

Digital Scotland Superfast Broadband Programme in the Scottish Borders: A Review of the process and outcomes of the Programme



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Foreword from the Chairman of Audit and Scrutiny Committee

Good, consistent, high quality digital connectivity is crucial to the lives of people and businesses within the Scottish Borders, and is now considered an essential utility, much in the same way as water or electricity.

At a time of fast moving technological changes, the Digital Scotland Superfast Broadband (DSSB) programme has provided a boost to the availability of digital infrastructure in the Scottish Borders, although this coverage is not equal across the area. In the course of this review of the roll-out of the DSSB Programme we have assessed the amount and quality of digital infrastructure coverage delivered; the communication process during the roll out; the value for money for the Council's investment; and the take up of superfast broadband services across the Scottish Borders. This has allowed us to identify appropriate lessons for future programmes, such as the new R100 Programme.

Much thought has been given to the information provided by Council officers and members of the Scottish Government's DSSB Team, which has allowed the Committee to arrive at its conclusions. I wish to thank the Members and officers for their time and energy, commending the findings and recommendations to you.

Councillor Stuart Bell
Chairman, Audit & Scrutiny Committee



27 November 2018

EXECUTIVE SUMMARY and RECOMMENDATIONS

- a) Access to Superfast Broadband was, and is, a significant practical and political concern where the public continually asks all Councillors about progress. Scottish Borders Council considered the Digital Superfast Broadband programme on a number of occasions. At its meeting on 21 August 2018, the Executive Committee requested the Audit & Scrutiny Committee to review the programme and ascertain if there were any lessons which could be learned for future projects.
- b) The Audit and Scrutiny Committee met on 4 separate occasions to consider the programme, receiving briefings from Council officers and representatives from the Scottish Government DSSB team:
- 1 November 2018
 - 5 November 2018
 - 21 November 2018
 - 27 November 2018
- c) The scope of the Review covered the following:
- (1) An assessment of the final coverage delivered by Contract 1 of the DSSB Programme and the associated 'Gainshare' project;
 - (2) The quality of that coverage and any variations between premises in towns, villages and the countryside. This would include speed coverage, long-line issues and other limitations that have become apparent during the rollout period;
 - (3) How appropriate and effective the communication processes used during the roll-out were, and whether appropriate information sharing and openness was evident to all stakeholders throughout the programme;
 - (4) Did the DSSB Programme deliver appropriate value for money in relation to the Council's £8.4M investment;
 - (5) How successful the take up of superfast broadband services has been across the Scottish Borders; and
 - (6) Identify appropriate lessons for future programmes, such as the new R100 Programme.

- d) Having considered all the evidence and the main findings of the review, the Committee agreed the following seven recommendations at its meeting on 27 November 2018:

Recommendation One

The Leader should write to the Scottish Government stressing the importance of the Scottish Borders getting a larger share of the 'Gainshare' uplift in Broadband connections, as this was supposed to add to the 'coverage' from the core funding. At present, 'Gainshare' connections are merely helping get coverage to the expected 93.8%.

Recommendation Two

To ensure transparency, there needs to be absolute clarity in any future programme of work on the definition of "coverage", particularly as it applies in specific localities. It is not enough to identify national coverage percentages due to the wide variations within relatively small geographic areas. Coverage must be based on the actual service provided to the end user.

Recommendation Three

Within the fast changing world of technological advances, it is important that future-proofing is included within a contract and that a break is built into a contract to cover any major change in technology.

Recommendation Four

Progress in implementation must be communicated to all stakeholders at regular intervals during the contract period; with absolute clarity on any technical or logistical problems encountered or delays to previously advised timescales.

Recommendation Five

Rurality, geography, topography, and existing networks must be accounted for within the parameters of any new contract.

Recommendation Six

Simple, specific measurable outcomes must be built into any future contract to allow stakeholders to judge what success will look like.

Recommendation Seven

Any third party investors to a new contract must have deliverables specified and a clawback clause included – to cover situations where these deliverables fail and a new deliverable cannot be agreed by either party.

Section 1: INTRODUCTION

- 1.1 Over the past decade, it has become clear that good digital connectivity is crucially important to the future economic development and competitiveness of the Scottish Borders. Robust digital connectivity is already central to the delivery of private and public services and in meeting the needs and expectations of consumers, businesses and visitors; this will continue to be the case into the future. Scottish Borders Council has played a crucial role in the development of digital infrastructure in the South of Scotland.
- 1.2 On 25 August 2011, Scottish Borders Council agreed an indicative funding model to form the basis of the Local Broadband Plan (produced by the South of Scotland Alliance). In January 2012 this Plan became the model for the Scottish Government's National Infrastructure Plan to roll out Superfast Broadband to all of rural Scotland. This sought to deliver next generation broadband infrastructure (speeds of 24Mbps+) to 75% and broadband (2Mbps) to 100% of each local authority area in Scotland. It was anticipated that overall, 85% of Scotland's premises would be served through this activity by 2015. At its meeting on 13 December 2012, Scottish Borders Council agreed to formally commit £8.4m towards the rollout of Programme 1: NGB Step Change 2015 across the South of Scotland. That funding, over 3 financial years (2013 – 2016), was provided subject to the Council having direct discussions with the appointed supplier and was specifically for the provision of maximum coverage of next generation broadband in the Scottish Borders, over and above the 75% coverage funded by the Scottish Government programme.
- 1.3 On 3 July 2013, the Council entered into a Minute of Agreement with Scottish Government to deliver the Next Generation Broadband project (Step Change 2015). This Agreement set out the contract for the delivery in the 'Rest of Scotland' area of Step Change 2015 between Scottish Government and the supplier; that Scottish Government would manage the overall contract and use the transferred Local Authority uplift funding to deliver specified local priorities; and the payment mechanism for the transfer of the local authority funding. In order to fully participate in the procurement process, the Council signed a non-disclosure agreement with Scottish Government which covered all elements of the procurement process and Programme delivery. The Rest of Scotland area covered all of Scotland that had not been included in the Highlands & Islands NGB Programme that had commenced in 2012.
- 1.4 In February 2016, Council received an update on progress with the Digital Scotland Superfast Broadband Programme (DSSB – a change of name from Step Change 2015). At that time, 70 new superfast broadband cabinets had been installed as part of the roll out, enabling the provision of new services to over 17,500 premises

in the Scottish Borders. This roll out would continue until the end of 2017, aiming to service approximately 94% of all the premises in the area. Although work was progressing, concerns were raised about the lack of information from BT on the download and upload speeds of the areas already covered, or to be covered, by the DSSB roll out. The exact details of premises in exchange areas which would be covered by the provision of superfast broadband only became clear once cabinets were activated.

- 1.5 In June 2016, the Executive Committee received an update report on the Exchange areas already covered by DSSB; those exchange areas expected to have a level of coverage within 6 months; those exchange areas planned and in scope for a level of coverage through 2016 into 2017, subject to survey; and those exchange areas which remained under evaluation by BT to determine what coverage would be possible within existing budgets or with new funds. In January 2018, the Executive Committee received a further update report, advising that up to the end of September 2017, 82.7% of premises had been connected to fibre enabled cabinets or exchanges. More than 130 new superfast broadband cabinets and exchange upgrades had been delivered as part of the roll out, connecting over 31,800 premises in the Scottish Borders.
- 1.6 A number of challenging issues remained to be addressed within the programme. One key issue was that although a home or business may be connected to the new fibre technology, if they were located too far from the cabinet or exchange then it was likely they would have no improvement in their broadband service (the 'long lines' issue). While fibre optic technology was used coming in to the cabinet/exchange, premises were usually still connected via their existing copper telephone lines, with the speed of broadband diminishing over distance on copper lines. It would be helpful – although possibly not achievable, given the national nature of the contract – that accurate figures based on the premises that have actually received an improved service were provided as part of the outputs of the DSSB programme.
- 1.7 The Scottish Government then announced its commitment to investing £600m to extend superfast broadband access to 100% of premises across Scotland by the end of 2021. This is due to be delivered through the R100 Programme which aims to cover the remaining premises not reached by DSSB.
- 1.8 Scottish Borders Council has played a key role in the roll-out of broadband infrastructure across the area, lobbying at national level for a greater focus on rural communities. At its meeting on 21 August 2018, the Executive Committee requested the Audit and Scrutiny Committee to review the DSSB Programme and ascertain if there were any lessons which could be learned for future projects, such as the R100 Programme.

Section 2: TERMS OF REFERENCE

- 2.1 The Terms of Reference for the Review were set out by the Executive Committee on 21 August 2018. As the Council would have the opportunity to influence delivery of the Government's R100 programme with the outcome of the review there was some urgency for this work to be completed. Executive Committee agreed to ask the Audit and Scrutiny Committee to report its review findings at its meeting on 4 December 2018.
- 2.2 The Audit and Scrutiny Committee review has set out to include a range of issues related to the DSSB Programme in its scope. The review scope includes the following elements:
- (a) An assessment of the final coverage delivered by Contract 1 of the DSSB Programme and the associated 'Gainshare' project;
 - (b) The quality of that coverage and any variations between premises in towns, villages and the countryside. This would include speed coverage, long-line issues and other limitations that have become apparent during the rollout period;
 - (c) How appropriate and effective the communication processes used during the roll-out were, and whether appropriate information sharing and openness was evident to all stakeholders throughout the programme;
 - (d) Did the DSSB Programme deliver appropriate value for money in relation to the Council's £8.4M investment;
 - (e) How successful the take up of superfast broadband services has been across the Scottish Borders; and
 - (f) Identify appropriate lessons for future programmes, such as the new R100 Programme.
- 2.3 Support for the Review was provided by the Chief Officer Economic Development and representatives from the Scottish Government's DSSB Team.

Section 3: HOW THE REVIEW WAS CARRIED OUT

- 3.1 The Audit and Scrutiny Committee has worked through four steps in order to deliver its review of broadband improvements in the Scottish Borders. The Committee has undertaken this work 'at pace' in order to ensure it met its reporting target of 4 December 2018.
- 3.2 The four steps of the review have been:
- 1) Building the Committee's understanding of the technologies involved in the DSSB Programme, including the limitations of those technologies and the technical challenges of implementing those technologies;
 - 2) Seeking direct feedback from the Scottish Government's DSSB Team to understand the work that they have undertaken in delivering the Programme, including taking the opportunity to question the progress made and the challenges faced by the Programme;
 - 3) Seeking to understand the role that Scottish Borders Council played in establishing the DSSB Programme and how its financial, technical and strategic input has supported delivery of the Programme in the Scottish Borders; and
 - 4) Discussing and agreeing a series of findings and related recommendations, as set out in this report.
- 3.3 By following these four steps, the Committee has been able to consider all of the issues highlighted in the scope of the review and its findings and recommendations are highlighted in the subsequent sections of this report.

Section 4: DIGITAL SCOTLAND SUPERFAST BROADBAND PROJECT

- 4.1 The Scottish Borders covers some 4,732 square kilometres and is predominantly rural in nature, with the largest town being Hawick. Out of a total population figure of 114,040, 50,633 (44.4%) live in a rural or very rural location. The Digital Scotland Superfast Broadband Programme has been a major engineering project that has been improving broadband connectivity in the Scottish Borders since 2014. The technologies and processes involved in this major project are complex and subject to ongoing adaptation and improvement as new technologies and engineering solutions became available. Before detailed consideration of each of the scope points, it is useful to explain this complex mix of technologies and processes, as understood by the Committee.
- 4.2 The widely accepted definition of superfast broadband is a service that provides download speeds of at least 24Mbps. This was the benchmark adopted by the DSSB programme when it began in 2013. Since then, the EU has re-defined superfast broadband as speeds of more than 30Mbps. It was noted that the Minute of Agreement signed by the Council in July 2013 included the definition of Next Generation Access (NGA) as 30 Mbps. However, the Scottish Government has focused on 24Mbps as the target speed figure for DSSB. It is also worth noting that for future programmes, the Scottish Government has adopted the 30Mbps speed figure now used by the EU.
- 4.3 The main technology being used at the start of the DSSB programme was Fibre to the Cabinet (FTTC). This technology extends the fibre optic network by introducing new Digital Subscriber Line Access Multiplexer (DSLAM) cabinets at key locations across an area. The DSLAM is linked to the fibre network and it in turn links to an existing Primary Connection Point (PCP) cabinet that takes the superfast broadband signal into the existing copper cable network to provide an enhanced service to the premises connected. Speeds of up to 80Mbps are possible through this system. This technology was predominant at the start of the DSSB Programme as it is an effective way of delivering upgraded services in those areas where there are more properties.
- 4.4 Another key technology that has been used in the DSSB Programme roll-out is the upgrading of 'Exchange Only' lines. Many telephone lines in villages and more rural areas are known as 'Exchange Only' (EO) lines because they run directly into a local telephone exchange, rather than being routed through a Primary Connection Point (PCP). It was some considerable time after the Programme started that BT Openreach finalised its technical solution to Exchange Only lines. This essentially involved putting two new cabinets into locations where EO lines existed – a new DSLAM and a new PCP cabinet. Recently it has been possible to fit

all of this technology into one joint cabinet. Speeds of up to 80Mbps are possible through this system.

- 4.5 The final key technology in use by the DSSB Programme has been Fibre to the Premises (FTTP). This involves running fibre all the way to each premise from the DSLAM cabinet, thus bypassing the final copper network connection to the premises. This technology is more expensive to install and has only started to be used in rural areas in the Scottish Borders in 2018. The key benefit of FTTP is that it provides download speeds of up to 330Mbps at present, and has the technological potential to provide much higher speeds in the future as the technology is further developed. This technology is starting to be used as a higher proportion of the roll-out in the current phase as Openreach is now willing to string fibre cables on telegraph poles. This is a much more cost effective solution compared to its previous policy of only using undergrounded fibre cables; it is much more expensive to dig trenches to lay fibre underground.
- 4.6 Fibre to the Premise (FTTP) offers the most effective connection solution, but is available for few premises at present. The Fibre to the Cabinet (FTTC) solutions that have been most common have a fundamental limitation due to the use of copper line connections from the PCP cabinet to the premise. The broadband speed reduces the greater the length of a copper line between cabinet and premises. The further the broadband data has to travel over copper, the more the speeds will be affected. This generally means that for lines more than 1.2km from the green cabinet, a superfast service will not be achieved. Speeds can also be affected by the number of users in premises, the type of equipment being used, and the service from a commercial provider.

An assessment of the final coverage delivered by Contract 1 of the DSSB Programme and the associated 'Gainshare' project:

- 4.7 An open market review was carried out in 2012 to establish predicted commercial coverage; this was reported as 39.3% for the Scottish Borders. The original Step Change 2015 Programme for superfast broadband included the expectation by Scottish Government that each local authority area would take infrastructure coverage to at least 75%. With the additional local authority contribution made by Scottish Borders Council, it was expected that coverage should be taken beyond 85%. There was a phased approach to delivery, and planning and monitoring of the contract was carried out on a postcode basis. In effect, this meant that if one premise was connected to superfast broadband infrastructure in a particular postcode area, then the whole postcode was deemed to be connected. Coverage was referenced as Total Homes Passed (THP), still using a postcode basis for mapping and information, rather than individual premises.

- 4.8 Scottish Borders Council had contributed £8.4m of additional funding to the project “to increase the Network to provide access to Next Generation Access (NGA) to the greatest percentage possible beyond those premises which are delivered using the Scottish Ministers’ subsidy to achieve its objective of 75% NGA coverage in the Councils’ area....”. The Council’s funding was only for use beyond the 75% coverage objective and could not be used to get coverage to that level. Further funding for the project also came from “Gainshare” whereby the more superfast broadband was taken up by people/businesses, the more funding would come back into the Programme. In effect, the contract profit for the infrastructure had been capped. Technological issues – Exchange Only lines, long lines and copper re-arrangement - all played their part in causing difficulties with the implementation of the Programme.
- 4.9 The coverage target was key and varied depending on connection type and speed. As at 1 November 2018, Thinkbroadband.com, an independent website that tracks the progress of broadband availability, reported that Scottish Borders coverage (includes both business and residential premises) was as follows:
- Superfast UK >24 Mbps = 83.94%
 - Superfast EU >30 Mbps = 83.54%
 - Ultrafast >100 Mbps = 1.58%
 - Fibre partial/full at any speed = 93.81%
- 4.10 As the coverage for broadband is based on postcode level and not number of premises, the level of coverage will vary across the Scottish Borders and also within a particular postcode. The more rural the area, the more likely that coverage and speed will be less than urban areas. In the most rural areas, coverage will be considerably less and will not necessarily be deliverable through the DSSB Programme.
- 4.11 At the Audit and Scrutiny Committee meeting on 5 November 2018, the DSSB Team reported that coverage in Scottish Borders had reached 93.7% THP. This was just short of the 93.8% indicative target that had been highlighted in July 2013 when the Council signed the Minute of Agreement with the Scottish Government. It is important to note that the 93.8% target was supposed to be met by 31 December 2017; the 93.7% figure was reported as at 30 September 2018.
- 4.12 Another key factor in relation to the latest 93.7% coverage figure is that this also includes coverage that has been delivered by activity funded through ‘Gainshare’. A proportion of the £15.6M that has been injected into the Rest of Scotland area of the DSSB Programme has been spent in Scottish Borders, reflecting the priority given to the Local Authority areas where there had been significant additional

financial contributions from the Council. However, there is a strong argument to be made that the 'Gainshare' coverage should have been adding further coverage beyond 93.8%, rather than helping the Programme deliver what was already expected of it.

The quality of that coverage and any variations between premises in towns, villages and the countryside. This would include speed coverage, long-line issues and other limitations that have become apparent during the rollout period

- 4.13 A key challenge for the DSSB Programme is that the range of technologies being used (FTTC, EO, FTTP) means that there is a range of experiences of improved broadband services across towns, villages and the countryside. In towns, coverage has mostly rolled out effectively and users have been able to receive strong broadband signals, often close to the maximum 80Mbps from FTTC. However, it is not unusual for some premises in towns and villages to be quite close to a new DSLAM cabinet, but not get a significantly improved service because of the 'long lines' issue. The copper network that provides the final connection to each premise has developed in an organic way over many decades, rather than in an efficient, planned way. Another issue faced in towns, and some villages, has been strong uptake of superfast broadband services that has then led to the new cabinet being 'full' and customers having to wait for further slots to be created in the high demand cabinet before they can be connected.
- 4.14 The 'long lines' issue is one of the fundamental limitations of the FTTC and EO approaches to the superfast broadband roll-out. Where the length of copper line connection to the cabinet to the premises is longer than 1.2km there is a dramatic fall-off in connection speed so that users may find that they have no appreciable improvement in broadband service, even though they are connected to the new DSLAM cabinet with the new technology. It was June 2016 before the Council was properly aware of the scale of the 'long lines' issue so even when a cabinet went 'live', it was not clear which premises would get a properly improved service
- 4.15 In villages and more rural areas the experience has sometimes been more frustrating as there are more instances of 'long lines' in these areas, so the speed uplifts experienced by customers have been more variable. There have also been more instances of Exchange Only (EO) lines in these areas. This meant that superfast services were slower to be deployed in these areas and, again, long lines were an issue. The increased use of FTTP in the latest phase of the Programme should go some way to mitigate this challenge, but the reality is that many premises that are connected to the new network do not receive the broadband speed uplift that they would have expected.

- 4.16 From a local customer perspective, and also from the experience of Local Members, the most common experience with the DSSB Programme has been one of major customer frustration and uncertainty. Broadband connectivity has been a common cause for concern at a local level for some time. However, following the commencement of the DSSB Programme and the associated increase in expectations of service availability, broadband became a significant issue raised with Council and Councillors on an almost daily basis. At times it was the main issue being raised with Local Members.
- 4.17 The Council was hampered in its ability to provide as much information as it would have liked to communities and businesses by the confidentiality agreement it had signed. This caused a major limitation in terms of what information could be shared, which in turn added to the frustration of both broadband customers and Elected Members.
- 4.18 The practical reality of the Programme delivery was that BT Openreach was unable to accurately predict when any given cabinet would 'go live' because of the technical challenges around installing each cabinet. Although there was a known range of challenges, each cabinet faced a different mix of those challenges, so it was difficult to accurately estimate service availability timescales. However, even when a cabinet went 'live', it was not clear which premises would get a properly improved service.
- 4.19 Download and upload speeds only became apparent after an area went 'live', with no way to tell beforehand. Thus, it only became clear after cabinets went live which premises would be properly served and which would not see any significant improvement in service. Understandably, communities and businesses were frustrated at this lack of information and the seeming inability of the Programme to be clear about where and when improved services would become available. This lack of information was raised with the Depute First Minister in February 2016 as part of the South of Scotland Alliance's regular discussion with Mr Swinney MSP.
- 4.20 In view of the large numbers of premises that do not actually receive >24Mbps broadband services, it is clear that there is still a major task ahead for the R100 Programme. It must tackle these premises that have been connected to the fibre network, but are not currently receiving an improved service.

How appropriate and effective the communication processes used during the roll-out were, and whether appropriate information sharing and openness was evident to all stakeholders throughout the programme

- 4.21 Communication and publicity was a key element of the Programme to ensure awareness and take-up. The Scottish Government put a significant effort behind this activity to ensure that there was a high profile for the roll-out in each area.

This was a sensible approach as it is crucial that as many users as possible actually sign up to use the new broadband infrastructure. More users, especially business users, help to demonstrate that the Government's investment delivered value for money and positive economic impacts.

- 4.22 The DSSB Programme recruited a range of regional advisers who helped to ensure press coverage in local press; organised special events; manned a Broadband Bus that made a number of appearances across the Scottish Borders; and arranged stands and presence at local events. Local Elected Members were involved in DSLAM cabinet launches across the area to demonstrate the Council's role in the roll-out, and to ensure that local newspapers picked up on the story. All of this activity was also driven by the 'Gainshare' principle that the more take-up, the more should come back into the Programme at later stages.
- 4.23 Overall however, the main issue around communications was the fact that the Programme was unable to provide an accurate picture of where and when improved broadband services would become available. As noted above, this led to considerable frustration in communities and undermined the positive impact that was being made by the roll-out. It is understandable that BT Openreach did not want to unrealistically raise expectations of delivery of services in particular areas – because of the risk of then failing to deliver on what it had said. However, the lack of information did lead to a negative perception of the roll-out and is one of the key lessons for future programmes. Crucially, it was into 2017 before there was an effective web-site that allowed households and businesses to check when they might be connected. Unfortunately, it still could not tell them what quality of service they would receive once they were connected.

Did the DSSB Programme deliver appropriate value for money in relation to the Council's £8.4M investment

- 4.24 The original Step Change 2015 programme contracted for 75% coverage of each local authority area which included the Scottish Borders. At that time, commercial coverage within the Scottish Borders was predicted at 39.3%, leaving a minimum shortfall of 35.7% to be achieved through the programme rollout. Given the rural or very rural nature of the Scottish Borders topography and the technical issues which arose throughout the Programme from the original telephone network, and which are still causing issues to date, it is likely that those areas closest to urban populations or technical "hubs" would have been prioritised in the rollout. As implementation of the infrastructure programme over the last few years has progressed, improvements in the technology available have been incorporated into the works on the ground. However, the use of postcode data to show coverage may still mean that broadband speeds are still variable to particular premises in the same area.

- 4.25 Value For Money is a key consideration for the Committee in view of the Council's £8.4M investment, agreed in 2012. At a simple level, the Council's investment has helped to ensure a 93.7% (and increasing) level of coverage in the Scottish Borders. This is beyond the 75% coverage that the Scottish Government was expecting to deliver at the start of the Programme, and is beyond the 85% that the South of Scotland Local Broadband Plan had targeted in 2012. It is undeniable that the Programme has ensured a 'step-change' in the coverage of superfast broadband in the area and that it can be argued to have delivered an appropriate return on investment for the Council's funding.
- 4.26 However, it has also been made clear in the submissions to the Committee that the 93.7% coverage that has been delivered is not the same thing as 93.7% of premises having proper access to superfast services. The Thinkbroadband website highlights that, at 1 November 2018, 83.94% of premises have >24Mbps superfast broadband speeds. So 16.06% of premises have broadband speeds that are lower than 'superfast', with 11.47% of premises being below 10Mbps. There are still a significant number of premises in the Scottish Borders that need to receive a proper superfast broadband service.
- 4.27 It is difficult to ascertain whether the Council's financial contribution on its own would have brought the infrastructure coverage up to the present day 93.7%, or whether 'Gainshare' funding has made the difference. It is likely to be a combination of both. The Council's additional £8.4m could be looked upon as pump priming for rural and very rural areas, providing a more equitable infrastructure across the Scottish Borders.
- 4.28 A further way of considering the value for money that has been delivered for the Council's funding is to look at what may have happened if the programme had been delivered at a South of Scotland level, which was the planned approach in 2012. It is likely that the DSSB Programme delivered more coverage than if it had been a Local Broadband Plan programme, but there is a question as to whether a South of Scotland programme would have delivered the coverage more quickly as it would have been fully focused on the south, rather than having to have phases running all over Scotland at the same time.
- 4.29 Would a Local procurement have delivered the same amount of coverage? Perhaps not in a situation where there may well only have been a single supplier and where the South of Scotland Local Authorities would have had even less leverage with the supplier than the Scottish Government did. It is also likely that a Local Programme would have faced the same technological challenges and similar information and data challenges. It is therefore likely that the Scottish Government-led procurement and Rest of Scotland Programme has delivered more for the Scottish Borders than a Local Programme could have. That suggests that

the Council probably received better value for money from being part of the larger DSSB Programme than it would have secured as part of a much smaller South of Scotland Programme.

- 4.30 In comparison to other areas that also made a significant financial contribution towards the DSSB Programme, such as Dumfries & Galloway, Scottish Borders is in a similar position with regards to coverage. Dumfries & Galloway Council signed up to an agreement that highlighted an indicative target of 95.0% coverage. The Thinkbroadband website reported the current coverage figure for D&G as 94.8%, close to the target of 95.0%, but, as with Scottish Borders, a delay in reaching the target. It is worth noting that Aberdeenshire Council made the largest financial contribution to the Programme, at approximately £16M, Dumfries & Galloway Council made the second largest contribution at £12.6M and Scottish Borders Council made the third largest contribution. These financial allocations reflected the scale of the rural challenge in these three Council areas, and the desire of these Councils to extend coverage through DSSB to include as many businesses and households as possible.

How successful the take up of superfast broadband services has been across the Scottish Borders

- 4.31 Originally, the supplier contract was based on a take-up rate target of 20%. The take-up of superfast broadband services has been reasonable in Scottish Borders, with the most recent figures showing 44.2% take-up. However, this is slightly behind the overall Rest of Scotland figure of 46.2%. These figures mask a variation of take-up across the Scottish Borders. It has been reported that Coldstream, Duns, Earlston, Eyemouth, Melrose, Selkirk, St Boswells and West Linton have been high take-up communities, but that Kelso has been a relatively low adoption community.
- 4.32 It was some way through the Programme before the DSSB Team realised the importance of highlighting to households and businesses that they needed to specifically sign up for the new superfast broadband service when it became available. Most customers had been used to experiencing broadband speed uplifts without having to sign up for new services; this was due to technological improvements with the existing copper line based services (Asynchronous Digital Subscriber Line ADSL). There is an ongoing need to remind businesses and households that they need to specifically sign up for Superfast Broadband, as well as a need for on-going activity to encourage uptake and use of the new infrastructure – in order to maximise the return from the investment.

Identify appropriate lessons for future programmes, such as the new R100 Programme

- 4.33 Scottish Borders Council has been at the forefront of the drive for better digital connectivity in the Borders and across the South of Scotland, in partnership with the South of Scotland Alliance. It is important to maintain this focus and lobbying pressure as it is clear from this review that there are still many premises that remain without effective superfast broadband connections. The R100 Programme is the new Scottish Government Programme that will tackle the next phase of broadband improvements, and this review has useful lessons to offer the new R100 Programme.
- 4.34 The R100 Programme aims to deliver superfast connectivity to 100% of premises by 2021. R100 is in procurement stage at present, which is expected to conclude in Spring 2019 with implementation following soon after. A key lesson from the DSSB Programme is the importance of taking a 'premises' level focus to planning for the new programme as the 'postcode' basis of DSSB was not helpful. It was the use of postcode level information that caused much of the uncertainty and vagueness of the DSSB Programme, although it is accepted that a premise by premise approach was probably not deliverable in 2012/13. It seems that R100 is being taken forward on a 'premises' basis and that the Scottish Government has already learnt that lesson. However, there are other lessons that can be highlighted to Scottish Government to inform the R100 roll-out.
- 4.35 Communications are crucial – future programmes need to be able to give communities, businesses and households a better idea of when the service will 'go live' for them. They also need to be able to provide a better sense of what level of improvement will actually be provided. The experience gained through the DSSB Programme would suggest that these ambitions are deliverable in future programmes if they are planned in at the start.
- 4.36 Although it is difficult to address, it is also clear that there needs to be a better way of expressing how a particular technology will deliver the outcomes that are sought by a programme. The issue of 'long lines' was not clear at the start of the DSSB Programme, and has had a significant impact on the real-world impact of the Programme at a local level. The Scottish Government may or may not have understood what this meant for the end outcome of the DSSB Programme, but this has meant that the 'coverage' percentages have given an optimistic view of what has actually changed on the ground.
- 4.37 In 2012 when Step Change/DSSB was being planned, superfast broadband was a relatively new service and was available in a limited number of locations. Many users wondered whether they would really need superfast speeds of up to 80Mbps. However, it has become even clearer since then that broadband connectivity is

crucial to the future economic competitiveness of rural areas. Technology has also moved on, with far more FTTP services being available in urban areas and the future of connectivity clearly relying on Fibre To The Premises wherever possible. R100 needs to deliver as much FTTP as it can if it is to ensure that the infrastructure investment is as future-proof as possible. Otherwise, rural areas will remain under-served and at the back of the 'technology curve'.

- 4.38 Another challenge that has been apparent in the DSSB Programme has been that the market failure that justifies Government intervention in digital connectivity for rural areas feeds through in a real-world way to the procurement process. The market failure manifests itself as limited private sector interest in taking on delivery in rural areas and also limited capacity to deliver in the most rural areas. In turn, this hampers the Government's ability to achieve value for money in these investments.
- 4.39 Another challenge thrown up by the DSSB Programme has been how to balance commercial confidentiality with effective communication to communities and businesses. There needs to be an effective system of answering / responding to household and business queries in place for the start of any new roll-out. Otherwise there is a risk of customer frustration and negative publicity for the new programme.
- 4.40 Finally, there needs to be an ongoing focus on utilisation of the new infrastructure. It is important that there is support for communities and businesses to help them utilise the new infrastructure in creative and innovative ways, again helping to maximise the return on investment and to realise the full step-change potential that good broadband connectivity can deliver.

Section 5: KEY FINDINGS and RECOMMENDATIONS

FINDINGS

An assessment of the final coverage delivered by Contract 1 of the DSSB Programme and the associated 'Gainshare' project;

- 5.1 The DSSB Programme has delivered in spirit if not to the letter of the Minute of Agreement. 93.8% was an interpretation of a contract that in the 'letter' only undertook to get as far as possible over 75% (which would be delivered without Council support). There was talk of getting coverage to 85% and modelling said it could be 93.8%, but there was no specific commitment to this; it was clearly an indicative target. In practice, the 93.7% coverage that is claimed to be delivered at 30 September 2018 (note that Contract 1 should have finished at 31 Dec 2017) is being financed by 'Gainshare' monies (see below), and whilst this runs to March 2019, we have no statement on the target coverage at that date.

The quality of that coverage and any variations between premises in towns, villages and the countryside. This would include speed coverage, long-line issues and other limitations that have become apparent during the rollout period;

- 5.2 There have been major problems with the quality of the coverage. Many customers in towns and villages have an excellent service and have seen a real improvement in their broadband service when they have signed up for superfast broadband. However, other customers have faced massive problems in relation to the quality of service they have received, with many still unable to enjoy the benefits of superfast broadband, although they are technically 'connected' to the new network.
- a) Quality and speed of connection can only be judged once the end customer connects to the new network.
 - b) If quality is defined as 'meeting expectations' then the poor communications and genuine lack of certainty about what could be delivered have together resulted in unrealistic expectations in some sections of society, and those expectations have not been met. If quality is defined as 'meeting expectations', then there has possibly been a poor quality of delivery.
 - c) To be fair to the supplier, they did not know at the outset all of the technical and logistical problems that the rollout would face. Many of these problems were exacerbated by rurality, combining a low density of premises and long distances to cabinets and exchanges.
 - d) 'Coverage' itself was so variable in its definition that this led to public confusion. Whilst there was a widespread expectation that each premises would get the faster connection and that this 'utility' would just be automatically upgraded without the end customer having to take any action, in reality i) 'coverage' was defined by postcode and not by individual premises (so

just one premises connected in a postcode = coverage for that postcode); and,
ii) the success measure was the very revealing term 'premises passed'.

- e) A direct consequence of the above is that measurement was inherently difficult, leading to poor feedback and poor understanding of how the Programme was actually progressing.
- f) Significantly, the Council did not really understand until later in the process the extent of, and impact of, degradation of signal strength to the extent that premises further than 1.2km down a copper line might see no improvement in speeds. Whilst the impact of this problem may not have been fully understood by the contractor, something went wrong if this was not well enough understood by the Council and ultimately the end customers.

How appropriate and effective the communication processes used during the roll-out were, and whether appropriate information sharing and openness was evident to all stakeholders throughout the programme;

- 5.3 Whilst it is clear that a lot of effort went into publicity and communications, the quality of communication was poor – in part because of the complexities outlined above; in part because of the confidentiality agreements that were necessary as part of the contract; in part because there were many players in the process so that transparency and openness was not properly achieved.

Did the DSSB Programme deliver appropriate value for money in relation to the Council's £8.4M investment;

- 5.4 Possibly. Measured against the prediction that without the Step Change/DSSB Programme the predicted 'coverage' in the Scottish Borders was expected to be 39.3% - it went well. Measured against the stated 'coverage' of comparable rural authorities the Borders probably got as good an outcome as those comparators. There will be some very satisfied end customers in the Scottish Borders and some who continue to be dissatisfied. The whole process was a project on a heroic scale and it has probably made a step change in Superfast Broadband services – but it has also exposed that many more steps are needed.

How successful the take up of superfast broadband services has been across the Scottish Borders;

- 5.5 Originally, the supplier contract was based on a take-up rate target of 20%. The take-up of superfast broadband services has been reasonable in Scottish Borders, with the most recent figures showing 44.2% take-up. However, this is slightly behind the overall Rest of Scotland figure of 46.2%.

Identify appropriate lessons for future programmes, such as the new R100 Programme

- 5.6 In the first instance, notwithstanding the forthcoming R100 Programme, the Council should write to Scottish Government stressing the importance – the fairness elements – of our area getting a larger share of the 'Gainshare' uplift in Broadband connections, as this was supposed to add to the 'coverage' from the core funding (from the EU, UK Govt, Scottish Govt). What we see at present is that the 'Gainshare' connections are just helping get coverage to the expected 93.8%.

- 5.7 In relation to R100 there are a number of lessons that can be fed back to Scottish Government:
- a) Need for honesty about the challenges and transparency about the progress and issues and performance. Step Change was done to us... R100 needs to be done with us.
 - b) There is a clear need for comprehensive but simple of communication to the public about what is and is not included in the R100 Programme, what it will mean in terms of actual services provided, and what the end customer needs to do to sign-up to the improved service. The Audit and Scrutiny Committee members benefitted greatly from the explanations of the articulate experts who addressed the Committee – the messages we received and understood need to get out to the Borders public.
 - c) Much that the Audit and Scrutiny Committee came to understand as issues and opportunities need to be incorporated into the R100 Programme:
 - The importance of Fibre To The Premises connections being used wherever possible;
 - Simple web-sites that give a premise by premise indication of what might be delivered, and when;
 - The benefit in rural areas of multiple/mixed solutions;
 - The need to address the very distant and dispersed premises and not just “pass them by”.

RECOMMENDATIONS

Recommendation One

- 5.8 The Leader should write to the Scottish Government stressing the importance of the Scottish Borders getting a larger share of the ‘Gainshare’ uplift in Broadband connections, as this was supposed to add to the ‘coverage’ from the core funding. At present, ‘Gainshare’ connections are merely helping get coverage to the expected 93.8%.

Recommendation Two

- 5.9 To ensure transparency, there needs to be absolute clarity in any future programme of work on the definition of “coverage”, particularly as it applies in specific localities. It is not enough to identify national coverage percentages due to the wide variations within relatively small geographic areas. Coverage must be based on the actual service provided to the end user.

Recommendation Three

- 5.10 Within the fast changing world of technological advances, it is important that future-proofing is included within a contract and that a break is built into a contract to cover any major change in technology.

Recommendation Four

- 5.11 Progress in implementation must be communicated to all stakeholders at regular intervals during the contract period; with absolute clarity on any technical or logistical problems encountered or delays to previously advised timescales.

Recommendation Five

- 5.12 Rurality, geography, topography, and existing networks must be accounted for within the parameters of any new contract.

Recommendation Six

- 5.13 Simple, specific measurable outcomes must be built into any future contract to allow stakeholders to judge what success will look like.

Recommendation Seven

- 5.14 Any third party investors to a new contract must have deliverables specified and a clawback clause included – to cover situations where these deliverables fail and a new deliverable cannot be agreed by either party.

Ends.