

Superfast Cornwall
Cornwall Development Company

Superfast Cornwall
Project Evaluation Report

September 2020

Use of Data

Market Research supporting PR activities

All of the work carried out by PFA Research Ltd is conducted in accordance with the Market Research Society Code of Conduct.

The Market Research Society places a duty of care on market research organisations to protect the interests of both their client and those that took part in any research. As part of this duty of care market research organisations are required to ensure that any press releases or other promotional material issued by the client is supported by the data. As such PFA Research reserves the right to view and suggest amendments to any press release or promotional material prior to its release into the public domain. This procedure is in line with the recommendation of the Market Research Society and does not undermine client ownership of the data.

General Disclaimer

While every care has been taken during the course of the research, PFA Research Ltd takes no responsibility for any incorrect information supplied to us. Quantitative market information is based primarily on interviews or self-completed questionnaires and therefore is subject to fluctuation.

The contents of this report represent our interpretation and analysis of information that can be considered generally available to the public and provided voluntarily by respondents. It is not guaranteed as to accuracy or completeness. It does not contain material provided to us in confidence by our clients or research respondents.

Table of Contents

1	Executive summary.....	5
1.1	Superfast programme.....	5
1.2	Role of the Final 2020 Report	6
1.3	Roll out, coverage and take up.....	7
1.4	Business impact.....	7
1.5	Economic impact	8
1.6	Wider impact.....	10
1.7	Conclusions and recommendations	10
1.7.1	Outputs	10
1.7.2	Business impact.....	11
1.7.3	Economic impact	11
1.7.4	Wider impact.....	12
1.7.5	Recommendations	13
2	Superfast Programme	15
3	Project Aims and Objectives.....	17
3.1	Logic model	17
3.2	Economic impact estimates	17
3.3	Role of the Final 2020 Report	18
4	Outputs: Roll-out, Coverage, Take-up and Satisfaction	20
4.1	Roll out and coverage	20
4.2	Number of businesses connected	21
4.3	Number of households connected	21
4.3.1	Number of start-ups	22
4.4	Satisfaction with network performance	22
5	Business impact	24
5.1	Change in use of broadband	24
5.2	Turnover, profit and costs.....	29
5.3	Businesses introducing new products and services	30
5.4	Recruitment and sales	31
5.5	Overall benefit.....	33
6	Economic impact	34
6.1	Jobs and GVA created (established business).....	34
6.2	Jobs safeguarded (established business).....	36
6.3	New business start-ups - jobs and GVA	37
6.4	Summary of economic impact	39

7	Wider impact.....	41
7.1	Flexible working.....	41
7.2	Finding work.....	46
7.3	Widening access to digital	47
7.4	Access to education.....	51
8	Conclusions and recommendations.....	53
8.1	Outputs	53
8.2	Business impact.....	53
8.3	Economic impact	54
8.4	Wider impact.....	56
8.5	Recommendations.....	56
9	Appendices.....	58
9.1	Methodology.....	58
9.1.1	Model for assessing economic impact	58
9.1.2	Coverage and take up figures	58
9.1.3	Lag on economic impact	59
9.1.4	Two approaches – established businesses and start-ups.....	59
9.1.5	Economic impacts - Gross to net.....	59
9.1.6	Method for estimated the number of businesses connected	60
9.1.7	Key drivers of the economic model for 2018/19 Reports	63
9.1.8	Accounting for Covid-19 Pandemic.....	68
9.1.9	Drawing sample - established versus newly enabled areas	68
9.2	Survey Tabulations	69

1 Executive summary

In early 2017, PFA Research was commissioned by Cornwall Development Company (CDC) to undertake an evaluation of the superfast broadband roll out in Cornwall between 2017 and 2021. The end of the programme has since been brought forward to close end September 2020 and therefore this final report has also been brought forward.

This evaluation builds on the 2011-15 programme and previous evaluation work led by CDC's Research and Evaluation Manager and SERIO at Plymouth University. Wherever possible, we have used the same or very similar methodology as the 2011-15 evaluation to ensure consistency. Where approaches differ the case for change is clearly stated.

There have been three distinct Superfast programmes

- 2011-2015 Superfast Cornwall Programme, part funded by the European Regional Development Fund (ERDF)
- 2016-2017 Superfast Cornwall Extension Programme (SEP)
- 2018-2020 Superfast 2, part funded by ERDF, with an extension funded by the European Agricultural Fund for Regional Development (EAFRD)

The on-going impact of 2011-2015 Superfast Cornwall Programme has been determined alongside 2016-2017 SEP and 2018-2020 Superfast 2.

The first deliverable from the evaluation contract was the baseline summary report in May 2017. This work used the economic model developed for the previous Superfast Cornwall evaluation combined with up to date estimated take-up figures, to estimate the current business take-up figures and the economic impacts in terms of jobs and GVA. No new raw data was collected at this stage but the underlying model was adjusted to reflect available new data. The baseline report allows the uplift from the ongoing impact of the first Superfast Cornwall Programme, the 2016-2017 SEP and 2018-2020 Superfast 2 programmes to be evaluated. Two further interim phase reports were delivered in 2018 and 2019, which provided an update on the impact of the roll out of superfast broadband based on new primary data and estimated take up figures.

This final report for 2020 provides an update on the previous interim reports and gives a final assessment of the impacts of the programme overall. A total of 502 businesses (that have been connected to superfast broadband for 6 months or more¹) and 579 households (connected for 6 months or more) have been interviewed over the three waves of evaluation work between 2018-2020. This final report therefore includes all the impacts from the 2011-2015 Superfast Cornwall programme, from the 2015-2017 SEP programme as well as Superfast Cornwall 2.

1.1 Superfast programme

Cornwall's 2011-2015 Next Generation Broadband (NGB) Infrastructure project, known as Superfast Cornwall, had an initial target to make fast, fibre based broadband available to at least 80% of the baseline of 253,000 premises (homes and businesses) in Cornwall by the

¹ Given the change in project timings which required the evaluation research fieldwork to take place six months earlier, the requirement for businesses to have been connected for at least 12 months was relaxed to 6 months. 29% of the 2020 sample (and 14% overall) had been connected for at least 6 months but less than 12 months.

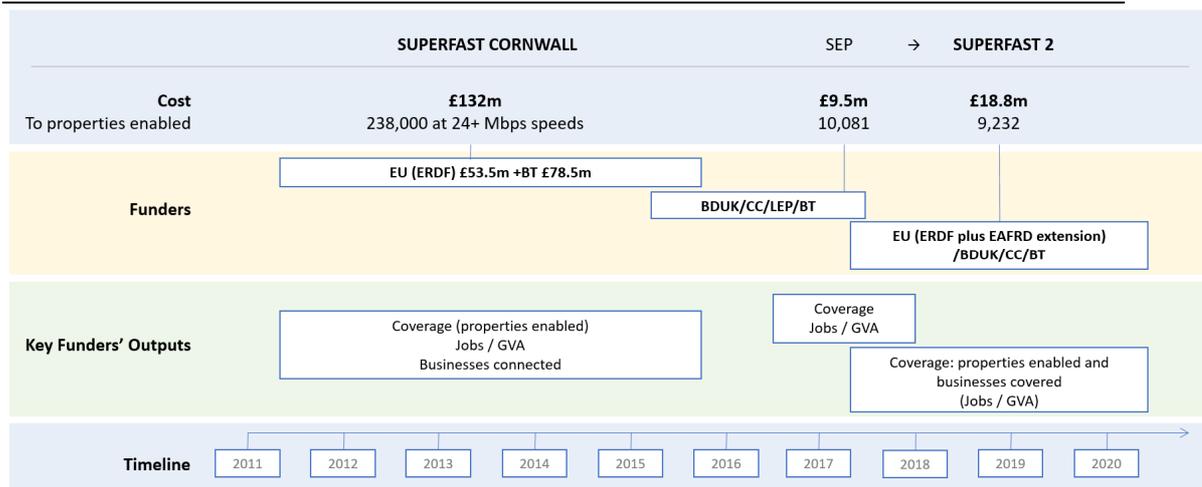
end of 2014. The initial target was extended to 95%² of the baseline premises with access to fibre broadband, due to efficiency gains and high take-up³. By March 2015 the extended target had been exceeded. By the end of the 2011-2015 Superfast Cornwall Programme there were 238,000 premises covered by 24+ Mbps of which 232,000 premises were covered by 30+Mbps⁴.

A third programme, “Superfast 2”, completed in 2020. Superfast 2, which is a part-EU and Cornwall Council funded programme, rolled out superfast broadband to a further estimated 7,500 premises. The target was extended with some additional EAFRD and Cornwall Council funding to cover an additional 423 premises. The current coverage delivered is 9,232 premises (with a small number still to be delivered as part of the EAFRD extension).

As the roll-out progressed, take-up steadily increased and reached 66,500 connected premises in June 2015, an estimated 90,000 by March 2017 and the estimated number of total connections to July 2020 is 158,600 across all three programmes.

The timelines and funding inputs of the three programmes are illustrated in Figure 1-1 below.

Figure 1-1 Programme Phases



1.2 Role of the Final 2020 Report

This evaluation builds on the 2011-15 programme and previous evaluation work led by CDC’s Research and Evaluation Manager and SERIO at Plymouth University. Wherever possible, the same or very similar methodology as the 2011-15 evaluation has been applied to ensure consistency.

PFA Research delivered a baseline summary report in May 2017 and a first phase report in 2018 following a first round of new primary research, followed by a second interim phase

² 95% coverage comprising 'fibre broadband' and includes some sub-24Mbps Fibre to the Cabinet (FTTC) lines.

³The 253,000 premises was a baseline contract figure that excluded the area of Saltash (which was out of scope due to the presence of a second infrastructure in Virgin Media) and any new builds that came on-line since the BT were appointed in 2009 (approximately 2,200 per annum).

⁴After the start of the programme in 2010, superfast broadband was subsequently defined as 24Mbps by UK Government and 30+Mbps by the EU.

report in 2019. This work used the economic model developed for the previous Superfast Cornwall Evaluation combined with up to date estimated take-up figures, to estimate the current business take-up figures and the economic impacts in terms of jobs and GVA.

This final evaluation report for 2020 provides an update on the impact of the roll out of superfast broadband based on the total primary research data (from the three survey rounds) and estimated take up figures. For businesses, this report includes the impact of 2011-2015 Superfast Cornwall Programme and the Superfast Extension Project (2015-2017), as all surveyed businesses have been connected for 12 months or more⁵. The household survey was undertaken with residents which were connected more than 6 months prior to the interview.

Between January and May 2018, 102 businesses and 100 households were surveyed for the first interim report. A further 155 businesses and 100 households were interviewed between January and April 2019 for the second interim report. For the final evaluation, an additional 245 businesses and 379 households were interviewed, giving a combined survey of 502 businesses and 579 households.

Note in this report, all business numbers are displayed rounded to the closest 50, job numbers to the closest 10, connections to the closest 50 and GVA to the closest £100,000.

1.3 Roll out, coverage and take up

An estimated 158,600 premises were connected by July 2020. For household connections, the estimated number of total connections to July 2020 is 141,600.

Overall business and households indicate a high level of satisfaction with both speed and reliability of network performance.

- **Businesses:** 80% satisfied with speed of connection and 79% satisfied with reliability
- **Households:** 78% satisfied with speed of connection and 77% satisfied with reliability.

1.4 Business impact

Businesses report positive impacts of using superfast broadband across all three survey waves.

- Internet based inter-personal communications, such as web/collaboration, conferencing, are being used extensively as a result of businesses' superfast connections - 53% overall say they use this more since being connected to superfast broadband, video conferencing is used more by 52%, 49% are transferring large files and 47% now use remote data storage more than before they were connected to superfast broadband.
- A third of businesses (34%) have changed one or more of their business processes, like sales, administration or marketing, etc., since connecting and most commonly through faster/easier down/uploading (38%), the increased use of cloud based services (22%) and being more efficient/effective (18%).

⁵ Given the change in project timings which required the evaluation research fieldwork to take place six months earlier, the requirement for businesses to have been connected for at least 12 months was relaxed to 6 months. 29% of the 2020 sample (and 14% overall) had been connected for at least 6 months but less than 12 months.

- The strongest impact reported by businesses was their saving time and/or money (75% agreed with this) – a finding that is in keeping with the previous research. Businesses also agree that superfast broadband enables them to raise productivity (71%) and work in new and different ways (64%).
- 39% indicated that superfast has helped them develop new goods/services.

Financial performance. Two thirds (67%) of the businesses gave an indication of their annual turnover and of those over a quarter (27%) indicated a growth in turnover since connecting to superfast. There is some evidence of superfast having contributed to this growth – 43% attribute over 10% of their turnover uplift to their superfast connection and only 9% overall report there has been no impact. Superfast has had a limited impact on profits, however over a third of respondents say that superfast has reduced their costs (8% significantly, 28% slightly).

Sales and market expansion. 49% of respondents indicated that superfast broadband has helped generate sales, win new business contracts and access new markets. Nearly one in five (19%) indicate that their new sales are mainly international which indicates superfast broadband has contributed to some export led growth. Around one in four firms believe connecting to superfast has provided a market advantage and 42% of these indicate that this advantage will last ‘years’.

Without superfast broadband. Two-thirds (68%) of businesses indicated that if their business could not have connected to superfast, they would have been negatively impacted – suggesting that not having a superfast broadband rollout in Cornwall would have meant too many businesses would have been left behind.

Business continuity. The final wave of surveying took place during June and July 2020, following or during the latter stages of the Covid-19 lockdown. 13% of businesses said that their superfast broadband connection proved essential, that they could not have continued working without it; a further 32% cited it as helpful and their connection allowed them to keep working.

Overall, businesses are positive about the overall benefits to upgrading to superfast broadband, with 36% indicating the service has been extremely beneficial and a further 47% suggesting it has been ‘quite’ beneficial.

1.5 Economic impact

Businesses connected in July 2020. It is not possible to record the number of businesses connected to Superfast accurately. There are two different ways this can be estimated. Only one method attempts to include unregistered as well as registered businesses. This method estimates that in July 2020 there are 34,300 businesses connected. The other method, which includes only registered businesses, suggests that there is approximately 17,000.

New business start-ups. By July 2020 the roll out of superfast broadband had led to or contributed to around 9,800 new businesses being set up. Not every start-up business creates a full-time employee and the estimated net FTEs from new start-ups is estimated to be about 2,650.

Net economic impact. Net economic impact is the change that can be attributed to superfast connection and incorporates the knock on economic impacts of the programme. Up to July 2020 the combined Superfast Cornwall programmes delivered an estimated 5,300 FTE jobs and £235,800,000 GVA, with safeguarded jobs (net) delivered estimated to be 8,410 and associated GVA of £374,400,000 – as summarised in Table 1.1.

The uplift since the baseline report (which presented impact of the first Superfast Cornwall programme and before any impacts of SEP could be assessed and before the Superfast 2 roll-out) is summarised in Table 1.2 below⁶. This shows that since 2017 the net impact of all Superfast Cornwall programmes was 2,180 FTE jobs and £97,200,000 GVA, with safeguarded jobs (net) delivered estimated to be 4,980 and associated GVA of £238,200,000. The impacts attributable to the SEP and Superfast 2 projects are based on relative take-up.

Table 1.1 – Economic Impact

		Employment FTE	GVA
Established businesses	Gross increase	11,330	504,400,000
	Attributable increase	2,630	117,200,000
	Net increase	2,650	117,900,000
	Attributable safeguarded	8,360	372,100,000
	Net safeguarded	8,410	374,400,000
Start-ups	Attributed businesses start-ups	2,630	117,200,000
	Net increase	2,650	117,900,000
Combined	Overall uplift (net)	5,300	235,800,000
	Safeguarded (net)	8,410	374,400,000

Table 1.2 - Summary of impact 2017-2020 (uplift from baseline)

		Employment uplift from baseline	GVA uplift from baseline
All programmes	Overall uplift (net)	2,180	£97,200,000
	Safeguarded	4,980	£238,200,000
Attributable to SF1	Overall uplift (net)	1,860	£82,900,000
	Safeguarded	4,470	£215,500,000
Attributable to SEP	Overall uplift (net)	200	8,900,000
	Safeguarded	320	14,200,000
Attributable to SF2	Overall uplift (net)	120	5,400,000
	Safeguarded	190	8,500,000
Combined SEP + SF2	Overall uplift (net)	320	14,300,000
	Safeguarded	510	22,700,000

⁶ The surveys delivering the data upon which impact is evaluated are based upon random samples of businesses and households. No business or household was knowingly interviewed more than once during each of the 2011-15 or the 2017-20 evaluations. The majority of survey respondents for the 2017-20 evaluation connected to superfast broadband within the last 5 years; however, it cannot be entirely ruled out that a small proportion of businesses and households may have been invited to participate and subsequently surveyed for both the evaluations.

1.6 Wider impact

The raw data collected across the three 2018-2020 evaluation survey waves has highlighted wider impacts of superfast broadband, especially around flexible working⁷:

- A net balance of 21% (21% increased, less 0% decreased) of businesses say superfast broadband has helped increase the proportion of employees able to work remotely.
- 8% of businesses say superfast has allowed them to retain and/or recruit staff, that otherwise would have been unable to work for the business.
- 52% of household survey respondents say that they or someone in the home uses the internet to do work or business related activities.
- Of respondents who work from home, 60% do so for more than one day a week (and an average 2.6 days) whereas before superfast 66% worked from home less than 20% of the time (i.e. one day per work-week.)
- Working from home has resulted in a reduction in commute to a place of work for 53%, most commonly a car journey (85%) which has saved on average 154 commute miles per week.

1.7 Conclusions and recommendations

The report draws conclusions and recommendations as follows:

1.7.1 Outputs

By the end of March 2019, the 2016-2017 Superfast Extension Programme (SEP) rolled out superfast broadband **coverage** to 10,000 properties and the Superfast 2 Programme has covered a further 9,250 properties from March 2018 to July 2020. The total number of properties in Cornwall able to connect to 30+ Mbps superfast in July 2020 is approximately 251,000. N.B. This is the known coverage available from the three publicly funded programmes - there is further commercial footprint in Cornwall such as from Virgin Media around Saltash and from Openreach and others elsewhere in Cornwall, including into new property builds.

The specific number of **connections** to superfast is estimated to be 158,600 as at July 2020. Based on past take up rates, this is likely to be 173,500 by March 2021. 3.8% of these connections (6,000) are attributable to SEP and 2.3% (3,600) to the Superfast 2 programme.

The number of **businesses connected** continue to grow in line with these figures. The most accurate estimate of the total number of registered and unregistered businesses connected in July 2020 is 34,300, and the most accurate estimate of the total number of registered businesses connected in July 2020 is 17,000. The number of **households connected** is estimated to be 141,600 in July 2020.

Superfast motivated many households to **start-up businesses**. It is estimated that by July 2020 superfast has contributed to 9,800 new businesses to start trading; of these the SEP contributed to around 370 start-ups and Superfast 2 to around 220 start-ups.

⁷ Surveys conducted during 2020 (Wave 3) used questions that were adjusted to counter effects of the Covid-19 lockdown; respondents were asked to provide their responses in isolation of any impacts they may have experienced as a result of changed business

Overall there is high level of **satisfaction** from customers – both businesses and households – with the speed of the connection. For businesses, 80% of respondents were very satisfied or satisfied with speed and 79% were very satisfied or satisfied with reliability. Households indicated a similarly high level of satisfaction with speed (78% satisfied or very satisfied) and reliability (77% satisfied or very satisfied). 13% of business customers and 16% of households were dissatisfied with the reliability of their connection, indicating there may be some problems with this.

1.7.2 Business impact

Overall businesses are positive about the impact of superfast. Firms are using **online services** such as web conferencing and collaboration, video conferencing, and remote data storage more as a result of their connection. A third of businesses describe have changed one or more of their business processes, such as sales, administration or marketing as a result of connecting to superfast broadband. Without the connection, the majority (68%) of firms would have experienced negative impacts – suggesting that not having superfast would be a barrier to growth.

For many businesses their superfast connections proved very important for business continuity during the Covid-19 pandemic lockdown during the spring and summer of 2020. 13% of businesses said that their superfast broadband connection proved essential, that they could not have continued working without it; a further 32% cited it as helpful and their connection allowed them to keep working.

Superfast is benefiting businesses in many other ways. Importantly superfast is helping companies **save money and time and to be more productive** (75% agree). This is reflected in that one in four firms indicate superfast has had a positive impact on their turnover. There is evidence that connection to superfast is contributing to export growth for some business. Around 19% of businesses indicating **new international** sales as a result of superfast.

The evidence around the impact of superfast on **innovation** is mixed – with roughly even numbers of respondents indicating superfast help them develop new goods and services and saying it did not.

Improving access to services and work is an important driver for the Superfast Programme. Businesses do not appear to see their connection to superfast as a particularly strong enabler to employ those who would be otherwise excluded from working for the firm. Only 8% of those firms indicated superfast contributed to this, mainly as a result of permitting remote working/access and more effective communications.

1.7.3 Economic impact

The net economic impact of superfast is the change that can be attributed to superfast and incorporates the knock on economic impacts of the programme. Up to July 2020, the net impact of all Superfast Cornwall programmes was 5,300 FTE jobs and £235,800,000 GVA, with safeguarded jobs (net) delivered estimated to be 8,410 and associated GVA of £374,400,000 – as summarised in Table 1.3.

The uplift since the baseline report (which presented impact of the first Superfast Cornwall programme and before any impacts of SEP could be assessed and before the Superfast 2

roll-out) is summarised in Table 1.4 below⁸. This shows that since 2017 the net impact of all Superfast Cornwall programmes was 2,180 FTE jobs and £97,200,000 GVA, with safeguarded jobs (net) delivered estimated to be 4,980 and associated GVA of £238,200,000.

Table 1.3 - Summary of Superfast Cornwall economic impact

		Employment FTE (2020)	Employment FTE (Baseline)	GVA £ (2020)	GVA £ (Baseline)
Established businesses	Gross increase	11,330	5,180	504,400,000	189,500,000
	Attributable increase	2,630	1,490	117,200,000	88,000,000
	Net increase	2,650	1,500	117,900,000	88,600,000
	Attributable safeguarded	8,360	3,410	372,100,000	135,400,000
	Net safeguarded	8,410	3,430	374,400,000	136,200,000
Start-ups	Attributed businesses start-ups	2,630	1,620	117,200,000	49,800,000
	Net increase	2,650	1,620	117,900,000	50,100,000
Combined	Overall uplift (net)	5,300	3,120	235,800,000	138,600,000
	Safeguarded (net)	8,410	3,430	374,400,000	136,200,000

Table 1.4 - Summary of impact 2017-2020 (uplift from baseline)

		Employment uplift from baseline	GVA uplift from baseline
All programmes	Overall uplift (net)	2,180	£97,200,000
	Safeguarded	4,980	£238,200,000
Attributable to SF1	Overall uplift (net)	1,860	£82,900,000
	Safeguarded	4,470	£215,500,000
Attributable to SEP	Overall uplift (net)	200	8,900,000
	Safeguarded	320	14,200,000
Attributable to SF2	Overall uplift (net)	120	5,400,000
	Safeguarded	190	8,500,000

1.7.4 Wider impact

Wider impacts experienced of superfast broadband and pertaining to ERDF cross-cutting themes include flexible working, reduced commuting (carbon savings) and widening digital access.

Superfast enables **flexible working**. Over half of households indicate that someone in their house uses their connection for work or business-related activities and one in five have

⁸ The surveys delivering the data upon which impact is evaluated are based upon random samples of businesses and households. No business or household was knowingly interviewed more than once during each of the 2011-15 or the 2017-20 evaluations. The majority of survey respondents for the 2017-20 evaluation connected to superfast broadband within the last 5 years; however, it cannot be entirely ruled out that a small proportion of businesses and households may have been invited to participate and subsequently surveyed for both the evaluations.

someone who works remotely all of the time. Of these, household respondents work from home on average 2.6 days a week and other members of their household approximately 2.8 days a week. Within businesses, on average 15% of employees work remotely at least sometimes and 6% all of the time.

The amount of time people are working at home has increased since connecting to superfast; of respondents who undertake work from home, 60% work more than one day a week from home whereas before superfast 66% worked from home less than 20% of the time (i.e. one day per work-week). Two thirds (65%) of households indicate that superfast is a key enabler for home-working. The uplift in home working has positive environmental consequences – taking an average of 154 miles off the typical weekly commute.

Superfast is **widening digital access** for those who are connected. For many, superfast has helped access to goods and services (77% agree/strongly agree). More households are using the internet to access more Government and Public Services online with superfast broadband than before they connected to superfast or upgraded from ‘regular’ broadband. It is also contributing to skill development both in terms of digital skills specifically and skills more widely. A half of respondent households (51%) use the internet to access education resources. 42% of these say they did not do this before they had superfast broadband, and 34% are using the internet for education more than they were before they had superfast.

1.7.5 Recommendations

Assist businesses to address issues with reliability. The business survey indicates there may be issues with the reliability for some of the connections for businesses, and this has been a consistent finding across all survey waves. Whilst satisfaction with speed increases, businesses are increasingly using cloud computing, remote data storage, web conferencing and internet telephony, and they are becoming increasingly dependent on reliable service. Real or perceived issues with reliability may lead to firms not be able to take full advantage of internet services that being connected to superfast bring, therefore businesses could be advised on how to resolve these.

Business advice and financial help. Nearly a half (46%) of survey respondents in 2020 would welcome follow-on business advice and grants to help them make the most of their superfast connection and IT in general. After the initial realised benefit of having a faster connection, companies would like to learn how to utilise their connection more effectively for business growth. Even amongst resident households, where new businesses start-ups may develop, almost a third (31%) think they would benefit from advice, grants or both to make better use of their superfast connection and IT in general.

Aligned activities to promote workforce access. There is little evidence to suggest that a superfast connection in and of itself is encouraging businesses to provide opportunities for those who face barriers to accessing work opportunities (e.g. those with caring responsibilities, based in remote areas, etc.) Targeted activity around this may be required to address this. During the Covid-19 lockdown phase, superfast connections contributed to many businesses being able to keep operating which could be the springboard to demonstrate how superfast-dependent business continuity could underpin new and full smart working strategies.

Understanding innovation. Businesses split on how important superfast is for innovation. For half of the sample, superfast is a key enabler of innovation, for the other half it is not. This is an area that would be worth further investigation in subsequent field work. It would

be interesting to try to understand a bit more about why this might be the case and explore if aligned activity could help support innovation using superfast (or subsequently available digital services) to stimulate the development of new products and services.

2 Superfast Programme

Cornwall's 2011-2015 Next Generation Broadband (NGB) Infrastructure project, known as Superfast Cornwall, had an initial target to make fast, fibre based broadband available to at least 80% of the baseline of 253,000 premises (homes and businesses) in Cornwall by the end of 2014. A total of £53.5m of funding was provided by the European Regional Development Fund (ERDF) in the roll out of the project, making it the largest single EU Convergence Programme investment, while an additional £78.5m was invested by BT. The project aimed to have a real economic transformation and leave a long term legacy for Cornwall and the Isles of Scilly.

The initial target was extended to 95%⁹ of the baseline premises with access to fibre broadband, due to efficiency gains and high take-up¹⁰. By March 2015 the extended target had been exceeded. By the end of 2011-2015 Superfast Cornwall Programme there were 238,000 premises covered by 24+ Mbps of which 232,000 premises were covered by 30+Mbps¹¹. The county has the second best coverage, after Japan, of the 13 comparator areas assessed by Analysys Mason in its 2015 Benchmarking report¹².

As the roll-out progressed, take-up steadily increased and reached 66,500 connected premises in June 2015 and an estimated 90,000 by March 2017.

The Superfast Extension Programme (SEP) started in 2016 and ran until March 2018, with a second programme "Superfast 2" being delivered after this, from 2018 to 2020. The second programme (SEP) aimed to cover 8,000 24+Mbps premises by the end of 2017 and was funded by Broadband Delivery UK (BDUK), Regional Growth Fund (RGF), Growth Deal, Cornwall Council and private sector investment from BT. The rollout concluded with circa 10,000 premises upgraded.

Superfast 2 is a part-EU and Cornwall Council funded programme to roll out superfast broadband to a further estimated 7,500 premises between 2017 and 2020. The £17.6 million programme includes £8.4m ERDF, £3m BDUK, £1.1m Cornwall Council and £5.1m from BT. The target was extended with some additional EAFRD and Cornwall Council funding to cover an additional 423 premises. The current coverage delivered is 9,232 premises (with a small number still to be delivered as part of the EAFRD extension).

⁹ 95% coverage comprising 'fibre broadband' and includes some sub-24Mbps Fibre to the Cabinet (FTTC) lines.

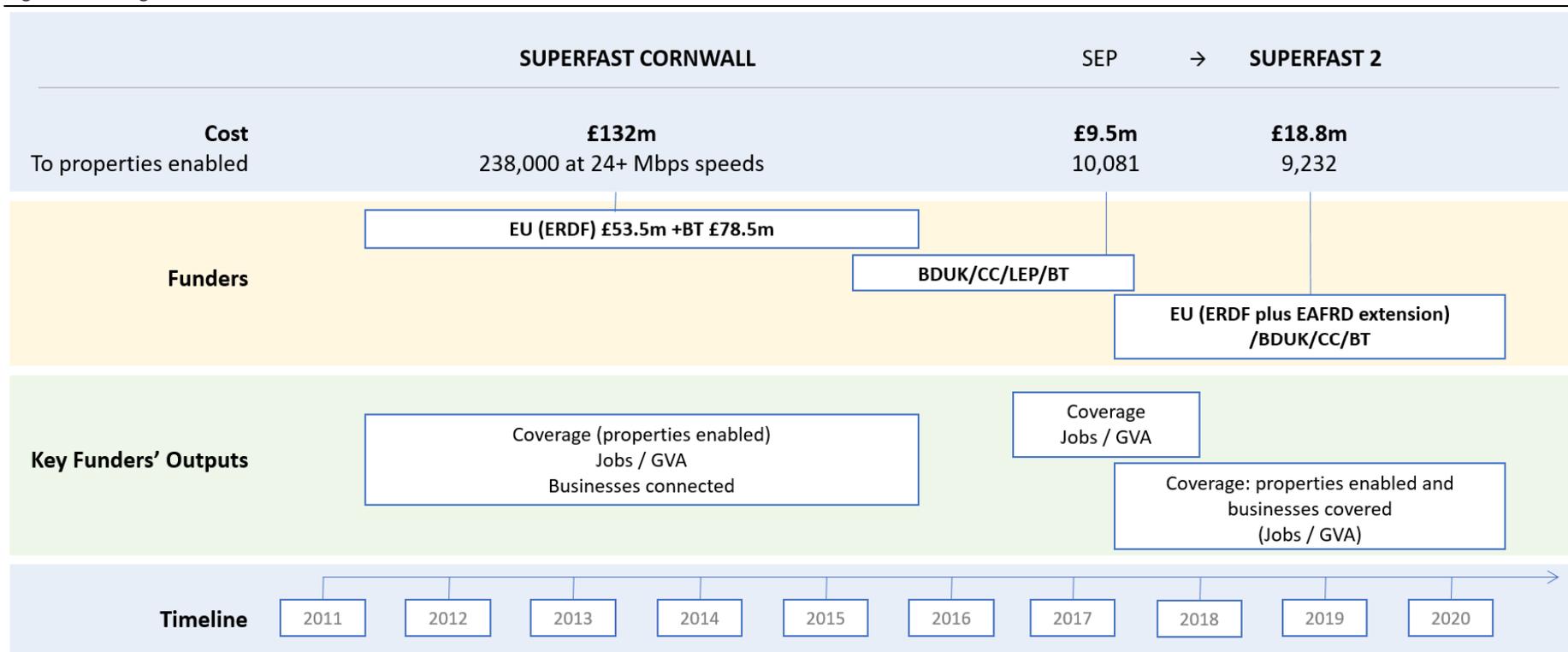
¹⁰The 253,000 premises was a baseline contract figure that excluded the area of Saltash (which was out of scope due to the presence of a second infrastructure in Virgin Media) and any new builds that came on-line since the BT were appointed in 2009 (approximately 2,200 per annum).

¹¹Since the start of the programme in 2010 superfast broadband has been defined as 24Mbps by UK Government and 30+Mbps by the EU.

¹²Analysys Mason was commissioned by CDC to conduct a benchmarking analysis of the anticipated Superfast Cornwall network in March 2015 against 12 comparator areas. Ref: Analysys Mason (2015) Benchmarking the Superfast Cornwall Landing Point.

The phases of the programme are illustrated in the diagram below (see Figure 2-1).

Figure 2-1 – Programme Phases



3 Project Aims and Objectives

The SEP and Superfast 2 programmes continued the work of the pioneering Superfast Cornwall programme. However the scope of the project’s aims and objectives were somewhat scaled back to reflect the smaller funding figure, as well as reflecting the increasing costs required to upgrade remaining rural areas.

3.1 Logic model

The overarching ‘project logic’ of SEP and Superfast 2 is set out in the table below. The evaluation questionnaire and methodology focused on the key outputs, outcomes and impacts that are identified here.

Table 3.1 – SEP and Superfast 2 Project Logic

Objectives	Inputs	Activities	Outputs	Outcomes	Impact
Build on the existing superfast broadband network to connect a further 16,000 premises	Funding from	Install superfast broadband infrastructure – fibre to the premises, fibre to the cabinet	2,880 businesses benefits from upgraded ICT infrastructure (including 1,200 ERDF businesses for Superfast 2)	777 jobs created 411 jobs safeguarded	£15m net additional GVA
	BDUK				
Continue to transform Cornwall’s economy by providing a superfast broadband network for high growth, high value businesses to increase productivity, innovation, collaboration and global opportunities	Private sector investment	Communicating the benefits to businesses SAV Enabling research and innovation projects	Number of households connected Take-up Satisfaction with network performance	£27 million gross increase in GVA £16 million additional safeguarded GVA	337 net additional jobs Net additional new business start-ups (associated GVA and jobs)
	Cornwall Council Investment				
	Regional Growth Fund				
	Growth Deal				
	EU Funding				
	CDC delivery management team				
SAV Strategic leadership	Positive environmental benefits – flexible working, access to work, and services				
Influence and engagement					

3.2 Economic impact estimates

The estimated economic impact to be achieved by March 2022 from both phases of the project are summarised below. The estimates were based on the methodology established and results achieved in the previous Superfast Cornwall 2011-15 programme (by the 2015 Superfast Cornwall evaluation), which were then applied to the estimated number of businesses that were expected to connect during the project.

Table 3.2 – SEP and Superfast 2 target economic impacts

Number of gross jobs created	Gross: 777 Net: 337
Number of jobs safeguarded	411
GVA created	Gross: £26,881,910 Net: £15,282,130
GVA safeguarded	£15,694,454
Number of businesses covered	2880 - Calculated as 18% of 16,000 premises to allow for registered and unregistered businesses (total estimated in Cornwall was 50,000 from the Superfast Cornwall evaluation)
Number of ERDF eligible businesses covered in 2017-2020 'Superfast 2'	1200 - The 1440 figure for Superfast 2 was reduced to 1200 to allow for ERDF ineligible businesses e.g. primary producing farms
EU Cross cutting themes in the 2017-2020 'Superfast 2' programme	

3.3 Role of the Final 2020 Report

In early 2017, PFA Research was commissioned by Cornwall Development Company (CDC) to undertake an evaluation of the superfast broadband roll out in Cornwall between 2017 and 2021. The end of the programme has since been brought forward to close end September 2020 and therefore this final report has also been brought forward.

This evaluation builds on the 2011-15 programme and previous evaluation work led by CDC's Research and Evaluation Manager and SERIO at Plymouth University. Wherever possible, we have used the same or very similar methodology as the 2011-15 evaluation to ensure consistency. Where approaches differ the case for change is clearly stated.

There have been three distinct Superfast programmes

- 2011-2015 Superfast Cornwall Programme
- 2016-2017 Superfast Cornwall Extension Programme (SEP)
- 2018-2020 Superfast 2

The on-going impact of 2011-2015 Superfast Cornwall Programme has been determined alongside 2016-2017 SEP and 2018-2020 Superfast 2.

The first deliverable from the evaluation contract was the baseline summary report in May 2017. This work used the economic model developed for the previous Superfast Cornwall evaluation combined with up to date estimated take-up figures, to estimate the current business take-up figures and the economic impacts in terms of jobs and GVA. No new raw data was collected at this stage but the underlying model was adjusted to reflect available new data. The baseline report allows the uplift from the ongoing impact of the first Superfast Cornwall Programme, the 2016-2017 SEP and 2018-2020 Superfast 2 programmes to be evaluated.

The second deliverable report in 2018 provided an update on the impact of the roll out of superfast broadband based on new primary data and estimated take up figures. For businesses, the 2018 report included only the impact of 2011-2015 Superfast Cornwall Programme, as all surveyed businesses will have been connected for 12 months or more.

Equally, the household survey was undertaken with residents which were connected more than 6 months prior to the interview. Between January and May 2018, 102 businesses and 100 households were surveyed.

The third deliverable was the 2019 interim report, which updated the findings from 2018. A further 155 businesses were interviewed (that had been connected to superfast broadband for 12 months or more) and 100 households (connected for 6 months or more). The report included the impact of the 2011-2015 Superfast Cornwall Programme as well as the 2015-2017 SEP programme.

This final report for 2020 provides an update on the previous interim reports and gives a final assessment of the impacts of the programme overall. An additional 245 businesses (that have been connected to superfast broadband for 6 months or more¹³) and 379 households (connected for 6 months or more) were interviewed. This final report includes all the impacts from the 2011-2015 Superfast Cornwall programme, from the 2015-2017 SEP programme as well as Superfast Cornwall 2. A summary of the survey samples by wave are presented below.

Table 3.3 – Survey Samples, by Wave and Cumulative

	Businesses		Households	
	Wave	Cumulative	Wave	Cumulative
2018 – Wave 1	n=102 ±9.7%	n=102 ±9.7%	n=100 ±9.8%	n=100 ±9.8%
2019 – Wave 2	n=155 ±7.8%	n=257 ±6.1%	n=100 ±9.8%	n=200 ±6.9%
2020 – Wave 3	n=245 ±6.2%	n=502 ±4.3%	n=379 ±5.0%	n=597 ±4.1%

¹³ Given the change in project timings which required the evaluation research fieldwork to take place six months earlier, the requirement for businesses to have been connected for at least 12 months was relaxed to 6 months. 29% of the 2020 sample (and 14% overall) had been connected for at least 6 months but less than 12 months.

4 Outputs: Roll-out, Coverage, Take-up and Satisfaction

This section presents the background statistics and assumptions representing the project outputs, around roll-out of the superfast broadband network in terms of coverage (the estimated number of properties that can access 24+ Mbps broadband) and the proportion of total coverage enabled by each of the three superfast programmes, estimates for the number of businesses and households that have connected, the number of businesses that have started up as a result of superfast broadband. Businesses' and households' satisfaction with the speed and reliability of their connections are also shown.

The evaluation approach and methodology is explained in detail in appendices, together with the key drivers behind the outputs.

4.1 Roll out and coverage

At the end of the Superfast Cornwall programme in 2015, approximately 238,000 properties were able to connect to Superfast 24+ Mbps. By March 2018, SEP covered a further circa 10,000 properties. By July 2020, Superfast 2 has covered a further 9,250 properties.

Table 4.1 – Coverage

Programme	Date	Cumulative new properties covered by SEP	Total number of properties covered by superfast broadband	Proportion of total coverage enabled by SEP
Superfast	2015		238,000	0%
SEP	March 2017	3,200	241,200	1.3%
	Sept 2017	6,000	244,000	2.5%
	March 2018	10,000	248,000	4.0%
Programme	Date	Cumulative new properties covered by SF2	Total number of properties covered by Superfast Broadband	Proportion of total coverage enabled by SF2
Superfast 2	March 2019	3,750	251,750	1.5%
	July 2020	9,250	257,250	3.6%

The number of premises connected to superfast (take up figures) is known to BT although, due to commercial sensitivity, these numbers are not provided to the same degree of accuracy and are available only at certain points in time. When take up figures are quoted, they are estimates provided by the CDC Superfast team.

This report adopts the same assumptions as the 2011-2015 Superfast Cornwall Programme Evaluation. In this evaluation, it is assumed that for businesses it takes one year from connection for an economic impact (such as jobs or GVA growth) to emerge. For households, the lag is assumed to be six months between connection and economic impact. Therefore, to ascertain the economic impact at March 2019, the model considers only those businesses who have been connected for 12 months or more (i.e. the number connected in March 2018).

The Superfast broadband team estimate that in March 2017 there were 90,000 connections to Superfast, 103,400 by March 2018, 128,400 by March 2019 and the total number of connections is estimated at 158,600 by July 2020. For household connections we need to

further estimate the number of connections to January 2020. Using an average growth rate in connections, the estimated number of total connections to January 2020 is 147,450.

4.2 Number of businesses connected

It is not possible to know exactly how many businesses are connected to superfast. BT holds some commercial records of the number of business phone lines, however these will not adequately capture those businesses connecting through domestic agreements. The number of businesses connected must be estimated. There is no 'silver bullet' method for estimating this number, therefore in the 2011-2015 Superfast Cornwall Evaluation, the results from three different methods were compared. One of the methods (Method 2) has not been updated for this report as the market research on which it was based is now out of date. Method 1 and Method 3 are set out and updated in the methodology in section 9.1.

The following table displays estimates of the number of businesses connected to superfast in March 2017 to July 2020.

Table 4.2 – Connected Businesses

Calculation method	Mar 17	Mar 18	Mar 19	Jul 19	Mar 20	Jul 20
Method 1	9,650	11,100	13,750	14,600	16,200	17,000
Method 2 – not used						
Method 3	16,350	19,000	24,700	26,200	32,700	34,300

Method 3 is a more accurate estimate of businesses for registered and unregistered businesses – so the total number of business connections to July 2020 is estimated as 34,300. Due to our approach to sampling, Method 1 is the correct figure to use for the economic impact modelling.

4.3 Number of households connected

The number of households connected is simply the total number of connections minus the estimate of businesses connected. The estimates that drive the economic impact assessment are based on Method 1 and are set out below:

Table 4.3 – Households Connected

Date	Estimated number of households connected	Date	Estimated number of households connected
March 2016	68,400	July 2019	127,250
March 2017	80,350	September 2019	125,000
September 2017	86,350	March 2020	134,950
March 2018	92,300	July 2020	141,600
September 2018	103,500		
March 2019	114,650		

The number of households connected to July 2019 is the key figure used for the economic impact calculations.

4.3.1 Number of start-ups

The number of start-ups is estimated from the number of households connecting. The household survey asks whether the household has set up a business using the internet and if they have, how important was the superfast broadband connection to their decision to start a business.

According to the most recent primary research, 66 households in the sample set up a business using the internet – an average of 0.114 businesses per household connected (gross figures). In terms of attribution to superfast, those businesses for which superfast broadband was ‘important’ or ‘very important’ (62%) in the decision to set up, provides an estimate of an average 0.074 business start-ups per household as a result of their connection to superfast. This adopts the same method as used to evaluate the previous Superfast Cornwall programme, which found an average number of start-ups per household as a result of superfast was 0.044.

In the earlier interim reports evaluating the impact of SEP and Superfast Cornwall 2, the wider definition of attribution and using new data from what was a relatively small group of businesses was considered potentially problematic and estimates were therefore based upon the previous primary research data and used the 0.044 weighting. For the final evaluation report and with a larger survey sample, and in consideration of an economic environment where freelancing is common, it is reasonable to adopt the new figure of 0.074 business start-ups per household (see section 6.3).

The number of new start-ups attributable to superfast is displayed in Table 4.4¹⁴.

Table 4.4 – New start-ups

Date	Estimated number of households connected	Number of business start-ups attributable to superfast (6 month lag)
September 2018	103,500	6,850
March 2019	114,650	7,700
September 2019	125,000	8,550
March 2020	134,950	9,300
July 2020	141,600	9,800

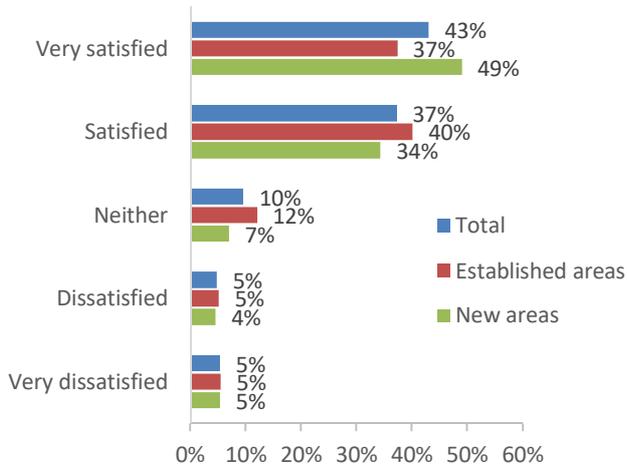
It should be noted that due to different calculation methodologies, it is not possible to combine the number of start-ups with the estimates for the number of businesses connected (using method 3 – see Appendices, Section 9.1.6) without a risk of double counting.

4.4 Satisfaction with network performance

Overall business and households indicate a high level of satisfaction with both speed and reliability of network performance. For businesses, 80% of respondents were very satisfied or satisfied with speed and 79% were very satisfied or satisfied with reliability. Households indicated a similarly high level of satisfaction with speed (78% were satisfied or very satisfied) and reliability (77% were satisfied or very satisfied).

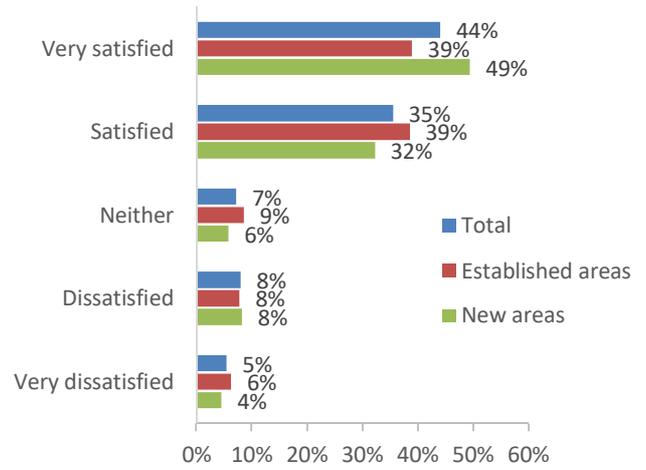
¹⁴ Data for earlier years revised and updated for final evaluation report.

Figure 4-1 – Speed Satisfaction (Businesses)



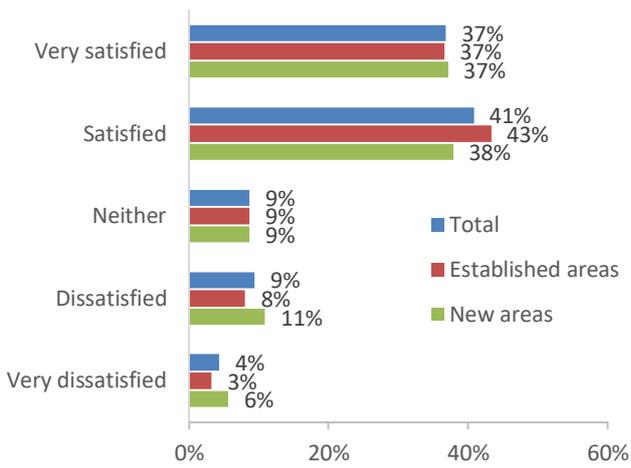
Base: All respondents, n=502

Figure 4-2 – Reliability Satisfaction (Businesses)



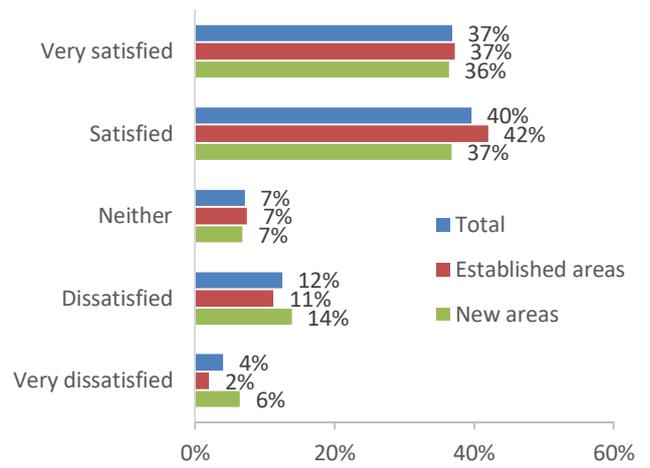
Base: All respondents, n=502

Figure 4-3 – Speed Satisfaction (Households)



Base: All respondents, n=579

Figure 4-4 – Reliability Satisfaction (Households)



Base: All respondents, n=579

5 Business impact

In order to assess the impact of superfast broadband on connected businesses, 502 randomly selected Cornish businesses have been surveyed over three waves, between January and March 2018 (n=102), 2019 (n=155) and 2020 (n=245). Businesses were contacted via phone and screened to confirm they had been connected to superfast broadband for 12 months or longer (6 months in the 2020 wave¹⁵). Within eligible businesses senior decision makers were interviewed. With a sample size of 502, the error margin for the business survey is +/-4.3% at the 95% confidence level – see Table 5.1. Residents of households were also telephone interviewed and screened to confirm they had been connected for 6 months or longer. 597 households were interviewed, allowing the survey to be quoted with an error margin of +/-4.1% at the 95% confidence level.

The geographic frame for the random sample surveys depended upon being able to assign respondents to ‘established areas’ (i.e. those from the Superfast Cornwall 2011-15 enabled areas) or ‘newly enabled areas’ (i.e. those enabled through the SEP and Superfast 2 programmes). Analysis of the survey data throughout is split by ‘established areas’ versus ‘newly enabled areas’. These assignments are approximate as unfortunately there was no accurate way to categorise respondents to one or the other as specific premises enabled by the fibre network build is commercially sensitive information.¹⁶

Table 5.1 – Survey Samples

Date	Businesses	Households
Established areas	n=257 ±6.1%	n=312 ±5.6%
Newly enabled areas	n=245 ±6.2%	n=267 ±6.0%
Total	n=502 ±4.3%	n=597 ±4.1%

5.1 Change in use of broadband

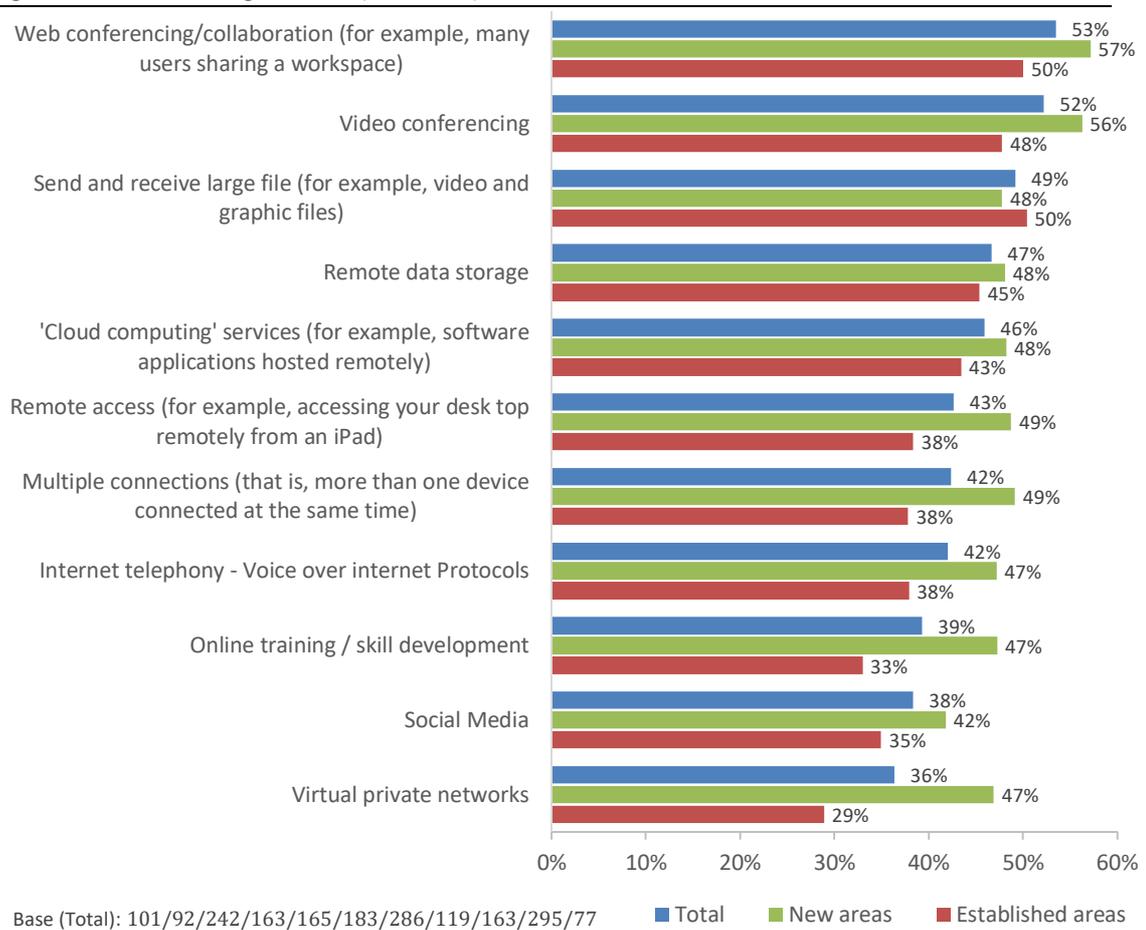
Businesses were asked to identify what they are using their connection for and how this has changed since they upgraded to superfast. Of those businesses using web/collaboration conferencing, 53% overall say they use it more since being connected to superfast broadband. Video conferencing is used more by 52%, 49% are transferring large files and 47% now use remote data storage more than before they were connected to superfast broadband. For almost all applications, those businesses in newly established areas are

¹⁵ Given the change in project timings which required the evaluation research fieldwork to take place six months earlier, the requirement for businesses to have been connected for at least 12 months was relaxed to 6 months. 29% of the 2020 sample (and 14% overall) had been connected for at least 6 months but less than 12 months.

¹⁶ The process followed for drawing the survey samples is set out in appendices (section 9.1.9) which explains why it was not possible to say with any degree of accuracy whether all those assigned to either established or newly enabled areas truly related to the first Superfast Cornwall programme or the SEP/Superfast 2 programmes.

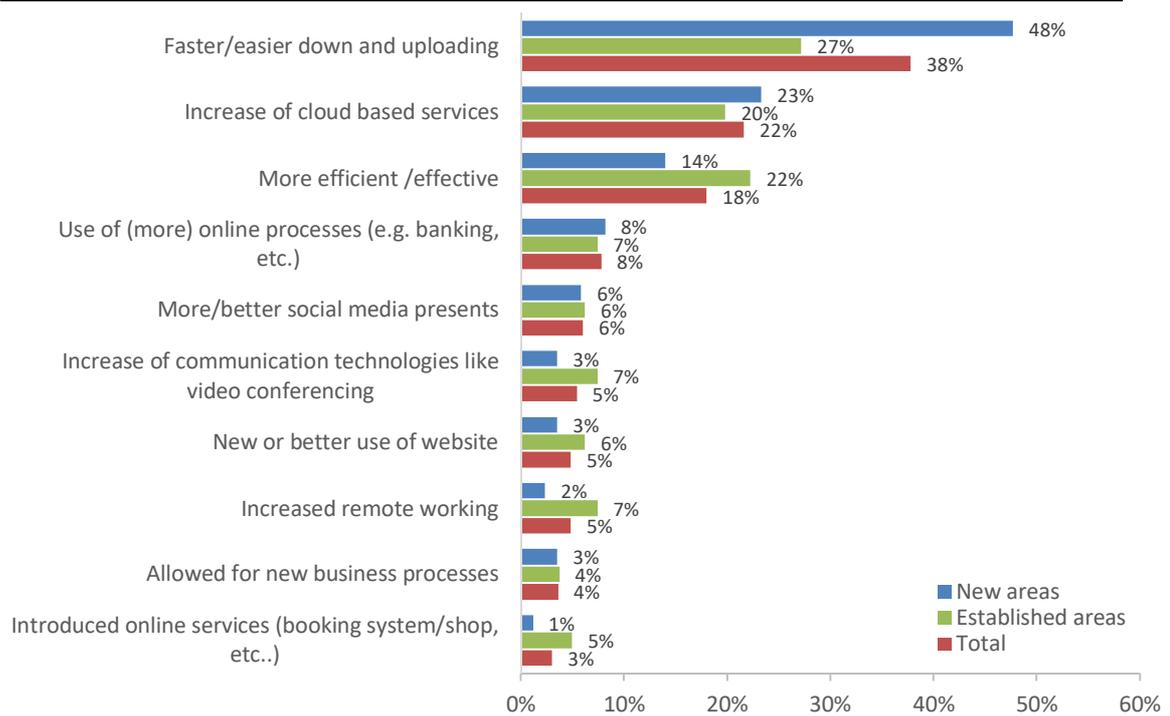
more likely to say they are making greater use of their superfast broadband connection than those in the established areas.

Figure 5-1 – Function Usage Increase (Businesses)



A third of businesses (34%) have changed one or more of their business processes, such as sales, administration or marketing, etc., since connecting to superfast broadband. When asked how these processes have changed (displayed in Figure 5-2), the most common mechanism was through faster/easier down/uploading – cited by 38% overall and by almost half (48%) of those from newly enabled areas, the increased use of cloud based services (22%), and being more efficient/effective (18%).

Figure 5-2 – Process Changes (Businesses)



Base: Those who have changed business processes, n=167

Other process changes mentioned by 2% or fewer included: back up for unreliable broadband connection; increased premises offer due to better connectivity; potential to expand; use of more reliable broadband connection; spend more time using technology; decreased speed; and, new service offering.

Two thirds of businesses (68%) indicated that if their business could not have connected to superfast, they would have been impacted negatively (Figure 5-3) – suggesting that not having a superfast broadband rollout in Cornwall would have meant too many businesses would have been left behind. The final wave of surveying took place during June and July 2020, following or during the latter stages of the Covid-19 lockdown. 13% of businesses said that their superfast broadband connection proved essential, that they could not have continued working without it; a further 32% cited it as helpful and their connection allowed them to keep working.

Almost half (48%) of businesses that said they would have been impacted described that likely impact to be loss of productivity, effectiveness, efficiency, time etc. and more than half (56%) of businesses in the newly enabled areas stated this would have been the impact (Figure 5-4). The second most cited expected impact, by 15% overall, would have been a limit to use of enabling technology such as cloud based services.

Figure 5-3 – Impact of Non-Connection (Businesses)

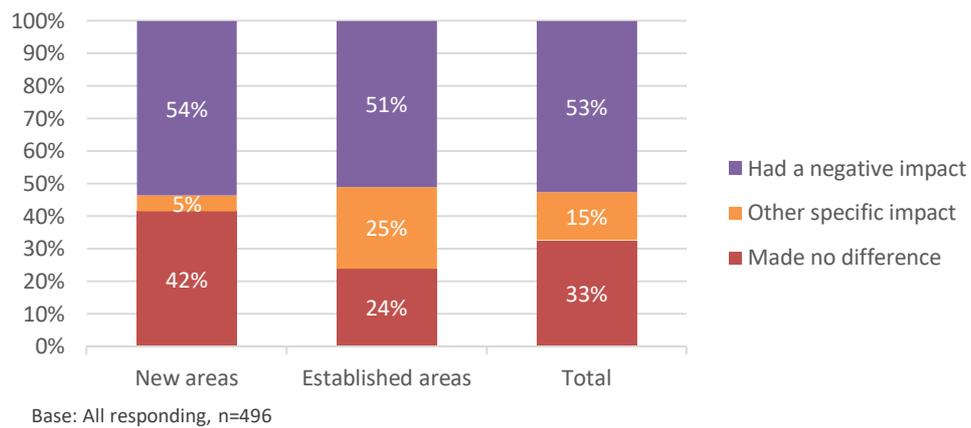
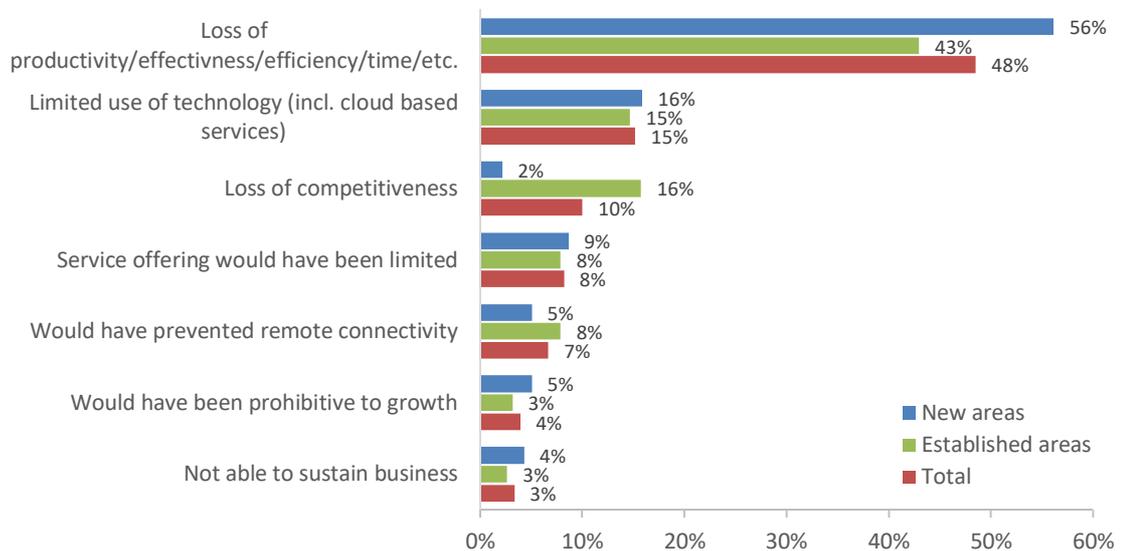


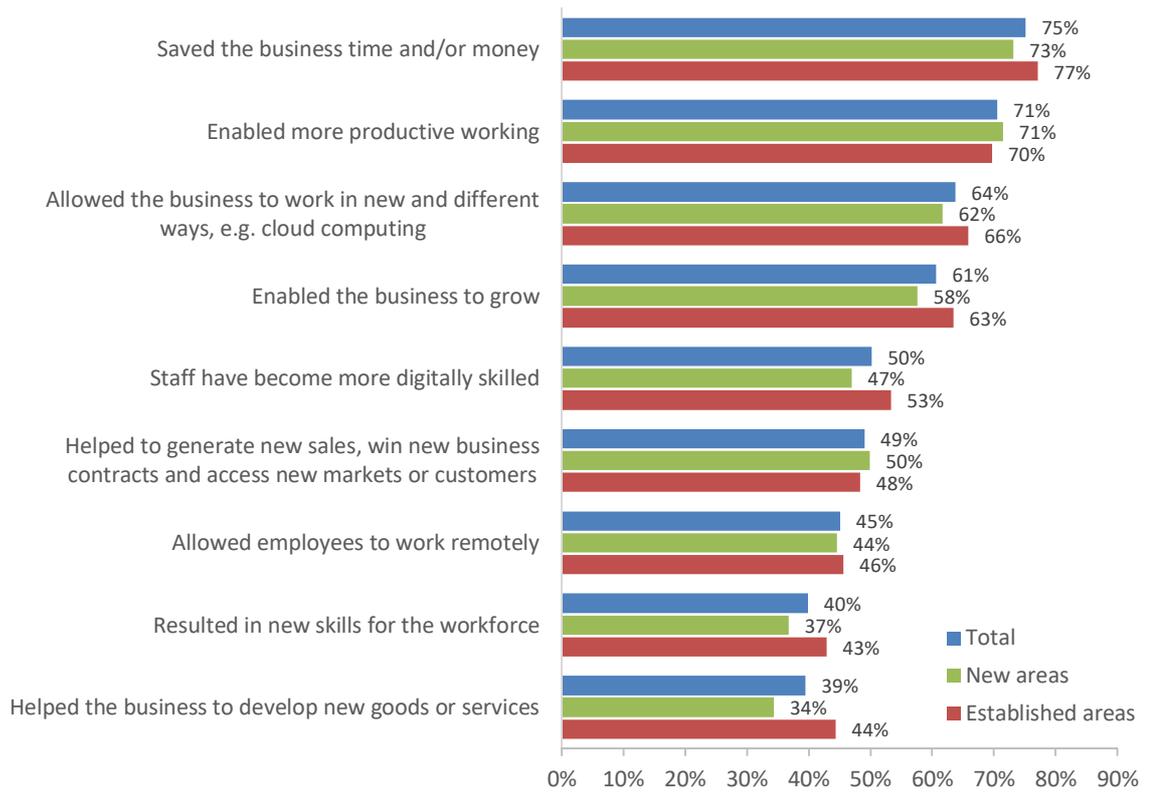
Figure 5-4 – Nature of Impact of Non-Connection (Businesses)



The impact of superfast manifests in many ways, as shown in Figure 5-5. According to the businesses interviewed, the strongest impact was experienced through businesses saving time and/or money (75% overall agree with this) – a finding that is in keeping with the previous Superfast Cornwall evaluation research (2015). Other strong impacts are (i) raising productivity and (ii) enabling businesses to work in new ways.

There is some evidence that upgrading to superfast broadband enabled innovation (39% indicated superfast helped them develop new goods/services), although the impact is not as obvious as for other impacts considered here. This figure is ten percentage points lower than for previous Superfast Cornwall evaluation research (2015), suggesting that a superfast connection may be less of a driver for innovation than it previously was, although the figure for established areas is ten percentage points higher than the newly enabled areas which could mean that impact on ‘innovation’ is a suppressed benefit to emerge after superfast broadband becomes embedded in businesses over time.

Figure 5-5 – Superfast Broadband Impact - % agreeing or strongly agreeing with statement (Businesses)



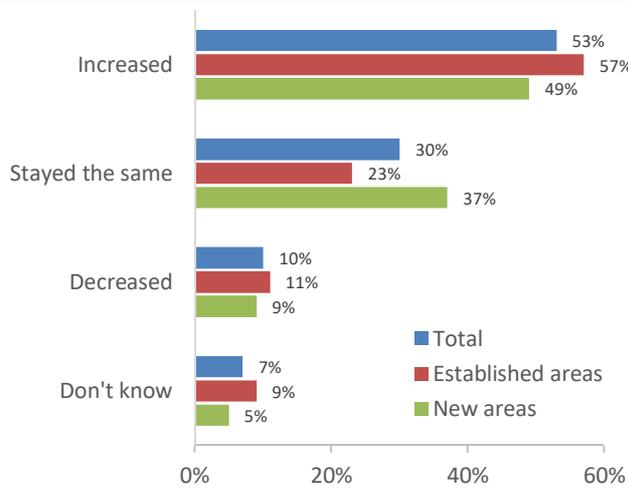
Base: All respondents, n=502

5.2 Turnover, profit and costs

334 out of a total 502 firms (67%) were willing and able to provide their company turnover, explicitly (240) or estimated to a range band (94). Their combined turnover for the previous financial year was £251.4 millions, an average of £0.8 millions per business. These 334 businesses employ 9.2 people on average, reflecting a skew towards slightly larger businesses in the survey sample (rather than micro-businesses and sole traders).

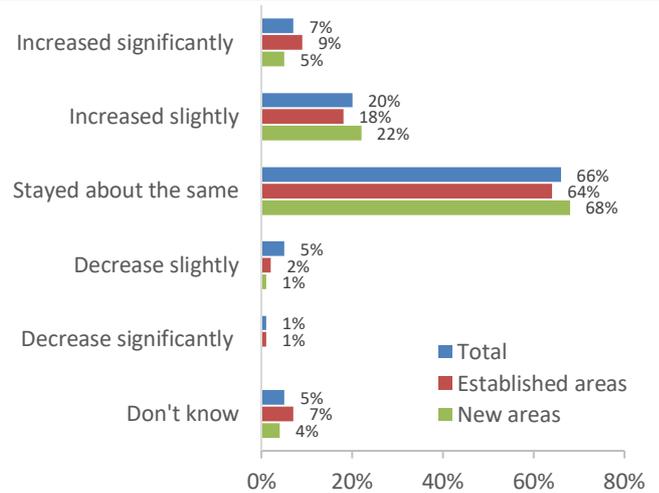
53% of firms surveyed (57% in established areas) indicated that they anticipate their turnover to be higher in the current financial year than the last. Over a quarter (27% overall) suggested that their turnover had increased since they connected to superfast broadband (which was between 12 and 36 months ago for the majority of firms participating).

Figure 5-6 – Current Financial Year (Businesses)



Base: All respondents, n=502

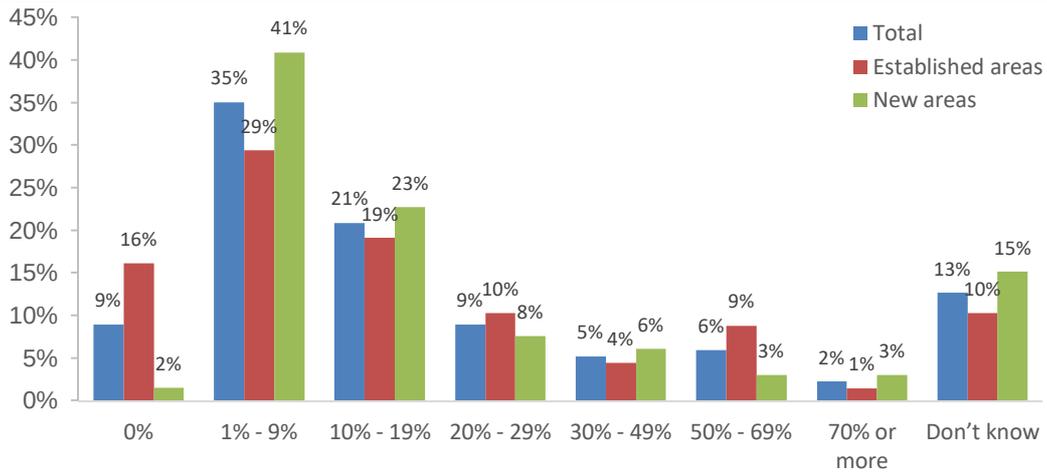
Figure 5-7 – SFBB Effect on Turnover (Businesses)



Base: All respondents, n=502

Of the 134 which indicated a growth in turnover since connecting to superfast, there is some evidence of superfast having contributed to this growth – 43% of these attribute over 10% of their turnover uplift to their connection and only 9% overall report there has been no impact.

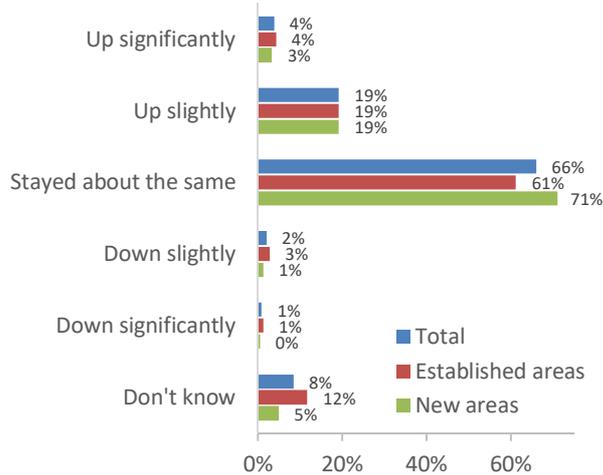
Figure 5-8 – Proportion of turnover uplift attributable to upgraded connection (Businesses)



Base: All those expecting higher turnover, n=134

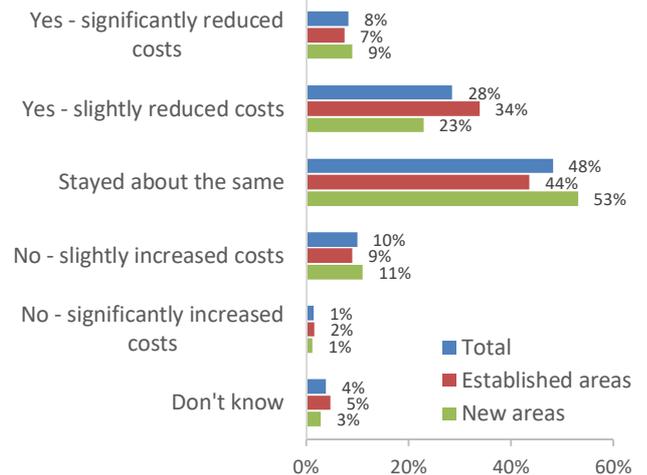
Superfast has had a limited impact on profits, however over a third of respondents say that superfast has reduced their costs (8% significantly, 28% slightly).

Figure 5-9 – Profit Levels (Businesses)



Base: All respondents, n=502

Figure 5-10 – Cost Levels (Businesses)

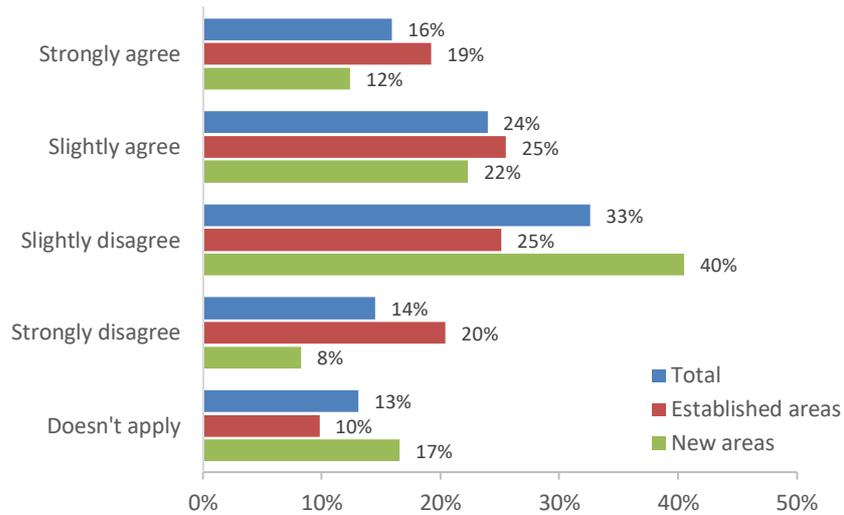


Base: All respondents, n=502

5.3 Businesses introducing new products and services

In terms of innovation, the evidence of the impact of superfast on firms' ability to develop new products and services is divided – with almost as many businesses strongly agreeing or strongly disagreeing with the statement “superfast helped the business to develop new goods and services” as strongly or slightly agreeing. However, those in the newly enabled areas are more likely to disagree that superfast broadband has helped develop new goods or services than those in the established areas (net difference -14% vs -1%).

Figure 5-11 – New Products or Service (Businesses)



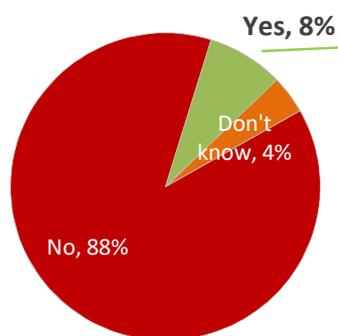
Base: All responding, n=497

5.4 Recruitment and sales

One of the desired added value outcomes of the Superfast Cornwall 2 programme is to make work more accessible for those who may find it difficult due to their circumstances, such as because they live in remote locations or have responsibilities for caring or other such commitments.

To consider this from the business perspective, survey participants were asked if connecting to superfast broadband had enabled them to retain and/or recruit staff that would have been unable to work for the business (e.g. who need to work from remote locations, etc.). The results (displayed in Figure 5-12), indicate a small proportion (8%) for which this impact is apparent.

Figure 5-12 – Ability to Employ/Retain Staff (Businesses)



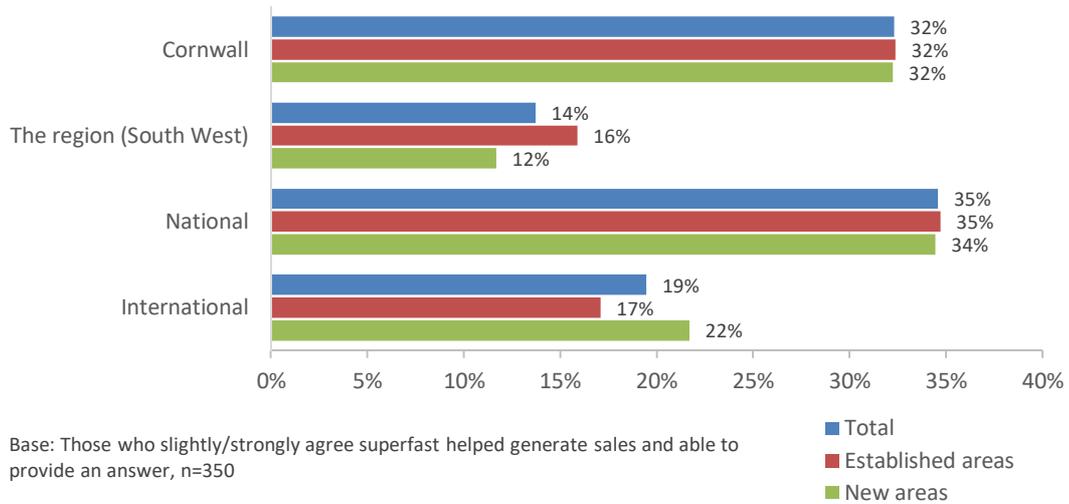
Base: All respondents, n=502

Q: Briefly explain how Superfast Broadband has helped you to retain/recruit those employees:

- Allowed for remote working/access (16)
- More effective communications (8)
- Increased sales (6)
- More flexibility/reliability (3)
- Added new skill into business (2)
- Able to recruit online (2)
- Allowed for secure communications (1)

49% of respondents indicated that superfast broadband has helped generate sales, win new business contracts and access new markets (Figure 5-5). In terms of the location of these new sales, the picture is quite mixed, as Figure 5-13 suggests. However, nearly one in five (19%) of these indicate that their new sales are mainly international which indicates superfast broadband has contributed to some export led growth.

Figure 5-13 – New Customer Areas (Businesses)



Around one in four firms believe connecting to superfast has provided a market advantage and 42% of these indicate that this advantage will last ‘years’. Over the three waves, and potentially reflecting how superfast broadband takes time to achieve impact, the proportion of businesses believing they have market advantage over competitors has increased, from 18% measured in 2018, to 29% recorded in 2020.

Figure 5-14 – Market Advantage (Businesses)

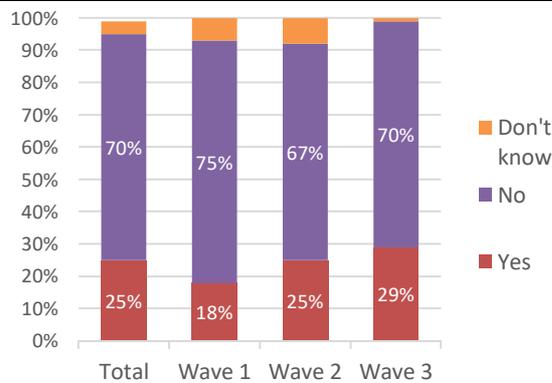
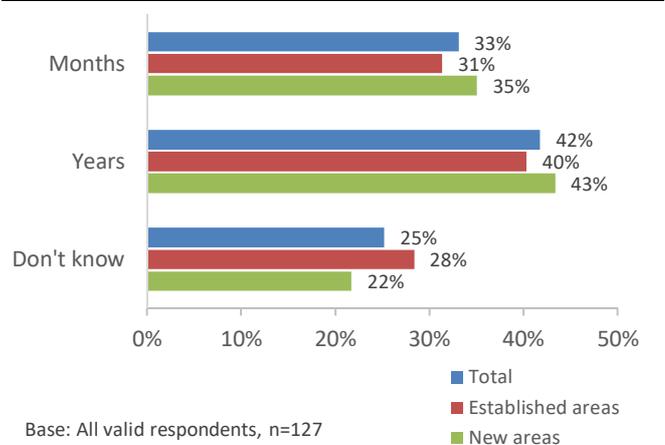
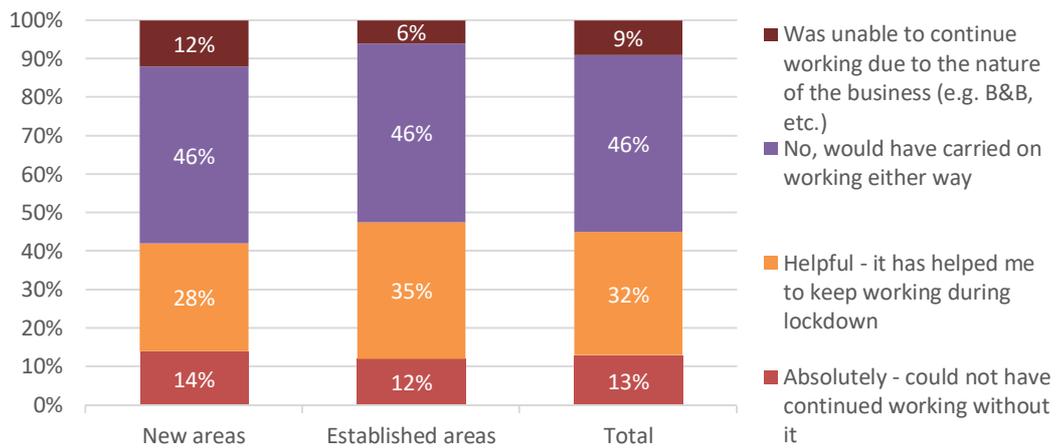


Figure 5-15 – Advantage Duration (Businesses)



The final evaluation surveys were scheduled and conducted during the 2020 Coronavirus pandemic. 45% of businesses confirmed that having a superfast broadband connection either helped them to keep on working during lockdown (32%) or was essential and they could not have continued working without it (13%). (Figure 5-3.)

Figure 5-16 – Business Continuity During Covid-19 Lockdown (Businesses)

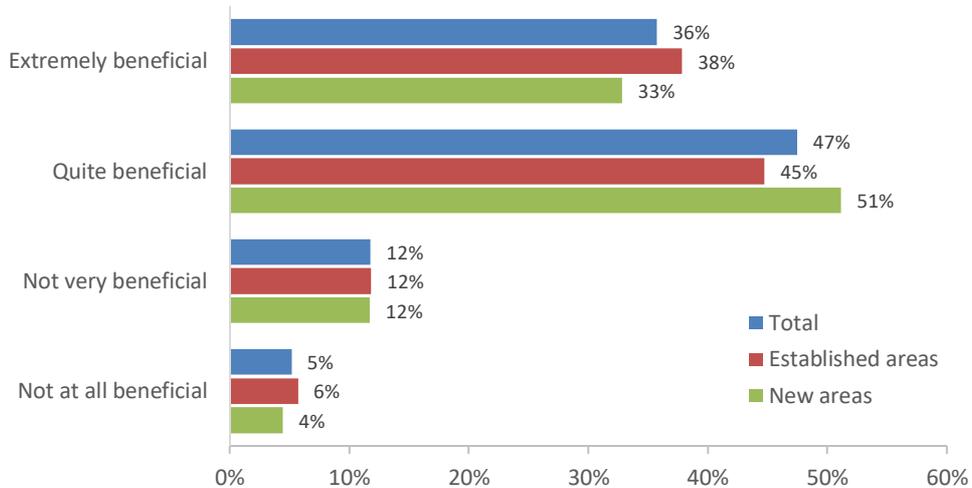


Base: All Wave 3 respondents, n=245

5.5 Overall benefit

Overall, businesses are positive about the overall benefits to upgrading to superfast broadband, with 36% indicating the service has been extremely beneficial and a further 47% suggesting it has been 'quite' beneficial. Only 5% said that upgrading was 'not at all beneficial'.

Figure 5-17 – Overall Benefit (Businesses)



Base: All responding, n=426

6 Economic impact

No economic development project takes place in a vacuum and it is essential to take into account what would have happened in the absence of the intervention and isolate the impact of the intervention. In line with government guidance, the following factors are included in the economic impact model and are referred to in the rest of this section:

Gross impact. Gross jobs or GVA created is the total change in the jobs/GVA during the previous two years in those businesses connected to superfast.

Attributable impact. The attributable figure is the amount of the change that can be attributed to connections to superfast broadband.

Net impact. The net impact considers the wider economic effects to Cornwall – both positive and negative. It takes account of:

- Displacement. The degree to which the benefits of the project are offset by reductions of employment or output elsewhere in Cornwall. An estimate of 19.5% is used¹⁷.
- Leakage. The project benefits which are outside the target area. However, since the survey asks only about jobs and growth this is assumed to be zero.
- Substitution. When a firm substitutes one activity for a similar one to take advantage of public sector assistance. However, the previous research assumed substitution to be zero since the programme was being rolled out across Cornwall.
- Multiplier. This is the further economic effect caused in Cornwall by new jobs or growth in profits or wages in Cornwall through the local supply chain or through wage spending in the local economy. This is estimated to be 1.25¹⁸.

6.1 Jobs and GVA created (established business)

Gross jobs created and GVA

The business survey has covered 502 companies, representing 7,466 employees (incl. sole-traders and those self-employed), with a median of 4 employees per company. 61% are micro businesses and only one person working for the business.

Although the majority of firms have seen no employment growth in the two years prior to interview, 18% of businesses indicate that at time of interview they employed more people than they did two years before (only 3% indicated a decrease). On average across the sample, that represents an average increase in (gross) employment of 0.77 employees per firm.

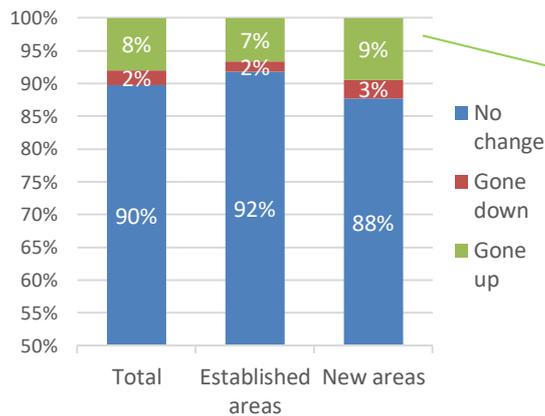
Using the estimated number of business connections to July 2019 (highlighted on page 21), as approximately 14,620¹⁹, the total number of gross jobs created from established businesses is 11,330 FTEs.

¹⁷ This figure was used in the previous impact evaluation and came from BIS Occasional Paper No.1 “Research to Improve the Assessment of Additionality”.

¹⁸ Multiplier estimate from the same BIS Occasional paper.

¹⁹ Based on Method 1 calculations – see Appendices, Section 9.1.6.

Figure 6-1 – Staffing Levels (Businesses)



Base: All respondents, n=502

*Q: Approximately how many more people are you employing to two years ago? (n=90, those with **increased** staffing levels)*

- 10 or more staff (8)
- 5 - 9 more staff (9)
- 4 more staff (13)
- 3 more staff (15)
- 2 more staff (21)
- 1 more staff (24)

Totalling 600 jobs created over each respondent's previous two years.

The methodology for calculating GVA is set out in detail in the annex. It uses a different methodology to that used for the evaluation report of the first Superfast Cornwall programme for a number of reasons – firstly as ONS now produce sub-regional productivity measures, and secondly the methodology employed to determine GVA per FTE is based on the methodology from the South West Regional Accounts which have not been updated since 2010, meaning it is now out of date. Although there is no sector specific figures available, the robustness of the ONS estimates outweighs the benefits of the additional granularity of estimated sector specific figures.

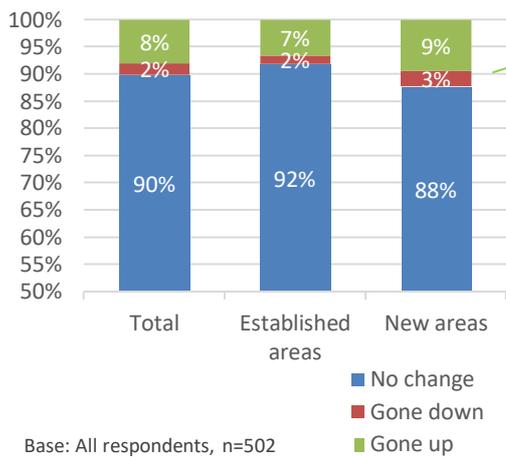
To enable transparency of approach, we have chosen to use an average GVA per hour worked figure for Cornwall published by ONS which is £26.50 per hour. Assuming on average a full time worker works 35 hours a week, 48 weeks a year, this gives an estimate of £44,520 per FTE. Using this, Gross GVA to March 2020 is estimated to be £504,400,000.

Attributable jobs and GVA

In the previous evaluation, the amount of job growth attributable to superfast broadband was determined through a robust counterfactual method – comparing the growth of firms connected to superfast with those which were not. This approach provide an average FTE uplift of 0.18 per firm.

The evaluation plan and budget for this report did not allow for a counterfactual survey, so the questionnaire included a question to explore how much impact can be attributed to superfast. Respondents were asked to estimate the number of jobs that have been created as a result of superfast broadband. The vast majority (90%) of businesses do not attribute any employment growth with their connection to superfast. 27 businesses in the interview sample indicated employment growth attributable to superfast broadband – working out as an average of 0.26 jobs per firm. However as indicated in Figure 6-2, this figure (as can be the case with very small response groups) is dominated by an 'outlier' response that indicated their connection to superfast led to 40 new jobs in the firm. While this is possible, it would not be appropriate to apply this figure to the whole of the sample. Removing the outlier gives an average attributable job uplift of 0.18 jobs per firm which, although based on a small number of responses and therefore may not be reliable, aligns with the counterfactual.

Figure 6-2 – SFFB Influence on Staffing Levels (Businesses)



Q: Please could you estimate the change as a result of being connected to superfast broadband? (n=27, those with increased staffing levels due to SFBB and able to estimate)

- 10 or more staff (5)
- 5 to 9 more staff (3)
- 2 to 4 more staff (12)
- 1 more staff (7)

Totalling 133 jobs created which are attributed to the company connecting to superfast broadband.

Reason for Job Gain	Reason for Job Loss
Increased sales/orders (13)	Lost trade due to unreliable service (3)
Better/more communications possible (7)	Enabled better/new business procedures (2)
Essential to the business operations (4)	
Time gained reinvested into the business (2)	
Established remote premises (2)	
More effective product sourcing (1)	

The attributable number of jobs to July 2020 is therefore 14,620 multiplied by 0.18 which gives an estimated number of jobs from established businesses of 2,630. Using the same average GVA per FTE figure, the total attributable GVA is £117,200,000.

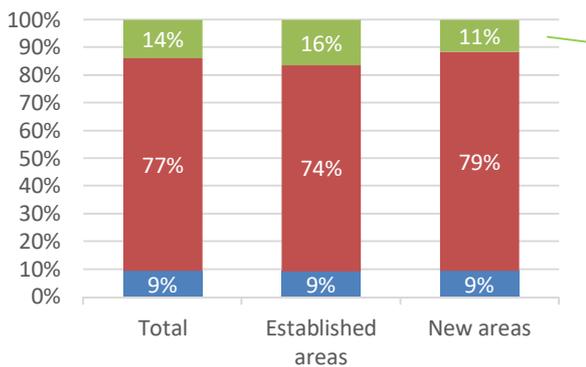
Net jobs and GVA

Employing the displacement and multiplier factors estimates net jobs created to be 2,650 and GVA to be £117,900,000.

6.2 Jobs safeguarded (established business)

Safeguarded jobs are defined as those jobs which were forecast to be at risk, but are no longer at risk of being lost within the next year. 14% of the business survey sample indicated that as a consequence of connecting to superfast, jobs in the firm have been safeguarded. On average 0.57 FTE jobs were safeguarded per firm.

Figure 6-3 – Safeguarding Jobs (Businesses)



Q: Could you please estimate how many? (n=70, those with safeguarding jobs due to SFBB)

Estimated 287 jobs were safeguarded by companies as a result of their connection to superfast broadband. (Established areas: 131; Newly enabled areas: 156.)

Base: All respondents, n=502 ■ Don't know ■ No ■ Yes

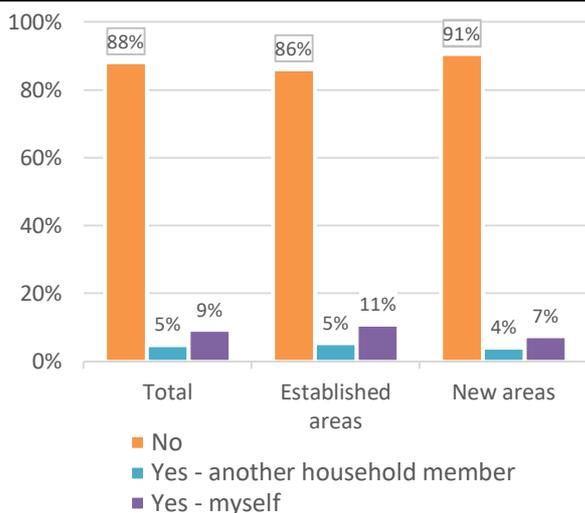
The **attributable** number of safeguarded jobs to July 2020 is 8,360. Associated safeguarded attributable GVA is £372,100,000.

Accounting for displacement and multiplier, the net safeguarded jobs figure is 8,410 and associated GVA is £374,400,000.

6.3 New business start-ups - jobs and GVA

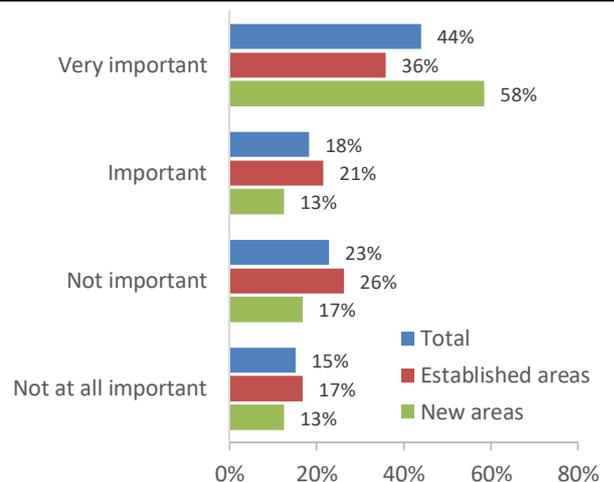
The motivation for starting up a business are varied, but previous research has indicated that access to superfast broadband has been a contributing factor to the decision to begin trading. The household survey gives us an insight into this. Respondents were asked, “Have you (and/or another household member) used the internet to set up your own business?”²⁰ – see Figure 6-4.

Figure 6-4 – Home Business (Residential)



Base: All respondents, n=579

Figure 6-5 – Influence of SFBB to set up business (Residential)



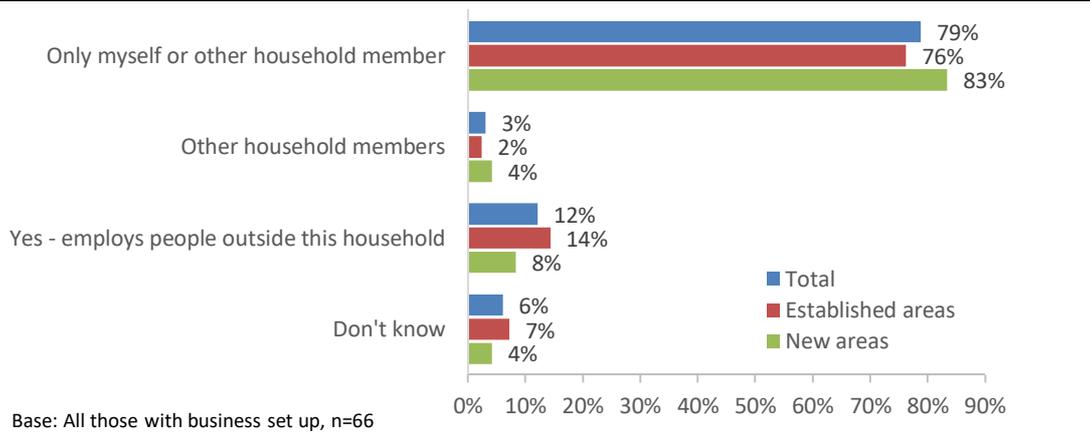
Base: Those setting up business, n=66

²⁰ Question amended for the final survey to “Prior to the Covid-19 lockdown, have you (and/or another household member) used the internet to set up your own business?”

Figure 6-5 sets out the estimated number of business start-ups that is attributable to superfast. It is assumed that the impact on households is visible after 6 months, so the September 2019 start-up figures drive the model for determining the jobs and GVA. It is estimated that 9,800 have been established as a result of superfast connections (see Table 4.4)

The survey data provides some insight into employment in the start-ups businesses, although the base numbers are low (Figure 6-6). In the main, employment in these businesses is confined to those who set up the business and only a few employ anyone outside the household – meaning they are mainly sole traders.

Figure 6-6 – Home Business Employees (Residential)



In addition to 52 who said they employ themselves or another household member in a start-up business, an additional 23 'external' people are employed in four businesses full time, and four businesses employ nine (9) part-time workers.

Of the 68 respondents saying they or a household member has used the internet to set up a business however, 41 (66%) say that superfast broadband was influential in the decision to start a business and with further data confirming the business was set-up since they were connected. Some other businesses appear to have been established before superfast broadband was available to them and it is likely that their business activities diversified once they became connected. These 41 businesses account for 23 FTEs, though from the data it is not possible to say further whether the roles still exist or whether all of the sole trader roles are actually full time roles. This subset would suggest an average of 0.04 jobs per household connected to superfast broadband though the samples are small to be able to project with great accuracy. The previous evaluation found an average of 0.02 jobs per household connected, so in the interest of erring on the side of caution we have retained this figure to be used in the calculations.

The attributable FTE is 2,630 and GVA is £117,200,000.

Accounting for substitution and multiplier effects the net jobs figure is 2,650 and GVA is £117,900,000.

6.4 Summary of economic impact

The table below sets out the key economic impact estimates for the final 2020 report, compared to the 2017 baseline.

Table 6.1 – Summary of economic impact

		Employment FTE (2020)	Employment FTE (Baseline)	GVA £ (2020)	GVA £ (Baseline)
Established businesses	Gross increase	11,330	5,180	504,400,000	189,500,000
	Attributable increase	2,630	1,490	117,200,000	88,000,000
	Net increase	2,650	1,500	117,900,000	88,600,000
	Attributable safeguarded	8,360	3,410	372,100,000	135,400,000
	Net safeguarded	8,410	3,430	374,400,000	136,200,000
Start-ups	Attributed businesses start-ups	2,630	1,620	117,200,000	49,800,000
	Net increase	2,650	1,620	117,900,000	50,100,000
Combined	Overall uplift (net)	5,300	3,120	235,800,000	138,600,000
	Safeguarded (net)	8,410	3,430	374,400,000	136,200,000

The vast majority of these impacts are from 2011-2015 Superfast Cornwall Programme as SEP only completed in March 2018 and the Superfast Cornwall 2 roll-out completed in March 2019. It will take time for the longer impacts of Superfast Cornwall 2 to mature. The following tables apportion the impacts to the early 2011-2015 Superfast Cornwall Programme (SF1), SEP and Superfast Cornwall 2 (SF2) by take-up.

Table 6.2 – Summary of economic impact (Employment FTEs) by Programmes

		All programmes	Impact of SF1	Impact of SEP	Impact of SF2
Established businesses	Gross increase	11,330	10,640	430	260
	Attributable increase	2,630	2,470	100	60
	Net increase	2,650	2,490	100	60
	Attributable safeguarded	8,360	7,850	320	190
	Net safeguarded	8,410	7,900	320	190
Start-ups	Attributed businesses start-ups	2,630	2,470	100	60
	Net increase	2,650	2,490	100	60
Combined	Overall uplift (net)	5,300	4,980	200	120
	Safeguarded (net)	8,410	7,900	320	190

Table 6.3 – Summary of economic impact (GVA) by Programmes

		All programmes	GVA £ SF1	GVA £ SEP	GVA £ SF2
Established businesses	Gross increase	504,400,000	473,900,000	19,100,000	11,400,000
	Attributable increase	117,200,000	110,100,000	4,400,000	2,700,000
	Net increase	117,900,000	110,800,000	4,500,000	2,700,000
	Attributable safeguarded	372,100,000	349,600,000	14,100,000	8,400,000
	Net safeguarded	374,400,000	351,700,000	14,200,000	8,500,000
Start-ups	Attributed businesses start-ups	117,200,000	110,100,000	4,400,000	2,700,000
	Net increase	117,900,000	110,800,000	4,500,000	2,700,000
Combined	Overall uplift (net)	235,800,000	221,500,000	8,900,000	5,400,000
	Safeguarded (net)	374,400,000	351,700,000	14,200,000	8,500,000

7 Wider impact

This section presents findings from the Business Survey and the Household Survey to evidence some of the wider impacts experienced of superfast broadband and pertaining to ERDF cross-cutting themes.

7.1 Flexible working

42% of businesses say at least one person working in the business works remotely at least some of the time and 20% have someone who works remotely 'all of the time'. On average 15% of employees work remotely at least sometimes and 6% all of the time.^{21 22}

A net balance of 21% (21% increased, less 0% decreased) of businesses say superfast broadband has helped increase the proportion of employees able to work remotely. 8% of businesses say superfast has allowed them to retain and/or recruit staff, that otherwise would have been unable to work for the business.

Superfast broadband has clearly had a positive impact on many businesses during the 2020 Coronavirus pandemic lockdown, allowing them to implement business continuity plans. 45% of businesses confirmed that having a superfast broadband connection either helped them to keep on working during lockdown (32%) or was essential and they could not have continued working without it (13%) – see Figure 5-3 above. In other research conducted by PFA Research in July 2020 through its What Cornwall Thinks panel, the proportion of people working from home increased from 15% to 27%, and the proportion that were going out to work was 20% (compared to 40% when the question was asked in March 2020). Of those working from home, only about one third usually did so and 90% said homeworking 'suited them' (compared to 81% when asked in March 2020).

52% of household survey respondents say that they or someone in the home uses the internet to do work or business related activities. Of these, respondents work from home on average 2.6 days a week and other household members approximately 2.8 days a week (Figure 7-1 and Figure 7-3).

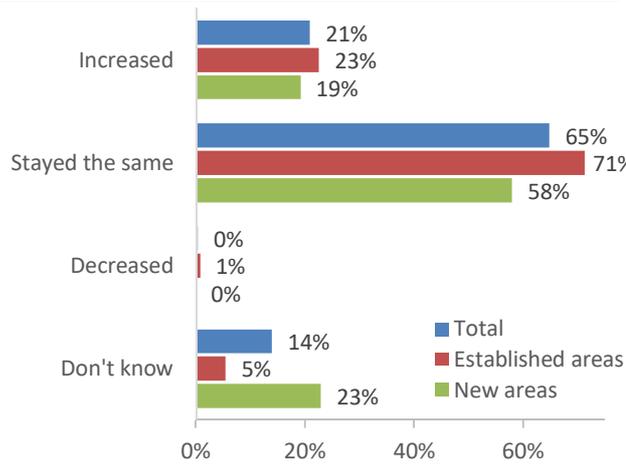
Superfast broadband has clearly made a difference to these respondents. Of the 43% of respondents who undertake work from home, 60% work more than one day a week from home whereas before superfast 66% worked from home less than 20% of the time (i.e. one day per work-week) (Figure 7-4 to Figure 7-7).

65% say that having superfast broadband was 'very important' (47%) or 'important' (18%) in their decision to work from home (Figure 7-8). Working from home has resulted in a reduction in commute to a place of work for 53%, most commonly a car journey (85%) which has saved on average 154 commute miles per week (Figure 7-9).

Q: Since connecting to superfast Broadband, has the proportion of employees being able to work remotely...?

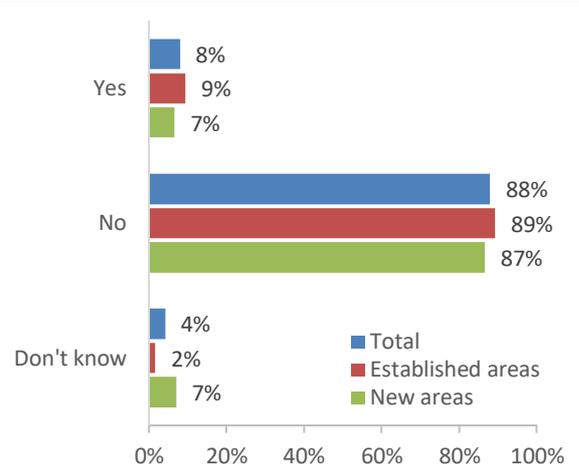
Q: Since connecting to Superfast Broadband, have you been able to retain and/or recruit staff, that otherwise would have been unable to work for the business? i.e. those who need to work remotely due to remote locations, those who have caring or child care responsibilities, etc.)

Figure 7-1 – Remote Working (Businesses)



Base: All respondents, n=502

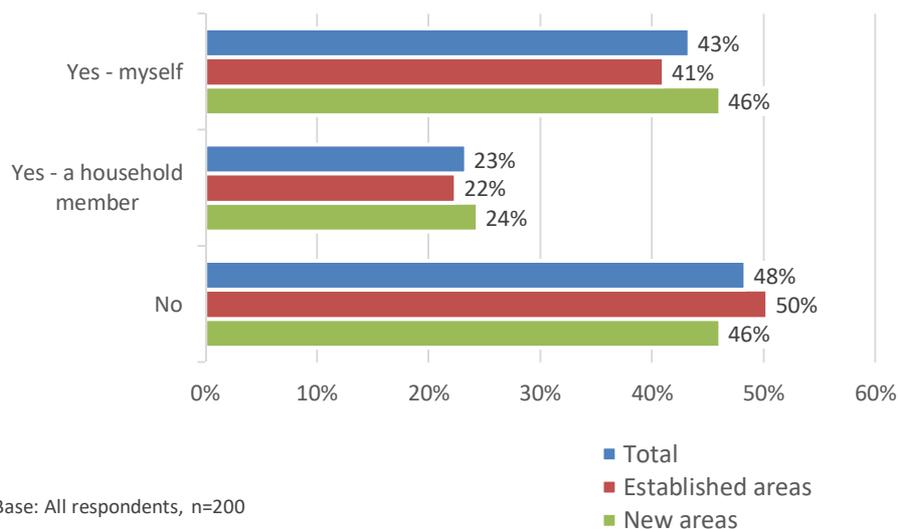
Figure 7-2 – Remote Workers Due to Necessity (Businesses)



Base: All respondents, n=502

Q: Do you or any other member of your household currently use the internet at home to do work or business related activities?

Figure 7-3 – Home Working (Residential)

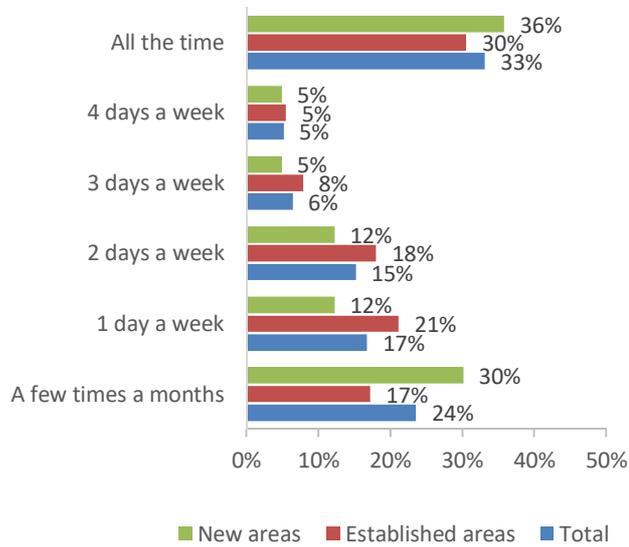


Base: All respondents, n=200

Q: Which statement best describes the frequency of this home working now? – Respondent²¹

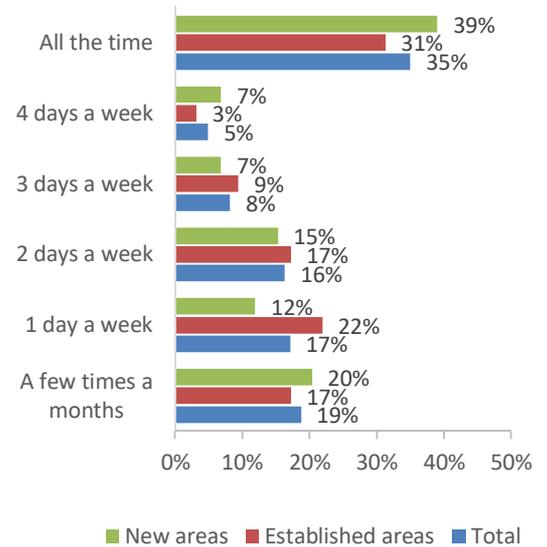
Q: Which statement best describes the frequency of this home working now? – Other household member²²

Figure 7-4 – Home Working – Respondent (Residential)



Base: All those respondents working from home, n=251

Figure 7-5 – Home Working – Household member (Residential)



Base: All those household members working from home, n=123

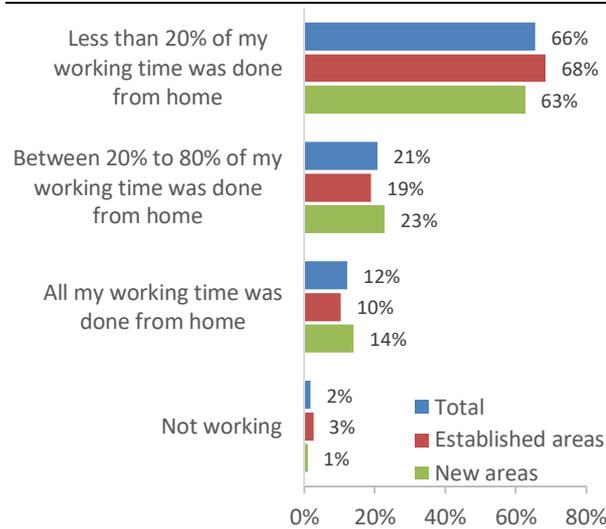
²¹ Question amended for final 2020 survey to: “Which statement best describes the nature of your home working since connection to superfast broadband but before the Covid-19 lockdown?”

²² Question amended for final 2020 survey to: “Which statement best describes the nature of the other household member's home working since connecting to superfast broadband but before the Covid-19 lockdown?”

Q: Which statement best describes the nature of your home working before connecting to superfast broadband?– Respondent

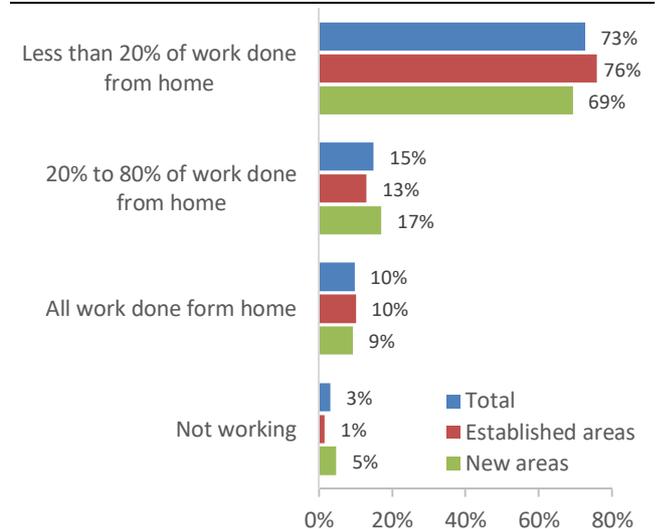
Q: Which statement best describes the nature of your home working before connecting to superfast broadband?– Other household member

Figure 7-6 – Home Working Prior to SFBB – Respondent (Residential)



Base: All those respondents working from home and responding, n=232

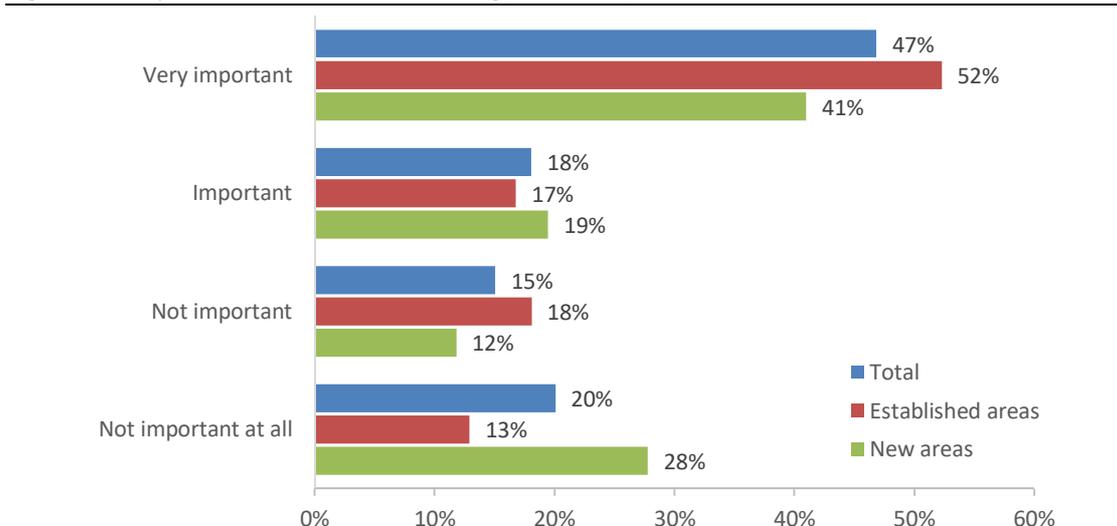
Figure 7-7 – Home Working Prior to SFBB – Household member (Residential)



Base: All those household members working from home, n=135

Q: How important was connecting to Superfast Broadband in your decision to work from home?²³

Figure 7-8 – Importance of SFBB in Home Working (Residential)



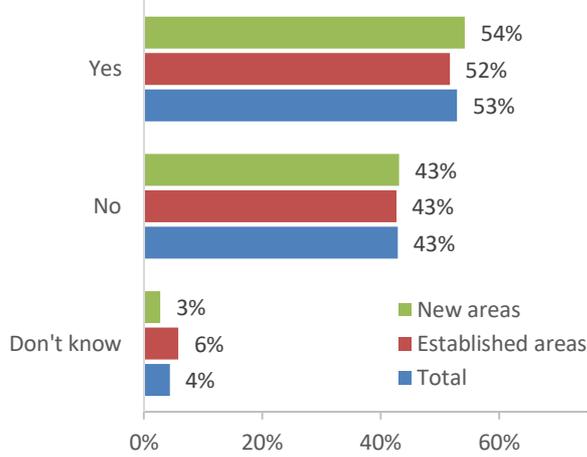
Base: All those with home working activity, n=299

²³ Question amended for final 2020 survey to: “Not accounting for the Covid-19 lockdown, how important was connecting to Superfast Broadband in your decision to work from home?”

Q: Does being able to work from home result in a reduction in your commute to another place of work?²⁴

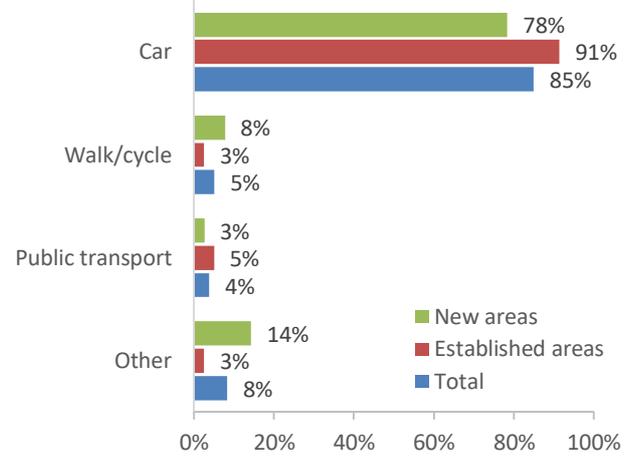
Q: How do/did you normally travel to work?

Figure 7-9 – Reduction in Commute (Residential)



Base: All those with home working activity, n=299

Figure 7-10 – Normal Commute Method (Residential)



Base: All those with reduced commute, n=158

Q: Can you estimate how many miles less you drive each week as a result of working from home?²⁵

The average home worker is saving 154 miles/week on commuting, ranging from 4 miles to 1,000 miles. The median number of commuting miles saved is 80.

²⁴ Question amended for final 2020 survey to: “Not accounting for the Covid-19 lockdown, does being able to work from home result in a reduction in your commute to work?”

²⁵ Question amended for final 2020 survey to: “Not accounting for the Covid-19 lockdown, can you estimate how many miles less you drive each week as a result of working from home?”

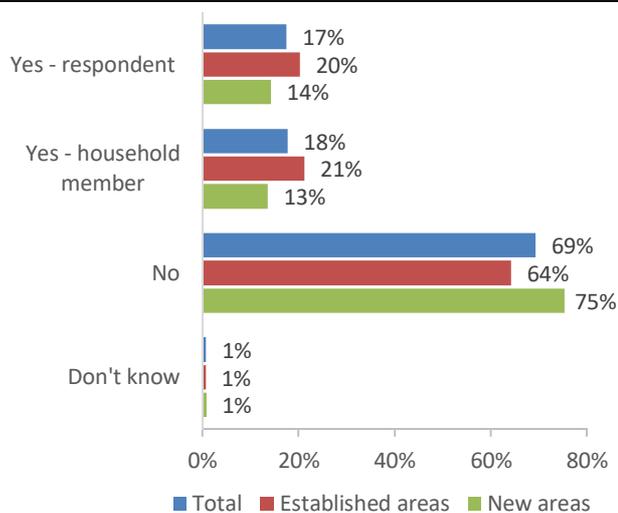
7.2 Finding work

31% of household survey respondents say that they or another household member has used the internet to look for a job since connecting to superfast broadband. It is worth noting that there was a significant difference between the findings of survey waves conducted in 2018/19 and 2020; around 45% had used the internet to look for a job in the 2018/19 surveys whereas just 23% had done so in 2020.

Q: Have you (and/or another household member) used the internet to look for a job since connecting to superfast broadband?²⁶

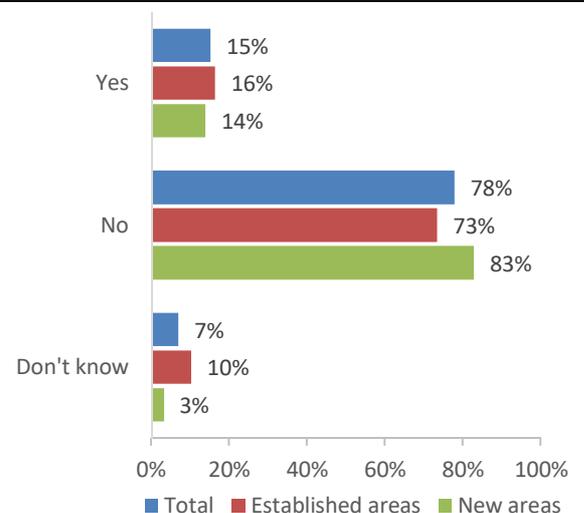
Q: Has connecting to superfast broadband changed the way you use the internet for your job search activities?

Figure 7-11 – Job Search (Residential)



Base: All respondents, n=579

Figure 7-12 – Changed Job Search Activity (Residential)



Base: All those job searching, n=316

²⁶ Question amended for final 2020 survey to: "Not accounting for the Covid-19 lockdown, have you (and/or another household member) used the internet to look for a job since connecting to superfast broadband?"

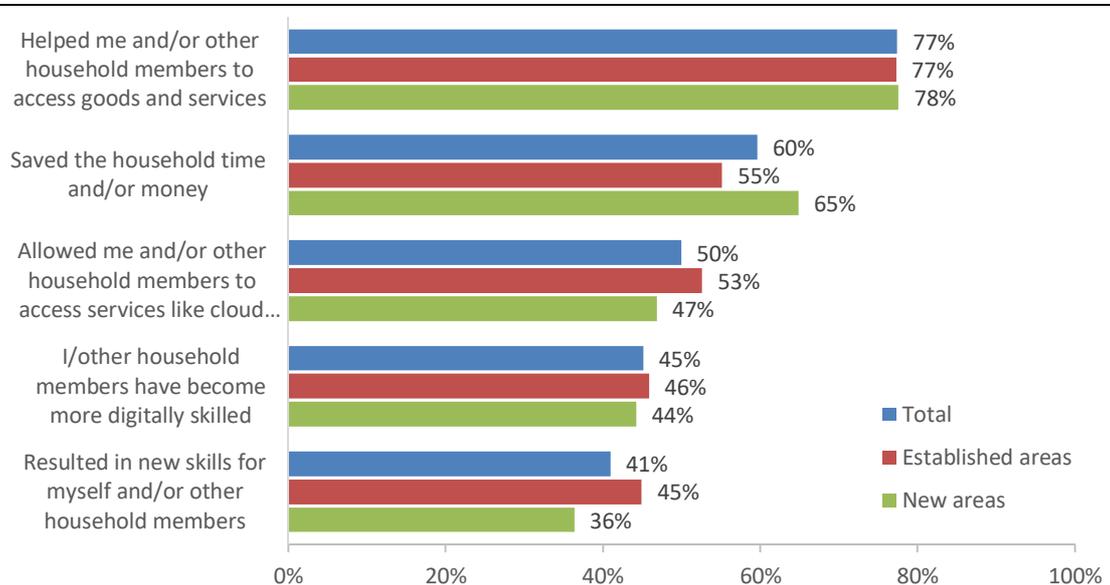
7.3 Widening access to digital

Household survey respondents mostly report positive impacts of superfast broadband on their household, most commonly (77% agree or agree strongly) that it has helped them more easily access goods and services (e.g. online purchasing). Least of all, though still with 41% agreeing, respondents report that superfast has resulted in them being more digitally skilled - see Figure 7-13.

More households are using the internet to access more Government and Public Services online with superfast broadband than before they connected to superfast or upgraded from 'regular' broadband. The net increases are marginally greater for those in 'established' areas than those in the newly enabled areas. See Figure 7-14 through Figure 7-16.

Q: How much would you agree or disagree with the following statements about the impact that Superfast Broadband had on your household to date?

Figure 7-13 – Digital Access (Residential) – Agree + Strongly Agree



Base: All respondents, n=579

Q: Do you or anyone else in the household use the internet to access any of the following Government or Public Services online:

Q: And did you use broadband to access government services before you upgraded to superfast?

Figure 7-14 – Public Service Access (Residential)

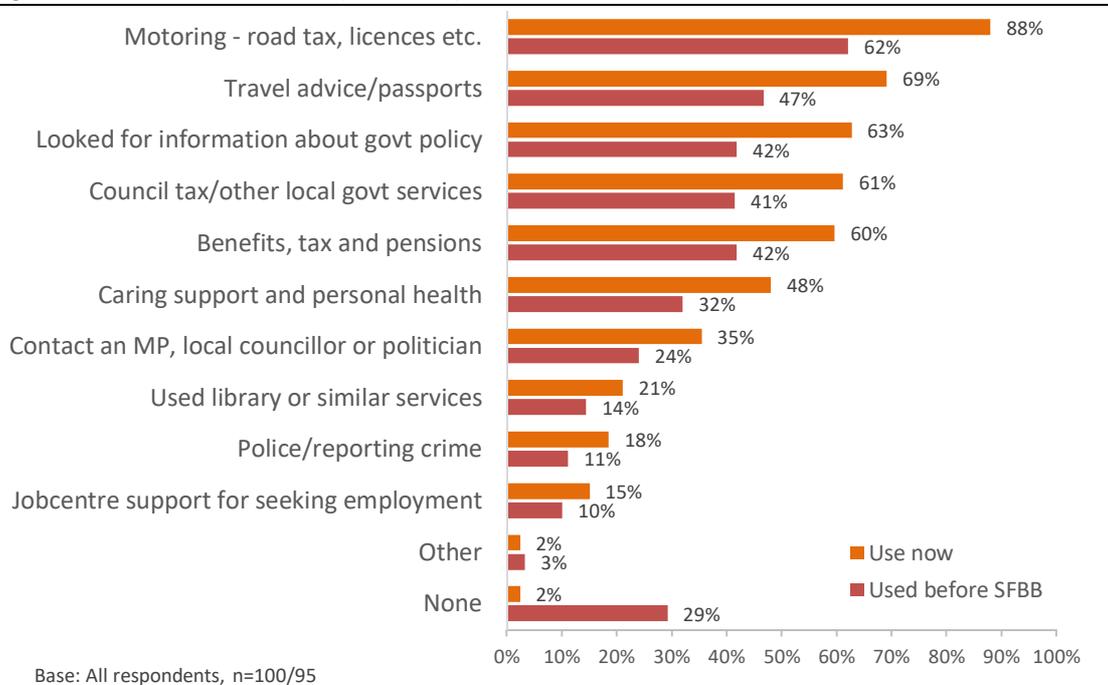
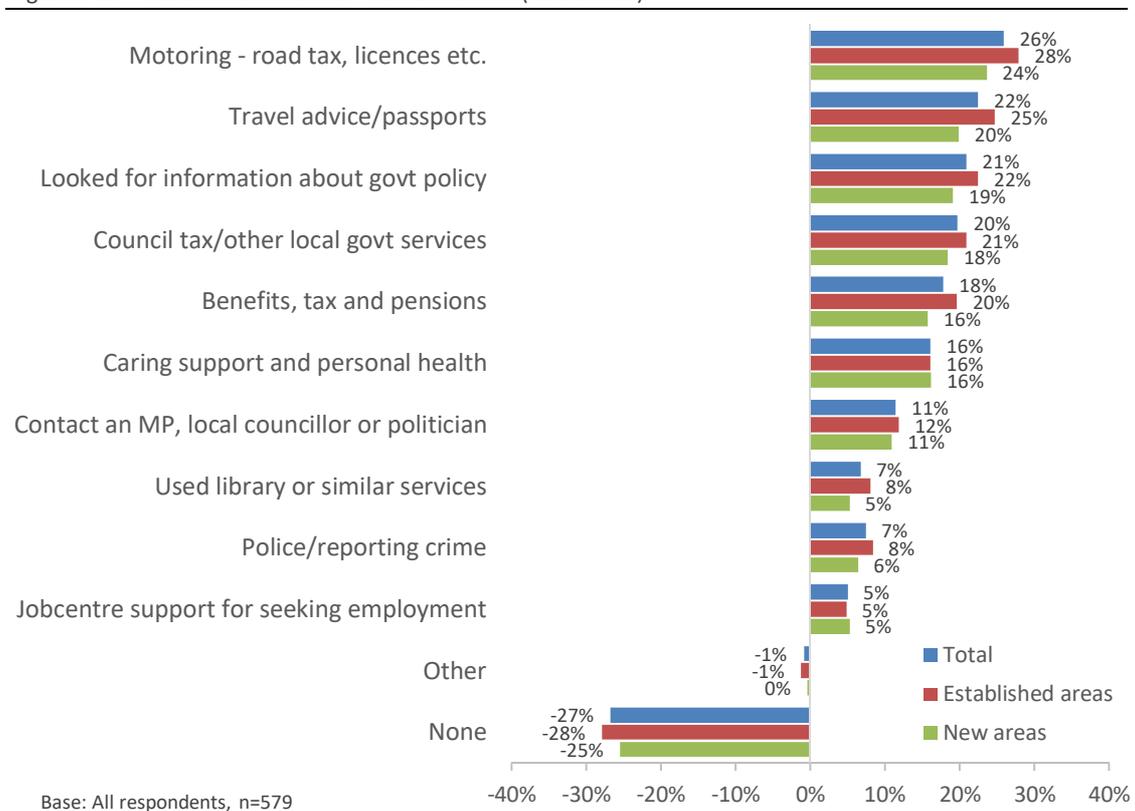
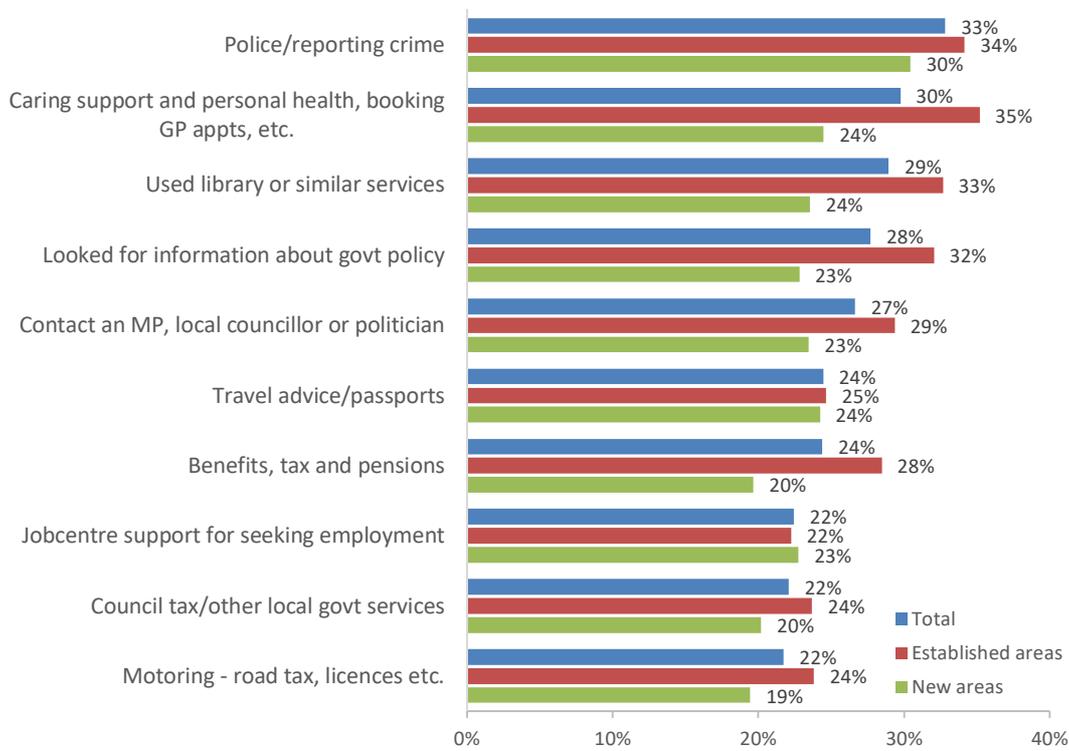


Figure 7-15 – Public Service Access – Net Difference (Residential)



Q: As a result of your upgrade to superfast broadband do you access government services more, less or the same as before you upgraded?

Figure 7-16 – Using Services More (Residential)



Base: All those using service, n=64/185/83/242/139/270/242/58/240/359

Table 7.1 – Online Government Services Used by Age (Residential)

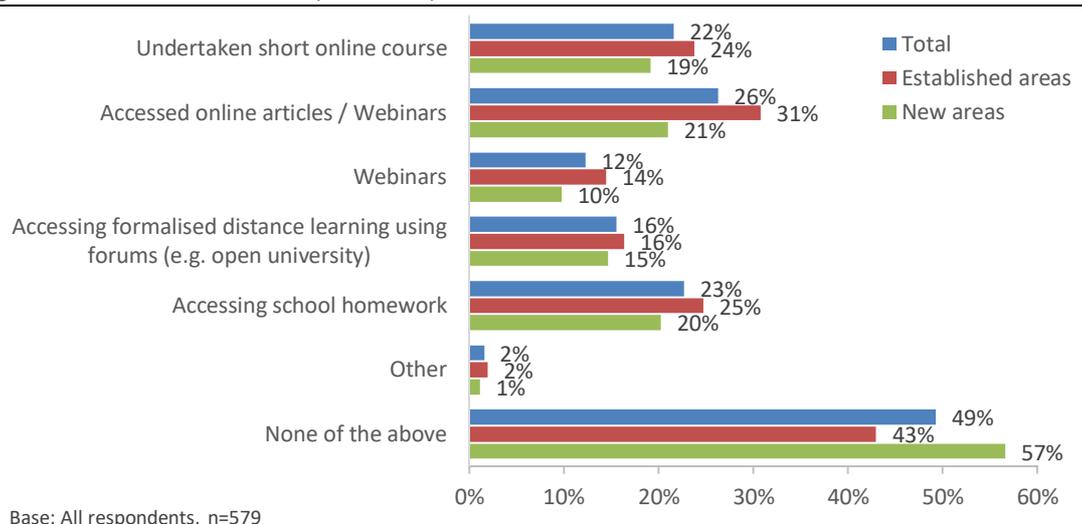
	Total	18 to 24	25 to 34	35 to 44	44 to 54	55 to 64	65 to 74	75 or older	Prefer not to say
Base	579	5	38	78	120	164	138	29	7
Motoring - road tax, licences etc.	88%	80%	87%	88%	89%	88%	88%	90%	57%
Travel advice/ passports	69%	80%	53%	68%	76%	72%	65%	69%	57%
Looked for info about govt policy	63%	80%	53%	60%	70%	66%	61%	41%	57%
Council tax/other local govt services	61%	60%	74%	63%	59%	63%	57%	55%	71%
Benefits, tax and pensions (e.g. filed tax return)	60%	80%	50%	60%	64%	67%	52%	48%	29%
Caring support and personal health (e.g. NHS Choices, booking GP appts, etc.)	48%	80%	37%	46%	43%	50%	51%	52%	57%
Contact an MP, local councillor or other politician	35%	40%	16%	29%	33%	35%	46%	45%	0%
Used library or similar services	21%	20%	13%	27%	26%	20%	17%	24%	29%
Police/reporting crime	18%	20%	18%	17%	23%	20%	17%	7%	0%
Jobcentre support for seeking employment	15%	40%	18%	22%	25%	13%	7%	0%	14%
Other	2%	0%	0%	4%	0%	2%	6%	0%	0%
None	2%	0%	0%	3%	2%	3%	2%	3%	14%

7.4 Access to education

A half of respondent households (51%) use the internet to access education resources. 42% of these say they did not do this before they had superfast broadband, and 34% are using the internet for education more than they were before they had superfast.

Q: Do you or anyone else in the household use the internet to access education in any of the following ways?²⁷

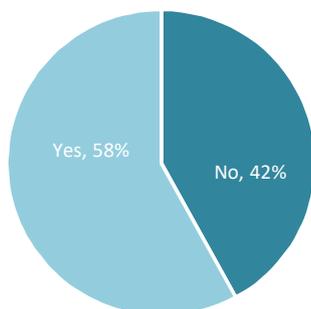
Figure 7-17 – Access to Education (Residential)



Q: And did you use broadband to access education resources before you upgraded to superfast?

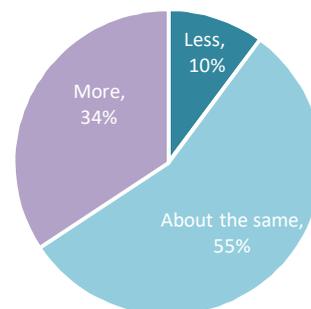
Q: As a result of your upgrade to superfast broadband do you access education resources more, less or the same as before you upgraded?

Figure 7-18 – Education Used Prior to SFBB (Residential)



Base: All those accessing education, n=295

Figure 7-19 – Increased Use since SFBB (Residential)



Base: All those accessing education, n=172

²⁷ Question amended for final 2020 survey to: "Prior to the Covid-19 lockdown, did you or anyone else in the household use the internet to access education in any of the following ways?"

Table 7.2 – Education Accessed by Age

	Total	18 to 24	25 to 34	35 to 44	44 to 54	55 to 64	65 to 74	75 or older	Prefer not to say
Base	579	5	38	78	120	164	138	29	7
Accessed online articles	26%	40%	32%	28%	37%	26%	17%	17%	29%
Accessing school homework	23%	20%	24%	46%	42%	17%	5%	0%	0%
Undertaken short online course	22%	40%	13%	26%	33%	24%	11%	7%	29%
Formalised distance learning	16%	60%	18%	26%	24%	12%	7%	3%	29%
Webinars	12%	0%	13%	14%	22%	10%	7%	7%	14%
Other	2%	20%	0%	4%	2%	1%	1%	0%	0%
None of the above	49%	20%	39%	33%	31%	53%	67%	79%	57%

8 Conclusions and recommendations

8.1 Outputs

By the end of March 2019, the 2016-2017 Superfast Extension Programme (SEP) rolled out superfast broadband **coverage** to 10,000 properties and the Superfast 2 Programme has covered a further 9,250 properties from March 2018 to July 2020. The total number of properties in Cornwall able to connect to 30+ Mbps superfast in July 2020 is approximately 251,000. N.B. This is the known coverage available from the three publicly funded programmes - there is further commercial footprint in Cornwall such as from Virgin Media around Saltash and from Openreach and others elsewhere in Cornwall, including into new property builds.

The specific number of **connections** to superfast is estimated to be 158,600 as at July 2020. Based on past take up rates, this is likely to be 173,500 by March 2021. 3.8% of these connections (6,000) are attributable to SEP and 2.3% (3,600) to the Superfast 2 programme.

The number of **businesses connected** continue to grow in line with these figures. The most accurate estimate of the total number of registered and unregistered businesses connected in July 2020 is 34,300, and the most accurate estimate of the total number of registered businesses connected in July 2020 is 17,000. The number of **households connected** is estimated to be 141,600 in July 2020. Table 8.1 below estimates the number of business and household connections by programme, pro-rata to the level of take-up.

Table 8.1 – Superfast connections

	Total	Businesses (Registered)	Households
All programmes	158,600	17,000	141,600
Superfast Cornwall 2011-15	149,000	15,950	133,050
Superfast Extension Programme (SEP)	6,000	650	5,350
Superfast 2	3,600	400	3,200

Superfast motivated many households to **start-up businesses**. It is estimated that by July 2020 superfast has contributed to 9,800 new businesses to start trading; of these the SEP contributed to around 370 start-ups and Superfast 2 to around 220 start-ups.

Overall there is high level of **satisfaction** from customers – both businesses and households – with the speed of the connection. For businesses, 80% of respondents were very satisfied or satisfied with speed and 79% were very satisfied or satisfied with reliability. Households indicated a similarly high level of satisfaction with speed (78% satisfied or very satisfied) and reliability (77% satisfied or very satisfied). 13% of business customers and 16% of households were dissatisfied with the reliability of their connection, indicating there may be some problems with this.

8.2 Business impact

Overall businesses are positive about the impact of superfast. Firms are using **online services** such as web conferencing and collaboration, video conferencing, and remote data storage more as a result of their connection. A third of businesses describe have changed

one or more of their business processes, such as sales, administration or marketing as a result of connecting to superfast broadband. Without the connection, the majority (68%) of firms would have experienced negative impacts – suggesting that not having superfast would be a barrier to growth.

For many businesses their superfast connections proved very important for business continuity during the Covid-19 pandemic lockdown during the spring and summer of 2020. 13% of businesses said that their superfast broadband connection proved essential, that they could not have continued working without it; a further 32% cited it as helpful and their connection allowed them to keep working.

Superfast is benefiting businesses in many other ways. Importantly superfast is helping companies **save money and time and to be more productive** (75% agree). This is reflected in that one in four firms indicate superfast has had a positive impact on their turnover. There is evidence that connection to superfast is contributing to export growth for some business. Around 19% of businesses indicating **new international** sales as a result of superfast.

The evidence around the impact of superfast on **innovation** is mixed – with roughly even numbers of respondents indicating superfast help them develop new goods and services and saying it did not.

Improving access to services and work is an important driver for the Superfast Programme. Businesses do not appear to see their connection to superfast as a particularly strong enabler to employ those who would be otherwise excluded from working for the firm. Only 8% of those firms indicated superfast contributed to this, mainly as a result of permitting remote working/access and more effective communications.

8.3 Economic impact

The net economic impact of superfast is the change that can be attributed to superfast and incorporates the knock on economic impacts of the programme. Our models assume that it takes one year for business and six months for household impacts to emerge. Also, the survey methodology depends on being able to identify and interview businesses and households that were connected specifically as a result of that programme. Up to July 2020, the net impact of all Superfast Cornwall programmes was 5,300 FTE jobs and £235,800,000 GVA, with safeguarded jobs (net) delivered estimated to be 8,410 and associated GVA of £374,400,000 – as summarised in Table 8.2.

The uplift since the baseline report (which presented impact of the first Superfast Cornwall programme and before any impacts of SEP could be assessed and before the Superfast 2 roll-out) is summarised in Table 8.3 below²⁸. This shows that since 2017 the net impact of all Superfast Cornwall programmes was 2,180 FTE jobs and £97,200,000 GVA, with safeguarded jobs (net) delivered estimated to be 4,980 and associated GVA of £238,200,000. It also

²⁸ The surveys delivering the data upon which impact is evaluated are based upon random samples of businesses and households. No business or household was knowingly interviewed more than once during each of the 2011-15 or the 2017-20 evaluations. The majority of survey respondents for the 2017-20 evaluation connected to superfast broadband within the last 5 years; however, it cannot be entirely ruled out that a small proportion of businesses and households may have been invited to participate and subsequently surveyed for both the evaluations.

means that the SEP and Superfast 2 programmes broadly achieved the economic impact estimated at the inception of the project.

Table 8.2 - Summary of Superfast Cornwall economic impact

		Employment FTE (2020)	Employment FTE (Baseline)	GVA £ (2020)	GVA £ (Baseline)
Established businesses	Gross increase	11,330	5,180	504,400,000	189,500,000
	Attributable increase	2,630	1,490	117,200,000	88,000,000
	Net increase	2,650	1,500	117,900,000	88,600,000
	Attributable safeguarded	8,360	3,410	372,100,000	135,400,000
	Net safeguarded	8,410	3,430	374,400,000	136,200,000
Start-ups	Attributed businesses start-ups	2,630	1,620	117,200,000	49,800,000
	Net increase	2,650	1,620	117,900,000	50,100,000
Combined	Overall uplift (net)	5,300	3,120	235,800,000	138,600,000
	Safeguarded (net)	8,410	3,430	374,400,000	136,200,000

Table 8.3 - Summary of impact 2017-2020 (uplift from baseline)

		Employment uplift from baseline	GVA uplift from baseline
All programmes	Overall uplift (net)	2,180	£97,200,000
	Safeguarded	4,980	£238,200,000
Attributable to SF1	Overall uplift (net)	1,860	£82,900,000
	Safeguarded	4,470	£215,500,000
Attributable to SEP	Overall uplift (net)	200	8,900,000
	Safeguarded	320	14,200,000
Attributable to SF2	Overall uplift (net)	120	5,400,000
	Safeguarded	190	8,500,000
Combined SEP + SF2	Overall uplift (net)	320	14,300,000
	Safeguarded	510	22,700,000

8.4 Wider impact

Wider impacts experienced of superfast broadband and pertaining to ERDF cross-cutting themes include flexible working, reduced commuting (carbon savings) and widening digital access.

Superfast enables **flexible working**. Over half of households indicate that someone in their house uses their connection for work or business-related activities and one in five have someone who works remotely all of the time. Of these, household respondents work from home on average 2.6 days a week and other members of their household approximately 2.8 days a week. Within businesses, on average 15% of employees work remotely at least sometimes and 6% all of the time.²⁹

The amount of time people are working at home has increased since connecting to superfast; of respondents who undertake work from home, 60% work more than one day a week from home whereas before superfast 66% worked from home less than 20% of the time (i.e. one day per work-week). Two thirds (65%) of households indicate that superfast is a key enabler for home-working. The uplift in home working has positive environmental consequences – taking an average of 154 miles off the typical weekly commute.

Superfast is **widening digital access** for those who are connected. For many, superfast has helped access to goods and services (77% agree/strongly agree). More households are using the internet to access more Government and Public Services online with superfast broadband than before they connected to superfast or upgraded from ‘regular’ broadband. It is also contributing to skill development both in terms of digital skills specifically and skills more widely. A half of respondent households (51%) use the internet to access education resources. 42% of these say they did not do this before they had superfast broadband, and 34% are using the internet for education more than they were before they had superfast.

8.5 Recommendations

Assist businesses to address issues with reliability. The business survey indicates there may be issues with the reliability for some of the connections for businesses, and this has been a consistent finding across all survey waves. Whilst satisfaction with speed increases, businesses are increasingly using cloud computing, remote data storage, web conferencing and internet telephony, and they are becoming increasingly dependent on reliable service. Real or perceived issues with reliability may lead to firms not be able to take full advantage of internet services that being connected to superfast bring, therefore businesses could be advised on how to resolve these.

Business advice and financial help. Nearly a half (46%) of survey respondents in 2020 would welcome follow-on business advice and grants to help them make the most of their superfast connection and IT in general. After the initial realised benefit of having a faster connection, companies would like to learn how to utilise their connection more effectively for business growth. Even amongst resident households, where new businesses start-ups may develop, almost a third (31%) think they would benefit from advice, grants or both to make better use of their superfast connection and IT in general.

²⁹ Survey questions were amended in 2020 to account for effects of the Covid-19 pandemic – see Appendices, Section 9.1.8.

Aligned activities to promote workforce access. There is little evidence to suggest that a superfast connection in and of itself is encouraging businesses to provide opportunities for those who face barriers to accessing work opportunities (e.g. those with caring responsibilities, based in remote areas, etc.) Targeted activity around this may be required to address this. During the Covid-19 lockdown phase, superfast connections contributed to many businesses being able to keep operating which could be the springboard to demonstrate how superfast-dependent business continuity could underpin new and full smart working strategies.

Understanding innovation. Businesses split on how important superfast is for innovation. For half of the sample, superfast is a key enabler of innovation, for the other half it is not. This is an area that would be worth further investigation in subsequent field work. It would be interesting to try to understand a bit more about why this might be the case and explore if aligned activity could help support innovation using superfast (or subsequently available digital services) to stimulate the development of new products and services.

9 Appendices

9.1 Methodology

Research and evaluation was an important strand of activity during the initial Superfast Cornwall Programme. The evaluation was led by CDC's Research and Evaluation Manager and SERIO at Plymouth University was commissioned to be the external evaluation partner. SERIO delivered a baseline report (November 2011), a mid-term report (November 2013) and a final evaluation report (June 2015). The full suite of reports is available online³⁰.

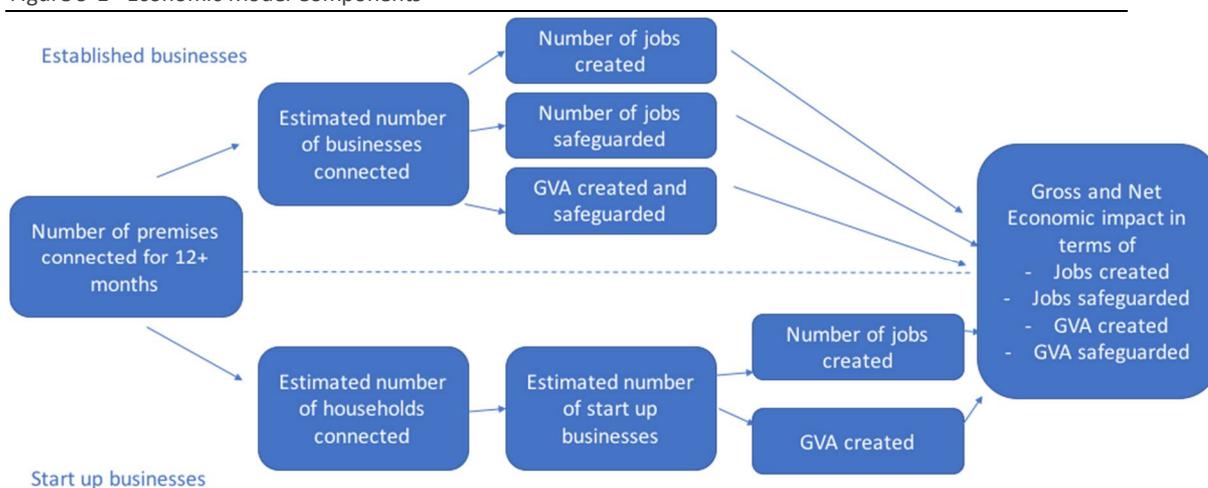
The Evaluation of Superfast (2011-2015) was cutting edge as it was the first time the economic impact of a publicly funded investment in superfast broadband in a rural area had been thoroughly and systematically assessed. The evaluation was methodologically robust and statistically reliable and provides a really strong base on which to assess further impacts of the technology.

The evaluation methodology used for the evaluation 2017-2021 has been deliberately similar to that employed for the 2011-2015 evaluation. Where a different approach is taken, it is clearly detailed.

9.1.1 Model for assessing economic impact

Figure 9-1 describes the main components of the economic model that was designed and developed for the Superfast Evaluation 2011- 2015.

Figure 9-1 - Economic Model Components



9.1.2 Coverage and take up figures

The model is driven by the number of premises connected to superfast. The coverage figures (i.e. the number of premises which can choose to connect to superfast) is a core programme outcome. At the end of the Superfast Cornwall programme in 2015, approximately 238,000 properties were able to connect to Superfast 24+ Mbps. This represented 85% of all properties in Cornwall (estimated as 280,000 at the time). The number of premises connected to superfast (take up figures) is known to BT although, due to

³⁰ <http://www.superfastcornwall.org/programme/evaluation>

commercial sensitivity, these numbers are not provided to the same degree of accuracy and are available only at certain points in time. When take up figures are quoted, they are estimates provided by the CDC Superfast Cornwall team.

9.1.3 Lag on economic impact

2011-2015 Superfast Cornwall Programme Evaluation model assumes that for businesses, it takes one year from connection for an economic impact (such as jobs or GVA growth) to emerge. For households, the lag is assumed to be six months between connection and economic impact. Therefore, to ascertain the economic impact at June 2015, the model considers only those businesses who have been connected for 12 months or more (i.e. the number connected in June 2014). For this report, the economic impact is driven by the number of businesses connected for 12 months or more at March 2020³¹ and households connected for six months.

9.1.4 Two approaches – established businesses and start-ups

Figure 3-1 shows two different approaches used to estimate economic impact from established and start-up businesses. The impact on established businesses is determined by estimating the number of businesses connected and combining this with the average economic impact per businesses. The amount of economic activity from new start-ups, established in part (or wholly) because of the connection to superfast, is estimated by combining the number of households connected with the propensity of households to set up a new business once they connect to superfast.

9.1.5 Economic impacts - Gross to net

No economic development project takes place in a vacuum and it is essential to take into account what would have happened in the absence of the intervention and isolate the impact of the intervention. In line with government guidance, the following factors are included in the economic impact model:

Gross impact. Gross jobs or GVA created is the total change in the jobs/GVA during the previous two years in those businesses connected to superfast.

Attributable impact. The attributable figure is the amount of the change that can be attributed to connections to superfast broadband.

Net impact. The net impact considers the wider economic effects to Cornwall – both positive and negative. It takes account of:

- Displacement. The degree to which the benefits of the project are offset by reductions of employment or output elsewhere in Cornwall. An estimate of 19.5% is used³².
- Leakage. The project benefits which are outside the target area. However, since the survey asks only about jobs and growth this is assumed to be zero.

³¹ Given the change in project timings which required the evaluation research fieldwork to take place six months earlier, the requirement for businesses to have been connected for at least 12 months was relaxed to 6 months. 29% of the 2020 sample (and 14% overall) had been connected for at least 6 months but less than 12 months.

³²This figure was used in the previous impact evaluation and came from BIS Occasional Paper No.1 “Research to Improve the Assessment of Additionality”.

- Substitution. When a firm substitutes one activity for a similar one to take advantage of public sector assistance. However, the previous research assumed substitution to be zero since the programme was being rolled out across Cornwall.
- Multiplier. This is the further economic effect caused in Cornwall by new jobs or growth in profits or wages in Cornwall through the local supply chain or through wage spending in the local economy. This is estimated to be 1.25³³.

9.1.6 Method for estimated the number of businesses connected

It is not possible to know exactly how many businesses are connected to superfast. BT holds some commercial records of the number of business phone lines, however these will not adequately capture those businesses connecting through domestic agreements. The number of businesses connected must be estimated. There is no 'silver bullet' method for estimating this number, therefore in the 2011-2015 Superfast Cornwall Evaluation, the results from three different methods were compared. One of the methods (Method 2) has not been updated for this evaluation of Superfast 2 as the market research on which it was based is now out of date. Method 1 and Method 3 are set out and updated below.

³³Multiplier estimate from the same BIS Occasional paper.

Method 1

Use the number of business premises as a proportion of all premises and applying this to the total Superfast take up figures.

Connected businesses = total number of phone lines receiving superfast service x (number of businesses/number of premises)

2015 report. At the start of the Superfast programme (in 2011), there were 29,000 businesses premises on the MINT database. It was estimated that 12% of the total number of connections to superfast are business connections – giving a figure for business connections of 7,984 in June 2015. This was slightly higher than the pro-rotta figure because the Superfast Cornwall marketing was very business focused.

Approach from 2018: The 2018/19 approach uses MINT data from May 2016 when there were 30,023 businesses on the MINT database based in Cornwall. Since no longitudinal data is available, we assume this number is static between March 2016 and March 2017. The best available data (provided by CDC) is that in 2015 there were approximately 280,000 premises in Cornwall. We have assumed this to remain constant as no good data is available to suggest a reasonable growth rate. The proportion of business premises using this method is around 10.5%. We will not be inflating this to 12% because the business focused marketing campaign finished in 2015.

Assumptions

- Assumes that the take up rate amongst businesses is the same as for households. There is some evidence to suggest take-up might be higher for businesses than for households and for this reason the figure is likely to be an underestimation of total number of businesses connected.

Limitations

- Limited to the accuracy of the MINT database. It includes registered and unregistered businesses but is unlikely to include very new or very small home based businesses which do not make a regulatory footprint.

Method 2

Not updated as the Market research data used is now out of date.

Method 3

Use the number of registered businesses from national statistics, adjusted to include non-registered businesses. Combined with the programme coverage and overall take up data.

Connected businesses = (total number of businesses from business demography, adjusted to reflect unregistered businesses) x (take up/total number of premises)

2015 report: The number of registered businesses from the ONS business demography was 19,980 in 2013. National statistics indicated that only 40% of businesses in the South West are registered. Applying this to Cornwall suggests there were 49,950 businesses in 2013. This combined with a 95% coverage and a 26% project take up rate estimates there were 12,104 businesses connected to superfast in June 2015. Note that the 95% figure refers to coverage of 'fibre broadband' and pre-dates the definition of 24+Mbps superfast broadband, so include premises able to connect at sub-24Mbps speeds.

2018/19 interim reports and 2020 final report: In 2019, the South West had 222,135 registered businesses from a total 561,645 businesses; registered businesses make up 40.1% of total (Source, ONS Business population estimates 2019). The latest data on registered businesses in Cornwall is for 2018. Using the same method as used in Method 1 above, the number of active registered businesses in Cornwall is estimated to be 21,730 in 2017, 21,884 in 2018, and 24,255 in 2019. Adjusting this to include unregistered businesses gives an estimated 53,050 registered and unregistered businesses in Cornwall in 2017, 53,425 in 2018 and 60,509 in 2019.

The number of connections (take up) was estimated to be 103,400 in March 2018, 128,400 in March 2019 and 158,600 in July 2020 for the final evaluation, of an estimated total 280,000 premises.

Assumptions

- Same proportion of businesses are unregistered in Cornwall as in the wider South West
- Take up rate amongst businesses is equal to that of the programme as a whole. This is likely to be an underestimation of the take-up rate given the results of previous market research.

Limitations

- The method in the 2015 report assumes that there has been no change in the number of businesses between 2013 (when latest figures are available) and 2015.

9.1.7 Key drivers of the economic model for 2018/19 Reports

Ref		Description	Factor from 2015 report	Factor used in baseline report	Factor in 2018 report	Factor in 2019 report	Factor in this final report	2020 report source and discussion
Established businesses								
i	Gross jobs created	Total change (in last two years) in the number of FTEs employed by company connected to superfast	0.63 FTE jobs per established business	0.63	0.71	1.027	0.775	Survey of connected businesses found that a total number of 389 FTE jobs were created by (502) connected businesses. Question 23 in Business Survey. (N.B. 79 jobs were lost giving net 309.)
ii	Attributable jobs created	Amount of the change in jobs which can be attributed to superfast connection	0.18 FTE jobs per established business	0.18	0.18	0.18	0.18	In the 2015 and baseline report, this was calculated through using a counterfactual survey. However, for the 2018/19/20 reports, no counterfactual survey is available. Businesses were asked to estimate the change as a result of being connected to superfast (Q25). This gives an estimate of 0.26 jobs per business connected – which is still higher than previous [counterfactual] research suggests. Hence, to remain consistent with the interim phase reports, and to err on the side of caution, it was decided to continue to use the original 0.18.

Ref		Description	Factor from 2015 report	Factor used in baseline report	Factor in 2018 report	Factor in 2019 report	Factor in this final report	2020 report source and discussion
iii	Net jobs created	Attributable jobs created adjusted to reflect the gross to net calculation above	0.18 FTE jobs per established business	0.18	0.18	0.18	0.18	See above with displacement and multiplier effects
iv	Gross GVA created	Total uplift in gross value added by companies connected to superfast (as a result of additional employment)	£22,214 a year per established business	£23,072	£28,267 Based on a GVA per FTE of £39,816 – based on regional productivity data 2020 edit: Data used in 2018 interim report based on latest data for 2016 (released 2018). These figures were revised in 2020 release, to give £41,832 (£24.9 x 48 x 35)	£41,073 Based on a GVA per FTE of £39,984 – based on regional productivity data 2020 edit: Data used in 2019 interim report based on latest data for 2017 (released 2019). These figures were revised in 2020 release, to give £43,512 (£25.9 x 48 x 35)	£34,449 Based on a GVA per FTE; i.e. £44,520 by gross jobs created (0.775 – see i above) – based on regional productivity data	We have used a different methodology from the baseline report as a) sub-regional productivity figures are now available from ONS and b) previous estimates relied on the methodology of South West regional accounts which is no longer updated and it is not available. According to sub-regional productivity estimates, Average GVA per job filled in Cornwall is £40,725 (2018), average GVA per hour worked in Cornwall £26.50 per hour which works out at £44,520 per FTE (35 hours a week 48 weeks a year) Source: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/datasets/subregionalproductivitylabourproductivitygvaperhourworked

Ref		Description	Factor from 2015 report	Factor used in baseline report	Factor in 2018 report	Factor in 2019 report	Factor in this final report	2020 report source and discussion
								ndgvaperfilledjobindicesbyuknuts2andnuts3subregions (2018 data - latest)
v	Attributable GVA created –	Uplift in GVA as a result of connection to superfast broadband	£10,315 a year per established businesses	£10,713	£7,166	£7,197	£8,014	As no counterfactual survey, this is the results of Q25. Estimated number of FTE increase attributable to SFBB. Question Q25 of Business Survey gives net jobs created – see iii above.
vi	Net GVA	Attributable jobs created adjusted to reflect the gross to net calculation above	£10,379 a year per established business	£10,780	£7,210 per established business	£7,242	£8,064	Accounting for substitution and multiplier
vii	Attributable safeguarded jobs	Number of jobs businesses that would have been at risk without a superfast connection	0.42 FTE per established business	0.42	0.43	0.62	0.57	Businesses from sample indicated safeguarding 284 jobs (n=502). Question Q28 of Business Survey. Established areas: 0.50 New areas: 0.64
viii	Net safeguarded jobs	Attributable safeguarded jobs, adjusted to account for gross to net calculation	0.42	0.42	0.43	0.62	0.57	Same as above.
ix	Attributable safeguarded GVA	GVA safeguarded (as a result of safeguarded jobs)	£15,870	£16,483	£17,119*	£24,893	£25,453	Product of viii * average GVA per FTE for Cornwall
x	Net safeguarded GVA	Attributable safeguarded GVA adjusted to reflect gross to net calculation	£15,969	£16,586	£17,226*	£25,048	£25,612	Product of viii * average GVA per FTE for Cornwall

Ref		Description	Factor from 2015 report	Factor used in baseline report	Factor in 2018 report	Factor in 2019 report	Factor in this final report	2020 report source and discussion
Startups								
xi	Number and % households starting up a business as a result of superfast		No figures explicitly set out. Data suggests 4.4% of households connected started up a business which is attributable to superfast.	4.444% of 77,059 households (connected at September 2016) which give 3,425 start-ups	Due to small samples – used the figure from the previous survey.	9% of 103,482 households (connected by Sept 2018), which gives 9,313 start-ups.	7% of 125,877 households (connected by Sept 2019), which gives 9,301 start-ups.	Out of 579 households interviewed, 66 said either the respondent or someone else in the household had set up a business. Of those, 62% indicated superfast had been influential in their decision, or 7% of households connected. See page Section 4.3.1, page 22.
xii	Attributable jobs created	Number of jobs created as a result of (or influenced by) a connection to superfast	0.02 FTE per household	0.02	Due to small samples – used the figure from the previous survey. However, it should be noted that the survey data in this period gives the same FTE per household for attributable jobs per household.	0.02 FTE per household	0.02 FTE per household	41 businesses set-up, influenced by superfast, account for 23 FTEs, or 0.04 jobs per household. Samples small to project with accuracy. Retaining original conservative 0.02 weighting.

Ref		Description	Factor from 2015 report	Factor used in baseline report	Factor in 2018 report	Factor in 2019 report	Factor in this final report	2020 report source and discussion
xiii	Net jobs created	Attributable jobs adjusted to account for gross to net calculation	0.02 FTE per household	0.02	Due to small samples – used the figure from the previous survey. Same as above.	0.10125 FTE per household	0.0397 FTE per household	As above.
xiv	Attributable GVA created	GVA created by uplift in employment by new starts ups	£701	£728	£796	£800	£890	FTE X GVA per FTE See xiii above
xv	Net GVA created	Attributable GVA adjusted to reflect gross to net calculation	£705	£732	£801	£805	£896	Incorporating substitution and multiplier effects

* Figures revised from previous report (previously £18,576)

9.1.8 Accounting for Covid-19 Pandemic

The schedule for final wave of surveying coincided with the 2020 coronavirus outbreak and subsequent period of lockdown in the UK. The evaluation depended on being able to append data like-for-like with data from the previous survey waves and exclude any adverse effects of the lockdown. A number of questions on the survey were therefore adjusted to advise respondents to frame their answer in terms of “before Covid-19 pandemic”. Where applicable, these are indicated in the report. A small number of additional questions were added to assess the benefit of superfast broadband on households and business continuity.

9.1.9 Drawing sample - established versus newly enabled areas

The geographic frame for the random sample surveys depended upon being able to assign respondents to ‘established areas’ (i.e. those from the Superfast Cornwall 2011-15 enabled areas) or ‘newly enabled areas’ (i.e. those enabled through the SEP and Superfast 2 programmes). Unfortunately, there was no accurate way to achieve this as specific premises enabled by the fibre network build is commercially sensitive information.

However, for both the business and household surveys in the 2019 and 2020 survey waves, Superfast Cornwall was able to provide PFA Research with a list of postcodes (at the postcode unit level, i.e. the full postcode) which estimated the connection coverage for each. An indication of high connection coverage therefore increased the probability that a randomly selected business or household located at the postcode would be connected to superfast broadband and deemed to be in a ‘newly enabled area’.

Other locations in Cornwall with postcodes not on the list supplied were, by default, deemed to be ‘established areas’.

Postcodes on the list with a coverage of 90% or higher were selected and independent commercial marketing database lists were leased, from which the survey sample could be drawn. However, it is not possible to specify records from the commercial database suppliers at the postcode unit level, only to postcode level 3 (i.e. the sector, e.g. “TR10 9”). This meant that there was a high amount of redundancy in the databases and generated a high margin of error on being able to assign any record to ‘established area’ or ‘newly enabled area’.

Given this, it was not possible to say with any degree of accuracy whether all those assigned to either established or newly enabled areas truly related to the first Superfast Cornwall programme or the SEP/Superfast 2 programmes.

9.2 Survey Tabulations

Data tabulations for the business and household surveys are provided as appendices and in a separate volume.