband Project Toolkit.

8.3.2   The focus of the Local Broadband Plan is the vision for broadband for the area. It should cover at least the period to 2015, and should include both Superfast and Standard Broadband coverage. For completeness the plan should reference mobile broadband. BDUK expects that the plan will state that everyone would have access to at least Standard Broadband by the end of the period that the plan covers, and . that local bodies will aim for Superfast Broadband to be available to 90 of people in each Local Authority area.

8.3.3   The Local Broadband Plan should also contain any supporting information, for example:

- Objectives that the local body has for the area, e.g. economic growth, fragile communities, rural development, public service transformation, and how these will be met or enabled through the plan;

- Background and baseline data - current situation in terms of population, geography, topography, and issues faced;

- An outline of the existing broadband infrastructure and current connectivity, any projects and known private sector plans for investment within the area, and an analysis of gaps;

- Strategic benefits (e.g. details of how the investment may be linked with public service transformation activities underway in both the local county and district councils, and with central government service transformation);

- Identification of where there are separate phases for delivery, and whether there is one project or multiple projects;

- An outline business case (or equivalent) for the project for which initial funding is being requested;

- Funding structure and profile/requirements for the duration of the plan;

- Market engagement, where undertaken;

- An outline procurement/sourcing strategy;

- Analysis of known broadband not-spots in the area;

- Details of any public networks that will be used;

- Known community activities;

- A description of known demand for broadband in the area;

- Demand stimulation activities currently being done or which could be undertaken;

- Details of stakeholder engagement;

- Risk management assessment;

- Project timetable;

- Details of how the local body intends to manage the project and, if applicable, arrangements in place for working jointly with other local bodies; and

- Resources and budget to be supplied by the local body for project delivery.

8.3.4   The Local Broadband Plan should cover the whole area that the local body is responsible for. However there does not need to be the same level of detail in the plan for the whole of the area. It is acceptable to have a phased plan with greater detail for the first phase and a timeline for developing the detail for subsequent phases.

8.3.5   Where the Local Broadband Plan mentions the potential for public service transformation related to the broadband infrastructure investment, it will need to be clear about the current plans for transformation and the support within the local body for this.

8.3.6   The plan does not need to contain specific details of the technologies that may be used or the sourcing strategy for each of any later phases in order to bid for BDUK funding. It would however need to set out the overall delivery approach.

8.4   Local broadband projects

8.4.1   The Local Broadband Plan should identify that there are one or more projects that the local body will undertake. A project should be supported by an outline business case. (Some of the material in the Local Broadband Plan and outline business case will overlap and it will be sufficient to provide cross references, or for a local body to combine them into a single document as appropriate).

8.4.2   Local bodies should consider at an early stage in the development of a Local Broadband Plan the optimum size of a project, and whether adjacent local bodies should be involved. The optimum size of a project will be influenced by:

- The extent of local collaboration achievable, where local bodies will need to work to an agreed timetable, and be capable of agreeing an effective project governance structure;

- Potential economies of scale in the delivery of broadband solutions;

- The likely 'transaction' costs for both the public sector and bidders in progressing procurements, relative to the value of investment required. Smaller and more numerous procurements are likely to cost more overall, and disincentivise suppliers from bidding;

- Geographical distribution of the targeted business and residential consumers, including authority boundaries;

- Local body funding and the level and skills of available resources;

- The ability to create a well competed procurement for a commercially sustainable solution; and

- Local requirements.

8.4.3   Devolved Administrations will manage the co-ordination of local bodies in their areas in accordance with individual strategies for the development of broadband infrastructure in their nations.

8.5   Sourcing/procurement

8.5.1   The Local Broadband Plan should set out the commercial model that the local body wants to take to investment. Further details of potential models are set out in Section 13.3.

8.5.2   The local body should develop an outline procurement or sourcing strategy as part of its Local Broadband Plan. Once a project is selected a more detailed strategy can be completed. BDUK's approach to procurement and sourcing is set out in section 13. Local bodies should consider engaging with potentially interested suppliers whilst the Local Broadband Plan is under development, i.e. prior to the commencement of any procurement process. Local bodies should ensure that any such engagement is consistent with public regulations to ensure an open and fair procurement.

8.5.3   A local body should seek to validate any understanding it may have of the national supplier market and engage with some local / niche suppliers to best understand their position in the competitive landscape. It is not safe to assume that because one local project enjoys strong competition for their procurement that this will be the same for all projects. Similarly, the scale and scope of one project will vary to others and may attract additional regional and local suppliers, either as sub or prime contractors. Though such suppliers may be more likely to sub-contract this should be explored to ensure the local procurement strategy encourages competition rather than accidentally excluding it. Market engagement is about understanding market capability, capacity, maturity and interest. Unless there are highly specific local issues, it may be appropriate to undertake detailed market engagement after the Local Broadband Plan is completed.

8.5.4   Local bodies are expected to lead in the procurement or sourcing of local broadband solutions, taking into account where sourcing arrangements such as frameworks are available. Together with ensuring economies of scale, and synergies of solutions, reducing project team and procurement costs is a valid reason for local bodies collaborating in the development and delivery of Local Broadband Plans.

8.5.5   Local bodies are responsible for ensuring that projects meet rules on State Aid. BDUK are intending to facilitate activities in this area as much as possible. This is discussed further in section 13.

8.5.6   Local bodies are responsible for identifying and applying for EU funding. BDUK will be able to assist in providing input to the initial application process to confirm the potential availability of funding that it may be able to contribute to a project. European funding is discussed further in section 14.6.

8.6   Project implementation

8.6.1   The local body will own and be responsible for the implementation phase of the project. The local body will need to retain a project team post procurement, albeit with some differing skill sets, to assure the implementation and operation phase, collecting the necessary data to monitor and support delivery. It is likely that the local body will need to undertake this activity for some time post procurement, as one of the conditions of EU funding is that there is a claw back mechanism in place to recover public subsidy under certain circumstances.

8.6.2   The role of the local body's project team during the implementation of the broadband solution is often defined in detail during the mobilisation phase when detailed plans are finalised and approved. Thereafter, the project is likely to focus on preparing for the supplier's works in terms of readying communities (business and residential), speeding planning and wayleave applications and governing and assuring delivery processes and performance. This will include confirming funding payments at completed milestones and reporting on expenditure for all funding parties.

8.6.3   Local bodies should consider appointing a senior lead responsible for pro-actively ensuring that costs and barriers to deployment are minimised that would occur as a result of local bodies, or organisations that they control or influence. This has the potential to make a noticeable difference in the speed of deployment once a project commences implementation. This could cover areas including planning and compliance with regulations and will principally involve exhorting other individuals and organisations to recognise the local importance of broadband implementations.

8.6.4   The award of a contract to a supplier is only a means to an end; it is not in itself an indication of success. BDUK expect to make available lessons learned from earlier projects to ensure the effective management of common issues.

9   Demand for Broadband Services

9.1   Introduction

9.1.1   This section describes issues which are relevant to increasing the demand for broadband services. Demand can be seen as coming from three areas:

- Consumers buying services from service providers;

- Businesses using the network and buying services from service providers; and

- The public sector using the network and buying services from service providers.

9.1.2   This section will focus on the actions that the Broadband Delivery Programme, local bodies, communities and suppliers can take to stimulate demand for consumers and businesses. Actions that the public sector can take to maximise their use of the network and to potentially act as an 'anchor tenant' to increase the viability of provision of broadband services is covered in sections 13.9 and 14.7.3.

9.2   The importance of demand

9.2.1   A key issue that makes it uneconomic to upgrade the broadband infrastructure in many areas could be said to be demand – essentially there are not enough people in the area prepared to pay enough money for an upgraded service to cover the cost of implementation. There is a direct relationship between the number of people who want broadband in an area (and the amount they want to pay for it) and the level of public subsidy that will be required.

9.2.2   In general terms, the commercial judgement for a supplier to invest in the upgrading of broadband infrastructure in an area will look at the balance of costs, both for implementation and the ongoing operation of services, and the potential revenues. Revenues will come in the form of subscriptions for retail broadband services from consumers and businesses, through service providers who will purchase access to wholesale broadband services from suppliers.

9.2.3   A key focus of the Broadband Delivery Programme is encouraging the stimulation of private sector investment in the final third of the country. Stimulating demand is important in two phases for local broadband projects:

- During the development of a project prior to the commencement of any procurement, and up to a date in the procurement process (normally when final bids are requested from suppliers). The more potential demand that can be demonstrated (see section 9.4 below on demand registration), the more attractive the project will stand as a potential investment opportunity for suppliers. Local bodies will be responsible for demand registration during this phase but should look to mobilise community and business champions to support this where possible. Suppliers would not be expected to take responsibility for such activities whilst they are still bidding; and

- From the date of award of a contract for the delivery of broadband service, the local body together with its contracted supplier will be responsible for encouraging demand and the actual level of achievement of take-up. The responsibilities of each party should be clearly allocated under the contract for broadband services, and the commercial model should incentivise behaviours.

9.2.4   One significant factor in the number of customers (both consumers and businesses) who subscribe to broadband services will be the availability of service providers, the packages they offer and the potential for bundles (e.g. broadband together with other services).

9.2.5   The majority of consumers who can get broadband currently do subscribe to broadband services from service providers – broadband take up as measured by Ofcom[7] is 71% of UK households. While access to Superfast Broadband is available to nearly 50% of the population through the Virgin network and a growing percentage of the population through BT's fibre to the cabinet investment, national take-up is still very low.

9.2.6   Without any demand stimulation activity it is expected that in areas with little or no broadband coverage, if offered a good service at an affordable price, then demand will be high amongst consumers and businesses. In areas where there is an existing Standard Broadband service then without any demand stimulation activity conversion by consumers to a Superfast Broadband service may be low.

9.2.7   However, as society's use and expectations of the internet evolve over time, it is likely that demand for Superfast Broadband will increase unaided. In particular, as more applications become available and more widely used that require access to Superfast Broadband then there will be greater take-up by consumers and businesses.

9.2.8   There are fewer figures for take-up of Superfast Broadband services by small and medium businesses, but there is expected to be a similar pattern as with consumers. In areas with no broadband take-up will be high, but conversion between Standard and Superfast Broadband will be lower. The Broadband Delivery Programme is supporting a survey being undertaken by the Communication Management Association (part of BCS, The Chartered Institute for IT) to Federation of Small Businesses members to better understand their demand for Superfast Broadband.

9.3   Demand stimulation

9.3.1   The Broadband Delivery Programme is exploring the viability of a number of measures to assist in stimulating demand for Superfast Broadband services. This will be based on working with other parties. For example, BDUK will be working centrally with the Race Online 2012 initiative (see section 7.11 for specific items) which is seeking to recruit digital champions who can act within their community to help people get online and make good use of their broadband service. BDUK is expecting to work with Race Online to increase the number of digital champions in areas where a local broadband project is upgrading the infrastructure.

9.3.2   A significant proportion of activities related to demand stimulation actually falls under the heading of demand registration – i.e. encouraging consumers and businesses to notify their interest in Superfast Broadband retail services. The private sector and other parties such as the BBC also have an interest in stimulating demand for broadband services through developing and offering devices, applications and content that consumers and businesses will be interested in. The Broadband Delivery Programme does not intend to become involved with or substitute for these activities that are best left without government intervention.

9.3.3   BDUK will expect local bodies to provide details in their Local Broadband Plans of how they plan to stimulate consumer and business demand, particularly under the development phase described in paragraph 9.2.3 above.

9.3.4   BDUK is promoting the use of a community portal for broadband. A role for this portal will be to give local communities guidance on developing demand stimulation activities of their own. BT's recent Race to Infinity competition showed that high levels of registration in individual areas, including 100% in some instances, is potentially achievable. The community portal is discussed further in section 10.3.4.

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[7] Ofcom Communications Market Report, 23 August 2010

9.3.5   BDUK also expects potential suppliers to detail in their bids for local broadband projects any plans to support demand stimulation activities or how they intend to run demand stimulation programmes of their own. In Cornwall for example, the supplier and the local authority are jointly funding demand stimulation initiatives with the continuation of rollout of the network beyond a minimum threshold being dependent on take-up. While this model will not be appropriate in all circumstances, it does show one way to link demand stimulation efforts to overall outcomes.

9.4   Demand registration

9.4.1   A clear understanding of the demand for Standard and Superfast Broadband in an area will be important in ensuring that demand stimulation activities are properly targeted. It will also provide information that local bodies can use with bidding suppliers to assess and, if appropriate, challenge their assumptions on take up.

9.4.2   BDUK is exploring the use of a 'white label' demand registration tool for local bodies to 'brand' to their projects and promote within their communities. BDUK are investigating reusing and developing existing tools rather than creating one from scratch. We expect this tool to be available later in 2011.

9.4.3   The tool will include demand registration questions for both businesses and consumers. It is expected that local bodies will promote the use of the tool, or any readily available equivalents, amongst citizens and businesses in their area and mention this in their local broadband plan.

9.4.4   Local bodies should recognise that demand registration in itself may be insufficient for bidders to have confidence in increased revenue projects. Collecting a stronger statement of intent or even commitments to buy services will have greater impact.

10 Local Community Groups

10.1 Introduction

10.1.1 This section describes how local communities can be engaged in the development, promotion, and in some cases delivery of broadband services. This can be seen to be part of the Big Society agenda.

10.2 Local communities

10.2.1 Localism and decentralisation is at the heart of the Government's agenda. Whilst the majority of local communities are not expected to develop their own local projects, it is anticipated that a significant minority will want to be more involved in the upgrade of broadband infrastructure. Communities can play a big role in ensuring the delivery of broadband services for their communities.

10.2.2 The Big Society agenda promotes the empowerment and self-sufficiency of local communities in shaping their own local services including the provision of broadband. It is expected that some local communities will want to take a leading role in working with the public and private sectors to organise investment and setting up community enterprises to develop networks.

10.2.3 BDUK consider representative 'community groups' to be a group of people living in the same locality with a common interest in achieving broadband connectivity. The group is likely to be part of the same administrative entity, sharing some common services, (such as a Parish Council). It is expected that the group would be represented by a recognised 'local champion' who will work with a steering group comprising people with appropriate knowledge, expertise and influence, to oversee and inform the approach.

10.2.4 Where appropriate parish councils may be invited to endorse the approach, participate in it and possibly lead it. Parish councils would be expected to verify that the community has voted for the proposed access solution and insure groups are making an informed decision. In creating a representative community it is expected that the 'group' is large enough to form a critical mass such that any broadband service is coherent, is financially viable and can benefit from economies of scale. Experience suggests that at least 100 households are required and the grouping should be sufficiently concentrated as to be able to connect to a single point of presence. Those proposing community access solutions should demonstrate financial backing for the proposal by ensuring a minimum proportion of the community (say 40%) have agreed to pay a specified connection charge and on-going monthly rental. Where the solution is to be provisioned and billed with a local provider, then the parish council should be happy that customers have had the solution explained to them including the details of the service levels being promised.

10.2.5 Different communities will require different solutions to suit their unique circumstances, (for example combinations of fibre based and wireless solutions may need to be deployed). It will be important to engage communities in determining what those circumstances and their priorities are. They may well need to find ways in which they can facilitate the development by making a financial contribution to the capital cost or by donating wayleaves and volunteer labour digging ducts and undertaking fibre installation. In some circumstances a community interest company may be an appropriate vehicle for owning and managing the network.

10.3 Developing community projects

10.3.1   It is expected that local bodies and Devolved Administrations will engage with their local communities to encourage involvement, contribution and commitment, especially in terms of their demand and pre-registration for services. This principle equally extends to promoting a degree of individual consumer contribution and commitment to a local broadband project to stimulate and register demand. It also allows the consideration of local variations to aggregated/common requirements, as constrained by deliverability and affordability.

10.3.2   Where there are existing community based projects, the Local Broadband Plan will need to be developed to take them into account. Local bodies are also responsible for working with communities that wish to develop their own local projects to fit them within a Local Broadband Plan.

10.3.3   BDUK and local bodies will support the development of community projects with help and guidance in a number of areas including technology approaches, policy and regulation, project planning, social enterprise, demand stimulation and mapping. Under some circumstances, a funding contribution may also be available from the Rural Community Broadband Fund (see section 10.4.5 below).

10.3.4   The Broadband Delivery Programme has encouraged the development of a community broadband portal[8], supported by a small amount of government funding. The portal should provide several functions:

- A register for all community broadband projects in the country. People are able to enter their postcode on the site to find projects that may already be underway in their area;

- An information resource for communities wanting to set up their own community broadband project. Some of the information has been developed specifically for the portal and some is present elsewhere with links provided;

- A resource for local bodies to use for community engagement if they wish; and

- A place for communities to share information and experiences.

10.4 Delivering community projects

10.4.1   In the majority of cases, community groups will not be involved in the actual delivery of the broadband infrastructure. It is expected that they will concentrate on:

- Raising awareness about the local broadband project being undertaken in their area;

- Undertaking work to stimulate demand; and

- Working with local bodies to have their community's needs reflected in the Local Broadband Plan.

10.4.2   In a minority of cases the community may become involved in the delivery of broadband infrastructure. This is expected to happen where the proposed broadband investment will not otherwise meet the community expectations. It may involve the use of a Community Broadband Hub.

10.4.3   There are several further ways a community may choose to be involved:

- **Funding**: To fund the network upgrade communities may come together to find potential funding sources. This may include bidding for EU funding, looking to the Parish Council or raising money themselves, including in the form of loans. This latter example has been used in the village of Lyddington, where various members of the community have come

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[8] www.ruralbroadband.com

together to loan money to a private sector company at commercial rates to provide VDSL to the village;

- **Structure**: The community may come together to create a formal structure for the project to be undertaken through. This may include creating a community interest company through which the access network is owned and managed;

- **Infrastructure work**: Some members of the community may choose to become directly involved in the infrastructure work. This could be as simple as digging trenches in your land to cut the cost of laying fibre to your home (as has happened in Ashby De La Laund), or it could be as complex as being involved in the installation and maintenance of the networking kit; and

- **Facilitation and contributions in kind**: Community members could offer, or persuade others to offer support, for example in the form of rent free access to sites or to speed up and/or reduce the cost of wayleave permissions.

10.4.4   In some areas, there are already communities who have started their own projects to upgrade the local broadband infrastructure. In some cases these communities are bidding for European funding (e.g. Ewhurst & Surrey Hills), in others they are finding other sources of funding, including from within themselves (e.g. Lyddington).

10.4.5   In March 2011, Defra announced that, with support from BDUK, it was creating a Rural Community Broadband Fund. This will comprise up to £20m in total, including funding from the Rural Development Programme for England and BDUK. This will be available for communities to bid into specifically to assist with the capital cost of developing small scale broadband projects, for example, such as an access network that utilises a Community Broadband Hub or other point of presence. Further details will be published in 2011, including information on what types of projects will be covered and where to submit bids to. This fund is applicable to England only and rural communities in the Devolved Administrations will have to adhere to individual national strategies.

10.5 Community Broadband Hubs

10.5.1   The contracts for broadband services let by local bodies with suppliers are expected to provide for the capabilities in outcome terms (or equivalent) that suppliers of broadband solutions are required to deliver for service providers to deliver broadband services to end users (i.e. customers). This will include the provision of Community Broadband Hubs by suppliers where there is sufficient demand for them, subject to their viability being demonstrated in early projects.

10.5.2   A Community Broadband Hub is an infrastructure point from which wholesale connectivity services can be extended by the community or their agents.

10.5.3   The Community Broadband Hub may take a number of physical or logical forms. BDUK are currently working with community groups in Cumbria, and examples of a definition of a Community Broadband Hub which can be varied and upgraded to meet the changing needs of a community will be made available in due course.

10.5.4   Connectivity from the Community Broadband Hub can then be extended over time to homes and businesses in a variety of ways. For example, an operator's cabinet can be equipped to support the splicing of fibre builds into the access network, where a community have decided to dig the fibre themselves. Interfaces could also be made available such that wireless networks or indeed community managed femtocells can be added to the network.

10.5.5   Wholesale connectivity should be available at a Community Broadband Hub at an affordable price within a community where communities or other private and public sector bodies could then take responsibility for extending the network capability further to individual homes. In one sense a Community Broadband Hub is essentially a point of

presence, where backhaul can be bought at typical market rates, rather than rates that relate to the distance of the hub from a point of handover (e.g. a suitably enabled BT exchange).

10.5.6 BDUK are exploring the demand for and viability of options for community groups to assist in the delivery of broadband services using Community Broadband Hubs which would permit differing levels of direct community involvement. These include:

- **Community access point**: This is where a supplier under a local broadband project will be required to support an existing community access point. There should be an affordable target annual rental price, plus monthly bandwidth charges. BDUK are not proposing to specify any additional retail service provider services, but suppliers will be free to propose additional services;

- **Community build and benefit from community network extension**: This is where a community does not wish to build or maintain their own network. However, they are willing to organise and pay for teams to conduct the civil works needed to lay duct, arrange wayleaves, and organise the necessary permissions from the local authority. This will typically be in areas where the community wants a fibre service, but where it is too costly for private or public sector investment. Private sector suppliers are expected to supply materials for free and to provide details of standards for civil works undertaken. The supplier would then take over and maintain the completed civil works and then lay the fibre and perform all necessary connections. The processes to support this option will be developed from the supplier products which support network build on major commercial sites. Demand for this option is uncertain; and

- **Community design and build**: This is where a community wishes to take an additional step and orchestrate the construction of their own network. Delivery would be with a Parish Council supported entity. The entity would need to get a formal vote of confidence and backing from the communities to be served and the Parish Council would be expected to bear the consequential risk. It is expected that communities and suppliers would be expected to contribute to the investment required. Demand for this option is unproven.

10.5.7 For any option involving community groups the boundaries of the commercial arrangements and the scope of the provision of services should be clearly defined before any arrangements are entered into. This applies to where a supplier under a local broadband contract will be required to undertake activities, or take over responsibilities, as well as for any arrangements involving suppliers outside of local broadband projects. Responsibilities of community groups, individuals, local bodies and each supplier that is involved should be clearly delineated.

11   Customers

11.1   Introduction

11.1.1   The beneficiaries of the outputs of the Broadband Delivery Programme will be the end-users of broadband services - residential consumers and businesses (together, described as customers). This section describes what the Programme should mean for them.

11.2   The customer story

11.2.1   Today's internet access experience is engineered to support a browsing and email experience which typically involves downloading HTML files which permits the viewing of data accessible on the worldwide web. The utility of the internet has grown from simple browsing to supporting instant messaging, interactive gaming, voice and video applications, video downloading and streaming at ever higher definitions. There is a growing dependence on connectivity and there is a perception that individuals need connectivity to partake and engage in society.

11.2.2   There is also a growing realisation that for Government (national or local) to deliver services efficiently citizens needed good connectivity. While most applications like tax returns and parking permits only require a reasonable browsing experience, emerging applications like telecare are more demanding in terms of the quality of service needed, while other applications like TV programme downloads are driving demand for higher access speeds.

11.2.3   So the customer story is very straightforward; Customers wish to do more with their connectivity and are becoming more reliant on it. For rural users there is a need to deliver greater access speeds to maximum number of customers, while securing a minimum of 2Mbps elsewhere..

11.2.4   Connectivity is device and technology (in terms of medium used) agnostic and thus the expectation is that whatever medium is available (fixed, wireless – licensed or unlicensed, mobile or satellite) can be used. The use of internet access to support the demands of TV streaming and downloading is of interest as the technologies used to deliver content will be used to deliver services such as education. It is the combination of applications and how these are shaping behaviour which is driving demand for both more connectivity and a better quality of connectivity in terms of the user experience in the busy hour.

11.2.5   BDUK funding will be used to stimulate investment in broadband infrastructure to deliver a greater volume and quality of connectivity resources available at a wholesale level in the 'final third' of the UK. The market, i.e. suppliers of wholesale services and service providers of retail services, will use these to help deliver the services demanded by end users.

11.3   Outputs from local broadband projects

11.3.1   In developing Local Broadband Plans and subsequent projects, local bodies should seek to manage and balance the wishes, needs and expectation of all stakeholders, not least the eventual customers. Of most relevance to customers will be:

- What type of service will they be getting (e.g. Superfast or Standard Broadband);

- What coverage of solutions will be available and when (e.g. fixed, wireless, mobile broadband, and satellite);

- What the quality of service will be; and

- How much a broadband subscription will cost them.

11.3.2   The overall targets in a local area for the type of service should be defined in the Local Broadband Plan. The actual details of coverage at specific locations will be subject to some discussion with suppliers, as there will be some geographic areas where there are complimentary or substitutable solutions, and hence the type of service that will be available.

11.3.3   The solutions to be available will be determined by suppliers. It will not be economic or sustainable or affordable to provide Superfast Broadband coverage to all of the population in the UK. The extent of Superfast Broadband versus Standard Broadband will be limited, at least initially, by the availability of public sector funding, however in many areas, the involvement of customers in demand registration can increase the potential commercial sustainability. Local bodies and, when engaged, suppliers will need to manage customer expectations in their areas to avoid disappointment.

11.3.4   The timing of individual implementations of services will also be determined by suppliers as part of their detailed implementation plans, although local bodies may specify overall timescales and milestones.

11.3.5   The retail price of broadband subscriptions will be set by retail service providers (i.e. internet service providers). It is intended that the contracts for wholesale broadband services between local bodies and suppliers will provide for open access to any retail service providers who choose to buy it to ensure ongoing competition in line with the rest of the UK market. It is intended that broadband subscriptions will be available at an affordable price to customers.

11.4 Addressing other broadband issues

11.4.1   Local broadband projects will seek to address the needs of customers in areas with broadband not-spots and slow-spots due to a requirement for further investment in broadband infrastructure. There are some customers who have slow or poor broadband connections due to other issues. For example, wiring conditions with individual premises may interfere with broadband technologies.

11.4.2   The Registered Digital Installers -Licensing Body (RDI-LB) is a Government backed licensing body supporting the digital television switch-over with its Digital Tick certified installers scheme. It currently has ~2,000 registered installers. This established base could be used to build a new service for consumers helping them with independent advice and information on where to go for a certified 'Connected Digital Home Engineer'.

11.4.3   The RDI-LB aims to deliver a new first stage information service for consumers and businesses on the connected home via the current RDI-LB website. In tandem it will develop a training scheme, 'Connected Home Digital Engineer' kite-mark and the licensing of certified connected home digital installers capable of understanding and addressing consumer connectivity issues.

11.4.4   For further issues with the quality of service provision of services delivered to consumers and businesses by service providers, then these should be raised to the service provider or (if separate) the communications provider. Further information is available on Ofcom's website[9]. Another useful source of information has been published on the Scottish Government's website[10].

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[9] http://consumers.ofcom.org.uk/tell-us/telecoms/

[10] http://www.scotland.gov.uk/Topics/People/BroadbandforScotland/SEBroadbandInitiatives/Reach

# 12	Market Delivery and Solution Approaches

## 12.1	Introduction

12.1.1	This section summarises BDUK's approach from a market and solution perspective. It sets out that each project will:

- Have its own residential and business community objectives and priorities, balanced with affordability, that will challenge bidders to develop solutions that maximise the proportion of Superfast Broadband;

- Support a mix of competing access technologies;

- Ensure wholesale services offer a platform for competing retail service provision; and

- Base requirements on residential and business outcomes through minimum service levels and standards.

## 12.2	Infrastructure upgrade

12.2.1	To achieve the aims of the Broadband Delivery Programme, the primary focus of BDUK is on stimulating private sector investment in the data transport and local access elements of the UK's broadband communications infrastructure in areas of the country that the private sector, by itself, will not deliver. Within this focus BDUK is seeking, through the development of local broadband projects by local bodies, to provide for outcomes in terms of the availability of wholesale broadband services.

12.2.2	A description of the available technology options for the UK's data transport network is set out in Chapter 3 of *Britain's Superfast Broadband Future*. These include:

- Fibre based solutions;

- Mobile wireless;

- Fixed wireless;

- Satellite; and

- Others, e.g. powerline communications.

12.2.3	Next generation networking encompasses a great many future possible services, and suppliers and service providers need to be capable of delivering such capabilities. BDUK will focus on ensuring the underlying access components and backhaul will be in place to allow for these capabilities to emerge, as consumer demand grows and internet and legacy communication services converge.

12.2.4	BDUK will not be directly involved in the networking layers above the data transport layer, but will let the competitive market determine and indeed end users decide how to use the available resources.

## 12.3	Requirements

12.3.1	Contracts let by the public sector with suppliers will provide the basis for public funding to contribute to the investment in broadband services by the private sector. It is envisaged that contracts will largely be let on the basis of a set of high level requirements which are outcome based. Depending on the commercial model (see section 13.3), in some cases a different form of specifications may be used.

12.3.2   Through analysis of outline residential consumer and business user scenarios a number of essential high level requirements have been derived as follows:

Local Requirements:
 - Local coverage & priorities
 - Community outcomes (hubs and digs)
 - Reuse of public assets
 - Variations to core / common requirements

Technical Requirements:
- Technology roadmap
- Retailable wholesale capability
- Standards
- Open access
- Community hubs
- Public services connectivity

Operational Requirements:
- Delivery / phasing / implementation / testing
- Service levels & service management
- Retail access
- Demand stimulation / take-up
- Management, governance & reporting
- Service continuity (including exit provisions)

Figure 12.1: High level requirements

12.3.3   It is intended each high level requirement be detailed in terms of the prioritised outputs and outcomes that are expected to satisfy them. These will be associated with, where appropriate, the prevailing standards and end user (consumer and business) service levels.

12.3.4   In this way a common and core set of requirements will appear in most local project procurements, in order to:

- Promote coherence and consistency across regions;

- Avoid the potential for a 'patch work' of wholesale networks and retail service offerings;

- Simplify solution development by bidders; and

- Allow local bodies to concentrate more on the local priorities, communities, coverage reuse and sharing of their enterprise networks, as detailed in their Local Broadband Plan.

12.3.5   Local bodies will be expected to use the common requirements most appropriate to them in contracts for broadband services, and to consider the balance between fibre based solutions and the need to focus on edge of network solutions. The balance will be dictated by geography and the history of investment in networks for public sector use and other broadband investments.

12.3.6   The outcome based requirements will provide flexibility for suppliers to agree with network operators Service Level Agreements (SLAs) for the capability of the data transport infrastructure. These will set out service levels for data transport between a customer's premise and a point of access to the internet. The SLAs are expected to describe a volume throughput of data that should be transported (download speed or volume of bits per second) and the quality expected during the busy hour period. Suppliers will select from a number of delivery alternatives to best reflect the appropriate solutions which will meet the service needs of the customers being served.

12.3.7   To achieve the requirements in the contract, it is likely that fibre based solutions to rural towns and villages will play a significant role in delivering the outcomes required. It is also expected that mobile, fixed wireless and satellite will play a major role in meeting the connectivity of end users in rural areas. The provision for suppliers to enter into SLAs pursuant to their contract with local bodies allows the appropriate mix of solutions to be determined by suppliers.

12.3.8   The high level requirements will ask for the highest access speeds to the greatest number of customers with a minimum edge of network speed of 2Mbps. When discussing access speed we are describing a volume of data throughput. The high level requirements will also provide for a quality of service which dictates what applications will work and what services will work during the busy period. It is essential to note that access to the internet is a shared resource and Internet protocol (IP) networking by its nature is 'best effort'. However, the nature of 'best effort' is described in the requirements.

12.3.9   A copy of the high level requirements will be available from BDUK. These will be consulted upon with industry prior to full publication.

12.3.10 While the high level requirements for wholesale broadband services allow mobile broadband to be used as part of a solution, no specific provision has been made to secure improvements to mobile broadband. This may be addressed if a mobile coverage obligation features in the license obligations associated with at least one lot of the 800MHz spectrum being released in 2012. Where it is not, and the chosen broadband supplier for a local broadband project does not include a mobile partner, then separate provision will need to be made.

12.3.11 The suppliers of broadband solutions will be expected to comply with all the relevant standards to support the following attributes of next generation networking, including:

- Decoupling of service provision from network, and provision of open interfaces;

- Support for a wide range of services, applications and mechanisms based on service building blocks (including real time/ streaming/ non-real time services and multi-media);

- Broadband capabilities with end-to-end Quality of Service and transparency;

- Interworking with legacy networks via open interfaces;

- Unrestricted access by users to different service providers;

- Independence of service related functions from underlying transport technologies; and

- Compliance with all regulatory requirements, for example concerning emergency communications and security/privacy, etc.

12.3.12 The SLAs will describe a quantity and quality of data that would be available to the end user, while regulation and industry agreements describe the detailed working and interworking between networks. The latter includes details as to how the technical standards are applied.

12.4 Access to wholesale services

12.4.1   Communications networks were once engineered to support a single service, like voice. The advent and use of Internet Protocols and increasing data processing capabilities has meant it is possible to construct a single data transport network capable of carrying any number of individual applications. This allows the underlying connectivity to be wholesaled to different service providers who then retail services to end users.

12.4.2   This split between the carriage of data and the applications that then use the available capacity means it is possible to sell or wholesale data transport services separate from the set of internet services or applications. Applications include email, browsing, IPTV, and

communication services. This is essential to establishing customer choice and permitting competition for retail services.

12.4.3 The provision of wholesale connectivity components which can be ordered online and which are suitable for service providers to package with the elements of an internet access service is a key component of the requirement.

12.4.4 There may be exceptions, such as the case of community extended networks, where the small number of customers means it is neither practical nor economic to invest in creating a wholesale variant of the service provided. However, the guiding principle should be to ensure wholesale access to services whenever public money is used and is proportionate to the outcome being sought.

12.5 Retail access platform

12.5.1 There is a risk that public investment in broadband infrastructure will result in the creation of a patchwork quilt of 'islands of connectivity' across the UK. These would be made up of vertically integrated networks where the retail service provider and the wholesale network operator are the same company, and the only connectivity outside of the network itself is at the internet peering point. This means that if a retail service provider or other organisation (either private sector or public sector) wishes to provide services it will need to connect to that network directly or provide them over the public internet. For services that require a higher level of quality of service (e.g. IPTV, remote health monitoring), the public internet will not be good enough, and connecting directly with each and every network will be expensive and time consuming.

12.5.2 If the chosen supplier is a national operator this will not be a problem as the size of their network means that service providers are already all 'plugged in' and they provide a product to allow differing levels of Quality of Service to be applied (Wholesale Content Connect). This is usually achieved by offering a retail access platform that not only provides a common access but a common operational support service for customer and service management.

12.5.3 The major suppliers have developed such access platforms based on having the scale of market to support such investments. However, there are few fully developed solutions for the smaller suppliers who offer retailer service providers relatively small markets and difficult integrations. It is assumed that retail access solutions will emerge as, or shortly after, local procurements progress albeit with a possible time lag and slow growth curve from both the retail and wholesale markets.

12.5.4 State Aid requires 'open access' so local wholesale networks must be open to the retail market. Whether this is smaller local retailers or the large national brands, is driven by the internet access cost and operational simplicity. If every retailer wishing to compete in local areas of the new networks needs to provide internet access and a unique operational interface, it would not be a surprise that few can make a reasonable economic case.

12.5.5 To address the potential outcomes, BDUK will encourage, as State Aid dictates, open retail access that is allowed to grow as more homes and businesses are able to access broadband services. This will be achieved by embedding the associated commercial and technical provisions within the core requirements outlined in section 12.3 above. BDUK will explore further with industry whether any further actions are required to ensure that sufficient open retail access is available for local broadband projects.

12.6 Target operating model

12.6.1 The target operating model for a local broadband project is simply how the services made available by the investment will be managed in steady state once the implementation is

complete. Local bodies should consider this when assessing which commercial model is most appropriate for them.

12.6.2   It is assumed that the consumer and business retail experience will be very similar to those individuals in the UK who are already enjoying Superfast Broadband. It is expected that investment will be made through suppliers in 'off-the-shelf' technologies and 'business as usual' processes. The figure below shoes the operating model for the investment gap funding model (as described in section 13):
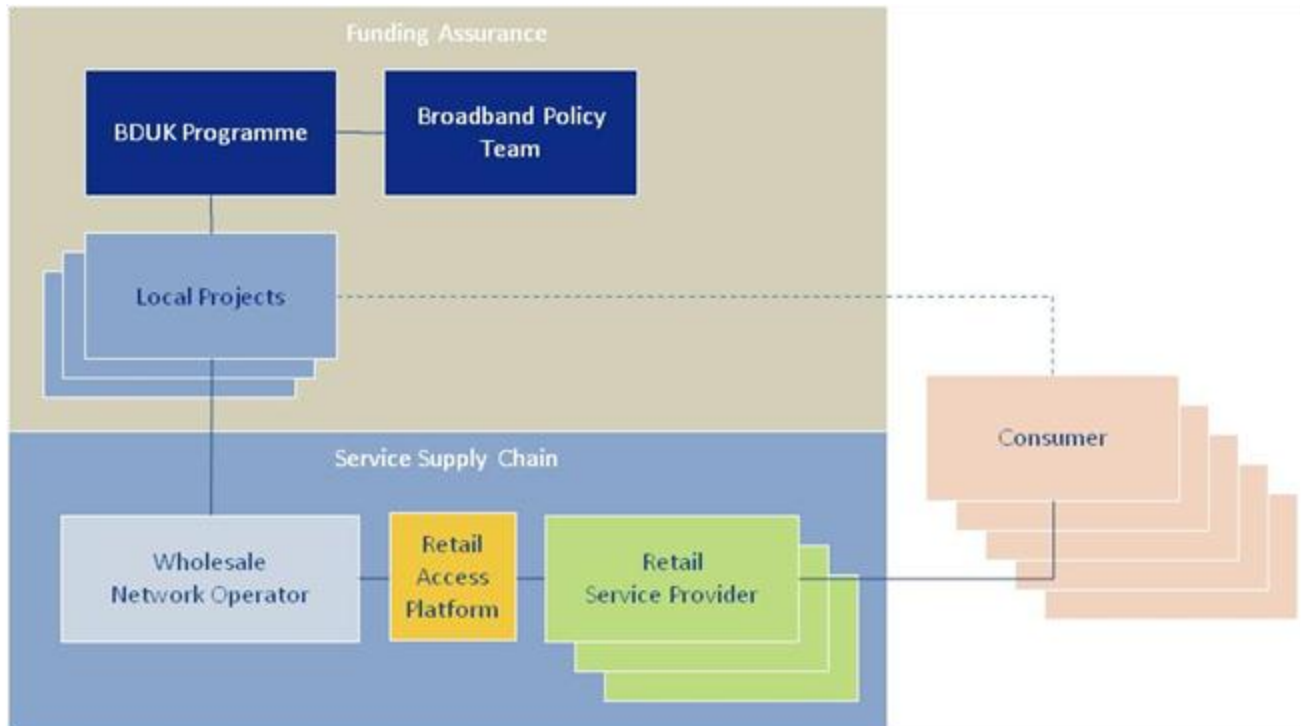

Figure 12.2: Operating model

12.6.3   It is anticipated that government intervention will have a number of effects on the operating model:

- State Aid demands 'open access', the most obvious being wholesale products necessary to maximise retail competition, not dissimilar to most of the existing market; and

- There will be additional reporting and assurance/compliance activity for suppliers, albeit intended to create only a very limited overhead. The local body must assure itself of success in terms of those taking up services and their experiences. This may invoke a contractual remedy or 'claw-back' of public subsidy

- Supplier solutions must be consistent with the goal of achieving the best in Europe Superfast Broadband network. This will need the key emergent operating properties for busy hour working to be transparent and best in Europe.

12.6.4   The principle of achieving 'commercial sustainability' assumes that consumer revenues and take-up are such that ongoing operational costs across a project area can maintain the environment. This suggests that one of the key risks to the target operating model is the level of customer take-up in the early years.

12.6.5   From the customer's perspective the operation of services and user experience should be the same as elsewhere in the UK. It is anticipated that consumers will chose their broadband service from a retailer who will operate this via the wholesale network operator.

12.7 Completing Standard Broadband coverage

12.7.1   The need to support an edge of network experience will differ from one local area to another. The requirements developed by BDUK will lead to SLAs which will support an edge of network experience of 2Mbps and above. The challenge for the local body is to minimise the proportion of Standard Broadband, and maximise that of Superfast Broadband within an envelope of affordability. This will be heavily dependent on the suppliers' assumed level of take-up as at low levels the local broadband project might only be able to afford a large degree of Standard Broadband. However, at a similar level of Superfast take-up to today's level of take-up of existing broadband services, Superfast Broadband might reach much deeper in to the market, if not to the edge of network.

12.7.2   This is a trade-off between coverage, affordability and risk. The latter pertains to the assumed level of take-up and how bold bidders will be in their projections and financial models. Contract provisions for the 'claw-back' of public subsidy are a recognised model for addressing this risk in setting low take-up commitments that are subsequently bettered. However, setting too low a commitment will restrict capability, introduce early upgrade costs and possibly constrain the extent of provision of Superfast Broadband – so creating a sub-optimal solution for residential consumers and businesses.

12.7.3   Suppliers who are contracted under local broadband projects will have to find the optimum mix of technologies within their broadband solutions. In addition other suppliers in the market place may choose to make available their services in areas where these are commercially viable. To ensure that at least Standard Broadband is available to remaining consumers and businesses, BDUK envisage that it will provide the ability for the local body or supplier (under the local broadband contract) to make available broadband services delivered by satellite. This is discussed further in section 13.

12.8 Use of enterprise networks in the public sector

12.8.1   For local bodies, there is the opportunity for suppliers of broadband solutions to make use of existing and planned investments in enterprise networks used by public sector organisations. This could be in the form of providing access to public sector enterprise network infrastructure and/or services to leverage those assets, services and expenditure to get the best Superfast Broadband upgrades possible. Or it may involve re-using broadband infrastructure to lower the investment required in future public sector enterprise networks.

12.8.2   Issues that need to be addressed include:

- Procurement issues – including whether contracts allow for use for the delivery of broadband services;
- Commercial issues – including whether the key commercial terms of the contract are suitable, and whether the exit provisions provide for continuity of services;
- State Aid issues;
- Technical issues – including provision for the adequate separation of community and public sector traffic; and
- Operational issues – including whether the network provider can perform the necessary business processes to provide products to a commercial operator, and whether the physical location of the infrastructure (e.g. in schools and other public sector locations) restricts access inside or outside of working hours.

12.8.3   Local bodies will need to gather adequate data on the assets that are available for re-use, whether under a single contract, or under multiple smaller contracts. This could usefully include information on public sector investment in route upgrades by network operators

over the last 5-10 years. The provision of broadband access to education establishments in particular means that a significant number of routes have potentially been readied for fibre rollout.

12.8.4   The strategy of the Public Sector Network (PSN) Programme in the Cabinet Office has long been rooted in the commoditisation and consolidation of public enterprise networks, e.g. health, police, education, local authorities, etc. It will create a network of networks in the public sector which are compliant with the PSN standards set by the PSN Programme. BDUK will work with the PSN Programme to provide guidance for local bodies to identify how best to exploit investments in PSN networks for public sector use.

12.8.5   When developing Local Broadband Plans local bodies should mention the potential for using public sector enterprise networks in an area. They should address any potential timescale impacts of this, including taking into account existing contractual constraints. They should also set out how other public bodies in the area will be involved, and allow for this in project planning and decision making.

12.9 Innovation

12.9.1   A guiding principle for BDUK is to make best use of the market's existing capabilities in terms of 'off-the shelf' products and services and 'business as usual' processes. Given that this is a programme based on adding extensions to existing capabilities (networks) there are few 'new requirements'. As such the potential innovations are predominantly commercial and operational rather than technical. A few of these are outlined below.

12.9.2   BDUK funding is essentially a one-off capital investment to achieve 'commercial sustainability' in the target market. This extends to further development, e.g. upgrades, in that the derived business and consumer revenues must fund future investments. This places an ever greater emphasis on achieving a reasonable level of take-up. As such, the technology roadmap of bidder's solutions will be important to ensure they are not investing in end-of-life or niche technologies that have an unknown development or upgrade path. This does not mean that technologies will be discounted, more that their inclusion might not be best on a widespread basis or as core to the entire architecture.

12.9.3   Standard Broadband solutions should be capable of being upgraded on a path to Superfast Broadband. Whether this is a new codec, algorithm, electro-magnetic spectrum or customer premise equipment, there is likely to be an increase in consumption over time and a desire to migrate all users up the broadband chain to Superfast Broadband and beyond. This offers bidders a real opportunity to innovate.

12.9.4   The scale of individual local broadband projects and their procurements is a key balance between economies of scale and the smaller bidders being accidentally excluded. This goes further in also impacting how attractive a wholesale network is to the retail sector. Having discussed this with a number of potential projects and potential suppliers in the market, BDUK will be promoting aggregation typically at the county level, and where feasible with multiple counties collaborating. This typically offers geographies of 100,000+ premises, not all being rural or right for investment, but a volume addressable by the market. Each will require a mix of network and access solutions from shared infrastructure with power distribution network operators (DNOs) to WiMax, mobile solutions such as LTE and satellite. Whilst all these solutions exist (with LTE in trials) today, the potential combination and integration of these will offer bidders an opportunity to address affordability through innovating the mix of technologies.

12.9.5   Investing in wholesale services implies that the supplier will need to offer similar wholesale products as BT Openreach, albeit, that these may be limited or constrained to basic open access. However, it will be necessary for any wholesaler to offer space for retailer(s) within any Community Broadband Hub or cabinet.

12.9.6   The mobile spectrum auction of 800Mhz and 2.6GHz frequencies, the latter associated with LTE/4G, is expected to take place early in 2012 for spectrum to be available by the end of 2012. The role of Mobile Broadband will be affected by the scope of any associated coverage obligation associated with one of the lots. This may be very late in achieving the objectives for coverage, though it is anticipated that this may be influenced by mobile operators seeking to subsidise this rollout through winning a role in delivery under local broadband project procurements once they have secured the necessary spectrum. Mobile operators will need to consider solutions other than LTE until the outcomes of the mobile spectrum auction are known.

12.9.7   White Space, Femto Cells, WiMax and a host of other wireless/mobile technologies offer potential NGA solutions. BDUK is keen that potential suppliers exploit all technologies, as appropriate, to offering affordable next generation access solutions, but note that the technology roadmap is key to ensuring commercial sustainability.

13   Commercial and Procurement Approach

13.1   Introduction

13.1.1   This section sets out:

- A description of the main commercial models that local bodies may consider;

- A description of the key procurement terms;

- A summary of the overall sourcing approach for the pipeline of projects in the Broadband Delivery Programme; and

- A description of how State Aid obligations will be managed.

13.2   Overview

13.2.1   The Broadband Delivery Programme's locally led delivery model puts the responsibility on local bodies to secure the best possible project outcome from the private sector. As the contracting authority, local bodies must determine the best value for money route for their circumstances, with BDUK's support.

13.2.2   A number of local bodies have expressed that they are seeking for BDUK to streamline the procurement process and provide a standardised default route to simplify the procurement where local bodies do not have specific requirements that drive an alternative approach. Similarly, through market engagement, suppliers are requesting standard procurement requirements and a consistent approach to reduce the overhead of bidding for the pipeline of projects.

13.2.3   Early projects will lead their own procurement processes, and BDUK will work with these local bodies to identify the best ways to simplify and standardise procurement routes. BDUK will seek to put in place a procurement framework for the investment gap funded approach that further projects can call-off from where appropriate. In addition, BDUK will procure a separate framework for local bodies to allow consumers and businesses to access broadband services through satellite where it is not economic to use alternative solutions.

13.2.4   BDUK will seek an umbrella State Aid approval from Europe for the programme of procurement activities, so that BDUK acts as a competency centre assuring the European Commission that individual projects adhere to the principles of the umbrella notification.

13.3   Commercial models

13.3.1   BDUK recognises that various different commercial models have been deployed by public sector organisations in previous local broadband interventions that were applicable to their circumstances. These are summarised below:

13.3.2   **Local Body investment gap funding:** Under this approach a local body would procure broadband infrastructure services from a private sector supplier (a single supplier or more likely a consortium) through a service contract. BDUK will provide funding, through a grant, to the local body as a contribution to the payments made by the local body to the supplier under the contract.

13.3.3   **Comment**: This approach is the simplest form of model from a BDUK perspective. The model should also allow appropriate risk transfer to the private sector though a services contract between the local body and a supplier. However, under this approach there is

limited scope for the public sector to share in any financial up-side or to influence investment decisions.

13.3.4 **Public private partnership:** Under this approach a local body forms a joint venture (JV) or special purpose vehicle (SPV) with a private sector supplier or suppliers. The JV or SPV would invest in, and provide, broadband infrastructure services to end customers (including service providers/retailers wishing to use the infrastructure network) through service contracts. Under such a model the public sector local body will share with its private sector partner(s) the risk and cost of delivery, take up and revenue. An example of such a structure is South Yorkshire Digital Region. BDUK could provide funding through a grant to the JV or SPV (or the public sector "parent") or could take an equity stake as a contribution to the infrastructure contract costs.

13.3.5 **Comment**: This approach assumes greater risk sharing between the public and private sectors and while there is an opportunity for the public sector to share in any financial upside and potentially influence investment decisions, the public sector is also exposed to financial down-side risk. BDUK would have to undertake some additional due diligence on the public private partnership.

13.3.6 **Public sector owned supplier:** Under this approach, an arms length company, owned by one or more public sector bodies would invest in, and provide, broadband infrastructure services to end customers through service contracts. An example of such a structure is NYNET which is wholly owned by North Yorkshire County Council. The arms length company (and depending on investment, the public sector "parent") will be exposed to the risk and cost of delivery, take up and revenue. BDUK could consider the provision of funding through a grant to the "parent" public sector body as a contribution to the infrastructure contract costs or could take an equity stake.

13.3.7 **Comment**: This approach could allow a "shared service" approach across the public sector, greater public sector influence on investment decisions and an opportunity for any surplus or profit to be re-invested. BDUK would have to undertake some additional due diligence on the public sector owned supplier, and would need to consider the implications for its available Programme budget if more funding where required up-front.

13.3.8 **Concession to Build-Operate-Transfer**: Under this approach a public sector body lets a concession contract to build, operate and sell wholesale broadband services from a network, which returns to public hands at the end of the contract, .e.g. North Wales Fibrespeed. BDUK could consider the provision of funding, through a grant, to the local body as a contribution to any public sector payments or subsidy made by the local body to the supplier under the contract.

13.3.9 **Comment**: This approach may allow some public sector share in any financial upside but the downside risks – e.g. solution design and sustainability risks (and public sector exposure to these risks) would need to be assessed. It may be possible to gain a greater public sector influence on investment decisions but the impact of public sector asset ownership would need to be understood. BDUK would need to undertake some additional due diligence on the concession arrangements.

13.3.10 BDUK funding under any model would be conditional on the set of defined Investment Criteria as set out in Section 14.4, as well as the affordability of any local broadband projects within the available Programme budget.

13.3.11 Ultimately a local body is free to choose, and BDUK will be supportive of any commercial model that can be demonstrated to be value for money, and affordable for BDUK. However, examination of the different models and local bodies' general appetite for owning different delivery risks would suggest that many will choose the model of a simple subsidy of the private sector's investment gap funding for delivery of a project. As such, BDUK will focus its efforts into developing materials to support this model, but should also be able to provide some support for any of the others.

13.4 Procurement terms

13.4.1   BDUK needs local broadband projects to deliver the Broadband Delivery Programme's objectives through the individual projects' respective procurement processes. BDUK will provide local bodies with support and assurance through the procurement process in order to achieve this aim.

13.4.2   In order to have confidence in an individual project's ability to meet the Programme objectives, and to ensure a project can be approved for State Aid (in particular under a BDUK umbrella notification), BDUK will require some minimum requirements for the local bodies' procurements.

13.4.3   Potential suppliers are also seeking a high level of consistency from the pipeline of work, so BDUK will also strongly recommend some requirements for the procurements too, where they create a better competitive environment or where BDUK believes they will achieve a better value for money outcome for projects.

13.4.4   BDUK anticipates that each local body will typically describe their requirements and commercial terms in a way that achieves the following outcomes / outputs:

- Ensure the availability of wholesale services to minimum service levels (including the end-to-end infrastructure) to various locations or proportions of households in the area – the mix of locations and various service levels will be location specific;

- Ensure the availability of affordable residential and business offerings from retail service providers, accessed through an open wholesale platform;

- Ensure the availability of benchmarked standard backhaul and open wholesale access products from nodes in suppliers' solutions and at required locations (e.g. public sector locations or sites for Broadband Community Hubs);

- Ensure minimum and recognisable quality standards are met in order to maximise the chance of takeover and the ongoing continuity of service should a network operator fail or seek to exit the market;

- In some instances, provide connectivity to public sector locations as part of a public sector enterprise network requirement;

- The level of public sector subsidy will be fixed in the contract and payable at points upon assured completion of the network offering availability at the required service levels, in order to transfer design, integration and delivery risk to the private sector;

- The level of public sector subsidy may be independent of take-up, in order to transfer the market success risk;

- The supplier will provide sufficient financial transparency such that excess subsidy to create a sustainable business case can be recovered through claw-back (e.g. higher than anticipated take-up);

- The suppliers' wholesale pricing to be under benchmarking and / or other price controls for at least 7 years to ensure a monopoly provider position is not unduly exploited; and

- Broadband solutions to be commercially sustainable after the initial implementation stage, i.e. to not require ongoing public subsidy.

13.4.5   Bidders are expected to differentiate themselves and their solutions on several aspects that should be reflected in a local body's evaluation criteria for a procurement:

- Design for 'day one' coverage and speed improvement for the premises passed;

- Cost and potential capability of future upgrades from the deployed architecture, including extent to which it meets communities' aspirations for incremental expansion;

- Wholesale products / prices / terms and sustainability of the business model;

- Retail service providers (likely or committed) / products / prices / terms and sustainability of the business model;

- Approach at driving maximum take-up from residential consumers and businesses;

- Level of public sector investment subsidy and potential for its claw-back;

- Level of confidence in solution implementation and the long-term commercial sustainability of the service; and

- Support for broader objectives, e.g. role of SMEs, environmental sustainability, skills development and economic growth.

13.5 Procurement options

13.5.1 Local bodies will need a degree of control over their suppliers to ensure achievement of the Broadband Delivery Programme's and their own objectives. Given this level of control, the use of public sector funding would be deemed a procurement of services, rather than a grant agreement funding activity towards a broad objective, and therefore EU regulated public procurement procedures must be followed. This is likely to involve the advertising of a procurement in the Official Journal of the European Union (OJEU).

13.5.2 The various different procurement routes for a locally led delivery model for broadband services are summarised as:

1) **Multiple OJEU procurements**: Each local body issues its own OJEU notice or notices for the requirements referred to in paragraph 2, predominantly using the Competitive Dialogue process. BDUK will takes steps to ensure that the procurement processes are as efficient, in terms of time and cost, as possible through guidance, examples of documentation, and model commercial terms;

2) **Frameworks**: BDUK centrally negotiates a framework contract(s) that include a panel of suppliers, with details of outline solutions for different geographical types of areas, and indicative pricing. Local bodies would call-off from these through the use of a mini-competition, i.e. the local body would be the contracting authority responsible for managing the local delivery of services by suppliers.; and

3) **Overarching bi-lateral contracts with key suppliers, negotiated centrally by BDUK**: This option may be adopted where there is evidence of insufficient competition in the market place. These contracts may include requirements for sub-contracting or ring-fencing of certain services to be awarded to other suppliers through a competitive process. This approach will require the cooperation of Ofcom and the European Commission to ensure that this route minimises market place distortion and is conducted within constraints of procurement and State Aid regulations.

13.5.3 BDUK's procurement strategy is set out as follows:

- Initial projects (including the Superfast Broadband Pilots) will be procured by local bodies using individual OJEU notices. The documentation used in the earliest projects will be available as examples for other projects;

- BDUK will prepare for the development of framework contract(s) which local bodies can utilise for subsequent projects based on the investment gap funded model. Local bodies proposing different commercial models, including where a procurement for broadband services is combined with a procurement for public sector enterprise network services, will be expected to undertake their own separate procurements. BDUK will expect that local bodies in England using the investment gap funded model will generally wish to procure through a BDUK framework. It is likely to be a more efficient method of procurement for both local bodies and suppliers, and will be consistent with BDUK's

umbrella State Aid notification. The framework will be available for local bodies outside of England to use as well;

- A framework contract for local bodies (or their suppliers) to call-off broadband services for a limited number of consumers for delivery by satellite technology will be developed and launched separately. The provision of broadband services for some consumers will not be economic even after a potential capital subsidy. In some instances, potentially up to 1-2% of the market, these consumers might be addressed by satellite solutions where the consumer will need to also support the customer premise equipment – though this will have a reasonable lifespan and may be upgradable; and

- Should the BDUK assessment determine that a competitive market does not exist across much of the UK then BDUK will consult on an alternative approach involving over-arching bi-lateral contracts with key suppliers instead. This could be, for instance, if there are few tenders submitted for the early projects or the suppliers that bid for the early projects show one supplier has an unassailable advantage) and it is likely that a programme depending on competitive tension to achieve value would fail to offer benefit to the UK public sector or to bidding suppliers,

13.5.4   Where local bodies intend to procure local broadband services in combination with a procurement for a public sector enterprise network then it may consider combining the procurements under one OJEU, potentially with different lots. BDUK will work with the PSN Programme to develop guidance on issues to be considered when using this approach.

13.6 The role of Small and Medium Enterprises

13.6.1   In line with Cabinet Office strategy, and recognizing their existing role in providing broadband to customers in rural areas, BDUK is committed to ensuring that Small and Medium Enterprise (SMEs) are able to play a full role in the delivery of Broadband services at a local level.

13.6.2   BDUK wants to facilitate and maximise the opportunities for SMEs in several key parts the value chain:

- Local civil engineering suppliers, providing teams used in the implementation of the networks;

- Small, local ISPs specialising in serving a local customer base, retailing a wholesale network operator's products; and

- Local network operators, perhaps operating an existing standard broadband network in the area with customers connected, that would not have the capacity or capability to prime a county-wide procurement.

13.6.3   BDUK are currently exploring with procurement lawyers the options for achieving these objectives through local procurements to ensure that these are in line with Government strategy and do not conflict with EU regulations. It is likely that BDUK will encourage local bodies to stress the need for suppliers to propose a diversified supply chain as part of their delivery solutions, and design the procurement process to help achieve this. For example, local bodies may require that opportunities are advertised on Government's Contract Finder portal.

13.7 Maintaining competitive outcomes from procurements

13.7.1   BDUK understands that the competiveness of a procurement process will depend on various aspects of how it is structured, and through consultation with the market, it is considering how to optimise the following key aspects to enable suppliers to bid cost effectively and competitively:

- **Requirements**: Bidders will expect procuring authorities to be as clear as possible about their requirements, including understanding the relative priorities of different areas in order that suppliers will be clear how they should trade-off solution and cost in their design. BDUK will define standard service levels that should be used by local bodies to express requirements in a consistent way;

- **Data room**: Bidders will expect procuring authorities to provide as much information about the area as possible, including the location of residential premises and communities, the location and nature of businesses, the location and placement of public sector spend, the location of actual supply infrastructure and potential locations for infrastructure (public sector or community locations). BDUK will provide local bodies with its centrally held and centrally sourced data to local bodies (under non-disclosure agreements) for them to share with bidders. Local bodies could also make it a requirement of selection at pre-qualification stage that bidders must disclose their infrastructure in the area to promote its re-use;

- **Route survey data**: Bidders will need to conduct representative physical surveys of existing infrastructure to be able to confidently bid a fixed price. Where bidders do not have their own capability to perform surveys, they will need to commission BT Openreach resources. BDUK will work with BT Openreach to programme survey activity to minimise risk of delay to individual procurements; and

- **Uncertainty in regulated inputs**: BT's Passive Infrastructure Access (PIA) product has been defined only in terms of a reference offer so far. Agreement between Ofcom and BT on the actual value and allowable uses of the PIA product are expected in Q3 2011, and the PIA product will probably not be able to be bought in bulk for several months after this date, creating uncertainty for bidders intending to use the product set in their solutions. BDUK will investigate with BT and Ofcom the extent to which uncertainty can be removed for the pilot projects by creating environments similar to the PIA pilots where the terms of use can be agreed ahead of the actual PIA decision.

13.8 State Aid

13.8.1   Government intervention in the broadband market place will be deemed to involve the presence of State Aid, which needs to be notified to the European Commission and is subject to assessment against the community broadband guidelines[11] before approval is given.

13.8.2   The European Commission assesses the risk that an intervention distorts competition and requires the intervention to be designed in such a way to minimise the amount of aid and minimise any distortion on the market place. Projects should:

- Intervene predominantly in 'white' areas – areas without an existing next generation infrastructure (e.g. outside of BT Infinity and Virgin footprint);

- Ensure wholesale access to infrastructure deployed; and

- Minimise the level of public sector subsidy (including awarding through competitive process and arrangements for claw-back of super-profits).

13.8.3   A single notification for the UK government's broadband scheme would be incompatible with a locally led delivery model that allows flexibility and innovation by local bodies. Instead, BDUK will seek an umbrella framework notification from the European Commission, where BDUK (the 'competency centre') will then certify that individual projects have adhered to the approved principles and constraints of the umbrella approval.

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[11] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:235:0007:0025:EN:PDF

13.8.4   While the structure and constraints of an umbrella framework notification are determined with the European Commission, BDUK will seek to use a single notification for the earliest projects, and then develop a standard template for use by subsequent projects. This standard template should simplify the notification process, reducing the effort for the local body to complete and for the European Commission to approve. Additionally, each notification should act as precedent for the next.

13.8.5   BDUK will manage the State Aid notification process for local broadband projects within the Broadband Delivery Programme following a standard approach within the guidelines set by BDUK. This will still include a number of activities to be conducted by a local body:

- Identifying and confirming local demand for broadband;

- Consulting suppliers for their intervention plans in the area; and

- Improving the accuracy of the BDUK modelling of white/grey/black areas[12].

13.8.6   Local bodies combining a local broadband project with a procurement for a public sector enterprise network should seek advice from BDUK about how the project might need to be designed to ensure that State Aid risks for this approach can be managed.

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[12] The definition of 'white', 'grey' and 'black' areas can be found at 2.3.2.1, 2 & 3, paragraphs 41–46 of the guidelines referred to in paragraph 13.8.1

14   Funding

14.1   Introduction

14.1.1   This section sets out:

- The funding for use by BDUK for the Broadband Delivery Programme;
- The principles which BDUK will use to determine the level of funding for local broadband projects; and
- Sources of funding for local broadband projects.

14.2   Overview

14.2.1   BDUK's funding is provided from two sources:

- A contribution from the underspend from the Digital Switchover Scheme; and
- A contribution from the TV Licence fee collected by the BBC.

14.2.2   BDUK will use this funding to stimulate private sector investment in broadband through:

- Primarily contributions to investment in broadband infrastructure in areas with significant numbers of not-spots and slow-spots;
- Contributions to the development of stimulation and registration of demand for broadband services and other activities to maximise the potential private sector investment in broadband;
- A contribution to the Rural Community Broadband Fund; and
- The central costs of BDUK.

14.3   BDUK funding profile

14.3.1   The table below sets out BDUK's sources of funds over the period 2010 – 2015:

£m	Total 2010-15
Digital Switchover Scheme	230.5
TV Licence Fee	300
Total	530.5

14.3.2   In addition, the TV licence settlement that was agreed in October 2010 covers the period up until 2017, so a further £150m in each of 2015/16 and 2016/17 is available for BDUK funding if required.

14.4   Investment criteria

14.4.1   BDUK will exercise appropriate control over the allocation of funds to local bodies to ensure that BDUK investment represents value for money. BDUK will apply a set of investment criteria in order to decide whether it invests in projects, and by how much. It is expected

that these will be refined over time as lessons are learned from early projects and the amount of other funds that the private sector are willing to invest becomes clearer.

14.4.2 The investment criteria that will be applied at the time of project selection will be based on an assessment by BDUK of a Local Broadband Plan in the following areas:

- The strategic context of the Local Broadband Plan including:

  o The vision and strategic need for investment in broadband infrastructure, and the fit with the objectives of the Broadband Delivery Programme;

  o The background of current and planned broadband provision including speeds, usage, residential/business split and the roll out of coverage;

  o Evidence of the need for broadband investment, including gap analysis and the identification of existing assets or services which could be leveraged (including assessment of the potential for the re-use of public sector enterprise networks);

  o The scope of the proposed local broadband project(s). This will include the project objectives, the identification of any constraints; the geographical area (including number of premises/postcodes); the number of local bodies involved; the phasing of a project/roll-out; and trade-offs between broadband speeds and coverage; and

  o The procurement strategy including the assessment of procurement and delivery options.

- Value for money including:

  o Funding requirements for capital investment, including the proportion of contributions from other sources, e.g. funding from local bodies and the EU;

  o Funding structure including how funding will be used and consideration of who is best placed to own infrastructure assets; and

  o The commercial case including the proposed commercial model and the rationale for it.

- Capacity to deliver including:

  o Project management, resourcing and funding of the project team and any other activities that need to take place in the development, procurement and management of a local broadband project;

  o Timetable for the development, procurement and the delivery of available broadband services to end-users; and

  o Monitoring and measurement of strategic benefits.

- Advanced planning and stakeholder engagement including:

  o Early market engagement, where undertaken;

  o The level of involvement and commitment of stakeholders; and

  o Existing and planned demand stimulation and registration activities.

- Risk management including:

  o Assessment of key risks and planned mitigation activities.

14.4.3 It is expected that when a local body develops the Full Business Case for a local broadband project it will be able to demonstrate the following for BDUK to be able to issue a Funding Agreement Letter:

- The project includes broadband coverage consistent with the objectives of the Broadband Delivery Programme and the Local Broadband Plan while meeting community needs;

- The Full Business Case has been developed in line with HM Treasury guidance and indicates a preferred option with all material risks identified

- The project is compliant with the umbrella or individual State Aid notification and EU procurement regulations. The contract is in line with the model contract/guidelines (as assessed by BDUK as the "competency centre"). Or, that the local body has obtained separate State Aid approval for a non-standard project;

- An appropriate allocation of risks has been agreed between the public and private sectors and is clearly articulated in the contract for broadband services, and risk management processes by both sectors are in place;

- The specification in the contract for broadband services of key payment milestones in the implementation or delivery phase of the project;

- The bidder that has provided the Most Economically Advantageous Tender in a procurement process has been identified using robust evaluation criteria;

- The outcome of the project offers value for money for public spend;

- Funding from other sources is in place such that obligations are affordable (including under an appropriate range of sensitivity analysis);

- Project management, implementation assurance and contract management resource is in place; and

- A robust strategy for marketing of new services and stimulation of demand is in place (by the public and private sectors).

14.5 Local body and community funding

14.5.1   It will be important for local bodies to seek to provide funding as part of the overall public sector funding package for local broadband projects. Investing in local broadband infrastructure is a key business growth enabler which should bring benefits to local areas, as well as proving greater access to services and inclusion for local residents. It is expected that local bodies will demonstrate their commitment to the delivery of Local Broadband Plans by committing funding to local broadband projects. This could be from local authorities, the Devolved Administrations, other public sector bodies or partner organisations.

14.5.2   Local bodies could also consider the provision of funding based on an 'invest to save' business case (e.g. through the achievement of lower transaction costs for services provided by the local authority as a result of increased customer interaction via the web).

14.5.3   Local bodies could provide funding for local broadband projects in the form of a direct capital investment funding contribution, i.e. in the same way as BDUK will contribute funding. The amount of investment gap funding required from a local body could be indirectly reduced by stimulating demand or including public sector spend on networking services as set out below. A local body could also seek to provide a guarantee of a minimum level of revenue or take-up, but such an obligation may need to be backed off to district or borough councils or parishes.

14.5.4   The greater the proportion of overall funding to be contributed by local bodies as well as other external organisations, the more positively a request for BDUK funding will be considered in project selection.

14.5.5   Local bodies should not expect BDUK funding to contribute to:

- Development of the Local Broadband Plan;

- Producing appropriate data and mapping for individual areas (though baseline data and some practical assistance will be available);

- Project development and delivery team costs (including technical or legal resource or back-fill of internal resource);

- The creation of governance structures;

- The procurement process for engaging a private sector partner/investor;

- Local demand stimulation activities;

- Business support activities;

- Skills development activities;

- Monitoring and evaluation of a project; or

- Ongoing operational costs of delivery.

14.6   European Union (EU) funding

14.6.1   The European Regional Development Fund (ERDF) is aimed at economic regeneration projects promoted primarily by the public sector. ERDF helps projects which offer substantial benefits that meet the needs of the region and its local areas that wouldn't take place without a grant. The rest of the funding, known as 'match funding', comes from other sources such as: local authorities, government schemes, other public bodies and the private sector.

14.6.2   ERDF funding is potentially available for local broadband projects from the EU to match other funding for improving broadband infrastructure in order to connect businesses to networks for improving their competitiveness. Where available, local bodies can seek to access funding from the existing 2007 to 2013 programming period. Further funding is expected to be available in the next programme period from 2014 to 2020.

14.6.3   BDUK will work with relevant Government Departments to improve access to and clarity, for local bodies, about the use of ERDF funding for local broadband projects. This will include co-ordinating guidance on specific issues and making available exemplars of applications from local bodies.

14.6.4   The Rural Development Programme for England (RDPE) is jointly funded by the EU, through the European Agricultural Fund for Rural Development, and the Government. In England, Defra are currently setting up the Rural Community Broadband Fund which will include RDPE and BDUK funding. Further details are set out in section 10.4.5 above.

14.7   Private sector funding

14.7.1   In an investment gap funding commercial model, suppliers are expected to bid for public sector subsidy on the basis that they will contribute part of the capital of the project – the proportion that they are willing to invest to achieve their target return on this. This calculation is typically based on discounting projected future revenues less operational and project costs for a particular area over the project lifetime.

14.7.2   The private sector capital contribution will be based on the ongoing revenues that will result from an investment. Typically, revenue estimates will be based on the potential number of premises, the expected-take-up and the supplier's product pricing. The calculation will also be dependent of a supplier's intended rate of return, and the length of their investment horizons. Suppliers taking a longer term view of the investment and perceiving a lower investment risk (and hence rate of return) will be able to invest a proportionately higher amount and bid for a proportionately lower level of subsidy. A supplier will also need to

have access to sources of finance over these timescales in order to be able to make this type of investment as well, making this model harder for the smaller supplier.

14.7.3   The level of demand that a local body is able to demonstrate should influence bidders' confidence in the projected revenues for a network. This, in turn, should enable it to invest and contribute more to a local broadband project and reduce the public sector subsidy required in an investment gap funding model. The aggregation of residential and business demand, and the role of the public sector in terms of public sector networking spend as an 'anchor tenant', could be significant in increasing the level of viability of the provision of commercially sustainable broadband solutions.

14.7.4   The proportion of private sector to public sector funding will vary between projects, but previous initiatives at a local level have achieved private sector contributions of the order of 50% of the capital funding requirement, which provides a guide as to what local bodies may be targeting, depending on their geographic location and the confidence in demand they are able to generate.

Annex A: Glossary

4G – Fourth Generation of mobile services.

Broadband – The term used to describe a wide range of technologies that allow high-speed, always-on access to the Internet. This is most often delivered via a connection through a telephone line or cable service, but can also be delivered using wireless and satellite connections. A potential access speed of less than 512 Kbps is deemed not to be broadband.

Broadband Stakeholder Group (BSG) – Website: www.broadbanduk.org.

ERDF – European Regional Development Fund.

Fibre based solutions – see FTTC, FTTH and FTTB.

FTTC (Fibre-to-the-cabinet) – Access network consisting of optical fibre extending from the access node to the street cabinet. The street cabinet is usually located only a few hundred metres from subscriber premises. The remaining segment of the access network from the cabinet to the customer is usually a copper pair but could use another technology, such as wireless.

FTTH (Fibre-to-the-home) – A form of fibre optic communication delivered in which the optical signal reaches the end user's living or office space.

FTTB (Fibre-to-the-building) – A form of fibre-optic communications delivery in which an optical fibre is run directly onto the customers' premises.

GHz – GigaHertz, a measurement of frequency in radio spectrum.

LTE – (Long Term Evolution). Part of the development of 4G mobile systems that started with 2G and 3G networks.

Mbps – Megabits per second.

MHz – MegaHertz – a measurement of frequency in radio spectrum.

Mobile broadband – Various types of wireless high-speed internet access through a portable modem, telephone or other device.

Not spot – A geographic postcode area where Customers do not have access to fixed line or wireless broadband.

Ofcom – The Office for Communications.

PSN – Public Sector Network.

RDPE – Rural Development Programme for England

Slow spot – A geographic postcode area where Customers have access to fixed line or wireless broadband at access speeds below 2Mbps.

SME – Small and Medium Enterprise.

Standard Broadband – BDUK has defined standard broadband as a service available at the edge of the network that allows a quality home working experience, for which a headline access speed of 2Mbps can be used as a proxy.

Sub-Loop Unbundling – The process by which a sub-section of part of the local loop in the access network is unbundled and allows other operators to interconnect with the local access network at a point between an incumbent's site and the end user.

Superfast Broadband – BDUK has defined Superfast Broadband as having a potential headline access speed of at least 20Mbps, with no upper limit. Typically, at a wholesale level, the underlying capability can be measured in gigabits. The retail market then takes this capability and delivers affordable propositions.

Take-up – The acceptance of broadband services by an end user where offered.

VDSL – Very high bitrate subscriber line.

Wimax – A wireless data transfer technology.

dcms
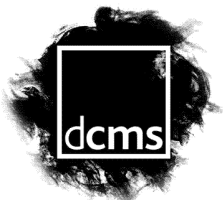
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