Superfast Cornwall Evaluation

Baseline Report

November 2011

SERI

Buckman|Associates|Ltd

Superfast Cornwall

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Superfast Cornwall Evaluation Baseline Report

Executive Summary

Introduction

Providing a robust assessment of the effectiveness of the Superfast Cornwall Programme is hugely important. How it provides the catalyst for business productivity improvements, innovation and growth and the return on the significant investment it generates are vital to understand, while the potential environmental and social benefits of the rollout of NGB will also need to be assessed.

Superfast Cornwall's Research & Evaluation Manager has developed a clear evaluation plan, and as part of this identified the need for objective external expertise to ensure that the evaluation is suitably objective and transparent, and reflects best evaluative practice.

In August 2011 a team led by SERIO including a range of experts from across Plymouth University, in collaboration with Buckman Associates were commissioned to provide this external expertise. Part of this input included the production of a baseline evaluation report.

Role of the Baseline Report

The purpose of this report is to establish the baseline context against which the impact of the Superfast Cornwall project can be assessed. At the point of its writing the Programme has completed a number of pilot roll outs in specific locations, and is on the verge of more substantial phase of roll out. It is therefore an ideal time for this baseline to be established.

Assessing the counterfactual

An important aspect of this evaluation is the identification of a number of comparator areas, so that the impact of Superfast Cornwall can be assessed with reference to what happens over the same period in very similar economies with similar current levels of Superfast coverage, but without the level of investment in Superfast Infrastructure that Cornwall will receive through the Programme. In evaluation terms this is referred to as establishing the counterfactual. For instance it will be important to understand:

- What level of coverage and connectivity is achieved in similar areas;
- To what extent Superfast Cornwall has enabled business growth, taking into account wider economic factors;
- How stakeholder views differ in Cornwall compared with similar areas.

The counterfactual in this context means forming an assessment of the likely outcome of a scenario whereby the Cornwall and Isles of Scilly Convergence programme did not make an investment in Next Generation Broadband on this scale. We know that BDUK investment would have been made in Cornwall in the absence of Convergence funding, and that it would have also been likely that further Local Authority investment would have been made to match this. The most accurate reflection of a "policy off" scenario are those similar areas that receive BDUK investment at a level which Cornwall would have benefited from without Convergence.

In selecting three counterfactual areas, the following criteria have been considered

- Do they provide a good socio-economic match (i.e. towards the top of the list of nearest statistical neighbours)
- Are they receiving some funding from BDUK at a level similar to that which Cornwall would have received; and
- Do they have a similar Ofcom broadband scoring profile to Cornwall, reflecting a similar broadband baseline.

On the basis of these criteria the three areas that will provide a robust comparison and enable an insight to the counterfactual are:

- Devon;
- North Yorkshire; and
- Lincolnshire

Socio-economic baseline

The Superfast Cornwall Programme seeks to increase productivity and stimulate business investment and growth. Given the level of investment in the Programme, understanding the extent of its impact on the economy of Cornwall and the Isles of Scilly is fundamental.

In section 4, a baseline is established against which the contribution of the Superfast Cornwall Programme can be assessed. It compares the current (or most recent) data related to a range of economic indicators, with the comparator areas for Cornwall - Devon, North Yorkshire and Lincolnshire.

The aim of this baseline and comparison with similar economic areas is to track economic trends in relation to very similar economies that have not received the same degree of investment in Next Generation Broadband infrastructure. However, it does need to be recognised that it is very difficult to attribute macro level economic changes to any specific intervention. The aim of the evaluation will be to establish the overall comparative change in economic conditions from analysis of relevant data and then draw conclusions as to the impact of the Superfast Cornwall Programme from the evaluation survey work. For instance it will be possible to establish the extent to which connection to NGB has led to increased sales or reduced costs in businesses and from this to establish the impact on GVA.

The table below summarises the indicators that will be used for this comparative analysis.

Summary of economic indicators to be used in the evaluation

Indicator	Cornwall & the Isles of Scilly	Devon	Lincolnshire	North Yorkshire
GVA per head (2009)[1]	13,256	15,583	14,485	18,248
Business density[2] **(2009)**	62.27	68.46	57.88	71.14
Births of new enterprises as % of business stock (2009)	8.1%	7.8%	8.7%	8.6%
Employment rate (2010)	68.8%	72.8%	73.1%	74.1%
Employment in knowledge intensive sectors (2009)	71,715	114,825	93,145	94,241
Median full time weekly pay (2010)	418.4	431.7	459.8	471.5

This economic baseline serves as a useful starting point for assessing the extent to which Superfast Cornwall makes a real and measurable difference to the Cornish economy, that is more significant than those areas that have a lesser level of investment, and that are nearly two years behind in terms of roll out. While the data in itself will provide insight to economic changes, it will not in itself provide evidence of the impact of the Programme given the number of other interventions, and general changes in macro-economic conditions. It will require the findings of the business surveys, set against these headline results to assess the difference made by Superfast Cornwall.

Stakeholder Views

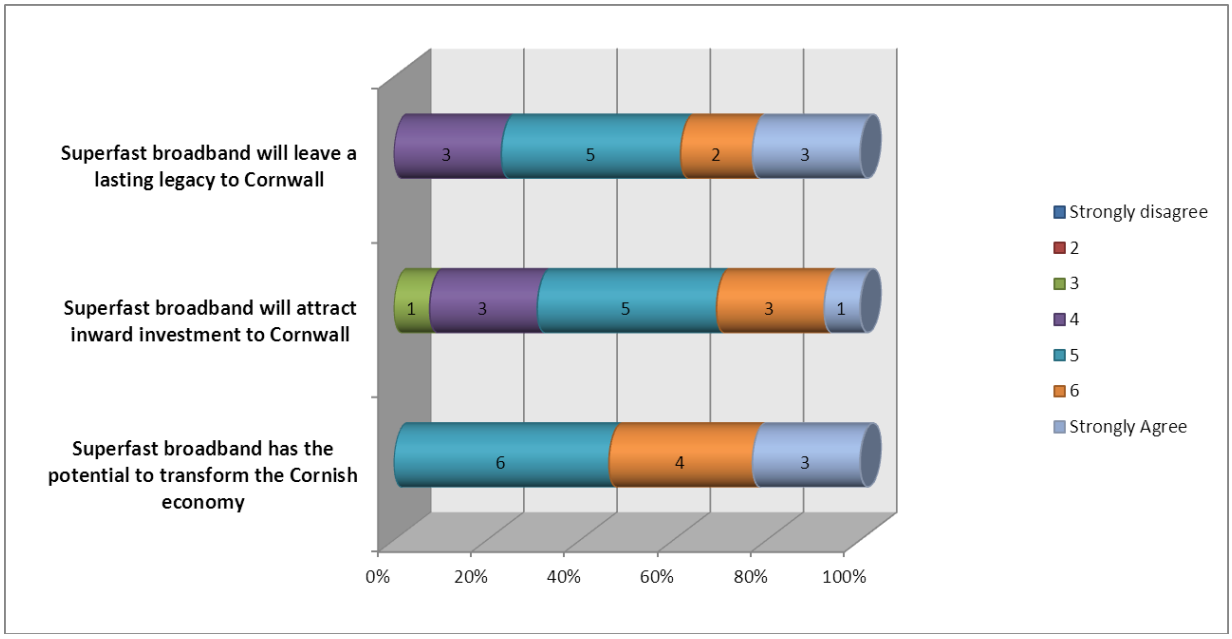
In Section Five of the report we present the key findings from thirteen in-depth semi-structured telephone interviews, undertaken with key, senior level stakeholders. This represents the first of three stages of interviews with the stakeholders for the baseline, interim and final stages of the project.

The interviews were aimed at uncovering current levels of understanding of the programme, anticipated usage; their early views on the impacts of the programme, both at a local and regional level, the perceived “added value” impacts and the Programme’s overall importance for Cornwall.

As part of this, three positive statements were read out to stakeholders and they were asked to identify from a scale to what extent they agreed with these statement (where 1 was strongly disagree and 7 was strongly agree).

[1] Data for 2009 will be accessed in December 2011
[2] As expressed by active enterprises per 1,000 working age population

Stakeholders' levels of agreement with three statements relating to Superfast Broadband



"Superfast broadband has the potential to transform the Cornish economy"

Stakeholders were largely confident that superfast broadband has the ability to transform the Cornish economy, with all scores between 5 and 7 and an average score of 5.8. There were elements of caution, expressed as a need for the right elements to come together at the right time, and that no one intervention on its own could be transformational.

Whilst there were very positive comments, most time was taken discussing the additional elements needed to make it truly transform the economy. Respondents generally felt that one single technology is not enough on its own and that the success of it also depends on other factors such as mentorship, persuading people of the potential of superfast, to encourage take-up and business support.

"Superfast broadband will attract inward investment to Cornwall"

Stakeholders were reasonably confident that the programme would attract inward investment rating it at an average 5 out of 7, where 7 is strongly agree.

The strongest theme that emerged, for the way in which this could be achieved, was by effective marketing and communication targeted at the right people, of what Cornwall can offer to investors, as a package. It needs careful, thoughtful and strategic planning. Several people alluded to the limited time there is to use the competitive advantage of having superfast first in the UK.

"Superfast broadband will leave a lasting legacy to Cornwall"

Stakeholders were cautiously confident that the programme would leave a lasting legacy to Cornwall, with an average score of 5.4 out of 7, and all agreed that it would to some degree.

Some respondents felt that the legacy would depend upon how much the competitive advantage of being first to have superfast, would be maximised, in the short time frame available.

Respondents, variously, felt superfast broadband would leave a legacy because:

- It's a permanent infrastructure;
- It will increase the skills base and develop the industry base;
- It creates the potential for Cornwall to become a centre of excellence; and
- It will raise the expectations of consumers.

Overall the interviews with stakeholders revealed significant positive regard held towards the Superfast Cornwall Programme, although this was tempered slightly by the view that one intervention, no matter how significant in scale, on its own could truly transform an economy. The view seems to be that economic transformation could not happen without Superfast broadband, but that having it will not automatically deliver this transformation. The right support and upskilling to enable businesses to exploit the new technology fully, focused on the real needs of business are seen as crucial pieces of the jigsaw.

There is also a recognition, by some at least, that the Programme is gaining Cornwall a head start, and that others will quickly catch up. This gave a sense of urgency to some, in that Cornwall perhaps has two years at most to take full advantage of its leading position, and taking this opportunity is imperative to success.

Expectations are undoubtedly high, and for some Superfast is possibly the only really positive Convergence investment. The implications of this are that the Programme has to meet these expectations, in order to be seen as a success. The main concern is that businesses have not fully embraced the opportunity that the technology offers and that this will restrict its impact on the business community and Cornwall more broadly. The need for really effective communication, as well as the support and upskilling delivered through the business support package, is clear.

Implementation of the Monitoring & Evaluation Plan

The Superfast Cornwall Monitoring and Evaluation plan was prepared in March 2011, setting out the overall objectives for the monitoring of the superfast Cornwall project, indicators to be collected and proposed methods of monitoring. Since this time, there have been developments both within the project (plans produced for the monitoring of client satisfaction, environmental impact etc.) and externally (the publication of the monitoring and evaluation framework for BDUK projects). Therefore it is appropriate that the plan is reviewed at this time. In Section Six, a clear plan of action is set out for monitoring and evaluating the Superfast Cornwall project.

BDUK commissioned Regeneris Consulting to produce a monitoring and evaluation framework for projects receiving funding from BDUK. This framework has been reviewed to identify if there are any elements which could be beneficial to the monitoring of Superfast Cornwall and to identify where it is possible to make alignments to allow comparability of evaluation material.

Review of BDUK framework - overall similarities and differences

Similarities/Differences	Suggested changes to Superfast M4E plan
Both superfast and BDUK utilise a logic chain approach. **The BDUK plan links the logic chain with the project rationale and priorities which is helpful.**	Adopt revised diagram linking logic chain with rationale and objectives.
The BDUK plan includes an additional link in the logic chain which shows how businesses behaviour might change – this is helpful to demonstrating impact.	Include 'mechanisms' link in logic chain.
The BDUK plan includes monitoring of public service delivery improvements; however, this is not relevant to ERDF funding.	Public service improvements resulting from Superfast Cornwall, would count as an additional/unexpected benefit from the upgraded infrastructure. Some aspects of this will be captured through the interviews with key stakeholders.
The BDUK plan includes monitoring of residents' benefits – this is less relevant to ERDF funding, except where a resident has taken economic action as a result (e.g. started a business)	Consider survey of new start businesses to establish the extent to which Superfast has been a driver.

The BDUK framework sets out a range of indicators across the logic chain. Our analysis shows that the indicators proposed for use by Superfast Cornwall and BDUK have some overlap, but also areas of divergence. Whilst BDUK may wish to utilise indicators proposed by Superfast Cornwall, we are principally interested in ensuring that Superfast Cornwall's proposed indicators will allow a thorough and robust evaluation.

The main differences are that the BDUK framework has:

- More indicators which measure residential and public sector uptake and benefits;
- Indicators to monitor mechanisms i.e. how end users utilise their faster broadband;
- Indicators to monitor intermediate impacts i.e. changes in the business operation such as new goods and services; and
- Outcome (impact) indicators which are very focused on the social/public sector changes that might occur.

In reflection of this the Monitoring and Evaluation plan for superfast Cornwall has been adapted to:

- Set out a revised list of indicators utilising the logic chain approach adopted by BDUK;
- Develop a series of indicators to measure mechanisms and intermediate results;
- Include relevant socio-economic focused impact indicators; and
- Include reference to relevant ERDF definitions as appropriate

As with any work requiring input from beneficiaries of projects and programmes, it is important to be mindful of the need to minimise the burden of completing surveys and providing other forms of input (e.g. focus groups, on-line feedback etc.). This is particularly important in an area such as Cornwall, where businesses may also be asked to complete research to support other convergence business support initiatives.

We therefore make the following recommendations to minimise the burden on businesses:

- Reducing the number of business surveys – **where possible surveys of businesses should be brought together in one omnibus survey** to avoid repeated contacts;
- Where it is unavoidable for more than one survey to run, **survey samples are drawn separately so businesses will not be asked to complete more than one survey** (e.g. businesses participating in the carbon diaries will not be asked to participate in the omnibus survey);
- That **the omnibus survey is used to recruit volunteers to participate in other forms of survey** (e.g. the longitudinal survey, focus groups etc.); and
- Surveys should be well designed and not feature any unnecessary or duplicate questions

This section of the report brings together the issues discussed above in the form of a revised M4E plan. This includes:

- A revised logic chain, incorporating some of the ideas put forward in the BDUK framework;
- A revised list of indicators that aligns with the BDUK framework; and
- A revised set of monitoring tools that address the issues discussed above.

Superfast Cornwall Evaluation

Baseline Report

1. Introduction

Project Overview

""Rolling out superfast broadband is probably the single most important thing we can do to ensure the sustainability of our rural communities in the 21st Century and end the digital divide"

Caroline Spelman Secretary of State for Environment, Food and Rural Affairs

The Next Generation Broadband Infrastructure for Cornwall and the Isles of Scilly project (known as Superfast Cornwall), is one of the key investments of the Convergence Programme. With up to £53 million of ERDF funding contributing to an overall project value of £132 million this is the largest single Convergence investment, aiming to leave a real economic transformation and long term legacy for Cornwall and the Isles of Scilly. The Superfast Cornwall programme is the largest ever single European investment in broadband infrastructure.

This is a significant investment and a significant programme for a number of reasons, not least that ICT infrastructure on this scale has never been built in a rural area anywhere in the world and this project is therefore high profile and of particular interest for policy makers nationally and internationally.

Cornwall Development Company, (CDC) funded through the European Regional Development Fund and Cornwall Council is leading the Delivery Management Team project, whose aims include driving the uptake of superfast broadband by businesses in Cornwall through marketing activities, contract management of BT, upskilling business and evaluation etc.

Super-fast broadband is being delivered through a parallel project funded through a £132 million partnership project between ERDF and the appointed private sector investment partner, BT, to make Cornwall and the Isles of Scilly one of the best connected locations in the world.

The Superfast Cornwall project runs just four years after a previous long-term ERDF investment in broadband between 2001 and 2007[3]. 'Actnow', the UK's first public-private broadband partnership, brought broadband coverage from almost 0% to 99% as well as bringing an estimated £80 million to the economy of Cornwall and the Isles of Scilly.

The evaluation

Providing a robust assessment of the effectiveness of the Superfast Cornwall Programme is therefore hugely important. How it provides the catalyst for business productivity improvements, innovation and growth and the return on the significant investment it generates are vital, while the potential environmental and social benefits of the rollout of NGB will also need to be assessed. Superfast Broadband provides the wider opportunity to inform national policy and drive the policy debate around digital infrastructure in peripheral areas.

[3] **Actnow** was a non-profit partnership that aimed to promote economic development in Cornwall and the Isles of Scilly through the use of broadband and ICT. It was led by Cornwall Enterprise and funded by the EU through Objective One and spearheaded the development of broadband in Cornwall. ERDF funding investment for Actnow totalled £8.2m.

In order to enable this robust assessment the Superfast Cornwall project has employed its own Evaluation lead whose role it is to ensure that evaluating the project's performance and impact is central to all it does. The Research & Evaluation Manager has developed a clear evaluation plan, and as part of this identified the need for objective external expertise to ensure that the evaluation is suitably objective and transparent, and reflects best evaluative practice. Part of the work of the external evaluation team is to produce initial, mid and final evaluation reports as well carrying out stakeholder surveys where independence is required and to provide technical evaluation advice to the project team.

In August 2011 a team led by SERIO including a range of experts from across Plymouth University, in collaboration with Buckman Associates were commissioned to undertake this work. The scope of this work includes:

- Undertaking stakeholder surveys;
- Reviewing business survey questionnaires and sampling procedures;
- Independently verifying business survey data collected;
- Undertaking baseline, mid-term and final evaluations using data collected by the R&E Manager and the Superfast Cornwall team; and
- Providing independent, expert evaluation advice as required

The scope of the work and the nature of the support provided is to be subject to continual review to ensure that the evaluation is fit for purpose and provides the best insight to the success of the Superfast Cornwall Programme over its lifetime.

Role of the Baseline Report

The purpose of this report is to establish the baseline context against which the impact of the Superfast Cornwall project can be assessed. At the point of its writing the Programme has completed a number of pilot roll outs in specific locations, and is on the verge of more substantial phase of roll out. It is therefore an ideal time for this baseline to be established. This report also provides the strategic and operational context for the investment. It is structured as follows:

- In Section 2 some key comparator areas are identified to provide an insight to the counterfactual (what happens to similar economies without the level of investment in Superfast Broadband infrastructure that Cornwall will be receiving;
- Section 3 provides an overview of the baseline position in terms of current levels of Broadband usage in businesses, as well as the strategic and policy context for the programme;
- In Section 4 a range of economic indicators are assessed to enable a tracking of the impact of the Programme over time, in comparison with similar economies that have not had the scale of investment that Cornwall and the Isles of Scilly have received through ERDF;
- Section 5 provides the early views of key stakeholders, who have been interviewed at this point so as to enable comparison at a later stage;

- Section 6 reviews the monitoring and evaluation plan for the Programme, comparing it with that developed for BDUK, and outlining the evaluation tools that will be used over the lifetime of the programme; and
- In Section 7 the next steps and key points are summarised.

2. Assessing the Counterfactual – establishing comparator areas

Why assess the Counterfactual?

An important aspect of this evaluation is the identification of a number of comparator areas, so that the impact of Superfast Cornwall can be assessed with reference to what happens over the same period in very similar economies with similar current levels of Superfast coverage, but without the level of investment in Superfast Infrastructure that Cornwall will receive through the Programme. In evaluation terms this is referred to as establishing the counterfactual. For instance it will be important to understand:

- What level of coverage and connectivity is achieved in similar areas;
- To what extent Superfast Cornwall has enabled business growth, taking into account wider economic factors;
- How stakeholder views differ in Cornwall compared with similar areas.

What is the Counterfactual?

The counterfactual is an assessment of what would have happened in the absence of the policy or 'policy off'. In this context, it means forming an assessment of the likely outcome of a scenario whereby the Cornwall and Isles of Scilly Convergence programme did not make an investment in Next Generation Broadband on this scale.

It is important to establish what the 'policy off' position is in this case. Our view is that an area that has received (or will receive) no investment in Superfast broadband, or that has no Superfast infrastructure does not represent the counterfactual accurately. We know that BDUK investment would have been made in Cornwall in the absence of Convergence funding, and that it would have also been likely that further Local Authority investment would have been made to match this. In reality, therefore, the most accurate reflection of a policy off scenario are those similar areas that receive BDUK investment at a level which Cornwall would have benefited from without Convergence, rather than those areas (even if they could be found) where there is no investment in Superfast infrastructure.

This counterfactual assessment is important in assessing the added value that the approach in Cornwall may deliver, taking into account the higher level of funding and the greater aspiration around connectivity levels. Issues such as the diminishing returns in investment as those hardest to reach are connected will need to be reflected in any analysis as well as the effectiveness of different technology mixes and approaches to demand stimulation. The final analysis will be an assessment of the comparative value for money of the Convergence investment compared with lower levels of BDUK funding in areas with similar challenges.

The counterfactual argument can apply through all levels of the project as table 1 below illustrates. The BDUK framework, recommends that the counter factual should be measured through both a top-down and bottom-up approach, where the top down compares the inputs and outcomes achieved in the target area with similar or control areas and the bottom up approach asks users to identify what proportion of changes they have experienced could be attributed to acquiring faster broadband.

Table 1: Measuring the Counterfactual in the context of the Logic chain

	Inputs	Outputs	Mechanisms	Intermediate Results	Results	Impacts
	£ invested	Businesses connected to superfast broadband	Behaviour change e.g. - e-marketing - supply chain management - on-line distribution	Business achievements - New goods and services - More customers - More efficient production Etc.	Improved profitability Employment Turnover No of businesses	Economic growth Social change
Counter factual	What would have been invested in the policy off	What proportion of businesses would we expect to have been connected without the investment?	Would businesses have been able to achieve these things without superfast? (Deadweight)			Would Cornwall have been able to achieve similar outcomes without superfast
Cornwall Assessment - Baseline	Planned investment - Expenditure - Coverage	No. of businesses connected to superfast broadband. Existing network capabilities	Baseline ICT adoption in business			Measurement of key Socio-economic indicators
Cornwall Assessment - Final	Actual investment - Expenditure - Coverage	No. of businesses connected to superfast broadband. Future network capabilities	Future ICT use in business	Changes in business achievements attributed to superfast.	Changes in business impacts attributed to superfast.	Measurement of key socio-economic indicators
Counter-factual Assessment - Baseline	Planned investment in superfast in control area - Expenditure - Coverage	No. of businesses connected to superfast broadband. Existing network capabilities	Baseline ICT adoption in business			Measurement of key Socio-economic indicators
Counterfactual assessment - Final	Actual investment in superfast in control area - Expenditure - Coverage Assessment of the level of private/public investment in Cornish Superfast – without ERDF.	No. of businesses connected to superfast broadband. Future network capabilities	Future ICT use in business	Changes in business achievements attributed to superfast.	Changes in business impacts attributed to superfast.	Measurement of key socio-economic indicators

Potential Control Areas

The CIPFA (Chartered Institute of Public Finance and Accountancy) nearest statistical neighbour model, identifies a local authority's closest statistical neighbours, based on the following variables.

Table 2: Variables used in CIPFA model

New Model	Source	Year
Population	ONS Population Estimates	Mid 2005
Population aged 0 to 17 (%)	ONS Population Estimates	Mid 2005
Population aged 75 to 84 (%)	ONS Population Estimates	Mid 2005
Population aged 85 plus (%)	ONS Population Estimates	Mid 2005
Output area based population density	Census	2001
Output area based sparsity	Census	2001
Taxbase per head of population	CIPFA Council Tax Demands and Precepts Statistics	2006/07
% unemployment	ONS Labour Market Statistics	June 2005
% daytime net inflow	Census	2001
Retail premises per 1,000 population	DCLG Rateable Value Statistics	April 2005
Housing Benefit Caseload (weighted)	DWP Quarterly Bulletin	May 2005
% of people born outside UK and Ireland	Census	2001
% of households with less than 4 rooms	Census	2001
% of households in social rented accommodation	Census	2001
% of persons in lower NS-SEC (social) groups	Census	2001
Standardised mortality ratio for all persons	ONS Death Rates	2005
Authorities with coast protection expenditure / income	CIPFA Finance and General Statistics	2006/07
Non-domestic rateable value per head of population	CIPFA Finance and General Statistics	2006/07
% of properties in bands A to D	CIPFA Council Tax Demands and Precepts Statistics	2006/07
% of properties in bands E to H	CIPFA Council Tax Demands and Precepts Statistics	2006/07
Area cost adjustment (other services block)	ONS New Earnings Surveys	2006/07

In addition to the standard variables, it is possible to select additional variables to change the emphasis of the model. Three additional available variables were selected to place a greater emphasis on the business structure that will provide a closer match to the Cornish economy:

- % foreign visitor nights
- % domestic visitor night
- Offices per 1,000 population

Based on this model, Cornwall's closest 15 statistical neighbours are listed in Table 3 over leaf, together with their Ofcom data scores[4], which provide an assessment of the level and quality of Broadband coverage, and the level of BDUK funding they have received.

[4] From the Communications Infrastructure Report, Ofcom, August 2011

Table 3: Cornwall's 15 Closest Statistical Neighbours

Nearest Statistical Neighbour	BDUK funding	Ofcom Communications data scores, where 1 is good and 5 is poor				
		Sync Speed	% receiving less than 2mb	Superfast availability	Take-up (excluding Superfast)	Broadband Coverage (Ofcom overall Score) 1 – is good – 5 is poor
Cornwall		4	4	5	3	4
Isle of Wight	£8,420,000[1]	4	3	5	3	4
Devon	£31,320,000[2]	4	4	5	3	4
Cumbria	£17,130,000	4	5	5	3	5
North Yorkshire	£17,840,000	4	4	5	3	4
Lincolnshire	£14,310,000	4	4	5	3	4
Somerset	£31,320,000[2]	4	4	5	2	4
Norfolk	£15,440,000	4	4	5	3	4
Torbay	£31,320,000[2]	3	2	4	3	2
Northumberland	£7,030,000	4	4	5	3	4
Dorset	£9,440,000[3]	4	4	5	3	4
Shropshire	£8,210,000	5	4	5	3	5
East Riding of Yorkshire	£8,540,000[4]	4	3	5	3	4
East Sussex	£10,640,000[5]	4	4	5	2	4
Gloucestershire	£8,070,000	4	4	4	2	3
North Somerset	£31,320,000[2]	4	3	4	2	3

[1] As part of Hampshire and the Isle of Wight, [2] As part of Devon and Somerset, [3] As part of bid with Bournemouth and Poole, [4] As part of Humber, [5] Including Brighton and Hove.

From discussions with BDUK it is estimated that without the investment of the Superfast Cornwall Programme, through Convergence, Cornwall and the Isles of Scilly would have received in the region of £15-20 million from BDUK, as well as potential Defra rural funding that will be made available to tackle the connectivity challenges of intensely rural areas. The level of investment received through Convergence and BT is therefore several times in excess of this and estimating the level of coverage that would have resulted from this much lower level of investment, gained form insight to other areas, will provide a useful comparison with that delivered by the Superfast Cornwall Programme.

In selecting three counterfactual areas, the following criteria have been considered

- Do they provide a good socio-economic match (i.e. towards the top of the list of nearest statistical neighbours)
- Are they receiving some funding from BDUK at a level similar to that which Cornwall would have received; and
- Do they have a similar Ofcom broadband scoring profile to Cornwall, reflecting a similar broadband baseline.

On the basis of these criteria the three areas that will provide a robust comparison and enable an insight to the counterfactual are:

- Devon
- North Yorkshire
- Lincolnshire

As the table above shows, these each share exactly the same Ofcom score across all categories as Cornwall & the Isles of Scilly, and are in the top five statistical neighbours. Both Cumbria and the Isle of Wight are also statistically similar, but have slightly different Ofcom scores.

Next steps

The three comparator areas will be used to understand the difference that the level of investment in Cornwall will have. This will require the establishment of a baseline assessment of Cornwall and its comparators, including

- Investment plans, including timing;
- Existing ICT infrastructure;
- ICT adoption behaviour within business where information is available; and
- The economic baseline.

It is then proposed that the following are undertaken as part of the ongoing evaluation:

- A “control” business survey - Non-connected businesses in Cornwall and areas of West Devon/North Devon/Torridge – thus testing deadweight;

- An extended stakeholder survey of LEP members in counterfactual areas at interim and final evaluation stages to explore outcomes of BDUK investment relative to ERDF convergence outcomes in Cornwall; and

- Interim and final outcome assessments similar to the baseline.

3. The strategic context

Across the UK, BT is investing c£2.5 billion into rolling out superfast broadband (BT 2011) and the UK Government has pledged £530 million, specifically to support more remotely located Councils, through Broadband Delivery UK (BDUK). The BDUK funding allocation was based on regions' modelled scale of white areas, or areas with poor broadband provision to any premises.

Table 4: BDUK Funding Allocation

Area (and constituent authorities)	White premises as a % of total [5]	Indicative BDUK allocation
Bedfordshire	13.4%	£1,060,000
Berkshire	8.0%	£1,430,000
Buckinghamshire	17.0%	£2,100,000
Cambridgeshire	40.5%	£6,750,000
Cheshire	21.1%	£3,240,000
Cornwall & the IOS	**89.0%**	**£0**
Cumbria	96.2%	£17,130,000
Derbyshire	40.1%	£7,390,000
Devon and Somerset	64.2%	£31,320,000
Dorset	48.3%	£9,440,000
Durham	42.8%	£7,790,000
East Sussex	62.5%	£10,640,000
Essex	28.4%	£6,460,000
Gloucestershire	54.3%	£8,070,000
Greater London	1.0%	£0
Greater Manchester	5.8%	£990,000
Hampshire and the Isle of Wight	26.9%	£8,420,000
Herefordshire	99.8%	£6,350,000
Hertfordshire	8.1%	£1,110,000
Humber	(not all KCOM data available yet)	£8,540,000 (subject to revision)2
Kent	36.7%	£9,870,000
Lancashire	38.7%	£10,830,000
Leicestershire and Rutland	25.1%	£3,880,000
Lincolnshire	69.6%	£14,310,000
Merseyside	16.6%	£5,460,000
Norfolk	66.8%	£15,440,000
Northamptonshire	23.9%	£4,080,000
Northumberland	71.0%	£7,030,000
North Yorkshire	66.6%	£17,840,000
Nottinghamshire	23.7%	£4,250,000
Oxfordshire	29.8%	£3,860,000
Shropshire	48.0%	£8,210,000
South Yorkshire	37.6%	£0
Staffordshire	36.0%	£7,440,000
Suffolk	66.5%	£11,680,000
Surrey	10.7%	£1,310,000
Tees Valley	8.7%	£770,000
Tyne and Wear	28.0%	£3,420,000
Warwickshire	25.1%	£4,070,000
West of England	14.4%	£1,430,000
West Midlands	10.2%	£630,000
West Sussex	47.3%	£6,260,000
West Yorkshire	21.2%	£6,340,000
Wiltshire	34.5%	£4,900,000
Worcestershire	24.7%	£3,350,000

Source: Department of Culture Media and Sport August 2010.

[5] A 'white area' is an area with poor Next Generation Broadband provision which is eligible for State support to receive quality broadband.

The three areas with the greatest proportion of white areas were Herefordshire (at 99.8%), Cumbria (at 96.2%) and Cornwall and the Isles of Scilly (89%) (DCMS 2011). Cornwall's significant support from European funding and private investment means that it has not received a BDUK allocation.

Compared with BDUK investments in other parts of the country, the Convergence funded programme in Cornwall is unique for three reasons:

- **Investment:** The largest single European investment in superfast broadband;
- **Scale:** The world's largest rural area covered by superfast broadband (although the Highlands and Islands may yet catch up); and
- **Penetration:** The largest number of Fibre to the Premises (FTTP) connections in the UK

Cornwall represents the world's largest rural region to install superfast broadband and as such, will play an important role in revealing the benefits for other world regions. The Superfast programme has in effect turned Cornwall into a laboratory for examining the potential of a digital economy in a rural setting and as such the learning points have significant importance far wider than Cornwall.

Policy drivers

International / EU

Many studies have shown the beneficial impacts of broadband not just economically but also socially, culturally and environmentally. Several studies for example, have made a causal link between broadband technology and increased GDP (see D'Costa and Kelly 2008). The UN have maintained that for every 10 per cent increase in broadband penetration in China, it could contribute an extra 2.5 per cent increase in the growth of (GDP) (UN 2011) and entitled one of their digital strategy documents ''The Future Built on Broadband'. The EU equally urges Nations to make 'ultra-fast broadband' widely available to promote economic growth and create a 'Digital Single Market'. A race is on internationally, to install and maximise usage of the newest broadband infrastructure, to both help in reversing the difficult economic climate and as ever, to remain competitive.

The EU Commission has claimed that investment in fast and ultra-fast broadband network infrastructure would immediately boost employment related to construction and related equipment. In Germany alone, for instance, the construction of broadband networks is expected to create almost a million jobs over the ten years up to 2020, while in France, the construction of a fibre-to-the-home (FTTH) network is calculated to generate 360,000 jobs per year. The European Investment Bank has also identified the importance of broadband and ICT for the productivity and success of the European economies in the post-recession period.

In reflection of this, as of late October 2011, The European Parliament and the EU's Council of Ministers were considering a proposal from the European Commission for an ambitious project, worth up to €100bn ($140bn), to fund the rollout of fibre broadband and associated services across the EU. The Commission has proposed to spend €9.2bn from 2014 to 2020, to give EU citizens and business access to broadband speeds of 100Mbps. However, this initial €9.2bn will be used to attract additional investment to a total of between €50bn and €100bn, with each Euro spent expected to attract another private investment of between €6 and €15, according to the Commission.

Projects to enhance digital service infrastructure that would be selected for grants by the Commission include trans-European very high-speed backbone connections for public administrations, cross-border delivery of eGovernment and e-Health services, enabling access to public sector information and multilingual services and pan-EU authentication of electronic identification (eID) so that citizens and businesses can access digital services in any member state.

UK

In January 2009 NESTA[6] painted a worrying picture of how the UK was 'lagging behind' in the developed world's drive for more digitised economies and societies (Meadway and Mateos-Garcia 2009). This was mainly due to the high costs of provision – estimated at £5 billion for fibre-to-cabinet provision (FTTC) and £25 billion for fibre-to-premises provision (FTTP) (in Analysys Mason 2008). NESTA made reference to the growing public concern over a digital divide and how in 2007, 28% of UK people had never been online (in Dutton and Helsper 2008) or 9 million adults, according to the Office for National Statistics (Blake 2009). The policy briefing implored that 'future competitive advantage will depend on fast connection speeds' and that the UK must upgrade its 'copper backbone with fibre-optic' in order to take advantage of the potential possibilities.

Nationally, the aims of the UK government began to take shape in the White Paper 'Digital Britain' published in June 2009. A newly formed BDUK became the delivery vehicle for the government's broadband policy, under the direction of the Department for Culture Media and Sport. In October 2010, the £830 million government investment in Superfast Broadband was announced[7], followed by 'Britain's Superfast Broadband Future' report, published in December 2010. It outlined a plan of action for giving Britain the best superfast broadband network in Europe by 2015. Since then, a bidding and piloting process has taken place.

Cornwall

Convergence investment has in effect given Cornwall a significant head start on those areas to benefit from BDUK support, as well as a level of investment on an altogether larger scale. Cornwall's largely rural economy, traditionally based on agriculture and tourism, has been the focus of several rounds of significant EU and UK investment, and its current high level of Broadband coverage is a direct result of the previous Objective One funded ActNow project.

Despite this level of investment over many years, and according to the Convergence Operational Programme (OP) for Cornwall, the economy still 'requires catalytic and transformational interventions across a range of areas' (2007, p.90) including in infrastructure, if it is to move towards being a knowledge based economy. The importance placed on infrastructure was underlined by the significant allocation to Axis 3 of the Convergence OP with an aim to invest in "digital infrastructure...to enhance connectivity, and stimulate new sectoral development…address[ing] some of the key factors related to poor productivity, notably distance from markets". The intention was that "future proofed" digital infrastructure would be developed, supported and complemented by other Programme activity to support sectoral development as well as ESF support for skills.

Reflecting this, a knowledge economy is one of the economic priorities Cornwall Council has outlined for the future in its Economy White Paper, and which Superfast broadband supports. The superfast programme has the potential to support all of the key impacts which the Council is working towards (see figure 1). In particular, it supports key impact six, with the explicit intention to attract and retain high value business.

[6] The National Endowment for Science, Technology and the Arts
[7] £530 million by 2015 and a further and £300 million by 2017 as part of the TV licence fee settlement.

Figure 1: Cornwall Council's Economic Ambition

1. An economy that is resilient and draws upon our strengths
2. Economic progress that has positive outcomes for people and supports an improved quality of life
3. An economy which strengthens our natural assets
4. More local people employed in high growth, knowledge based companies
5. An increase in world class skills, offering opportunities for higher incomes
6. Greater connectivity supporting business and employment growth
7. A vibrant business base where companies can innovate and flourish

Source: Cornwall Council 2010 White Paper: Economic Ambition. Page 5.

The recent case for Local Enterprise Partnership (LEP) status, "Empowering Enterprise" also reflected the importance of Superfast broadband as a "fantastic benefit. It will enable businesses to grow and encourage others to locate here. It will enable us to share our success with other remote rural areas… and be in the vanguard of creating enhanced connectivity to the global economy". At all levels, therefore, the importance placed on the Superfast Cornwall Programme in contributing towards a longer term transformation of the Cornish economy are clear, and the extent to which it delivers against (and is perceived to deliver against) these aspirations will be a key focus of the evaluation process.

Current infrastructure

The Ofcom report on levels of broadband throughout the UK identifies the following four metrics, which provide an insight to peripheral areas such as Cornwall:

Broadband take-up	The number of existing broadband connections as a proportion of residential and non-residential addresses
Average modem sync speed	The average maximum speeds of existing broadband connections
Superfast availability	The percentage of addresses which are within the coverage area of superfast broadband networks
Receiving less than 2Mbit/s	The percentage of existing broadband connections currently not achieving 2Mbit/s downstream speeds.

The table below shows this data for Cornwall and its comparators

Table 5: Ofcom data on connectivity (March 2011)

	Cornwall & IOS	Devon	Lincolnshire	North Yorkshire
Broadband take up	67%	69%	66%	68%
Average modem sync speed	6.5 Mbit /s	6.4 Mbit / s	6.5 Mbit / s	6.6 Mbit / s
Superfast availability	10%*	17%	23%	15%
Receiving less than 2Mbit/s	18.1%	17.2%	17.2%	17.1%

* Note that this includes those pilot areas connected through Superfast Cornwall to date (around 6%)

What this shows is that while levels of Broadband take up are similar across the four areas, as are average sync speeds, the availability of superfast is far lower in Cornwall and the numbers receiving low connection speeds of less than 2Mbit / s are higher.

As might be expected, the results of Ofcom's analysis highlight that overall broadband performance is lower in areas of low population density. This is reflected in lower average modem sync speeds, higher percentages of homes unable to achieve 2 Mbit/s and lower availability of superfast broadband. There are a number of factors that contribute to this:

- There is limited availability of cable networks in rural areas due to the high cost of building new networks in areas where there is a large distance between premises. The higher modem sync speeds available via cable networks tends to boost average modem sync speeds and all homes using cable are able to achieve speeds in excess of 2 Mbit/s and have the option of subscribing to superfast services;

- In many rural areas BT Wholesale (part of the BT Group) is the only operator that has chosen to install broadband equipment in the local telephone exchange and in many exchanges this is ADSL technology which supports a maximum speed of 8Mbit/s. In more urban areas multiple operators have deployed ADSL2+ equipment which is capable of delivering modem sync speeds of up to 24 Mbit/s

- For broadband services delivered over telephone lines, achievable modem sync speeds are dependent on the length and quality of the line. In rural areas average line lengths tend to be longer and hence lower speeds are achieved.

Comparator summaries

Devon

Devon and Somerset was one of the seven areas allocated funding to pilot superfast broadband as part of the BDUK rollout. This will build on the work of two significant Broadband programmes that received significant public investment. Firstly Broadband4Devon supported by the South West Objective 2 Programme and estimated in its independent evaluation (May 2005) to have had an impact to Devon including sales, relocated businesses, cost savings and productivity of more than £7 million, and secondly, Connecting Somerset. As of late September 2011, partners in Devon and Somerset were working on an implementation plan that will schedule the roll out of improved connectivity across the area. Currently no decision have been made about the technology or mix of technologies that will be used.

The aim is to achieve at least 85% of premises receiving superfast broadband.

Indicative levels of investment in infrastructure upgrade are £31 million from the Government via BDUK and a £22 million commitment of capital and revenue funding from Devon County Council, Somerset County Council, North Somerset Council and other public sector partners. A further significant contribution is expected from the private sector supplier who wins the contract. However, there remains a potential funding gap and the DEFRA Community Broadband Fund offers a potential additional source of funding (although exact requirements and use of this fund are still to be published).

It is expected that the deployment and rollout schedule will be announced and deployment begun from October 2012.

Lincolnshire

From 2003 to 2008, Lincolnshire County Council developed and delivered a £15million programme to make Broadband and ICT services available and support SMEs and community enterprises to utilise them. Under the banner OnLincolnshire, most funding was directed to demand stimulation, supporting businesses through connection subsidies, independent ICT advice and grants. This facilitated and encouraged investment from service providers. Provision focused on what then was ‘advanced’ broadband internet services (up to 2 Mbps with a high upload speed) for concentrations of businesses in parts of the County designated eligible for ERDF.

With BDUK investment, the implementation of the Lincolnshire Broadband Plan will deliver a range of outcomes by 2015 and 2017. The outcomes identified in the submission to BDUK being:

By 2015

- Every residential, business, community and public premise in Lincolnshire will be able to connect directly to an affordable service delivering broadband of at least ‘standard’speed (2mbps).
- Access to mobile broadband connectivity will increase to 90% of land area

By 2017

- Every community in Lincolnshire to have access to superfast broadband (30mbps) through a ‘fibre hub’ or alternative technology solutions (wireless or satellite1111) for around 10% of premises;
- All local authority and public sector partner ‘transactional’ services will be available on-line and every community will be able to benefit directly or through a community hub; and
- The percentage of internet users of 55 and over will equal or exceed the national average (ONS stats)

According to the timetable in the July bid to BDUK, implementation was due to commence in Lincolnshire in March 2012. Further updates are expected imminently.

North Yorkshire

North Yorkshire was one of the first pilot areas (announced in October 2010) o benefit from BDUK investment to test rural broadband rollout.

Connecting North Yorkshire is a partnership project led by North Yorkshire County Council to achieve high quality broadband to all businesses and citizens in North Yorkshire by 2017. Partners include the County Council, NYnet and Broadband Delivery UK, alongside key local community organisations.

The Connecting North Yorkshire programme aims to see high-speed broadband delivered to about 11,400 businesses and will benefit 220,000 people.

NYnet, the public and private sector commercial venture ISP that is in charge of the rollout, is also intending to secure additional finances from ERDF and it is hoped that this would bring the total investment to between £25m and £30m.

A procurement process is under way for the building of the new network, and is expected to complete by June 2012.

Use of ICT in Cornwall in 2011

A cost benefit analysis of next generation broadband conducted by Analysys Mason in 2009, outlined the existing communication infrastructure pre superfast broadband, and post the Actnow project. All 100 exchanges in Cornwall were ADSL enabled through Actnow. However, many premises received less than average national broadband speeds. 1-2% of lines could not sustain the basic 512kbit/s broadband connection and many more than elsewhere in the UK were unable to reach the advertised maximum of 8Mbit/s. Problems stemmed from the length of the line, with 68% of telephone lines over 1km, line quality and other technologies along the line. Cable coverage was also insignificant, estimated at less than 3% coverage. As previously stated, Cornwall and the Isles of Scilly had the third highest proportion of 'white' areas, with 89% of premises receiving poor broadband.

The latest figures from Ofcom show that 10% of Cornish addresses were within the coverage area of superfast broadband networks in August 2011. 82% of properties were receiving broadband speeds of at least 2mbps while the average speed was 6.5mbps. The number of existing broadband connections (take-up) was at 67% of properties (Ofcom 2011a and b). The availability of superfast is far behind the UK however, which has availability to 58% of addresses.

Businesses

Across the UK, the internet contributed an estimated £100 billion, or 7.2% of GDP, to the UK economy, a larger share than that of the construction, transportation or utilities industry. Further, the significance of the internet to the UK economy is actually greater than these numbers suggest because important economic activities of both consumers and businesses are not directly captured by GDP' (Boston Consulting Group 2010)

Several studies have surveyed South West and Cornish businesses recently, in relation to ICT use and a range of factors including for example, the importance of internet to the business and how it relates to business growth (SERIO 2011, Marketing Means 2010, Actnow 2008).

The evaluation survey (of over 900 businesses) for the Actnow broadband roll-out programme found that the internet is critical for 87% of businesses. There was a very good response to the access and support delivered by Actnow. A study of the impacts of broadband improvement in the county, as well as the impact of actnow support (for 927 businesses), showed that most businesses saw an improvement in efficiency (90% of

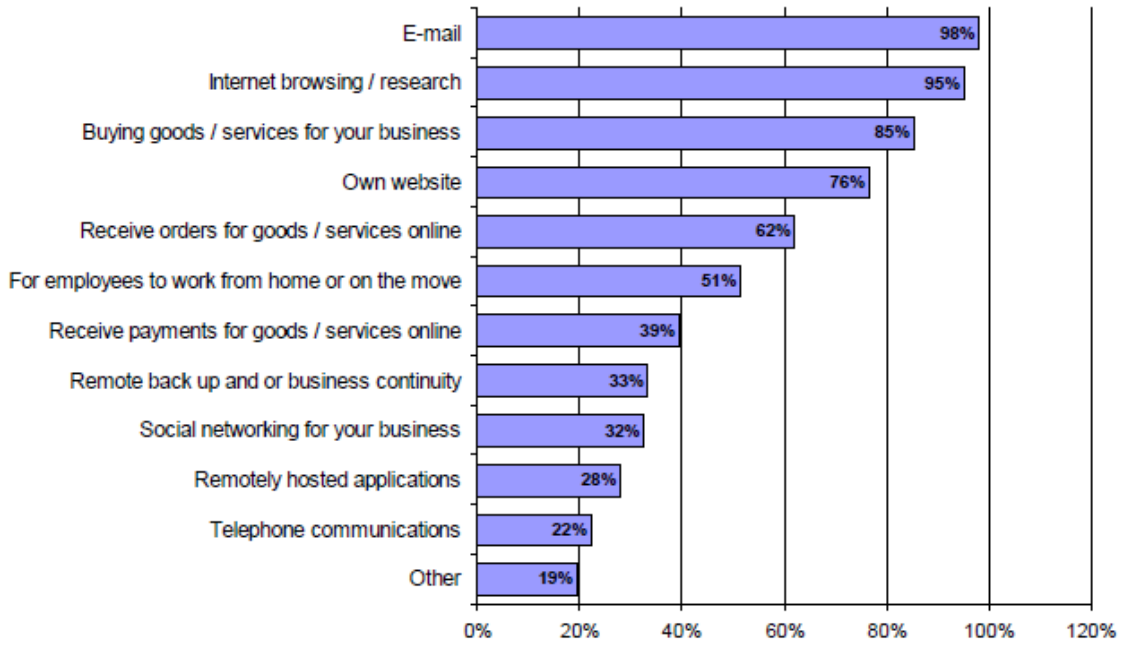
businesses), profitability (61%), skills in IT (60%), access to new markets (61%) and in improving innovation (55%) (actnow 2008). Most businesses had been in touch with the actnow project and the average service rating was 7 out of 10.

Good early customer care and support is likely to encourage further engagement with the new superfast broadband. There is also a belief in the impacts of superfast broadband beyond purely economic benefits, in terms of wider community gains (marketing Means 2010).

Usage

Surveys have found that the internet is almost universally used for emails, browsing, and buying goods and services for business (Figure 2) (Marketing Means 2010). 76% of businesses had their own website (marketing Means 2010), however there was an important variance in how websites were used. While 62% of businesses received orders for goods or services online, only 39% received payment online, representing an area for development following faster broadband installation. In addition, 51% of businesses used the internet to work from home or on the move. The extent to which these three types of usage change as a result of superfast broadband will be an important element to assess.

Figure 2: Applications Used by Businesses



Source: Marketing Means (2010).

Growth Sectors

The sectors for which superfast broadband would be most useful and most utilised were identified by Marketing Means as (2010):

- IT, design, graphics, media;
- Business, financial and professional services; and
- Manufacturing (to a lesser extent)

These business sectors expressed:

- The highest likelihood of upgrading;
- The highest likelihood of upgrading within three months; and
- More than other sectors, felt that their current internet connection was a significant limitation.

A strong majority of businesses in the IT and creative industries sector as well as in the business service sector, felt that the internet was extremely important to their businesses (75% and 73% respectively). Compared to other sectors, this was the highest.

Future Uses

A recent survey conducted by SERIO gathered data on 759 South West businesses (95 in Cornwall), with one section addressing experiences, challenges and anticipated future use of ICT. SERIO found that Cornish businesses are more confident in the future prospects for their business than any other county in the South West (SERIO 2010).

Several surveys found some level of dissatisfaction with speed and reliability of existing connections. 32% of businesses in Cornwall were found to be dissatisfied with their internet speed (SERIO 2010). 12% of Cornish businesses felt it was unreliable (marketing means 2010).

Across the South West, businesses plan to expand their ICT in different ways. In one survey, around a third of businesses indicated that they were looking at website development of one form of another, such as adding social networking facilities or putting training courses online (SERIO 2011). Other respondents mentioned plans to either create a new website, or revise and re-launch an existing one. Around one in ten respondents were interested in improving or creating online sales or improving their e-marketing.

The Potential for ICT Use

One of the more significant ways in which superfast can benefit businesses, is by enabling increased e-commerce and the expansion of new markets. In 2010, the UK was cited as having the biggest e-commerce market in the world, per capita (Boston Consulting Group 2010). Across the South West, national and international trade has increased since 2005 (SERIO 2011). 40% of respondents in one survey trade nationally (up from 35% in 2005) and 22% trade internationally (up by 3%). A third of those who export valued that trade at less than £10k. Almost 50% said the business was too small to trade internationally. Other responses talked about being unable to trade internationally due to the nature of the business or due to licensing or UK restrictions or that the business was too young to explore the option.

It is anticipated that many new and existing businesses will work more flexibly as a result of superfast broadband, in addition to the 2009 government legislation which extends flexible working rights to employees with parental responsibilities for all children up to 16.

Barriers to ICT Use and Business Growth

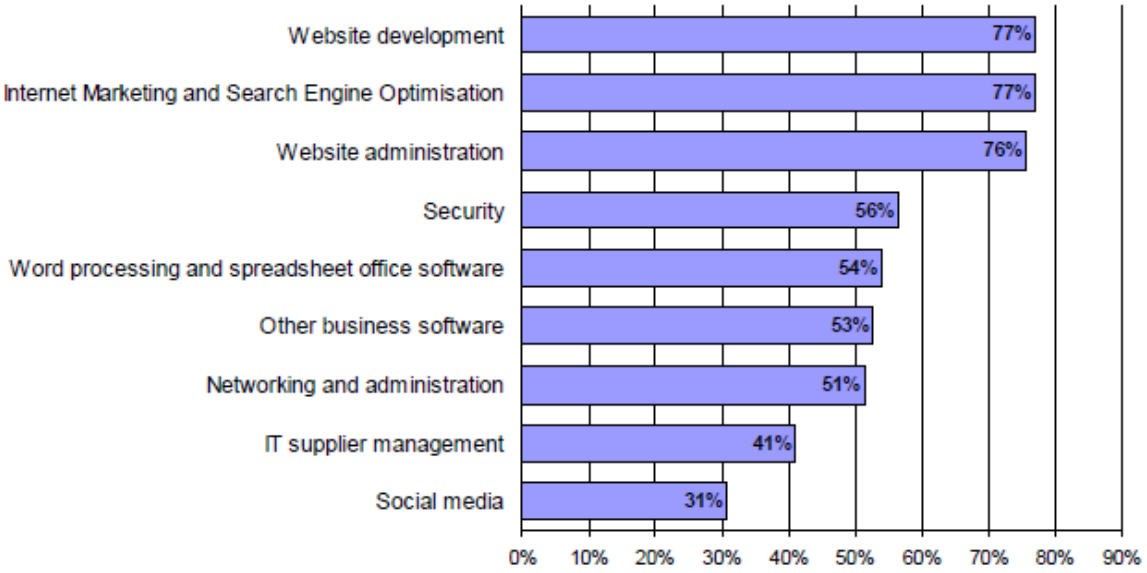
In Cornwall, 12% of businesses felt a lack of technical knowledge or IT skills was restricting further use of the internet for their business and 26% felt their lack of IT knowledge hampered business growth in general (Marketing Means 2010). Figure 3 shows what

business training needs were in terms of ICT. Website development, marketing and website administration were key areas for training.

14% of businesses in the South West region indicated that having an insufficient return on investment was restricting further use of ICT and 30% of Cornish businesses identified cost as a restricting factor to further use of ICT, compared to 27% of businesses across the South West (SWBOS 2010). The larger the business in Cornwall, the more likely they were to identify cost as a restricting factor.

In summary, speed is a limiting factor for almost half of Cornish businesses in the survey in terms of their increased use of ICT. Cost was also a significant barrier for many businesses, and a lack of staff training is likely to remain an issue. A perceived insufficient return on investment may also be a factor. These will be the next hurdles for businesses, now that higher speeds are available.

Figure 3: Areas Where Improved Knowledge Would be of Benefit to the Business



Source: Marketing Means 2010.

Consumers

The UK reportedly has the largest per capita e-commerce market in the world and the second largest online advertising market (after the United States). About 60% of the internet economy is driven by consumption, due to 66% of adults in the UK having used the internet to order goods and services, according to a Google commissioned report published in 2010 (Boston Consulting Group 2010). This was the highest in Europe and the authors predict that consumption will continue to be the largest contributor to growth.

Most people use the internet to communicate, work, learn and play. It is with large volumes of data where speed is crucial. Higher speeds enable more effective downloading of music and video as well as for holding, managing, processing and exchanging significant databases for example. Estimating and understanding internet usage for consumers in Cornwall is an area of research that is needed, as much of the focus has remained with businesses. This emerging area of research, linked to the Digital Inclusion workstream and the BT Get IT Together initiative is outlined in the revised Monitoring and Evaluation Framework later in this document.

Key Points

Significant survey work has been undertaken that has identified the barriers to ICT adoption amongst Cornish businesses, and areas where further support is required to enable businesses to exploit the new technologies effectively. Cornwall, and its comparator areas have all benefited from significant previous (mainly EU funded) investment that has provided a rich seam of intelligence that will help to focus the business support that is so crucial to Superfast Broadband being utilised effectively.

The progress of Cornwall and the Isles of Scilly, in comparison with the three comparator areas, which share significant similarities in terms of previous activity will be a crucial aspect of the evaluation of the programme, and the different scales of investment and, potentially, technology mixes deployed provides a unique opportunity to assess the effectiveness of different approaches to the roll out of Superfast Broadband in peripheral rural areas.

4. Socio-Economic Baseline

Overview

The Superfast Cornwall Programme seeks to increase productivity and stimulate business investment and growth. Given the level of investment in the Programme, understanding the extent of its impact on the economy of Cornwall and the Isles of Scilly is therefore fundamental.

This section establishes a baseline against which the contribution of the Superfast Cornwall Programme can be assessed. It compares the current (or most recent) data related to a range of economic indicators, with the comparator areas for Cornwall derived from the CIPFA "nearest neighbour" statistical model. As outlined earlier these are Devon, North Yorkshire and Lincolnshire.

The aim of this baseline and comparison with similar economic areas is to track economic trends in relation to very similar economies that have not received the same degree of investment in Next Generation Broadband infrastructure. However, it does need to be recognised that it is very difficult to attribute macro level economic changes to any specific intervention. The aim of the evaluation will be to establish the overall comparative change in economic conditions from analysis of relevant data and then draw conclusions as to the impact of the Superfast Cornwall Programme from the evaluation survey work. For instance it will be possible to establish the extent to which connection to NGB has led to increased sales or reduced costs in businesses and from this to establish the impact on GVA.

The table below summarises the indicators that will be used for this comparative analysis, and then each are discussed in more detail in turn.

Table 6: Summary of economic indicators to be used in the evaluation

Indicator	Cornwall & the Isles of Scilly	Devon	Lincolnshire	North Yorkshire
GVA per head (2009)[8]	13,256	15,583	14,485	18,248
Business density[9] **(2009)**	62.27	68.46	57.88	71.14
Births of new enterprises as % of business stock (2009)	8.1%	7.8%	8.7%	8.6%
Employment rate (2010)	68.8%	72.8%	73.1%	74.1%
Employment in knowledge intensive sectors (2009)	71,715	114,825	93,145	94,241
Median full time weekly pay (2010)	418.4	431.7	459.8	471.5

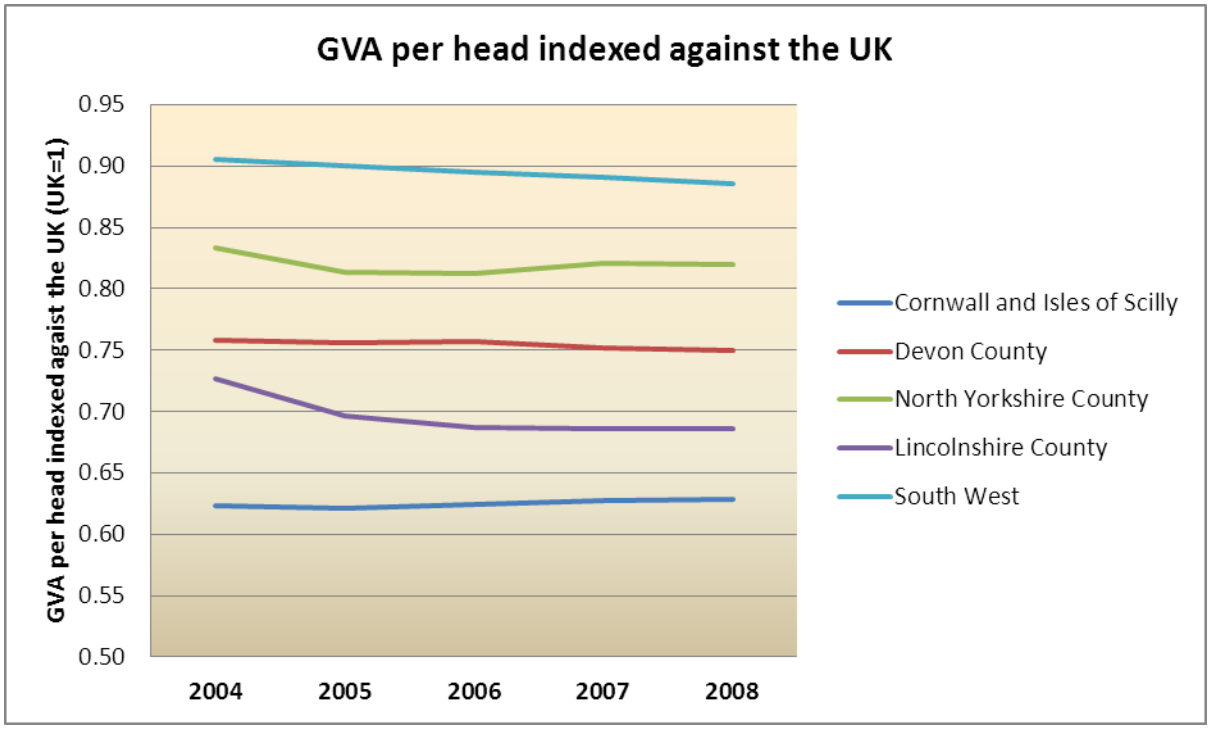
[8] Data for 2009 will be accessed in December 2011
[9] As expressed by active enterprises per 1,000 working age population

Indicator 1) GVA per head

GVA is the standard measure of the total value of goods and services in a particular economy. In order to compare the productivity of local economies, GVA per head provides an insight, although this will also be influenced by the number of people of non-working age in an area. Data on GVA per FTE is available for Cornwall through the South West Regional Accounts, but comparable data is not available for other comparator economies (apart from Devon) and to enable such comparison two data sets would need to be used. As the most appropriate common measure that is readily available, therefore, GVA per head will be used

Measure to be used: GVA per head[10]
Source: ONS
Release: Released each December with a 2 year lag (data released in December 2011 will cover 2009)

Baseline Position



While any comparison of local productivity against the national figure should be viewed with caution (the influence of the "super economy" of London and the South East skews the UK figure upwards), what this chart shows is that relative GVA has remained persistently lower than in the comparator economies over recent years, despite significant public sector (principally EU) investment. However, the rate of recent growth has been highest in Cornwall and what can also be seen is while other economies are losing yet more ground on the

[10] Regional GVA in the UK is compiled exclusively using a top-down approach and the method of compilation is completely income-based. The income-based approach aggregates all the income earned by resident individual or corporations in the production of goods and services. Estimates of workplace based GVA allocate income to the region in which the economic activity takes place.

national figure, Cornwall has at least held its own and indeed has closed the gap (albeit slightly) on its comparator economies.

Assessing the contribution of Superfast

The impact of any single intervention on GVA at sub regional level is unlikely to be noticeable at a headline level (the total value of the Cornish economy in 2008 was over £7 billion meaning that the *total* investment over 5 years in Superfast Cornwall is worth less than 2% of Cornwall's annual GVA).

However, from surveying businesses and establishing any impact that the Programme has had on a micro level, an estimate of the total GVA impact will be able to be made and this set against any headline changes to make an assessment of the contribution to GVA (net additional or safeguarded) made by the Superfast Cornwall Programme, and conclusions drawn as to the counterfactual position.

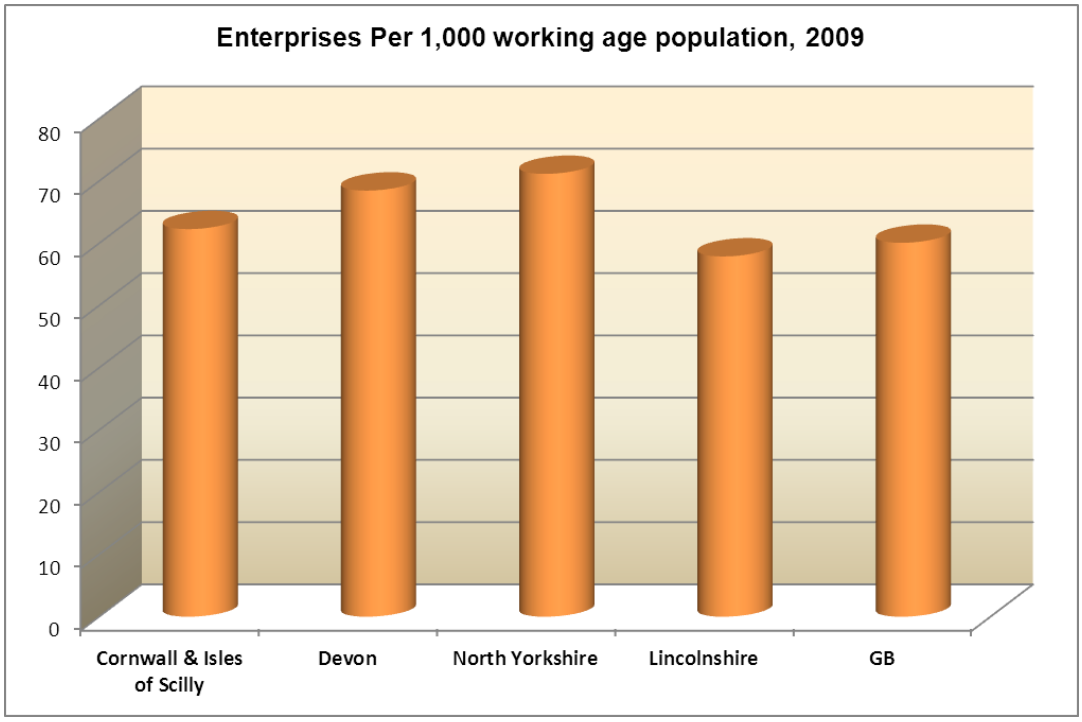
Indicator 2) Business density

A good indicator of economic activity is the number of active enterprises in a local economy, and the level of business churn (the turnover of businesses). A standard measure of comparative business density is the number of active enterprises per 1,000 of the working age population. The limitation of this data is that while it includes all businesses registered for PAYE (an improvement on previous VAT registration related data), it will not reflect the large number of very small micro-enterprises in the Cornish economy. However, if treated as a proxy indicator of business activity it offers a useful comparison with other similar economies (which will also have high numbers of micro-enterprises).

Measures to be Used:
% change in business density (based on the number of active enterprises per 1,000 working age population),
% increase in active enterprises on 2009 figures

Source: ONS (Business Demography)[11]
Release: Annually (December in 2011) with a one year lag

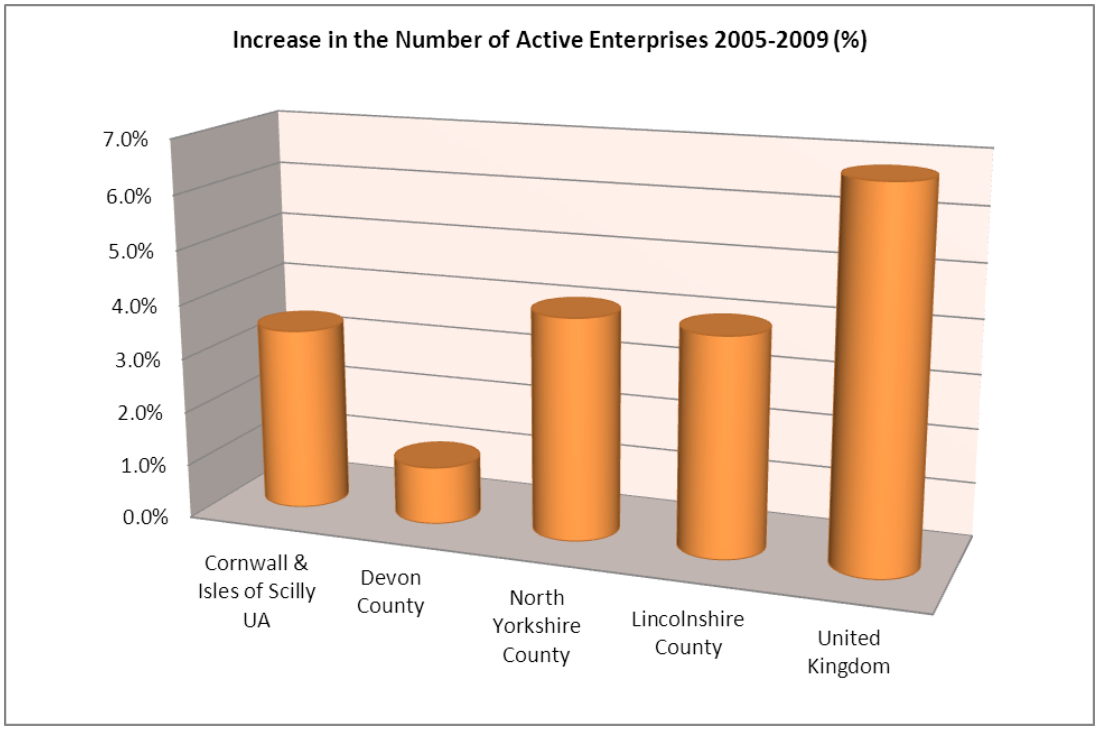
Baseline Position



As the chart above shows, while Cornwall and the Isles of Scilly have a higher business density than the country as a whole (as many rural areas do) it lags behind both its nearest neighbour, Devon, and North Yorkshire. The latter has a particularly high business density. When looking at the increase in the number of active enterprises over the period 2005-2009, it can be seen that Cornwall has outstripped Devon but is narrowly behind the other two

[11] This release is produced from an extract taken from the Inter-Departmental Business Register (IDBR) - a comprehensive list of UK businesses - recording the position of units as at November of the reference year, and excludes central government and local authorities. The data is produced using the guidelines found in the Eurostat/OECD manual on Business Demography.

comparator areas. The gap between these areas and country as a whole is relatively easy to see.



Assessing the contribution of Superfast

The number of businesses in a local economy is influenced by a wide array of macro-economic factors, and assessing the impact of one intervention on the basis of ONS data is impossible, given the other variables that exist (the amount of Convergence funding itself being a major one). While it will be possible to assess the trend in density compared with the comparator areas, it will be necessary to undertake primary research to understand the extent to which Superfast has been a factor in business start-up and survival and so has led to an increase in total stock.

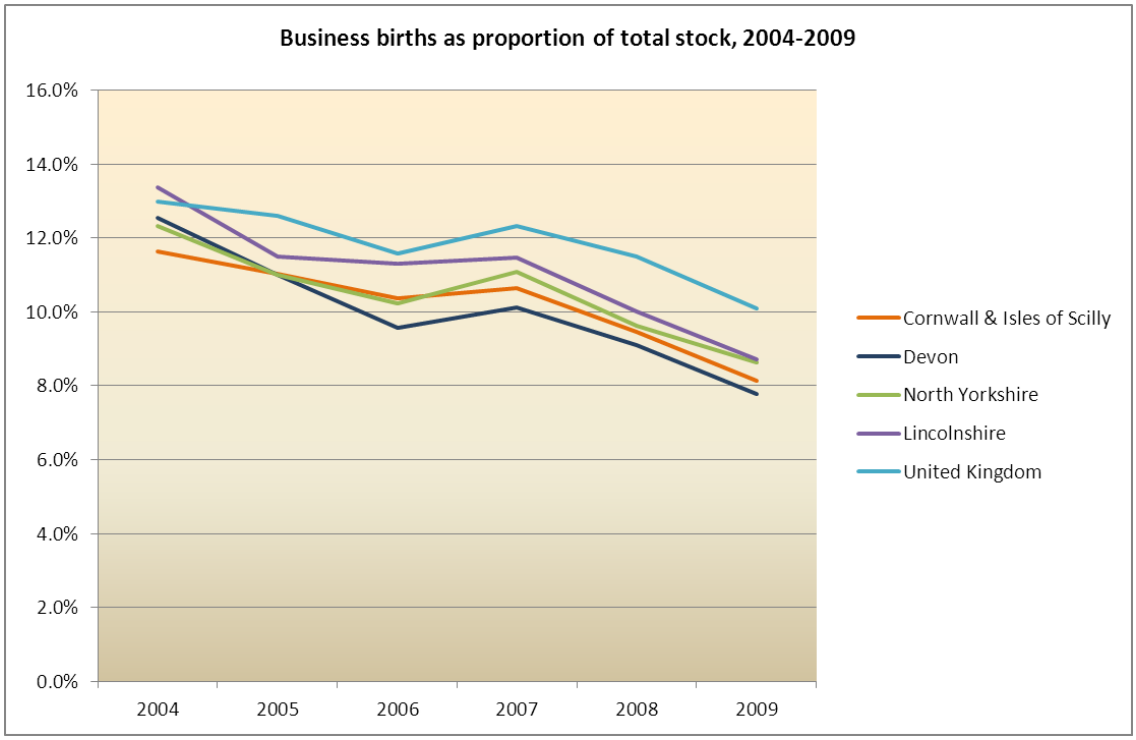
Indicator 3) Business start-ups

The impact of the Superfast Cornwall Programme on the business base, and the extent to which improved connectivity drives businesses to re-locate or start up in Cornwall are important factors to assess. High speed Broadband connections may result in businesses choosing to locate in Cornwall, as the high quality of life and environmental drivers that influence decision making in terms of business location, are supplemented with excellent connectivity. For many businesses across a wide range of sectors, this means that a principal barrier to location in Cornwall will have been removed.

Measures to be Used:
Business births as proportion of the total business stock

Source: ONS (Business Demography)
Release: Annually (December in 2011) with a one year lag

Baseline Position



What is clear from the chart above is that the rate of new starts has declined markedly more steeply in Cornwall and the Isles of Scilly, and similar rural economies than it has nationally, with this decline starting before the recent recession took hold, but with a steeper decline post 2007 across the board. In comparative terms, the rate of decline in Cornwall is less than its comparator economies, but in particular Lincolnshire (which saw its rate of business births fall from above the national position to well below it) and Devon (where the birth rate has fallen by nearly 5%).

Assessing the contribution of Superfast

The headline data will provide insight to the overall levels of business births reflecting a wide range of economic drivers, Broadband connectivity being one of these. In order to assess the impact that the Superfast Cornwall Programme has on the rate of new starts, it is proposed that a focused survey of businesses that have started since the launch of the Programme is undertaken towards the end of the intervention. This will investigate the various drivers for start-up or location in Cornwall, and the role played by higher connection speeds in this.

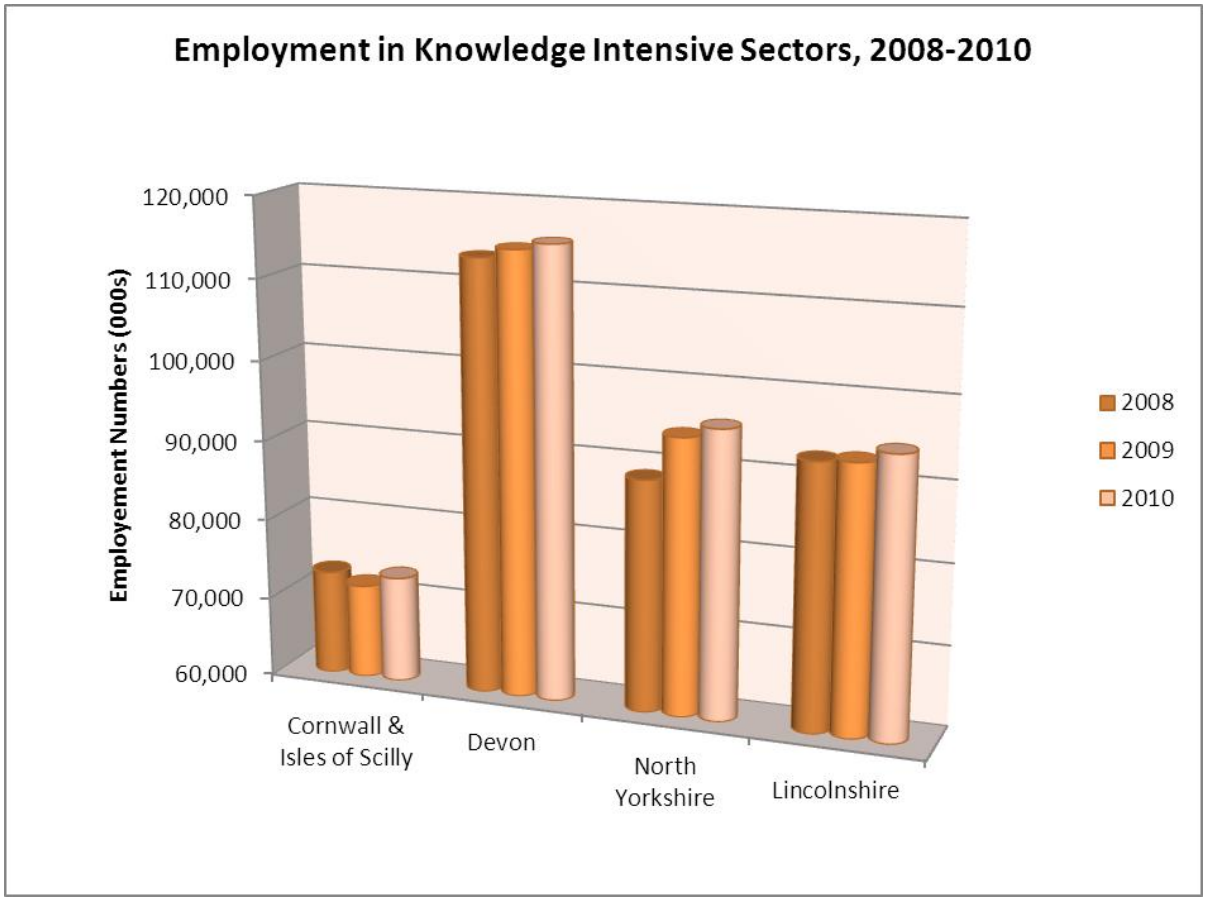
Indicator 4) Employment in "Knowledge Intensive" Businesses

One of the over-arching aims of the Convergence Programme is the development of an economy that supports higher quality, more productive jobs, moving on from previous interventions that have focused on job creation. The emphasis is on supporting businesses to create jobs in more knowledge intensive sectors. While there are a range of definitions for the term "knowledge intensive", that used by Eurostat[12] is a widely accepted one and allows ease of comparison across different economies.

Measures to be Used: % increase in employment in Knowledge intensive sectors using Eurostat and SIC 2007 definitions.

Source: ONS (Business Register and Employment Survey)[13]
Release: Annually (September in 2011) with a one year lag

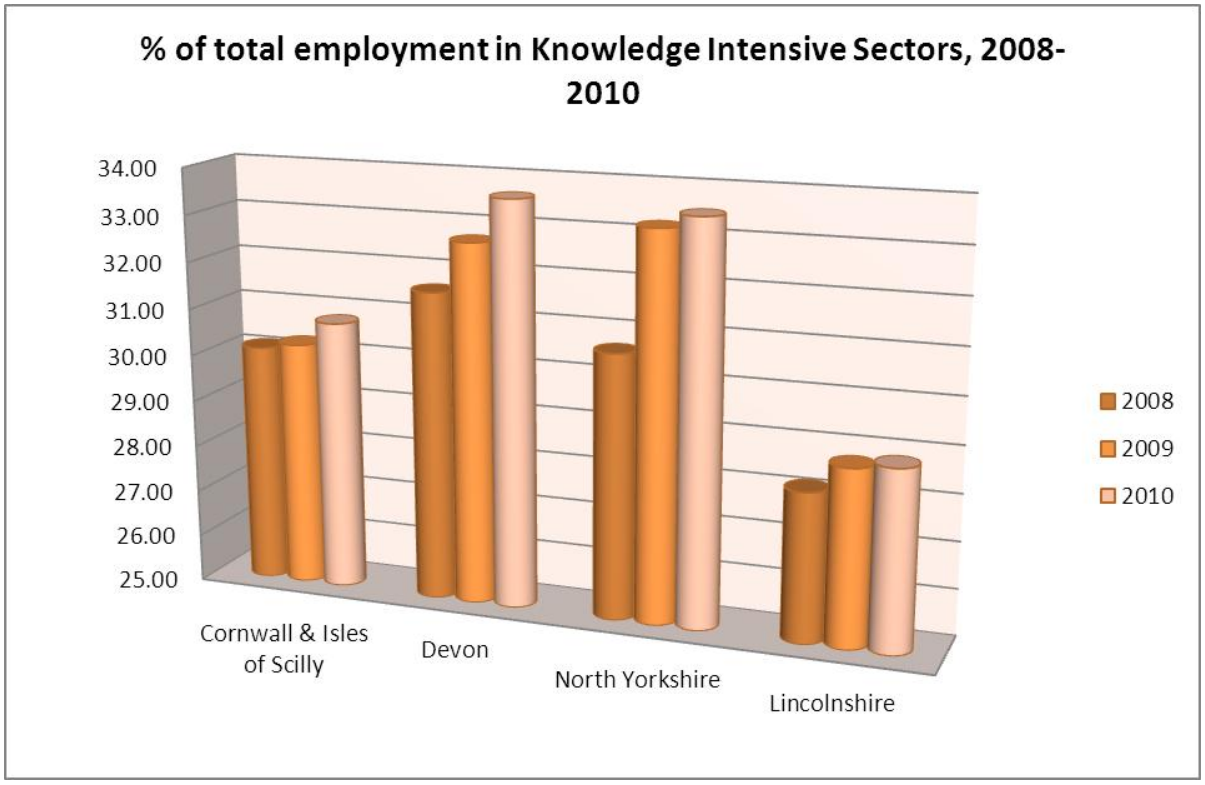
Baseline position



[12] Eurostat is the statistical office of the European Union. Its task is to provide the European Union with statistics at European level that enable comparisons between countries and regions.

[13] The key data source for analyses of business activity. Selection Criteria are GB trading businesses registered for VAT and/or PAYE (approximately 1,992,000) with a sample of approximately 82,000.

While the actual number of employees in these sectors is well below similar economies, as a proportion of total employment the difference is far less marked with recent increases in employment in these sectors meaning that 31% of employment in Cornwall is knowledge intensive.



While Cornwall has seen recent increases in the proportion of employment in these sectors the rate of increase has been less than both Devon and North Yorkshire.

Assessing the contribution of Superfast

From available data a headline comparison of employment levels in these sectors will be undertaken. However to assess the extent to which the Superfast Cornwall Programme has led to an increase in employment in these sectors, the business surveys will identify relevant SIC codes of those participating, and specific analysis will enable insight on the impact of Superfast on these businesses in particular, and their growth / employment.

Indicator 5) Employment rate

The proportion of the working age population in employment is a key economic indicator. By creating the conditions for businesses to be more competitive and so create jobs, Superfast Cornwall's impact on overall employment is an important aspect to assess.

Measures to be Used: Employment rate (working age population)
Source: ONS (Annual Population Survey)[14]
Release: Quarterly (with six month lag)

The baseline position

In the five years up until 2004, Cornwall had seen rates of employment rise at rates above the national figure (15% growth in 5 years compared with 6% at national level). Since 2005, some of this growth has been reversed as shown in the chart above, and employment levels remain well below similar economies.

Assessing the contribution of Superfast

The number of new jobs created by businesses as a result of Superfast Cornwall will be assessed through the business survey. From this the impact of the Programme on the employment rate in Cornwall will be extrapolated, and isolated from other factors.

[14] The Annual Population Survey (APS) is a combined survey of households in Great Britain. The most recent sample size for Cornwall was 1284 with a national sample of c 250,000

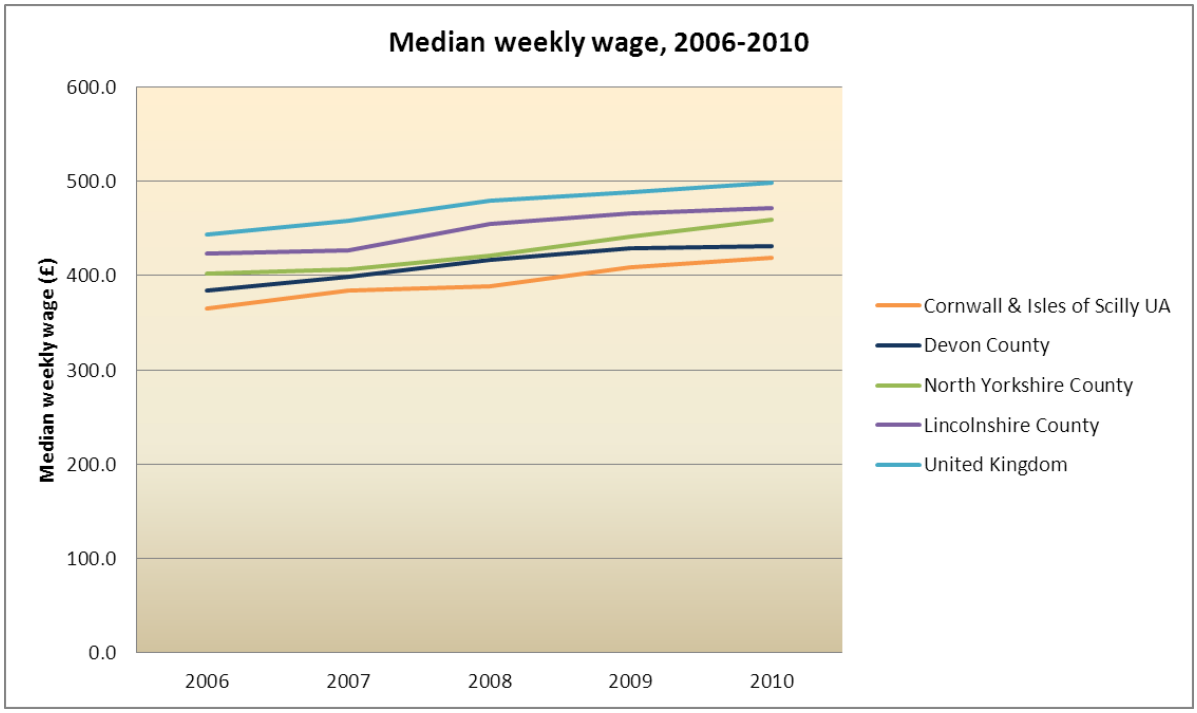
Indicator 6) Median weekly wage

While employment levels have remained below that in similar economies, wage levels too are well below the national average. In comparison with other areas in England, Cornwall and the Isles of Scilly has historically had one of the lowest median wage levels in the country. This low wage rate can be explained by two key characteristics of the Cornish Labour market – its industrial structure (significant employment in low wage sectors such as tourism) and the associated high levels of part time working.

A focus of the Convergence Programme is the creation of more "higher value" jobs, and a result of an increase in businesses and employment in more knowledge intensive sectors, should be reflected in an increase in median wage rates.

Measures to be Used: Median weekly wage
Source: ONS (Annual survey of hours and earnings)[15]
Release: Annually (December) with one year lag

The baseline position



The median gross weekly pay of Cornish workers for 2010, at £418.40, was almost £84 lower than the national average (ONS 2011), and also below comparator economies with similar industrial structures. Recent increases in wage levels have been matched by those seen elsewhere meaning that Cornwall continues to lag behind its comparators.

[15] The Annual Survey of Hours and Earnings (ASHE) is based on a one per cent sample of employee jobs taken from HM Revenue & Customs (HMRC) PAYE records. Information on earnings and hours is obtained from employers and treated confidentially. ASHE does not cover the self-employed

Assessing the contribution of Superfast

Through surveying businesses that have benefitted from the roll out of Superfast Broadband, the numbers and types of job created will be able to be assessed. From this an assessment of the contribution of the programme to higher median wages will be possible, although this will be based on assumptions regarding occupation types.

Key points

This economic baseline serves as a useful starting point for assessing the extent to which Superfast Cornwall makes a real and measurable difference to the Cornish economy, that is more significant than those areas that have a lesser level of investment, and that are nearly two years behind in terms of roll out. While the data in itself will provide insight to economic changes, it will not in itself provide evidence of the impact of the Programme given the number of other interventions, and general changes in macro-economic conditions. It will require the findings of the business surveys, set against these headline results to assess the difference made by Superfast Cornwall.

5. Stakeholder views – the baseline

Overview

This section of the report presents the key findings from thirteen in-depth semi-structured telephone interviews, undertaken with key, senior level stakeholders who are working with either a strategic, business, research, skills-based or environmental focus in Cornwall. This round of interviews represents the first of three stages of interviews with the stakeholders for the baseline, interim and final stages of the project. This longitudinal approach to the evaluation is a particularly insightful way to establish changes in opinion.

The interviews were aimed at uncovering current levels of understanding of the programme, anticipated usage; their early views on the impacts of the programme, both at a local and regional level, the perceived "added value" impacts and the Programme's overall importance for Cornwall.

Awareness and Understanding of the Programme

The interviews first aimed to establish stakeholders' level of understanding of the programme and where there were any gaps in knowledge. Some of those interviewed had some level of involvement with the programme and so their awareness was excellent. Most had a basic understanding of the programme although several were unsure of coverage and speeds. Only one person gave an incorrect view that it was targeting key businesses and sites rather than SMEs in general.

Usage

Interviewees were asked how they might use faster broadband as well as how it might impact both them and more widely. Almost all talked of the wider benefits to Cornwall but several struggled to pin down how they themselves would utilise it in their work. Overall only four people had some clear ideas of how they would make best use of it, two of whom were research or skills based organisations. Four stakeholders answered directly that they didn't know how they would use it, two said it wouldn't affect their work, two said they were happy with their current broadband and three talked about wider usage instead of their own usage.

Two stakeholders talked of how their service would be increasingly delivered online. Another mentioned how it would enable them to engage with the public more effectively and in innovative ways, reduce travelling, move communication towards video conferencing and move information around more rapidly and in bigger volumes. They also saw it as a communication line beyond Cornwall and the UK. Other benefits identified included research purposes, delivering online degrees and as a networking, collaboration and enabling facility, building presence outside Cornwall for teaching, research and knowledge exchange.

Other suggestions included cloud computing, smarter ordering systems, increased public engagement and taking on large contracts that only become possible when you have fast, reliable communication lines that overcome the physical distance in pitching for business.

Impact

There were varied views on what the overall impacts of business use of superfast broadband might be. Suggestions related broadly to the following, in no particular order.

- Positive changes for the local economy
- Increased opportunities and innovation for a peripheral economy
- Efficiency improvements

- Improved Communication abilities
- Improving Cornwall's image
- Varied environmental and social impacts

Respondents talked of the potential to transform the local economy and business base in various ways. The creation of new businesses and jobs was mentioned by a few, especially with regard to attracting the digital communications industry and insourcing of new contracts. The ability to work with large datasets and physical connectivity were seen as very important for this industry. The main focus however, was on how existing businesses might change their ways of working.

One person described superfast broadband as an aid to change and innovation. Businesses could 'gain an edge' and 'raise their game' by finding a niche, becoming more professionalised, sophisticated and adventurous, as well as more productive and efficient. A reduction in overheads and expensive applications was also mentioned by several. Respondents also talked of how it would make advertising, promotion and selling easier.

Peripheral geography

Many talked of the new opportunities that overcoming geographical barriers more effectively will bring to businesses, by increasing internet reliance, capacity and speed, moving Cornwall away from its peripheral status. Most obviously is the ability to work remotely but there is also the ability to insource large contracts, to have more effective international links and to deliver sources remotely.

With working remotely come the subsequent benefits of reducing travel time and pollution, being able to co-locate with friends and family as one stakeholder suggested, working from home or work hubs that are more convenient for people. Communication and access for customers will also be made easier it was felt.

Efficiency

There was a general impression that respondents felt it would improve efficiency towards working faster, smarter and better. Resource use would be more efficient, businesses would re-engineer their business processes, use host development servers and be able to work with larger datasets.

Communication

Communication with customers, clients and potential clients would improve with superfast broadband according to many, mainly due to more effectively overcoming geographical barriers. Having reliable high speeds means people could be more interactive including sharing information interactively, in real time, mentioned by a few respondents.

Image

Some respondents acknowledged how the superfast programme might make Cornwall more forward looking and how it may improve people's perceptions of local government. It was also felt that from the outside, it would make Cornwall look more modern and interesting. If large new contracts were successfully insourced, then Cornwall would be associated with major business brands. Another person felt it would provide rich data for research and enhance the research profile for digital technology in a rural setting.

Environmental and Social

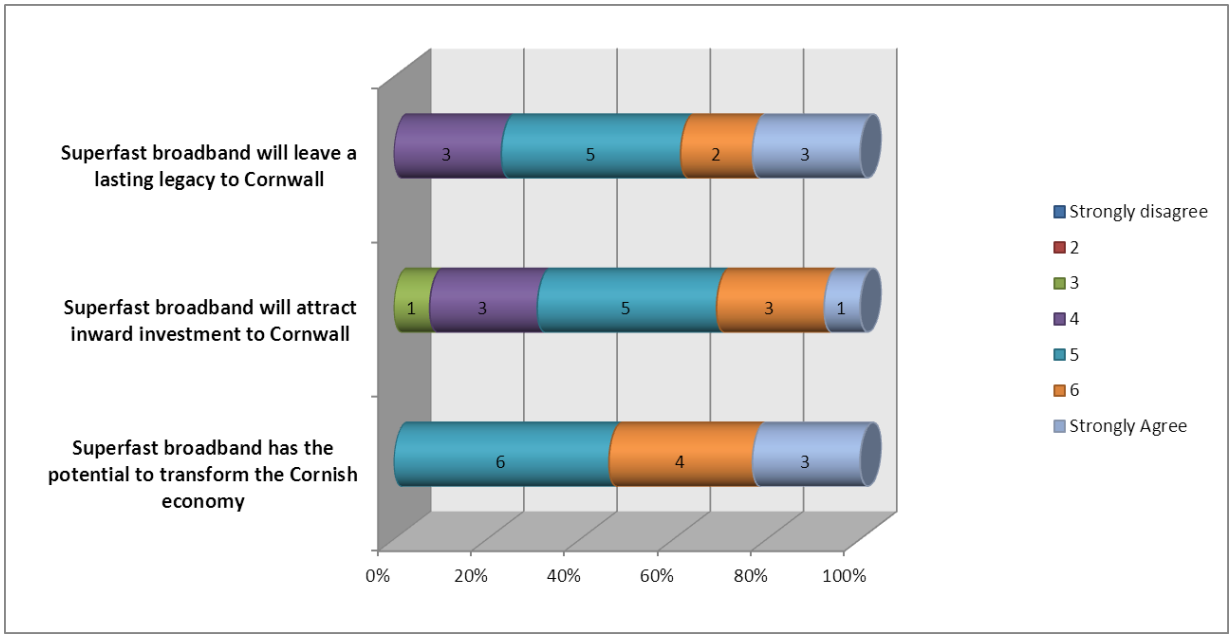
Environmental and social impacts were not talked about readily, although, to an extent, this is to be expected based on the business focused profile of the respondents as well as the economic focus of the programme. One person commented that these impacts were poorly understood and should be considered more carefully while another person felt the environmental impacts would have less importance than the social and economic ones. Another respondent felt that people would increase their use of electricity and nullify the environmental gains of a reduction in travel. There were only a few references to the potential for a digital economy to be more environmentally friendly due to reducing miles and transportation and increasing efficiency.

One stakeholder suggested that the flexibility of remote working would allow families to go on holiday together, whilst working, thereby improving work-life balance. Another thought it might engage more people with technology.

Expectations of Superfast Cornwall

In this section three positive statements were read out to stakeholders and they were asked to identify from a scale to what extent they agreed with these statement (where 1 was strongly disagree and 7 was strongly agree). They were also asked to explain their answer, probing for any possible additional benefits and negative implications.

Figure 4: Stakeholders' levels of agreement with three statements relating to Superfast Broadband



"Superfast broadband has the potential to transform the Cornish economy"

Stakeholders were largely confident that superfast broadband has the ability to transform the Cornish economy, with all scores between 5 and 7 and an average score of 5.8. There were elements of caution, expressed as a need for the right elements to come together at the right time, and that no one intervention on its own could be transformational.

Many referred to their earlier comments about the beneficial impacts of the programme, as the reason why they agreed so strongly that it would transform the economy. In addition to that, it is was seen by one respondent as a smart alternative to a more costly investment into road transport. Another cited how Cornwall might establish a competitive advantage because it will get superfast broadband first.

Perhaps the most promising testament came from a company that already has superfast broadband. They reported creating 12 new jobs, quadrupling their size; being able to attract very high value positions, due to Cornwall's new technological positioning and speeds of broadband and having better connections than one of their new clients in Europe. This respondent said it gives others confidence in Cornwall.

Whilst these were very positive comments, most time was taken discussing the additional elements needed to make it truly transform the economy. Respondents generally felt that one single technology is not enough on its own and that the success of it also depends on other factors. They pointed out various other needs for businesses in the region, such as:

- Service businesses need to expand their customer base outside of Cornwall;
- Suitable workplaces are needed, particularly to cater for creative companies;
- The need to fix mobile coverage;
- The need to fix the transport infrastructure;
- Business support; and
- Up-skilling and training.

On this last point, one of the skills-based organisations felt that businesses need to identify what they want to do, to enable trainers to deliver well-tailored programmes. Another said that more sophisticated approach to recruitment and skills is needed, as there is a lack of understanding and poor coordination of this element.

There were suggestions that successful transformation depended on factors such as mentorship, persuading people of the potential of superfast, to encourage take-up and business support.

"Superfast broadband will attract inward investment to Cornwall"

Stakeholders were reasonably confident that the programme would attract inward investment rating it at an average 5 out of 7, where 7 is strongly agree.

The strongest theme that emerged, for the way in which this could be achieved, was by effective marketing and communication targeted at the right people, of what Cornwall can offer to investors, as a package. It needs careful, thoughtful and strategic planning. Several people alluded to the limited time there is to use the competitive advantage of having superfast first in the UK. Another person was concerned about whether sources of funding would in fact result in an outflow of funds,

"Superfast broadband will leave a lasting legacy to Cornwall"

Stakeholders were cautiously confident that the programme would leave a lasting legacy to Cornwall, with an average score of 5.4 out of 7, and all agreed that it would to some degree.

Some respondents felt that the legacy would depend upon how much the competitive advantage of being first to have superfast, would be maximised, in the short time frame available.

Respondents, variously, felt superfast broadband would leave a legacy because:

- It's a permanent infrastructure;
- It will increase the skills base and develop the industry base;
- It creates the potential for Cornwall to become a centre of excellence; and
- It will raise the expectations of consumers.

Additional Benefits

A few benefits were mentioned by more than one person, but suggestions were mostly unique. Improved digital inclusion was seen as an additional benefit of the superfast programme. Creative service delivery was also pointed out, with examples including e-health, mobile health and video appointments with GPs and tourist packages that deliver a combination offer. It could also be used to promote and benefit the arts industry. One person suggested it could allow for a clustering of skills. Finally, another person felt it would make large companies, not least BT, see Cornwall in a different way.

Negative Impacts

There were relatively few negative impacts expected. A few respondents were concerned about a digital divide and whether the programme might increase rather than ease it. They referred to individuals as well as the fact that economic centres may move forward while others can't afford to.

One person suggested there are unknown consequences for the sustainability of smaller towns and shopping centres as for large businesses; it will become easier to exploit their reach further. Linked to this is the increasing reliance on technology and the possibility of redundancies as a result, which one person pointed out. Another also talked of possible cannibalism in the market, as competitors change seats. Another person alluded to environmental offsetting and whether more online retailing will really offset the increase in freight.

Synergy with Business Support

Respondents were asked to what extent they think Superfast Cornwall will compliment other business support activities. Quite a few people were unable to answer the question and of those who did, the feelings towards existing business support activities was very negative for all but a few. Respondents noted a high number of business support groups, but they were described very negatively. More positive comments included that they are mindful of each other and are well known to each other, so duplication or substitution is unlikely.

Raising Cornwall's Profile

Respondents were asked if they felt superfast broadband would raise the profile of Cornwall. Some were unsure and several pointed out that outside Cornwall, the Programme is not widely known. Others felt it was a benchmark project which is likely to be used as a model for the UK and Europe in terms of high speed internet in rural areas. The most optimistic

respondents imagined that if the anticipated move to a knowledge economy is successful, then superfast broadband will also be successful in pushing an image of being modern and forward looking and less and less remote.

Up-Skilling and Training

Respondents were asked for their views on how superfast broadband might provide opportunities for the development of new skills and training. Answers were varied but with little consistency. There was a general consensus, though, that up-skilling and training were inevitable as a result of superfast broadband.

Some new skills were cited as particularly important, namely computing skills and transmedia literacy skills such as for animation and film processing for media agencies. One person noted a growing focus on online training and on the job training.

Maximising Impact

When asked about how the impact of superfast cornwall could be maximised, the overwhelming impression was that businesses may not use it enough and don't know how to use it. As a result, discussions centred around how to reach people, businesses and potentially excluded groups, to raise awareness of the potential of superfast broadband.

For businesses, the view was that many don't see the advantages or applicability of the infrastructure. It was suggested by quite a few people that this knowledge has not been sufficiently communicated to date and people are under-using transformational technology that's already available, such as skype. To maximise the opportunity therefore, there is a need for educational programmes.

Many forms of programmes were suggested. One was a partnership arrangement with businesses, Superfast Cornwall and business support agencies. Another person suggested engaging the private sector IT support companies to demonstrate technologies using a technology demonstration tent. Case studies of success stories were called for repeatedly throughout the interviews.

Some worried that particular groups would be excluded. One person mentioned that the programme needs to better engage middle-aged mothers who are not in the workforce. Another person suggested that businesses below the VAT threshold will need particular knowledge access arrangements.

Three people saw the Cornish population in general as an important generator of excitement for superfast broadband, but that social impacts have also not been sufficiently communicated. Marketing needs to be more community focused and engaging, reaching local areas and day to day conversations.

Importance to Cornwall.

Respondents were asked to rate how important they felt superfast broadband is for Cornwall, from a choice of options. Eleven felt it was very important and two quite important. Their reasons centred on the importance of the impacts the overall investment made. Reference was made to how it promotes Cornwall's new modernised image and economic profile, the multiple other impacts the programme will have for all of the Cornish population and the new layer of historical narrative in communication technology in Cornwall.

Finally respondents were asked what they thought would happen without superfast broadband. Most people said Cornwall would continue on in exactly the same way; with a weak, struggling, economy, with some seeing it in more graphic terms, even as “a suppressed backwater”. It would not have the international reach superfast gives and the economy and other factors would be represented as a flat trend line.

Summary and key points

Overall the interviews with stakeholders revealed significant positive regard held towards the Superfast Cornwall Programme, although this was tempered slightly by the view that one intervention, no matter how significant in scale, on its own could truly transform an economy. The view seems to be that economic transformation could not happen without Superfast broadband, but that having it will not automatically deliver this transformation. The right support and upskilling to enable businesses to exploit the new technology fully, focused on the real needs of business are seen as crucial pieces of the jigsaw.

There is also a recognition, by some at least, that the Programme is gaining Cornwall a head start, and that others will quickly catch up. This gave a sense of urgency to some, in that Cornwall perhaps has two years at most to take full advantage of its leading position, and taking this opportunity is imperative to success.

Expectations are undoubtedly high, and for some Superfast is possibly the only really positive Convergence investment. The implications of this are that the Programme has to meet these expectations, in order to be seen as a success. The main concern is that businesses have not fully embraced the opportunity that the technology offers and that this will restrict its impact on the business community and Cornwall more broadly. The need for really effective communication, as well as the support and upskilling delivered through the business support package, is clear.

6. Review, Development and implementation of the Monitoring & Evaluation Plan

Introduction

The Superfast Cornwall Monitoring and Evaluation plan was prepared in March 2011, setting out the overall objectives for the monitoring of the superfast Cornwall project, indicators to be collected and proposed methods of monitoring. Since this time, there have been developments both within the project (plans produced for the monitoring of client satisfaction, environmental impact etc.) and externally (the publication of the monitoring and evaluation framework for BDUK projects). Therefore it is appropriate that the plan is reviewed at this time. Since being appointed, the SERIO/Buckman Associates team have been working closely with the Superfast Cornwall team to understand the project, its processes and procedures and how best to operationalise the evaluation plan. In this section, a clear plan of action is therefore set out for monitoring and evaluating the Superfast Cornwall project.

BDUK report

BDUK commissioned Regeneris Consulting to produce a monitoring and evaluation framework for projects receiving funding from BDUK. This framework has been reviewed to identify if there are any elements which could be beneficial to the monitoring of Superfast Cornwall and to identify where it is possible to make alignments to allow comparability of evaluation material.

Table 7: Review of BDUK framework - overall similarities and differences

Similarities/Differences	Suggested changes to Superfast M4E plan
Both superfast and BDUK utilise a logic chain approach. **The BDUK plan links the logic chain with the project rationale and priorities which is helpful.**	Adopt revised diagram linking logic chain with rationale and objectives.
The BDUK plan includes an additional link in the logic chain which shows how businesses behaviour might change – this is helpful to demonstrating impact.	Include 'mechanisms' link in logic chain.
The BDUK plan includes monitoring of public service delivery improvements; however, this is not relevant to ERDF funding.	Public service improvements resulting from Superfast Cornwall, would count as an additional/unexpected benefit from the upgraded infrastructure. Some aspects of this will be captured through the interviews with key stakeholders.
The BDUK plan includes monitoring of residents' benefits – this is less relevant to ERDF funding, except where a resident has taken economic action as a result (e.g. started a business)	Consider survey of new start businesses to establish the extent to which Superfast has been a driver.

The BDUK framework sets out a range of indicators across the logic chain. Many of these are already captured within the Superfast Cornwall evaluation plan, others are not relevant and some may be useful. The following table highlights the BDUK proposed indicators.

Table 8: Comparison of indicators used in BDUK framework and Superfast Cornwall M4E plan

	Inputs	Outputs	Mechanisms	Intermediate Results	Results	Impacts
BDUK	Income Expenditure	• Amount of fibre • Wireless/satellite reach • Network Operations & Structure • Premises with enhanced speed potential (business, residential, mixed) • No. of providers signed up • No. of public sector clients contracting • Price • Adoption (Business/Residential)	• Setting up Home based businesses • Home working • Digital Social Communication • Booking Services • Use of Virtual Services • Learning On-line • Increased use of e-commerce • Smart Devices • On-line product delivery • E-marketing • Supply chain management • Virtual Design • E-communication • Logistics and Stock Control • On-line back-up	**Residential benefits** • New businesses formed • Social benefits • Environmental benefits **Business benefits** • New goods and services • New markets and customers • More efficient production • New Business models • New Business Formed • Environmental benefits **Public Sector** • More efficient delivery of core services	**Business** • Employment • Turnover • Profitability • GVA **Residents** • Disposable Income • Time dividend **Environment** • Reduced vehicle miles • Reduced waste	**Contextual Indicators** • House prices • Business density • Educational attainment • Educational profile • Health outcomes • Deprivation • Wage levels • School enrolment • Index of sustainable Economic Welfare
Superfast Cornwall M4E listed indicators .		• Businesses Benefitting from upgraded ICT infrastructure • 250,000 premises covered • Marketing spend milestones • Number of service providers • Network performance • Overall take-up • Customer Satisfaction • Reduced impact of installation of superfast broadband network and sourcing	• Previously excluded Individuals: ➢ securing a job on-line ➢ Using local service or government	Innovation and R&D outcome	➢ Businesses with improved GVA ➢ Jobs created/safeguarded ➢ High growth/high value businesses ➢ Attractive environment for inward investment ➢ Increase in gross GVA ➢ Increase in net additional GVA ➢ Increase in net additional safeguarded GVA ➢ Increase in net additional jobs	

		materials • Reduced waste to landfill in construction and operation • Habitats and Biodiversity • Culture and Heritage • Digital Inclusion (take-up by individuals who previously did not use ICT. • Access to services through remote learning centres			➢ Reduced travel – commuting ➢ Reduced travel work ➢ Reduced energy use ➢ Smarter use of buildings ➢ Reduction in overall carbon impact ➢ Business ownership E&D ➢ Jobs created E&D ➢ Access to work and services	

This analysis shows that the indicators proposed for use by Superfast Cornwall and BDUK have some overlap, but also areas of divergence. Whilst BDUK may wish to utilise indicators proposed by Superfast Cornwall, we are principally interested in ensuring that Superfast Cornwall's proposed indicators will allow a thorough and robust evaluation.

The main differences are that the BDUK framework has:

- More indicators which measure residential and public sector uptake and benefits;
- Indicators to monitor mechanisms i.e. how end users utilise their faster broadband;
- Indicators to monitor intermediate impacts i.e. changes in the business operation such as new goods and services; and
- Outcome (impact) indicators which are very focused on the social/public sector changes that might occur.

We recommend that the Monitoring and Evaluation plan for superfast Cornwall is adapted to:

- Set out a revised list of indicators utilising the logic chain approach adopted by BDUK;
- Develop a series of indicators to measure mechanisms and intermediate results;
- Include relevant socio-economic focused impact indicators; and
- Include reference to relevant ERDF definitions as appropriate

Monitoring the counterfactual

As outlined in Section 2, the counterfactual is an assessment of what would have happened in the absence of the policy or 'policy off'. In this context, it means forming an assessment of the likely outcome of a scenario whereby the Cornwall and Isles of Scilly Convergence programme did not make an investment in Next Generation Broadband on this scale.

The counterfactual argument can apply at both the strategic level (i.e. in the absence of ERDF, what level of investment would Cornwall expect to receive for broadband roll-out) and at the business level (i.e. without superfast broadband, what level of growth would the business have expected to achieve).

The counterfactual should be assessed through all phases of the logic chain, see below:

Table 9: Assessment of the Counterfactual through the logic chain

Logic chain phase	Assessment of Counterfactual	Recommended approach
Inputs	What level of funding would Cornwall have been able to obtain in the absence of ERDF Convergence funding.	Discussion with BDUK representatives on funding formula.
Activities	What level of broadband roll-out solutions would have been achieved without the investment?	Tracking broadband roll out activity in comparator (control) areas.
Outputs	How many businesses/premises would have been connected without the investment	Tracking broadband roll out activity in comparator areas.
Mechanism	In the absence of superfast broadband, have businesses found alternative solutions to their problems	A control survey of businesses
Intermediate Results	Would businesses have been able to achieve business benefits without superfast	A control survey of businesses
Results	Would businesses have been able to grow and create jobs and GVA without superfast.	A control survey of businesses
Impacts	Would the overall socio-economic position have changed anyway?	Tracking socio-economic performance in comparator areas.

Selecting Control Groups

As outlined earlier at the "top down" level we have established three comparator areas, Devon, North Yorkshire and Lincolnshire.

At the business level, a control sample should be drawn from a population that has the closest match to the target population, but not able to access superfast broadband.

In the early years of the programme, the control sample could be drawn easily from businesses in Cornwall outside of the roll-out areas. However, as the programme of roll-out progresses, these areas will diminish – reaching a point whereby sampling from this group may become increasingly subject to bias (as non-connected areas are those which are perhaps more rural or isolated and share less characteristics with connected areas). When this point is reached sampling for the control group will need to include businesses from comparator areas such as Devon, North Yorkshire and Lincolnshire.

We therefore recommend that the monitoring and evaluation plan includes:

- A full **baseline assessment of Cornwall and three comparator areas** (already undertaken)
    - Investment plans, including timing
    - Existing ICT infrastructure
    - ICT adoption behaviour within business
    - Profile socio-economic baseline

- A **control business survey** - Non-connected businesses in Cornwall and areas of West Devon/North Devon/Torridge – thus testing deadweight.

- An **extended stakeholder survey of counterfactual LEPs** at interim and final to explore outcomes of BDUK investment relative to ERDF convergence outcomes in Cornwall.

- An interim and final outcome assessment similar to baseline.

Minimising the burden on business

As with any work requiring input from beneficiaries of projects and programmes, it is important to be mindful of the need to minimise the burden of completing surveys and providing other forms of input (e.g. focus groups, on-line feedback etc.). This is particularly important in an area such as Cornwall, where businesses may also be asked to complete research to support other convergence business support initiatives.

We therefore make the following recommendations to minimise the burden on businesses:

- Reducing the number of business surveys – **where possible surveys of businesses should be brought together in one omnibus survey** to avoid repeated contacts;

- Where it is unavoidable for more than one survey to run, **survey samples are drawn separately so businesses will not be asked to complete more than one survey** (e.g. businesses participating in the carbon diaries will not be asked to participate in the omnibus survey);

- That **the omnibus survey is used to recruit volunteers to participate in other forms of survey** (e.g. the longitudinal survey, focus groups etc.); and
- Surveys should be well designed and not feature any unnecessary or duplicate questions

Validation of connections

A key issue in measuring the impact of superfast broadband on businesses in Cornwall is ensuring that the process only measures the impact on those businesses that have got a superfast connection, as including businesses that have not, would bias the response.

One possibility that has been explored is a verification process, whereby BT wholesale could take a list of business telephone numbers and verify the connection process. However, this is complicated by unbundled exchanges (where BT Wholesale has no information on customers of Sky, Talk Talk etc). At present if given a phone number BT could provide three responses:

- Line has the ability to place an order (is enabled)
- Line has order in place (customer has upgraded to superfast package)
- No information on line ("belongs" to unbundled provider)

BT could provide this information on the phone numbers in the CRM database every 6 months to keep it updated.

A further complication is that the number captured in the CRM system database will be the business contact number but this may not be the number used for Broadband connection (for instance it could be a fax number). For businesses of any scale this might therefore give a lot of false responses from the BT validation.

As the number of "points of handover" are reduced to 15 "super-exchanges" the unbundling issue is likely to get more complicated.

Given the amount of uncertainty of this verification process, it is **our recommendation that the sample for the business survey should be drawn from businesses in those areas covered by exchanges/cabinets with the ability to connect (able to place an order), with routing at the beginning of the survey to establish those businesses that have upgraded**.

For the first cohort post validation could be undertaken to flag up whether there are any anomalies.

Adding Value to the evaluation – drawing on the knowledge base

There is a real opportunity to add value to the evaluative work that is to be undertaken through the links with Higher Education Institutions in the CUC partnership. Such collaboration will enable additional areas to be investigated and assessed in detail.

One innovative approach to this is to fund two to four PhD studentships via the CUC partnership. There are a number of reasons why this research may add value:

- This evaluation plan outlines the key areas to be evaluated. However, some areas such as social impacts are difficult to evaluate. Bringing in university research expertise will ensure that we have robust, cutting-edge research to complement the evaluation programme;
- Environmental sustainability is an ERDF cross-cutting theme and it is important to fully evidence the impacts of ICT infrastructure on the environment. The carbon footprinting proposals will assess carbon impacts but feedback from the Superfast Cornwall Environmental Steering group suggested that other environmental impacts need to be researched in detail too;
- A key part of the programme is to link with other Convergence investments to maximise impacts in Cornwall. Partnering with CUC to undertake research will help in achieving this goal;
- Superfast Cornwall's overall aim is to provide the platform (via the superfast infrastructure) for economic transformation to a more knowledge based, high value added, lower carbon economy. Therefore research around the ICT impacts and innovations will enable an assessment of the evidence of this economic transformation in a more detailed way and leave a research legacy in the CUC partnership and Cornwall.

It is therefore recommended that research proposals be requested under the following themes:

Macro-economics – to complement the economic data collection and analysis undertaken through the evaluation programme, this theme will focus on research to help identify overall economic transformation in Cornwall as a consequence of ICT infrastructure. The research should build on the cost-benefit analysis undertaken by Analysys Mason as part of the programme procurement.

Environmental sustainability – to complement the carbon impact assessments undertaken by the programme, this theme will focus on taking the carbon impact assessment work further and researching the wider environmental impacts of the programme (as requested by the Superfast Cornwall Environmental Steering group). This could include non-carbon impacts such as waste, recycling and a broader environmental sustainability assessment that uses the carbon impact data.

Social impacts – to complement the evaluation programme (social impacts are included but are light touch) by researching the social issues around digital exclusion and the impacts associated with using the ICT infrastructure. Qualitative studies could be used to understand how the technology changes people's lives.

Innovative product design – this theme focuses on innovations arising from superfast broadband and encourages research into developing a new product utilising the ICT technology. Partnership with a local business is strongly encouraged in this theme. Innovations that address a society need (e.g. health and wellbeing) are preferred.

Revised M4E plan

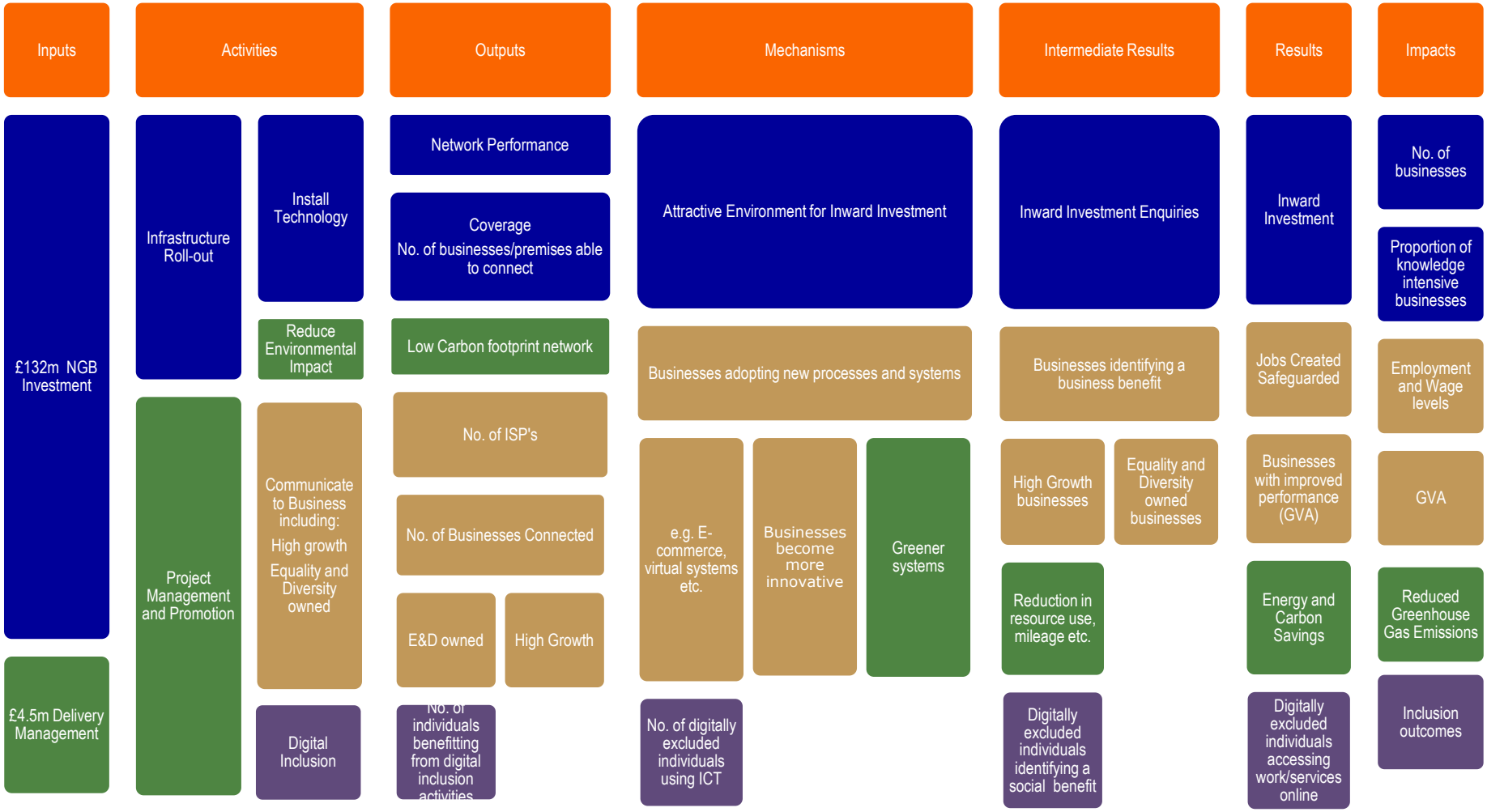
This section of the report brings together the issues discussed above in the form of a revised M4E plan. This includes:

- A revised logic chain, incorporating some of the ideas put forward in the BDUK framework;
- A revised list of indicators that aligns with the BDUK framework; and
- A revised set of monitoring tools that address the issues discussed above.

Revised Logic chain

The revised logic chain below re-interprets the Superfast Cornwall project using a similar approach adopted by BDUK.

Figure 5: Revised Logic Chain



Revised List of Indicators

The revised list of indicators is based round a set of indicators for each link in the logic chain.

Table 9: Input Indicators

No.	Indicator	Definition	Method of monitoring
1	ERDF Investment	£ claimed from ERDF	Financial claims monitoring
2	Private Sector Investment	£ invested from private sources	
3	Public sector investment	£ claimed from public sources	

Table 10: Project Activities & Outputs

Activity	No.	Indicator(s)	Definition	Method of monitoring
Install superfast broadband infrastructure	**4**	250,000 premises covered (availability)	No. of premises able to connect to superfast split by type of technology and business/residential where known.	Figures from BT wholesale
	5	% take-up (adoption)	No. of premises accessing superfast broadband packages. - Residential - Business - Mixed	**Residential** Estimate based on sample from BT 'bundled areas'. **Business** Business Omnibus survey End of project take-up survey if required.
	6	Customer Satisfaction	Customer satisfaction with broadband infrastructure	Business Omnibus survey
	7	Network performance	Measure core communication products and services delivered into Cornwall by BT against specification.	Testing by expert consultants employed by CDC – See separate paper[16].
Communicate benefits to businesses	**8**	BT marketing expenditure	Evidence of spend	BT monitoring
	9	Number of	Number of service	BT monitoring

[16] Product and service performance management methodology, metrics and plan. CDC/BT Jan 2010

		service providers	providers operating at the end of the project.	
	10	Customer Satisfaction	Customer satisfaction with Superfast advice	Business Omnibus Survey
	11	CDC marketing expenditure	Expenditure by CDC promoting benefits to businesses, including marketing, PR and project officer time.	CDC financial monitoring Brand awareness
Reduced impact of installation of superfast broadband network and sourcing of materials.	**12**	Reduction of the impact of the construction phases, compared with 'business as usual' scenario.	As defined in Environmental Monitoring Project Initiation Document	BT 'Carbon Footprinting the Superfast Cornwall network'. Other "non-carbon" impacts tbc
	13	Minimising the impact on sites of nature conservation	No. of sites where negative impact has occurred.	A process in place to monitor through BT providing details of cabinet upgrades in Natura 2000 sites.
	14	Minimising the impact on sites/areas with culture and heritage wealth	No. of sites where negative impact has occurred	tbc
Equality and digital inclusion activities	**15**	Access to services through remote learning centres	No. of individuals benefitting from remote learning centres	tbc
	16	Digital Inclusion	No. of digital inclusion events	Recorded by CDC
	17	Promoting inclusion amongst equality and diversity target groups	No. of businesses benefiting owned by women or BME groups	Tracked through CRM and omnibus survey

The BDUK framework also proposes collecting data on the following indicators:

- Amount of fibre;
- Wireless/satellite reach;
- Points of presence; and
- Price

The Superfast Cornwall team should consider if it is important to collect this data.

Mechanisms and Intermediate Results

These indicators relate to gaining an understanding of how end users utilise their new superfast broadband - this understanding it vital to proving causality, i.e. it was the changes resulting from superfast broadband that improved business performance, not something else.

- Mechanisms: the new technology, business practices adopted as a result of superfast broadband e.g. on-line product delivery
- Intermediate Impacts: The immediate results for the business e.g. new goods and services, new customers.

Table 11: Mechanisms and Intermediate Result Indicators

No.	Indicator	Definition	Method of Monitoring
18	**Mechanism** No. of businesses adopting new electronic processes and systems such as: - Increased use of e-commerce - Smart devices - On-line product delivery - E-marketing - Supply chain management - Virtual design - E-communication - Logistics and stock control - On-line back-up	No. of businesses identifying the adoption of new processes and systems as a result of using Superfast broadband.	Omnibus survey
	18a. No. of E&D owned businesses adopting new electronic processes and systems.	No. of businesses meeting the definition of equality and diversity ownership AND who are adopting new electronic processes and systems.	Omnibus Survey
	18b. No. of 'high growth' businesses adopting new electronic processes and systems.	No. of businesses meeting the definition of 'high growth'[17] AND who are adopting new electronic processes and systems.	Omnibus Survey
	18c. No. of businesses adopting lower carbon business processes and systems	Tbc	BT Environmental Monitoring

[17] Excluding businesses benefiting from the 'high growth business support package'

19.	**Intermediate Result** No. of businesses identifying a business benefit such as: - New markets or customers - New goods and services - More efficient production - New business models - New businesses formed	No. of businesses reporting a business benefit as a result of using Superfast broadband.	Omnibus survey
	19a. No of equality and diversity owned businesses identifying a business benefit.	No. of businesses meeting the definition of equality and diversity ownership AND who have identified a business benefit.	Omnibus survey
	19b. No of high growth businesses identifying a business benefit	No. of businesses meeting the definition of 'high growth'[18] AND who have identified a business benefit.	Omnibus survey
	19c. Reduction in resource use, mileage etc.	Net reduction in business carbon footprint.	BT Environmental monitoring.
20	**Mechanism** No. of digitally excluded individuals using ICT	Individuals who previously did not use (or who had limited use) of ICT, now using ICT.	Digital Inclusion event follow-up
21	**Intermediate Result** No. of digitally excluded individuals identifying a social benefit such as: - Cheaper purchases - Reduced transaction/search costs - Reduced living costs - Enhanced earnings - Increased use of public services - Social contact		Digital Inclusion event follow-up

[18] Excluding businesses benefiting from the 'high growth business support package'

Results

Table 12 below shows the definitions of the result indicators (note that the BDUK framework refers to these as impacts), contracted ERDF output/results are highlighted in bold. In preparing this table, we have consulted with the ERDF User Manual Combined Technical note on combined Indicators to provide the full definition for these indicators. This shows very demanding requirements for the evidence to support these impacts. However we are aware that discussions have been had with CLG in relation to this and that the expectations in terms of evidence and reporting, given the type of investment in this case, are not as defined in the guidance, where such definitions relate more to direct business assistance, as opposed to infrastructure improvements. It has been agreed with CLG that a sampled approach as outlined in the Monitoring and Evaluation Plan will be acceptable in this case.

Table 12: Result Indicators

No.	Indicator	Definition[19]	Method of Monitoring
22	**6,000 businesses with improved performance (GVA)**	**Measured through increase in GVA.** **GVA equals:** **Total wage costs + net profit before tax and interest + depreciation.** **This is counted when the businesses has shown an increase in their GVA against the baseline before the project intervention.**	**Omnibus survey**
23	**Gross no. of jobs created**	**Jobs created are an outcome/result when the jobs follow after the project intervention has ended.**	**Omnibus survey**
24	**Gross number of jobs safeguarded**	**Jobs safeguarded are an outcome/result when they are an indirect result of the project intervention e.g. the project may intervene at 1 level in the supply chain which results in jobs being retained further down the supply chain and this can be evidenced.**	**Omnibus survey**
25	**Gross Increase in GVA**	**No ERDF definition provided in the guidance. We understand this to equate to the sum of the GVA increases made by benefitting businesses, and grossed up to the business population.**	**Omnibus Survey**
26	**Inward Investment**	No. of businesses relocating the Cornwall as a result of the Superfast Cornwall project.	Tbc

[19] Where these are ERDF indicators, these definitions have been taken from the ERDF User Manual, Chapter 11 ERDF Indicators Combined Technical Note: Version 2

27	**Brand awareness**	Level of recognition amongst businesses of Superfast Cornwall and the opportunities it presents	Customer satisfaction surveys to be conducted by CDC marketing manager
28	**Energy and Carbon Savings**	The net resource and carbon savings resulting from 'greener' businesses processes as a result of Superfast broadband.	BT Environmental Monitoring
29	**Digitally excluded individuals accessing work/services online**	Individuals, who previsouly did not use (or had limited use) of ICT, now using ICT.	tbc

Impacts

Table 13: Outcome Indicators

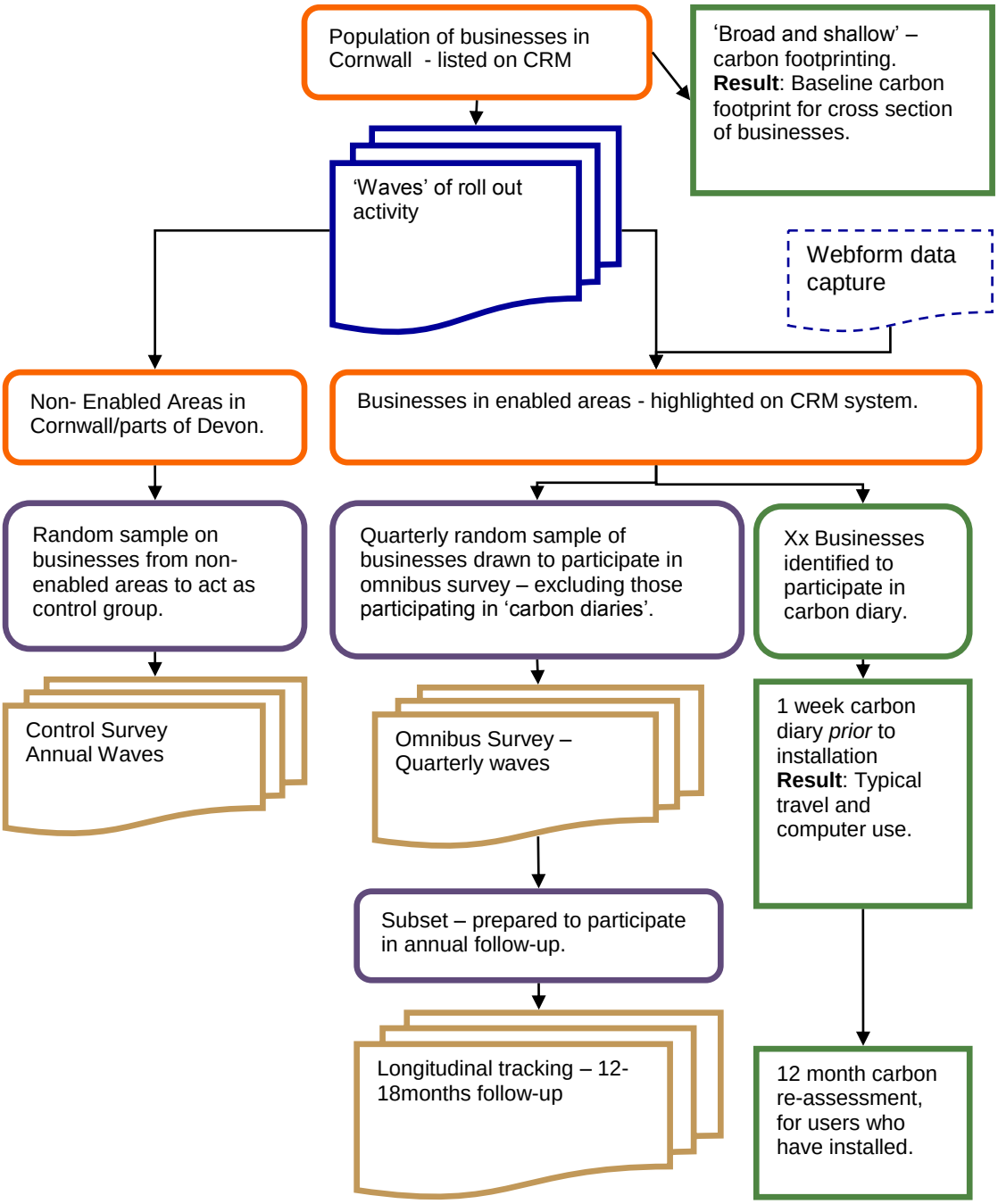
No.	Indicator	Definition	Method of Monitoring
30	**No. of Businesses**	Count (and number per 10,000 population) of the number of active enterprises and % increase in the number of "Active Enterprises" on the baseline year	ONS Business Demography data[20] gathered for Cornwall / IOS and the comparator areas
31	**Proportion of knowledge intensive businesses**	The proportion of the total business stock in the sectors defined by Eurostat as being "knowledge intensive", based on SIC 2007 definitions.	ONS Business Register and employment survey data for Cornall / IOS and the comparator areas .
32	**Employment and Wage Levels**	% of the working age population in employment Median FTE weekly wage level and % increase in median weekly pay compared with the baseline year.	ONS Labour market profile data for Cornwall / IOS and comparator areas
33	**GVA**	GVA per head	Data from updated Regional Accounts model, being developed by Plymouth Business School.
34	**Carbon Emissions**	TBC	
35	**Social Inclusion**	TBC	

[20] Note that there is a time lag in this data. Also that it includes all PAYE registered enterprises so will exclude very small micro-enterprises.

Monitoring Tools – operationalising the plan

Figure 6 below illustrates the main businesses monitoring tools, how they relate to the business population, CRM system and each other. Each tool is then described in detail. Appendix 1 shows the timing of each of these monitoring activities.

Figure 6: Overall Approach to evaluation



CRM System

Description: A database containing a large proportion of businesses in Cornwall, compiled from the Actnow database and data purchased from Mint. The database is updated to show:

- Enabled areas i.e. where the infrastructure has been enabled and where the majority of businesses should be able to connect to superfast.
- Connected businesses i.e. those businesses which have informed the project that they have connected or where BT has been able to verify that they have connected. (note, due to a number of issues, BT is not always able to verify that a business has connected).

The database is updated by project officers when they encounter connected businesses.

Target Audience: n/a

Method of selecting targets: n/a

Sample size: n/a

Method of data capture: Updating by project officers, information from BT and upgrades from Mint.

Themes covered: Each business has a separate record and branches can be linked to a parent business. As well as contact details, there are separate sections for:

- Connection – when the business is connected, this box is ticked and the date etc are recorded
- Marketing
- BT data (line checker data to show which exchange, cabinet, speed etc)
- Evaluation – this is simply business characteristics data such as high growth business, sector etc
- MINT data (employees and turnover data from MINT)

Indicators covered: 4 – availability, 5 - adoption

Timing: Continuous

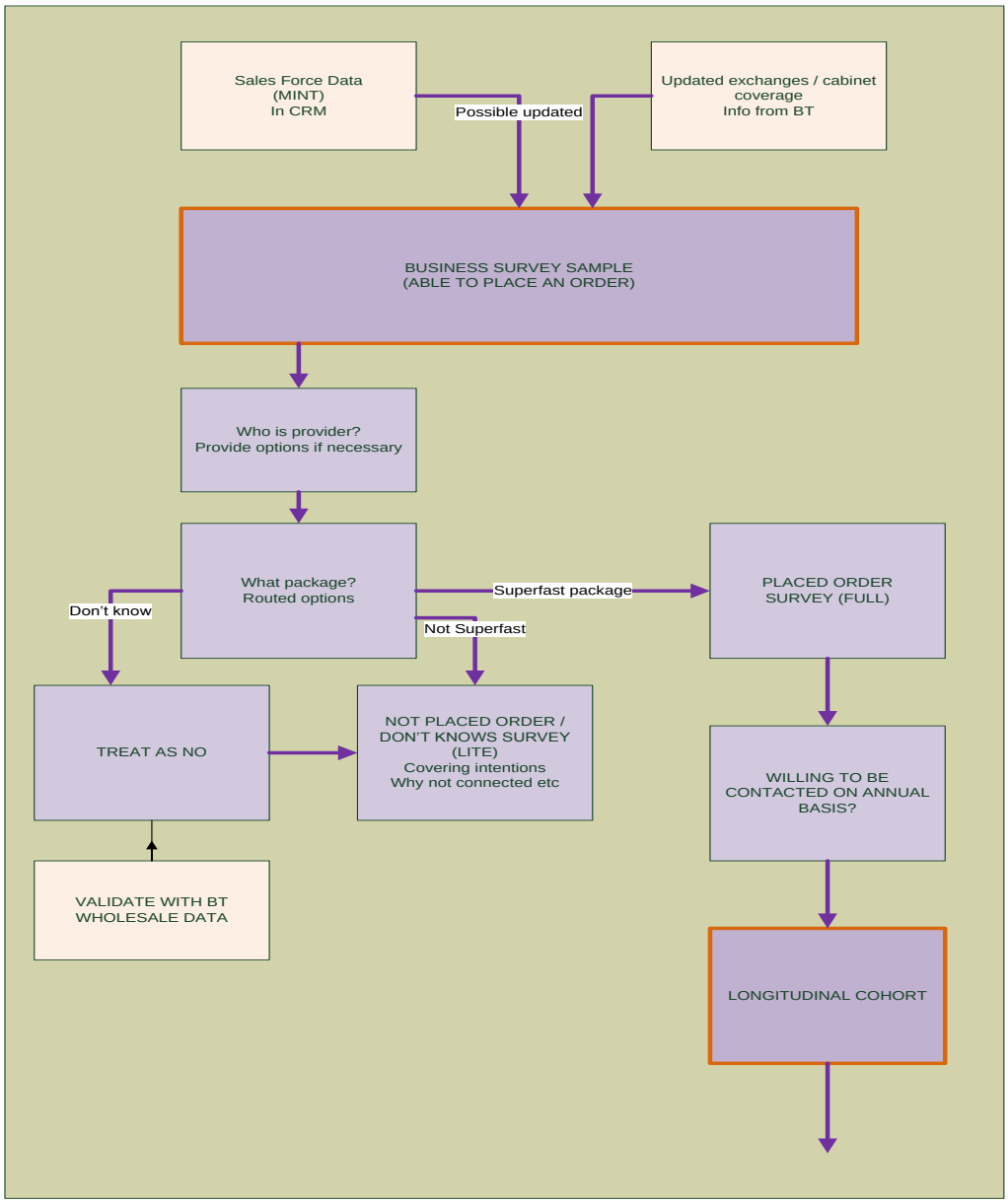
Use of data: Provide sample frame for business surveys. Keep record on business participation in monitoring exercises.

Omnibus Business Survey

Description: A quarterly survey of businesses that are able and have connected, picking up a range of relevant themes.

Target Audience: Businesses that have connected to Superfast broadband

Method of selecting targets: It is not possible to pre-select businesses that meet this criteria, therefore the sample will be drawn from those businesses that fall into areas which have been enabled. A series of questions to route participants according to whether or not they have been connected will be developed, as illustrated below.



Sample size: The sample size will be designed to achieve a 95% confidence interval and 5% margin of error on an ANNUAL basis.

Year	2011	2012	2013	2014	2015
Businesses connected	280	2350	5070	2050	250
Evaluation year	2012	2013	2014	2015	2016
Sample size	162	330	357	324	152

Method of data capture: The survey will be conducted via telephone

Themes covered: Connection, customer satisfaction, use of the internet (& new uses), business benefits, employee benefits, economic impact (including additionality), future impacts, equality and diversity.

Indicators covered:

- 5 – Business Take-up
- 6 – customer Satisfaction (infrastructure & ISP)
- 10 – customer Satisfaction (CDC advice)
- 17 – No. of businesses benefitting owned by women/BME groups
- 18 – No of businesses adopting new electronic processes (and 18a, b &c)
- 19 – No of businesses identifying a business benefit (and 19a, b & c)
- 22 – Businesses with improved performance (GVA)
- 23 – Gross number of jobs created
- 24 – Gross number of jobs safeguarded

Timing:

In order to capture the economic benefits arising, the survey will be timed to make contact with businesses at least 12 months after the area has been enabled, thus allowing some time to have elapsed to allow the businesses to have connected and made some changes.

Use of data: The omnibus survey data will be used to inform**:**

- Customer satisfaction
- Reasons for not taking up & qualified leads where appropriate
- Evaluation reports

Longitudinal Business Survey

Description: A follow-up survey which tracks changes in business use and benefits of superfast broadband over a number of years.

Target Audience: Businesses that have connected to Superfast broadband AND willing to participate.

Method of selecting targets: All businesses participating in the omnibus survey will be asked if they would be prepared to participate in a follow-up survey between 1 year and 18months in the future.

Sample size: A cohort of approximately 325 businesses will be recruited onto the longitudinal study. The table below illustrates an approximate sample size and timing of 1st and second follow-up. The intention is to over sample to allow some businesses to drop out before and between the follow-ups and to ensure a final sample of 200.

Year	2011	2012	2013	2014	2015
Omnibus sample		162	330		
Longitudinal sample		100	225		
1st follow-up			75	180	
2nd follow-up				60	140

Method of data capture: The survey will be conducted via telephone

Themes covered: Changes over time. In particular exploring how their use of superfast broadband has changed and how it has benefitted their business. Economic data will also be collected allowing an assessment of how economic benefits change as businesses embed the technology within their working practices.

Indicators covered:

- 18 – No of businesses adopting new electronic processes
- 19 – No of businesses identifying a business benefit
- 22 – Businesses with improved performance (GVA)
- 23 – Gross number of jobs created
- 24 – Gross number of jobs safeguarded

Timing: 12-18 months after original omnibus survey participation.

Use of data: The longitudinal study data will be used to provide additional depth of understanding in terms of how businesses benefit from superfast broadband. Where businesses give permission to do so, case studies may be developed.

Counterfactual Business Survey

Description: A control study which explores the economic growth of businesses that have not connected to superfast broadband over the same time period.

Target Audience: Businesses in areas not yet connected and when this becomes too small, parts of Devon.

Method of selecting targets: Selection at random from non-connected areas.

Sample size: A statistically significant annual sample

Year	**2011**	**2012**	**2013**	**2014**	**2015**
Businesses connected	280	2350	5070	2050	250
Evaluation year	**2012**	**2013**	**2014**	**2015**	**2016**
Sample size					

Method of data capture: The survey will be conducted via telephone

Themes covered: Use of ICT and new electronic processes, company growth information.

Indicators covered:

- 18 – No of businesses adopting new electronic processes
- 19 – No of businesses identifying a business benefit
- 22 – Businesses with improved performance (GVA)
- 23 – Gross number of jobs created
- 24 – Gross number of jobs safeguarded

Timing: Alongside omnibus survey.

Use of data: The counterfactual study will be used to inform the assessment of the additionality (and deadweight in particular) of any benefits shown in the omnibus survey. Whilst connected businesses are likely to report business benefits, the extent to which they would have occurred anyway is always subject to the individual bias of business owner's perspectives. A control sample will help to eliminate this bias and will be used to triangulate findings from the omnibus survey.

Broad and Shallow Carbon Footprint

Description: A baseline assessment of the carbon footprint of a random sample or Cornish businesses.

Target Audience: Businesses and individuals not yet signed up to Superfast broadband

Method of selecting targets: Businesses and individuals invited to participate.

Sample size: not known

Year	**2011**	**2012**
Businesses connected	**280**	**2350**
Evaluation year	**2012**	**2013**
Sample size	**tbc**	**tbc**

Method of data capture: Web based carbon calculators.

Themes covered: carbon footprint of businesses and individuals

Indicators covered: tbc

Timing: Jan- Mar 2012

Use of data: The broad and shallow carbon footprint work will inform the baseline assessment of the carbon footprinting work.

Baseline Carbon Diaries

Description: A smaller sub-set of consumers who have decided to subscribe to Superfast broadband and who are willing to complete a 1-week 'carbon diary' which will be used to provide a detailed insight into their typical weekly travel profile prior to installation of Superfast broadband, as well as collecting details of the equipment they have connected to their broadband line and the number of hours this equipment is used for.

Target Audience: Businesses intending to subscribe to Superfast, prior to connection

Method of selecting targets: not known

Sample size: not known

Year	2011	2012
Businesses connected	280	2350
Evaluation year	2012	2013
Sample size	tbc	tbc

Method of data capture: not known

Themes covered: detailed carbon footprint diaries

Indicators covered: tbc

Timing: Jan- Mar 2012

Use of data: The carbon diaries will inform the baseline assessment of the carbon footprinting work.

Carbon Follow-up

Description: Revisit interviewees at 12 monthly periods after installation of Superfast Cornwall to reassess their carbon footprints and determine whether the introduction of superfast broadband has brought about any identifiable changes to their behaviour which can be linked directly to the introduction of Superfast Cornwall.

Target Audience: Businesses participating in carbon baseline work.

Method of selecting targets: Already recruited at baseline

Sample size: not known

Year	**2011**	**2012**	**2013**	**2014**
Businesses connected	**280**	**2350**	**5070**	**2050**
Evaluation year	**2012**	**2013**	**2014**	**2015**
Sample size		**tbc**	**tbc**	

Method of data capture: not known

Themes covered: detailed carbon footprint diaries

Indicators covered: tbc

Timing: 2013 and 2014

Use of data: Assessment of carbon impact of Superfast Cornwall subscribers.

Business Take-up Survey

Description: A random survey of businesses in Cornwall at the end of the roll-out work to establish level of take-up at the end of the programme.

Target Audience: Businesses in Cornwall

Method of selecting targets: Random sample of Cornish Businesses

Sample size: Assuming 20,800 businesses in Cornwall, a 95% confidence interval and 5% margin of error, the sample size would be 378.

Method of data capture: Telephone survey

Themes covered: Connection to superfast broadband

Indicators covered: 5 – Business take-up

Timing: 2015

Use of data: Providing a final assessment of the number of businesses taking up Superfast Broadband.

Consumer research

Description: Research to establish the wider social and economic impacts on consumers in Cornwall as a result of Superfast Broadband.

Target Audience: Consumers in Cornwall

Method of selecting targets: Discussions will be ongoing as to the most appropriate approach, utilising existing mechanisms as appropriate, and linked to Digital Inclusion workstreams

Sample size: TBC in further discussion on this research area

Method of data capture: This could be through a number of approaches including focus groups or surveys (possibly street surveys)

Themes covered: To be confirmed but to include the uses of Superfast Broadband, in particular in terms of digital inclusion and peripheral areas, social impacts etc

Indicators covered: **29 -** Digitally excluded individuals accessing work/services online

35 – Social inclusion

Timing: 2015

Use of data: Providing a wider socio-economic assessment of the impact of Superfast Cornwall on people who live and work in Cornwall, and taking into account wider social implications to add depth to the business focused analysis.

Appendix A – Link to Overview – Timing for all Survey & Monitoring Elements (double click on the spreadsheet to open and view)

Superfast Cornwall: Timing for all survey and Monitoring elements

Theme	Survey name	Audience	Method	Timings	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Business impacts	Web form	Businesses upgrading	As business in touch with project	Ongoing																										
	CRM system	Businesses upgrading	As business in touch with project	Ongoing																										
	Business omnibus survey	All businesses	Randomised telephone survey	Annually or quarterly																										
	Flexible working case study	Employees	Focus groups	TBC																										
	Longitudinal business survey	Businesses upgrading	Telephone survey - recruited via omnibus survey	Ongoing recruitment, quarterly updates																										
	Customer satisfaction survey	Businesses upgrading	Integrated into omnibus survey	Need to check timings																										
	Business support project evaluation	Businesses upgrading	Survey	TBC																										
	Focus group	All businesses	Focus groups	Annually																										
	Skills Survey	All businesses	Web survey via newsletter																											
	Stakeholder surveys	Stakeholders	Selected to participate	Baseline, interim, final																										
	Counterfactual	Non-connected businesses in Cornwall/ parts of Devon	Telephone survey	TBC																										
		Stakeholders	Selected to participate	Interim and final																										
	Final Uptake survey	All businesses	Large scale random survey	2015																										
	Invest in Cornwall data	External (to Cornwall) stakeholders	Questions included within Invest in Cornwall brand surveys	TBC																										
Individual impacts	Digital inclusion programme	General public in disadvantaged areas	Survey	Annual - TBC																										
		Individuals attending events	Survey	TBC																										
		Individuals accessing remote learning centres	Survey	TBC																										
		Volunteers	Survey following volunteering for an event	TBC																										
Environmental impacts	Environmental research	SMEs and consumers upgrading	Web based survey	Baseline, and revisit at 6, 12 and 24 months. Start Oct/Nov 2011																										
			Interviews	Baseline, and revisit at 6, 12 and 24 months. Start Oct/Nov 2011																										
Equality and diversity impacts	Equalities and diversity monitoring	Delivery partners	Monitoring & reporting	Annual (TBC)																										
Technical performance	Product and service performance management	Delivery partners (BT)	TBC	Ongoing post installation																										
	Reporting																													

Theme	Survey name	Audience	Method	Timings	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15
	Web form	Businesses upgrading	As business in touch with project	Ongoing																					
	CRM system	Businesses upgrading	As business in touch with project	Ongoing																					
	Business omnibus survey	All businesses	Randomised telephone survey	Annually																					
	Flexible working case study	Employees	Focus groups	TBC																					
	Longitudinal business survey	Businesses upgrading	Telephone survey - recruited via omnibus survey	Ongoing recruitment, quarterly updates																					

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Appendix B: Definition of Knowledge Intensive Services (updated to 2007 SIC classifications 2 digit)[21]

1) Definition of *Knowledge Intensive Services* Using the Eurostat definition, based on SIC 2003 classification.

knowledge-intensive high-tech services:

- Post and Telecommunications (64);
- Computer and related activities (72);
- Research and development (73);

knowledge-intensive market services (excluding financial intermediation and high-tech services):

- Water transport (61);
- Air transport (62);
- Real estate activities (70);
- Renting of machinery and equipment without operator, and of personal and household goods (71);
- Other business activities (74);

knowledge-intensive financial services:

- Financial intermediation, except insurance and pension funding (65);
- Insurance and pension funding, except compulsory social security (66);
- Activities auxiliary to financial intermediation (67);

other knowledge-intensive services:

- Education (80);
- Health and social work (85);
- Recreational, cultural and sporting activities (92).

2) Definition of *Knowledge Intensive Services* using the Eurostat definition, based on SIC 2003 classification – Updated by SERIO to reflect 2007 SIC classifications.

knowledge-intensive high-tech services:

Telecommunications (61)
Computer Programming, Consultancy and Related Activities (62)
Legal and accounting activities (69)

[21] **Source:** http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Knowledge-intensive_services

Activities of Head Offices: Management and Consulting (70)
Architectural and engineering activities; technical testing and analysis (71)
Scientific Research and Development (72)
Advertising and market research (73)
Other Professional Scientific and Technological Activities (74)

knowledge-intensive market services (excluding financial intermediation and high-tech services):

Water transport (50)
Air transport (51)
Real Estate Activities (68)
Renting and leasing activities (77)

knowledge-intensive financial services:

Financial service activities, except insurance and pension funding (64)
Insurance, reinsurance and pension funding, except compulsory social security (65)
Activities auxiliary to financial services and insurance activities (66)

other knowledge-intensive services:

Education (85)
Human health activities (86)
Residential care activities (87)
Social work activities without accommodation (88)
Creative, arts and entertainment activities (90)
Libraries, archives, museums and other cultural activities (91)
Sports activities and amusement and recreation activities (93)

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