Ofcom

Business Connectivity Market Review

High bandwidth connections

Prepared for

Ofcom

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bdrc continental

providing *intelligence*

Contents

Page No.

1. About this document

Ofcom's Business Connectivity Market Review (BCMR) examines the markets for the provision of leased lines to businesses in the UK. Leased lines are high-quality, dedicated, point-to-point data transmission services used by businesses and providers of communications services.

As well as being essential components of many businesses' communications systems, they are also essential to support the provision of mobile telephone and fixed residential broadband services.

Every three years, Ofcom conducts a review of competition in the markets for the provision of leased lines in the UK. Where it is found that a provider has "significant market power" (SMP) in a market (i.e. that they are able to act independently of competitors) Ofcom impose regulations designed to address concerns about the impact of that market power on competition.

The consultation document pertaining to the review can be found here: http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr2015/summary/BCMRSections.pdf It sets out the provisional analysis of the market and identifies segments of the market in which Ofcom propose that a provider has SMP. The document also sets out what regulations Ofcom propose to impose to address such SMP.

Ofcom has commissioned quantitative research (conducted by BDRC-Continental) amongst high bandwidth leased line users to help inform the current BCMR review. Results of this research are reported in this document.

Previous research related to this review can be found here: http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-2015/annexes/BCMR_2014_report-bdrc.pdf

2. Research method and objectives

2.1 Overview

The research was targeted at three groups of high bandwidth retail consumers:

- Very high bandwidth users: retail business customers who use leased line Ethernet services above 1Gbit/s or use Wave Division Multiplexed (WDM) services;
- 1Gbit/s users: retail business customers who use leased line services at up to 1Gbit/s (but more than 100Mbit/s);

  100Mbit/s users: retail business customers who use leased line services at up to 100Mbit/s.

2.2 Data collection

The target respondent was the person in the organisation who had responsibility either solely or jointly for decision-making on business connectivity services at some or all of the sites that their business has. The most effective method for contacting these high level individuals was telephone research and interviews were conducted using Computer Assisted Telephone Interviewing (CATI).

Respondents were emailed letters explaining that Ofcom was conducting the research where this was requested.

Interviews lasted 24 minutes on average and fieldwork was conducted from 17 November 2015 to 7 January 2016.

2.3 Number of interviews

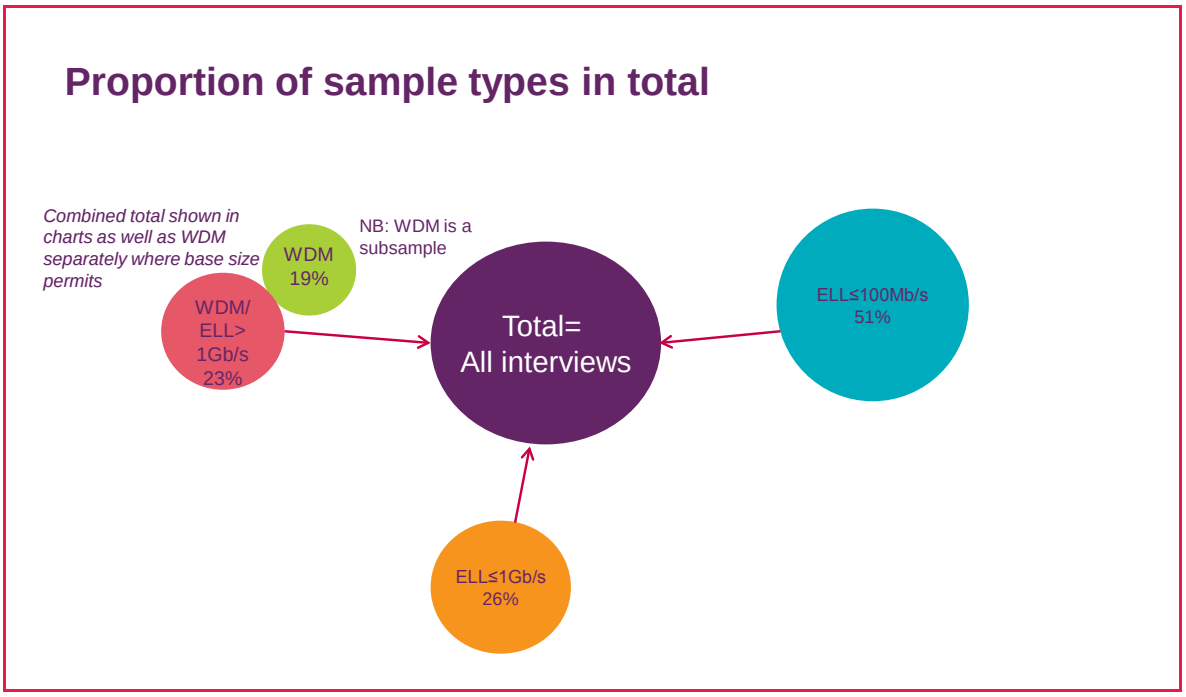
The overall sample size achieved was 241. Detail of respondents' high bandwidth line connectivity was checked during the initial stages of the interview and respondents were allocated into different sample groups on the basis of their responses. Throughout the interviews (unless otherwise specified) respondents were asked about the particular type of high bandwidth line connection they were allocated to in the screening process. This was either 'Wave Division Multiplexed' or the maximum contracted speed on their Ethernet Leased Line connection if they did not have a Wave Division Multiplexed connection.

Sample sizes achieved for each group were as follows:

Type of line	No. of interviews	
Type 1a: Wave Division Multiplexed	N=46	N=55
Type 1b: Ethernet Leased line >1Gbit/s	N=9	
Type 2: Ethernet Leased line ≤ 1Gbit/s but >100Mbit/s	N=62	
Type 3: Ethernet Leased line up to and including 100Mbit/s (but >50 Mbit/s)	N=124	

There were no additional qualifications for interview. No maximum limit was imposed on the number of interviews conducted with sample types 1 and 2 and quotas were not set according to the penetration of each line type in the market overall. Therefore, the overall sample 'total' is not reflective of the high bandwidth line market i.e. it is not a representative total. Results are provided in this report which include the overall 'total' as a comparison but when examining this it is important to bear in mind the composition of the sample which is outlined in figure 1.

Figure 1



2.4 Statistical significance and robustness

The convention in quantitative research is to show data where base sizes (number of interviews for that particular group/ subgroup) are greater than 50. This is because small differences in response patterns for individual respondents can make a bigger difference to the overall finding where the total number of interviews is below 50 (or close to 50).

The small number of interviews with some of the sample groups (sample 1a and b in particular) at both an overall level and when filtered (when questions were asked of a subset) means that in this report data is also shown where bases are at around 25 interviews. In all figures in this report where data is below 100, figures are highlighted with '*LOW BASE'. Where figures are lower than 50, data is highlighted with '**BROADLY INDICIATIVE ONLY.'

Statistically significant differences between the groups are flagged at a 95% level. This means that we are 95% confident that the difference between findings where the comparison is made is real. Where these differences are not flagged this does not necessarily mean there is not a difference between the groups, but the base size may be too small for it to be meaningfully detected.

In this report statistical differences are flagged using triangles. The colour of the triangle indicates which group the finding is different from and the direction of the triangle (pointing up or down) indicates whether the finding is higher or lower than the group in question.

2.5 Glossary

Throughout the report various technical terms and/or abbreviations are used. The table below provides explanations of the abbreviations and definitions of these terms.

Term/ abbreviation	Meaning
ADSL	Asymmetric Digital Subscriber Line - a variant of DSL that supports higher bandwidth on downlink transmissions, i.e. from the exchange to the end user than from the end user to the exchange.
Analogue leased lines	These are commonly used for voice transmission, e.g. external extension circuits between business sites. They are also used for low-bandwidth data transmission.
Bandwidth	In digital telecommunications systems, the rate measured in bits per second (bit/s), at which information can be transferred.
Cloud computing	Access to remote servers in data centres
ELL	Ethernet Leased Lines – modern technology that uses the Ethernet protocol for transmission. They support a variety of speeds from 10 megabits per second to 10 gigabits per second or more. Ethernet leased lines are generally provided using fibre optic cables
Gbit/s	Gigabit per second – speed of multiples of consumer information capacity
HBW	High bandwidth – defined for the purpose of this consumer survey as any service with bandwidth above 50 Megabits per second
ISDN	Integrated services for digital network – a digital telephone service that supports telephone and switched data services.
Latency	A measure of delay in transmission over a transmission path.
Mbit/s	Megabits per second (1 Megabit = 1 million bits). A measure of bandwidth in a digital system.
MPLS	Multiprotocol Label Switching Network - a packet-based network technology that uses label switching techniques in order to prioritise the routing of packets between network nodes. MPLS is commonly deployed in VPN and next generation networks' core applications.

Term/ abbreviation	Meaning
PSTN	Public switched telephone network – a telecommunications network that uses circuit switched technology to provide voice telephony services.
Resilient links	Resilient links are used as back-up lines by providers to enable continuity of service for the end-user in case of service disruption or failure. May include mirroring services and data
SDH/ PDH leased lines	**Synchronous/ Plesiochronous Digital Hierarchy** SDH/PDH leased lines - an older technology that supports a wide range of bandwidths ranging from 64 kilobits per second up to 655 megabits per second. Low bandwidth services are provided using copper cables and higher bandwidth using fibre cables
SIP	Session initiation protocol – used for internet telephony. It effectively uses the internet, rather than conventional ISDN to transmit voice (and video) calls
Specific interface/ File Transfer Protocol (FTP)	A network protocol to transfer files between clients and servers
VOIP	Voice over internet protocol - A generic term used to describe telephony services provided over IP networks.
VPN	Virtual Private Network - a technology allowing users to make inter-site connections over a public telecommunications network that is software partitioned to emulate the service offered by a physically distinct private network.
WAN	Wide area network – a geographically dispersed telecommunications network, typically a corporate network linking multiple sites at different locations.
WDM	Wave Division Multiplexed leased lines – an optical frequency division multiplexing transmission technology that enables multiple high capacity circuits to share an optical fibre pair by modulating each on a different optical wavelength.

2.6 Objectives

The objectives of the quantitative research are to explore the following areas amongst business users (not resellers) of high bandwidth leased line services:

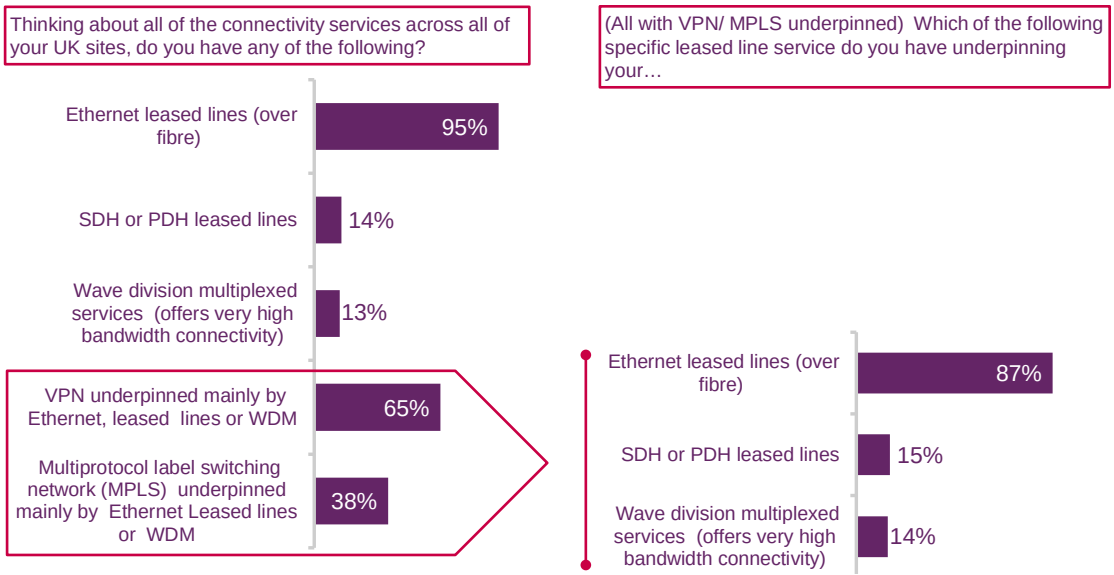
- Requirements of end-users from these services, willingness to switch and possible barriers to doing so;
- Choice of suppliers and any barriers to switching suppliers;
- Understanding user preferences and market trends.

3. Sample profile

Respondents were asked about the particular types of connectivity that they used 'across all their UK sites'. A list of different types of leased lines was read to respondents to select from. Results are shown in figure 2. Where respondents indicated that they had 'VPN underpinned mainly by Ethernet, leased lines or WDM' or 'Multiproduct label switching network (MPLS) underpinned mainly by Ethernet Leased lines or WDM' a follow up question then captured what **type** of lines underpinned these services.

Figure 2

Type of line used (detail)

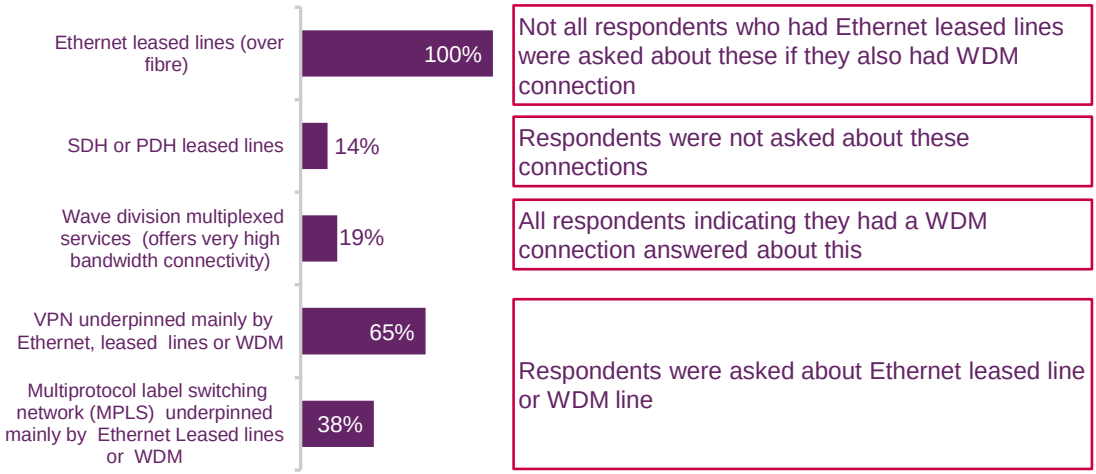


Source: QQUAL A: Thinking about all of the connectivity services across all of your UK sites, do you have any of the following?/ QQUALB: Which of the following specific leased line service do you have underpinning your…
Base: All respondents: 241, All respondents with VPN underpinned by Ethernet or WDM or MPLS underpinned mainly by Ethernet or WDM: 179

All respondents who selected **Wave Division Multiplexed** at either of these questions were then asked about this type of line during the interview. Where respondents selected 'Ethernet leased lines' and **not** WDM these were the focus for the interview. Respondents who did not use either of these types of connections were screened out. The full breakdown of the profile is shown in figure 3.

Figure 3

Type of line used (summary)



Source: QQUAL A: Thinking about all of the connectivity services across all of your UK sites, do you have any of the following?/ QQUALB: Which of the following specific leased line service do you have underpinning your…
Base: All respondents: 241, All respondents with VPN underpinned by Ethernet or WDM or MPLS underpinned mainly by Ethernet or WDM: 179

Respondents allocated to the sample of 'Ethernet leased lines' were then further divided into three different sample types based on their **speed of connection**. As shown in figure 4. Those with Wave Division Multiplexed line(s) were not allocated into a group depending on speed as this could vary. They were a **stand-alone** sample group.

In this report we sometimes refer to 'high bandwidth lines' as an overall description. However, respondents were in almost all instances answering about the particular high bandwidth connection they were allocated to during the interview. The different sample groups are outlined below along with the abbreviation used in the report to describe the sample group:

- Ethernet leased lines up to and including 100Mbit/s but more than 50Mbit/s - **ELL≤100Mbit/s**
- Ethernet leased lines up to and including 1Gbit/s but more than 100Mbits/s - **ELL≤1Gbit/s**
- Ethernet leased lines over 1Gbit/s - **ELL>1Gbit/s**
- Wave Division Multiplexed - **WDM**

Figure 4

Speed of connection (from bands)

	TOTAL	WDM**	ELL>1Gb/s WDM*	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s
Up to 50Mb/s	<0.5%	2%*	-	-	-
Up to and including 100 Mb/s	59%	39%	-	-	100%
Up to and including 1Gb/s	32%	30%	-	100%	-
Over 1Gb/s	8%	22%	100%	-	-
Don't know	1%	7%	-	-	-

*This single respondent was flagged as having a WDM service in the sample provided and therefore included in the research sample

NB: respondents were read these bands and allocated themselves to them. The bands are mutually exclusive and signify the highest speed service that the company paid for

Source: QS1d: What is the maximum contracted speed you pay for on your LEASED LINE ETHERNET(QQUALA/B/C=1 / WAVE DIVISION MULTIPLEXED SERVICES (QQUALA/B/C=3) services?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.

As shown in figure 5, the **exact** speed of connection broadly mirrored the responses to the prompted question. Almost 1 in 5 (18%) did not know what the exact speed of their high bandwidth line was. This reached a third (33%) for those with WDM/ ELL>1Gbit/s compared to 13% of those with ELL≤100Mbit/s. Almost 1 in 3 (29%) WDM/ ELL>1Gbit/s claimed their exact maximum contracted speed was 10Gbit/s.

This data was collected but was not used for screening.

Figure 5

Speed of connection (exact)

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s
Up to 100 Mb/s	5%	4%	4%	-	8%
100 Mb/s	44%	22%	18%	-	78%
Up to 1Gb/s	9%	4%	4%	27%	2%
1 Gb/s	18%	17%	15%	56%	1%
2 Gb/s	<0.5%	-	2%	-	-
10 Gb/s	7%	24%	29%	-	-
Don't know	18%	33%	33%	16%	13%

*Source: QS1dx,y,z: Do you know the **exact** maximum contracted speed you pay for on your…*
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.

4. Summary of key findings

Introduction and research method

Ofcom (via BDRC-Continental) conducted research into three groups of high bandwidth retail customers as part of the BCMR currently being undertaken. This report summarises the findings from this research which took place between November 2015 and January 2016.

In total 241 interviews were conducted which have been split into the following sample types:

- Very high bandwidth users: retail business customers who use leased line Ethernet services above 1Gbit/s or use Wave Division Multiplexed (WDM) services (N=55);
- 1Gbit/s users: retail business customers who use leased line services at up to 1Gbit/s (but more than 100Mbit/s) (N=62);
- 100Mbit/s users: retail business customers who use leased line services at up to 100Mbit/s (but more than 50 Mbit/s) (N=124).

Profile of organisations with high bandwidth connections

The mean number of employees for organisations with WDM/ ELL>1Gbit/s was 534. This was higher than for those with ELL at ≤100Mbit/s (282). Those with ELL ≤1Gbit/s had 452 employees on average. Average company turnover ranged from £140 million for WDM/ELL>1Gbit/s down to £55 million for those with ELL at ≤100Mbit/s.

Among the total sample, financial services/other services were the single largest sector (37%), and there were no significant differences other than a concentration of WDM lines in the public administration and service sector (6 of the 8 companies interviewed in that sector).

Sites with high bandwidth lines were distributed throughout the country, though there were 'hotspots' where a greater proportion of organisations using high bandwidth lines were present. These were London (29% of organisations had a high bandwidth line site here) and the South East (24%). Northern Ireland was the nation least likely to be reported to be using high bandwidth connections (2%).

The average (median) number of sites per organisation using high bandwidth connections was two. However, approaching a third (29%) of those with WDM/ ELL>1Gbit/s and 35% of those with ELL at ≤1Gbit/s had four or more sites using this type of connection. This contrasted with 16% of those with ELL at ≤100Mbit/s who had four or more sites. Among those with more than one site, approximately three in five of their sites (61% of the total sample) on average were claimed to have a high bandwidth connection.

Spend

Annual spend on business connectivity was estimated on average to be £235,000, and this was higher for those with WDM/ ELL>1Gbit/s (£601,000) compared to ELL at ≤1Gbit/s (£239,000) or ELL at ≤100Mbit/s (£83,000).

The proportion of spend on the high bandwidth connection was estimated on average to be 36% of overall company spend on business connectivity for those with WDM/ ELL>1Gbit/s, 45% for ELL at ≤1Gbit/s and 48% ELL at ≤100Mbit/s. This translated into an estimated mean spend on the high bandwidth connection of £216,000 for those with WDM/ ELL>1Gbit/s, £108,000 for ELL at ≤1Gbit/s, and £40,000 for ELL at ≤100Mbit/s.

Line usage

There was no single unique usage that dominated among users for their high bandwidth connection. Responses ranged from 81% (at a total level) for each of: 'using software and applications that require a constant connection' and 'access into data storage and backup', to 5% for telephony. Other key uses were 'just needs high speeds into my largest sites' (69%), 'cloud computing (66%), and 'resilient links' (64%). The latter was more heavily mentioned by those with WDM/ ELL>1Gbit/s (78%) and ELL at ≤1Gbit/s (74%) compared to those with ELL at ≤100Mbit/s (53%).

Suppliers

BT was the most commonly used supplier both at an 'overall' (57% of total sample) and 'main supplier' (40%) level. However, it should be noted that contact sample was sourced from key suppliers and so may have produced an overestimate of their market penetration. Other than Virgin Media, the list of other suppliers used was heavily fragmented; with Vodafone, TalkTalk, Colt, Janet, Easynet, and Zayo mentioned as a main supplier by 2% or more and the remainder by 1% or fewer.

Well over two in five (44%) claimed to use a mix of suppliers, and 27% used BT and another supplier. The overall category of reason for using more than one supplier was 'contingency' mentioned by 46% (of the total) followed by price (33%), location (21%) and product (15%). 'Contingency' was mentioned by more with a WDM/ ELL>1Gbit/s connection (58%) than ELL at ≤1Gbit/s (33% although this is not a statistically significant difference), and ELL at ≤100Mbit/s (42%).

The most frequently mentioned reason for using a particular supplier was price (specified by 85% of the total). Other key reasons included 'reputation for quality' (71%) and 'better resilience' (68%). Price was specified by more of those not using BT as their main supplier (93% not using BT as main supplier vs. 74% using BT), as were 'good contacts at chosen company' (65% not using BT as main supplier vs 47% using BT), 'chosen suppliers understand our business' (60% not using BT as main supplier vs. 41% using BT), and 'length of agreement' (50% % not using BT as main supplier vs. 35% using BT). In contrast ,'chosen

supplier already has a connection to our building' was more likely to be selected by those using BT as their main supplier (60% using BT vs. 46% not using BT).

Around half purchased their high bandwidth connection as a stand-alone product, the remainder were split between those who sometimes (20%) or always (28%) purchased in combination with other products. There was no single type of product that was purchased with the high bandwidth line, many were mentioned. The most commonly identified was 'telephony', cited by 25% of the total sample (43% of those with BT as their main supplier).

Migration

The high bandwidth connection had been in place on average for four years. However, 39% (50% of those with ELL at ≤1Gbit/s) had had their high bandwidth connection for more than 5 years. There was a variety of different types of connections or services that the high bandwidth line had replaced, most commonly this was 'ADSL or cable modem, or fibre broadband connection' (48% of total).

'Needing a faster connection' was the most frequently given reason for migrating to their high bandwidth connection. This was more commonly specified by those with ELL at ≤1Gbit/s (89%) and ELL at ≤100Mbit/s (84%) than those with WDM connections (64%). 'The company was expanding' (60% of total) and 'cost or price reductions in the market' (52%) were reasons mentioned by more than half across almost all sample types.

Two in five (41%) indicated they had experienced an obstacle during the migration, and this ranged from 45% for those with ELL≤100Mbit/s compared to 27% for those with WDM/ ELL>1Gbit/s connections. The most frequent obstacles experienced were 'time taken to deliver service/long delay in installation' (9%) and 'other criticism of provider, eg poor communication/ customer service' (8%). Around half (46%) estimated that the main obstacle they encountered when switching did not have any internal or external cost associated with it, although one in five (17%) estimated a cost of £10,000 or more.

Switching provider

In the past five years around a third of those with high bandwidth connections claimed to have switched suppliers. Of these, three in five (58%) rated the switching process as 'easy'. Whilst there was no overall difference in the proportion of those rating the process as 'easy' between those with WDM/ ELL>100Mbit/s (54%) compared to those with ELL at ≤100Mbit/s (60%), more with ELL at ≤100Mbit/s indicated that the process was 'not at all easy' (16%) compared to those with 3% vs. WDM/ ELL>100Mbit/s (3%).

The most frequently provided reason for not switching provider was that they had 'no reason to change/happy with service' (44% of the total). There were no significant differences by connection types or speed detected because base sizes were low. However, a higher proportion of those with ELL≤100Mbit/s indicated their reason for not switching was 'no reason to change/happy with service' (52% vs. 34% of those with WDM lines).

Other connections considered

Overall, eight in ten (81%) had considered changing the speed or the type of their high bandwidth connection. This ranged from 73% for organisations with WDM/ ELL>1Gbit/s to 84% for ELL≤100Mbit/s connections, although the differences were not significant. Considered alternatives ranged from dark fibre (20% of those with WDM/ ELL>100Mbit/s) to increasing bandwidth under existing connection (1% of ELL≤100Mbit/s).

The single reason most frequently provided by respondents for continuing with their current high bandwidth connection was 'price'/better value for money', mentioned by around a third for all the sample types. However, overall when combining similar responses 'current product was acceptable' was mentioned by 41%, more than mentions of price combined (32%).

Hypothetical price increases

Respondents were asked how they would react to an increase in price of 10% for their high bandwidth line from their supplier, or across all suppliers. A minority (8% for single supplier increase, 13% across all suppliers) claimed they would take 'no action'. The most commonly mentioned action was 'I would seek to negotiate with supplier' (86% single supplier increase, 82% across all suppliers). A lower proportion indicated that they would 'switch suppliers' (13% single supplier increase, 12% across all suppliers) than said they would negotiate. Despite this, 60% said they would 'look into switching' for the single supplier increase.

Respondents were additionally asked to indicate their certainty of performing one of their claimed actions. For 'switch supplier' where there was a price increase of 10% for an individual supplier, 22% were 'certain to' and 69% were 'certain to' **or** 'very likely' to. Of those who would 'seek to negotiate', those 'certain to' were 45% and 72% were 'certain to' **or** 'very likely' to. Figures for certainty of action were similar to responses relating to all suppliers increasing their prices.

Upgrading

There was some interest in upgrading connection speeds for those with ELL≤100Mbit/s and ELL≤1Gbit/s. This was strongest for the next step up in each sample group, e.g. for those with ELL≤100Mbit/s 36% said they were 'very or fairly' likely to upgrade one step to ELL>100Mbit/s <1Gbit/s. In contrast, just 7% were 'very' or 'fairly' likely to upgrade two steps to WDM.

Claimed intentions for those with ELL≤1Gbit/s were similar for upgrading to WDM (to those with ELL≤100Mbit/s) at 8%, but they were more likely to consider a move to ELL>1Gbit/s (27% vs. 8% for those currently with a connection of ELL≤100Mbit/s).

Dark fibre

Awareness of dark fibre ranged from 86% of those with ELL≤100Mbit/s to 98% with WDM/ ELL>100Mbit/s connections. Almost one in five (17%) of the total sample indicated that they

were using dark fibre. This ranged from two in five (42%) with WDM/ ELL>100Mbit/s connections, to 6% of those with ELL≤100Mbit/s.

Those not currently using dark fibre were asked to use a scale from 1 to 10 to indicate the extent to which they would consider this service as an alternative to their existing high bandwidth service. A rating of 1 indicated “Not consider at all” and a rating of 10 indicated “Strongly consider”. Expressed consideration levels of 7 to 10 out of 10 for dark fibre were higher among those with ELL>1Gbit/s connections (34%) compared to among those with ELL≤100Mbit/s (15%).

5. Detailed findings

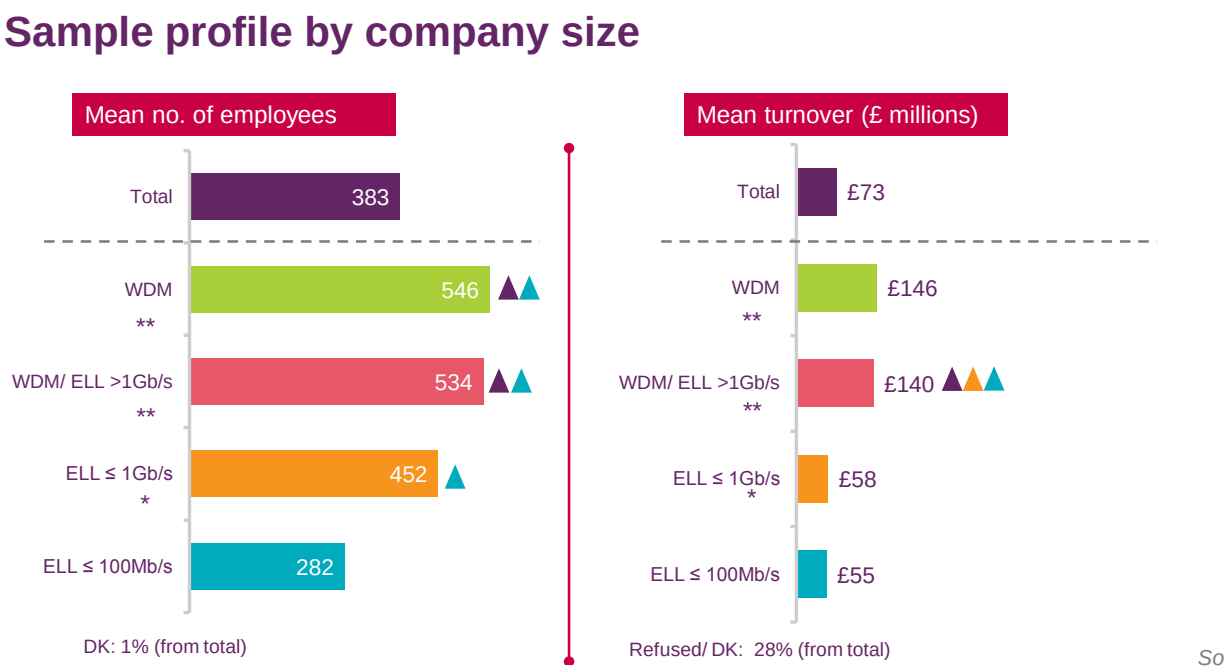
5.1 Profile of organisations with high bandwidth connections, suppliers, and usage

Size and sector

The higher the bandwidth used, the greater the number of employees was likely to be. The mean number of employees for those organisations with WDM/ ELL>1Gbit/s was 534. Those with ELL ≤1Gbit/s had 452 on average and those with ELL at ≤100Mbit/s had an average of 282.

As shown in figure 6, average turnover followed the same pattern for employee numbers in that it was also higher amongst organisations with WDM/ ELL>1Gbit/s at £140 million compared to £55 million for those with ELL at ≤100Mbit/s. The full break down for both number of employees and turnover (figure 6a and 6b) can be found in Appendix A.

Figure 6



So
urce: Approximately how many employees does your company/organisation have at all sites in the UK? / To the best of your knowledge what would you say is the annual turnover for your company?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

There was no strong skew for a particular sector emerging for any individual connection type or speed, as shown in figure 7. The only exception for this was **public administration and services** which was almost solely populated by those with WDM/ ELL>1Gbit/s. However, it only accounted as a sector for 1 in 10 (11%) with WDM/ ELL>1Gbit/s.

Overall, services were the **single largest** individual component sector at 28% with those with high bandwidth connections less likely to be in manufacturing (10%) and wholesale/retail/communications (11%) sectors.

Figure 7

Detailed sample profile by sector

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s
Manufacturing	10%	9%	9%	5%	12%
Construction	1%	4%	4%	-	1%
Wholesale/Retail/ Transport/Communications	11%	13%	15%	10%	10%
Financial Services	8%	11%	9%	6%	9%
Other services	28%	20%	18%	34%	29%
Public admin and services (EXCLUDING CENTRAL GOVERNMENT ORGS)	6%	4%	4%	11%	4%
Public admin and services (CENTRAL GOVERNMENT ORGS ONLY)	3%	9%	11%	-	2%
Other	33%	30%	31%	34%	33%

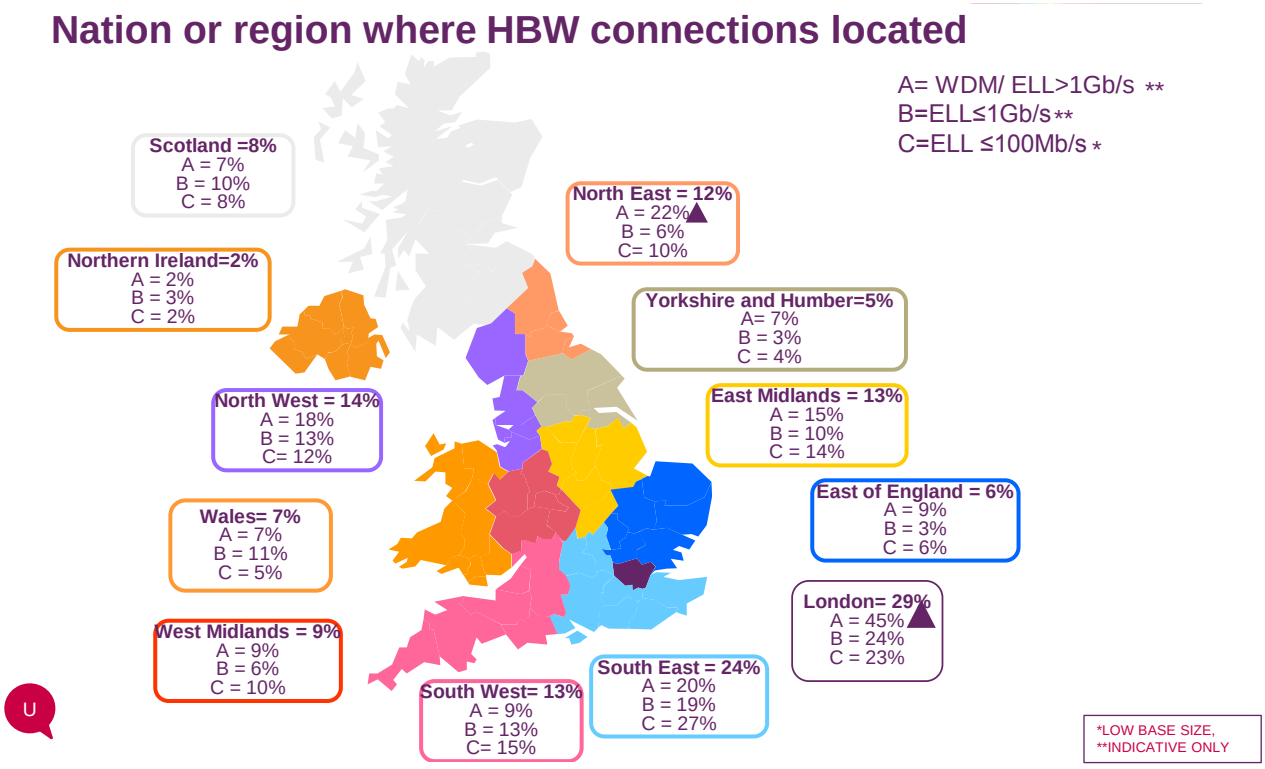
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Respondents were asked to indicate the **nation** or **region** where their high bandwidth connections were located (NB: this was not specific to the sample type). As shown in figure 8, respondents indicated that sites with these connections were distributed throughout the country but not in the same concentrations.

Sites with high bandwidth connections were more likely to be located in London (29%) and South East (24%). This contrasts with Northern Ireland (2%) and Yorkshire and Humberside (5%).

Respondents with WDM/ ELL>1Gbit/s connections were more likely to report having high bandwidth connections in the North East (22% of organisations with these line types had a site in the North East with this connection) and London (45%).

Figure 8



Source: In which region of the UK are your sites with very high bandwidth connections located?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

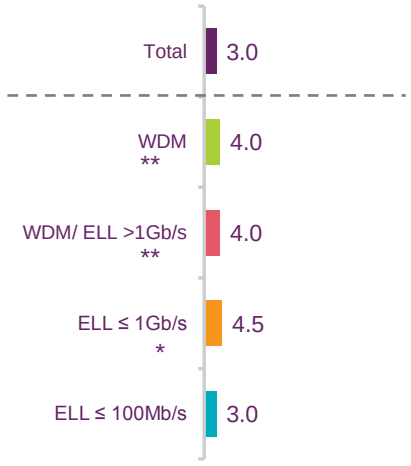
Number of sites

Just over three in four organisations of the total surveyed had more than one site, outlet, branch or office in the UK (76%). At least two in five with WDM or ELL connections at 1Gbit/s or above had more than 6 sites, more than the proportion of organisations with ELL≤100Mbit/s connections (23%). As shown in figure 9, the average (median) number of sites was 3-4.5 (depending on connection type and speed).

Figure 9

Number of sites in organisation OVERALL

Average (Median) number of sites:



Overall spread of sites:

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s *	ELL ≤ 100Mb/s >50Mb/s
1	24%	17%	18%	21%	27%
2-5	44%	37%	36%	39%	49%
6+	32% ▲	43% ▲	44% ▲	40% ▲	23%

Source: QBUS 1: Thinking now about your organisation. How many individual sites, outlets, branches and or offices, including the one where you work does your company/organisation have in the UK?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Figure 10 shows that the average (median) number of sites with **high bandwidth connectivity** was 2-3 (depending on connection type and speed).

Organisations with ELL≤100Mbit/s connections were more likely to have only **one** site with high bandwidth connectivity (49% vs. 28% WDM/ ELL>1Gbit/s, 33% ELL≤1Gbit/s). (NB: They were slightly more likely than those with greater bandwidths to have 1 site in their organisation overall, so at least some of this bias can be explained through this).

Figure 10

Number of sites in organisation WITH HBW☆CONNECTIVITY

☆ Connectivity = same as sample type assigned in survey

Overall spread of sites with HBW

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s
1	40%	29%	28%	33%	49%
2	23%	36%	33%	13%	24%
3	13%	11%	9%	20%	11%
4-10	16%	18%	20%	25%	10%
11-49	6%	7%	7%	7%	5%
50+	2%	0%	2%	3%	1%

Source: T11d. How many of your (INSERT NUMBER FROM QBUS1) sites have INSERT SAMPLE TYPE connectivity in the UK?
*Base: All respondents who gave a response: 239, WDM: 45**/ WDM/ ELL>1Gb/s: 54**/ ELL ≤ 1Gbs >100Mb/s: 61*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

The **proportion** of sites with high bandwidth connectivity was estimated to be at around three in five among the total sample. This ranged from 58% for organisations with WDM/ ELL>1Gbit/s connections to 64% for connections at ELL≤1Gbit/s (difference not significant). Around a third (ranging from 33% with WDM/ ELL>1Gbit/s or ELL≤1Gbit/s to 38% with ELL≤1Gbit/s connections) have their high bandwidth connection at 100% of their sites.

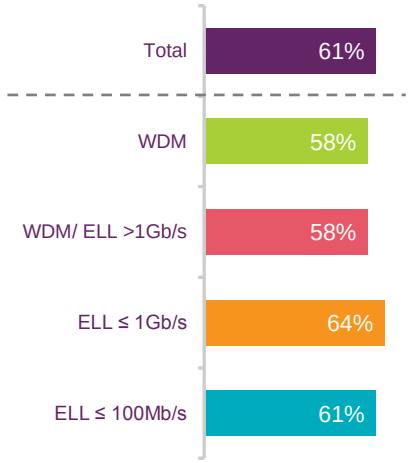
As shown in figure 11, this proportion was calculated by the number of sites with the high bandwidth connection divided by the number of sites at a respondent level. It **excludes** those with only 1 site.

NB: Including organisations who reported 1 site in the organisation and therefore with high bandwidth connectivity the proportion rises to 70% (of the total, range: 65% to 71%). The figure using this calculation can be found in appendix A, figure 11a.

Figure 11

Proportion of sites in organisation WITH HBW CONNECTIVITY★ (with more than 1 site)

Average proportion



Proportion in bands

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s*
Up to 24%	18%	22%	23%	17%	15%
25% to 49%	13%	14%	14%	13%	13%
50% to 74%	30%	28%	26%	25%	35%
75% or more	39%	36%	37%	46%	36%
100%	35%	33%	35%	38%	33%

★Connectivity = same as sample type assigned in survey

Source: T11d. How many of your (INSERT NUMBER FROM QBUS1) sites have INSERT SAMPLE TYPE connectivity in the UK?
*Base: All respondents with more than 1 site excl. DK: 182, WDM: 36**/ WDM/ ELL>1Gb/s: 43**/ ELL ≤ 1Gbs >100Mb/s: 48**/ ELL ≤ 100Mb/s >50Mb/s: 91**
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

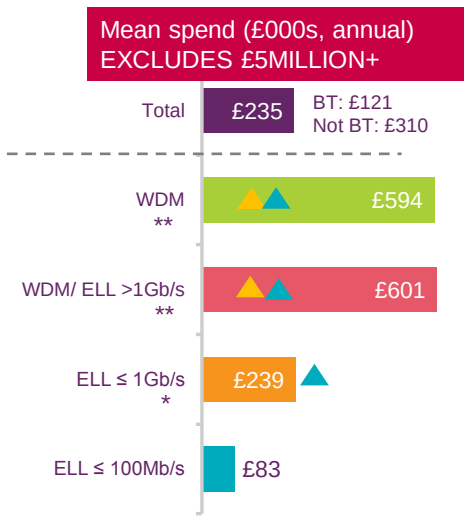
Spend

Figure 12 shows that annual mean spend on all business connectivity services within the UK and across all sites was estimated to be £601,000 for those with connections of WDM/ ELL>1Gbit/s. This was relatively higher than the mean of £239,000 for those with ELL≤1Gbit/s connections and £83,000 for those with ELL≤100Mbit/s connections. .

NB: This mean excludes very high spenders of £5 million or more. For the data with the mean including these respondents, please see Appendix A, figure 12a.

Figure 12

Annual spend on business connectivity (mean excluding £5M+)



Overall spread of spend

	TOTAL	WDM**	ELL>1 Gb/s WDM**	ELL ≤ 1Gbs >100Mb /s*	ELL ≤ 100Mb/ s >50Mb/ s
Up to £25k	28%	7%	9%	24%	38%
£25 to £99k	31%	28%	24%	31%	34%
£100k+	29%	48%	49%	34%	18%

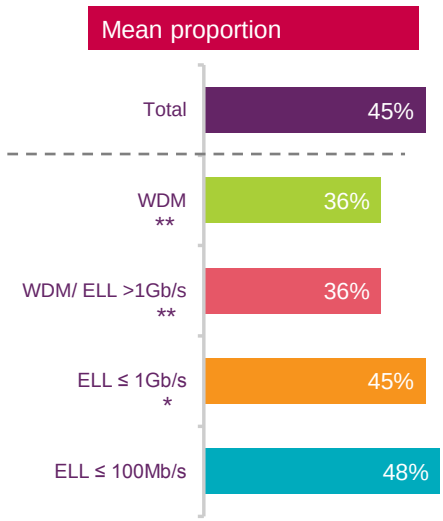
C1a.Would you be able to estimate approximately how much your organisation spends annually on business connectivity services within the UK across all sites? Please base this on the whole organisation and not just parts that you may be responsible for.
*Base: All respondents: 237, WDM: 45**/ WDM/ ELL>1Gb/s: 54**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 121*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Spend on the high bandwidth line

Respondents provided an estimate of the **proportion** of the total annual business connectivity spend accounted for by their spend on their high bandwidth connection. As figure 13 shows, this ranged from 36% for those with WDM/ ELL>1Gbit/s to 48% for organisations with ELL≤100Mbit/s connections. Just over one in ten (13% of the total) indicated that their high bandwidth connection accounted for less than 10% of their connectivity spend.

Figure 13

Proportion of connectivity spend on HBW✪



Overall spread of proportion

	TOTAL	WDM**	ELL>1 Gb/s WDM **	ELL ≤ 1Gbs >100Mb/s *	ELL ≤ 100Mb/s >50Mb/s
<10%	13%	15%	16%	11%	12%
10-24%	11%	11%	13%	10%	11%
25-49%	15%	24%	20%	16%	11%
50-74%+	24%	20%	22%	26%	23%
75%+	17%	9%	7%	18%	22%
DK	20%	22%	22%	19%	20%

✪ Connection asked about in survey

QC2. Approximately what proportion of your spend annually on business connectivity services is on ... within the UK across all sites?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

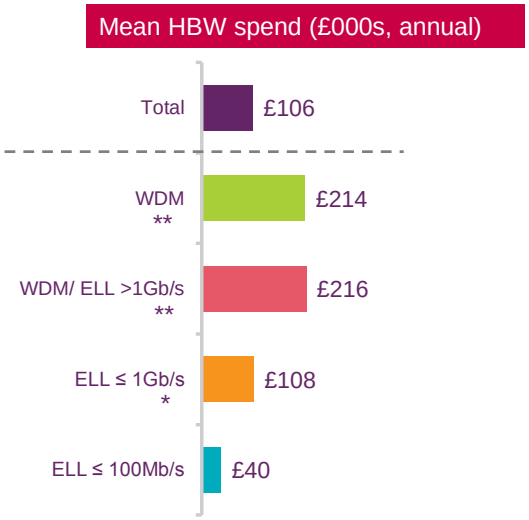
The mean estimated proportion of spend provided by respondents combined with the mean annual connectivity spend was used to estimate the mean annual spend for high bandwidth connections.

The total annual estimated spend for those with WDM/ ELL>1Gbit/s was £216,000, and this compares to £108,000 for ELL≤1Gbit/s connections and £40,000 for ELL≤100Mbit/s connections. As shown in figure 14, the estimated spend for organisations with a single site was relatively low in comparison to multisite entities (£52,000 vs. £118,000).

NB: Data in figure 14 is calculated using a mean which **excludes** very high overall spenders of £5million or more.

Figure 14

Estimated HBW line spend



Estimated using **mean spend on connectivity (excluding £5 million +)** and **mean proportion of spend on HBW line).**
NB: Respondent did not estimate exact figure

Single site	£52
Multi site	£118

QC2. Approximately what proportion of your spend annually on business connectivity services is on ... within the UK across all sites?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Usage of the high bandwidth line

Respondents were read a list of potential 'main' purposes for their high bandwidth line. The most common types of usage selected by respondents were 'using software and applications that require a constant connection' and 'access into data storage and back up' (both mentioned by 81% of total). As shown in figure 15, there were some differences in the 'main usage' reason between the different line types and connections.

For those with WDM/ ELL>1Gbit/s lines 'resilient links' were selected by as many as 'using software and applications that require a constant connection' (78%). The proportion selecting 'resilient links' was relatively higher for those with WDM/ ELL>1Gbit/s (78%) and ELL≤1Gbit/s (74%) compared to organisations with ELL≤100Mbit/s (53%).

'Using software and applications that require a constant connection' was stated as a 'main purpose' by 92% of those with ELL≤1Gbit/s. This was a greater proportion than for the other types of lines (78% WDM/ ELL>1Gbit/s, 77% ELL≤100Mbit/s).

NB: For reasons provided by fewer than 5% please see Appendix A, figure 15a.

Figure 15

Main purpose of HBW line (detail)

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s*	ELL ≤ 100Mb/s
Using software and applications that require a constant connection	81%	76%	78%	92% ▲▲▲▲	77%
Access into data storage and backup	81%	85%	85%	89% ▲	75%
Just need high speeds into my largest sites (e.g. head office)	69%	67%	65%	77%	66%
Cloud Computing - e.g. access to remote servers in data centres	66%	61%	62%	77% ▲	63%
Resilient links - e.g. mirroring servers and data	64% ▲	76% ▲▲	78% ▲▲	74% ▲	53%
Videoconferencing/ broadcasting	54%	41%	44%	65% ▲▲	54%
Specific interface/ File Transfer Protocol	49%	50%	51%	55%	45%
Specific low latency data transfer requirements (e.g. for high-value securities trading)	34%	46%	44%	29%	31%
Voice services/ VOIP	6%	4%	4%	6%	7%
Telephony	5%	4%	4%	3%	6%

HB1. What are the main purposes of your INSERT SAMPLE TYPE? What is it mainly used for in your organisation?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

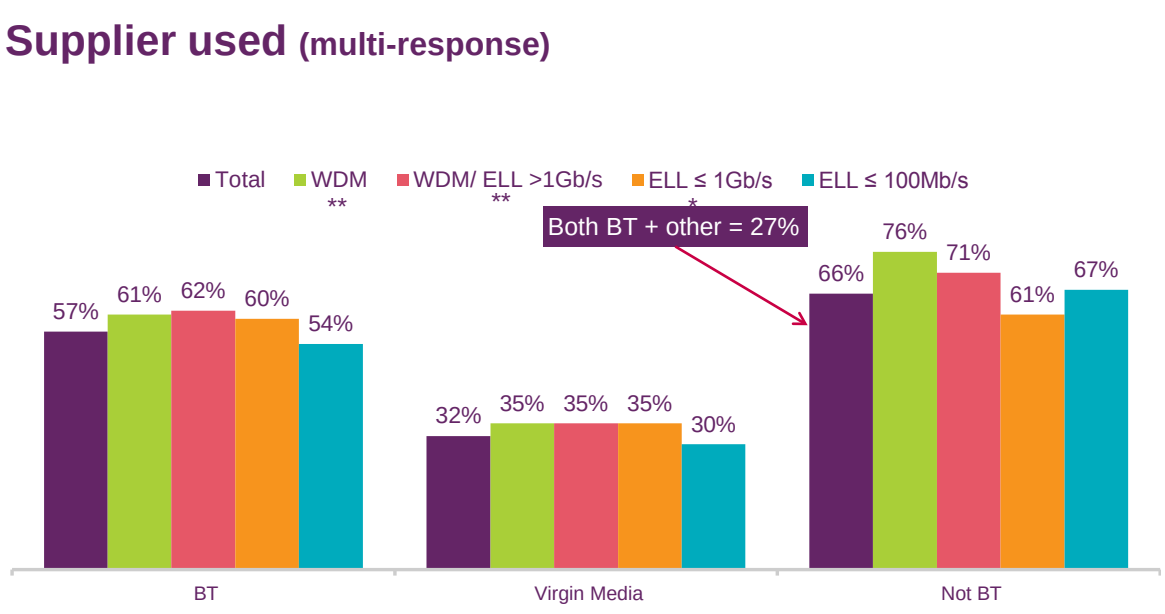
Suppliers

BT was the most commonly used supplier and there were no **significant** differences in supplier used between the different connection types and speeds as shown in figure 16. This ranged from 54% for those with ELL≤100Mbit/s to 62% for organisations with WDM/ ELL>1Gbit/s connections.

Virgin Media was used by approximately a third of those with high bandwidth connections (WDM/ ELL>1Gbit/s: 35%, ELL≤1Gbit/s: 35% ELL≤100Mbit/s: 30%). Those naming a supplier **other** than BT (at a net level) accounted for 71% of those with WDM/ ELL>1Gbit/s connections, 61% with ELL≤1Gbit/s and 67% with ELL≤100Mbit/s. There was some crossover between the suppliers used. Overall one in four (27%) used **both** BT **and** another supplier.

It should be noted that this is not a fully representative sample of high bandwidth users. Hence, supplier data may not be an accurate representation of the overall market composition and is a reflection of the composition of the sample only

Figure 16



T1. Which Telecoms supplier or suppliers does your organisation use for your INSERT SAMPLE TYPE?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

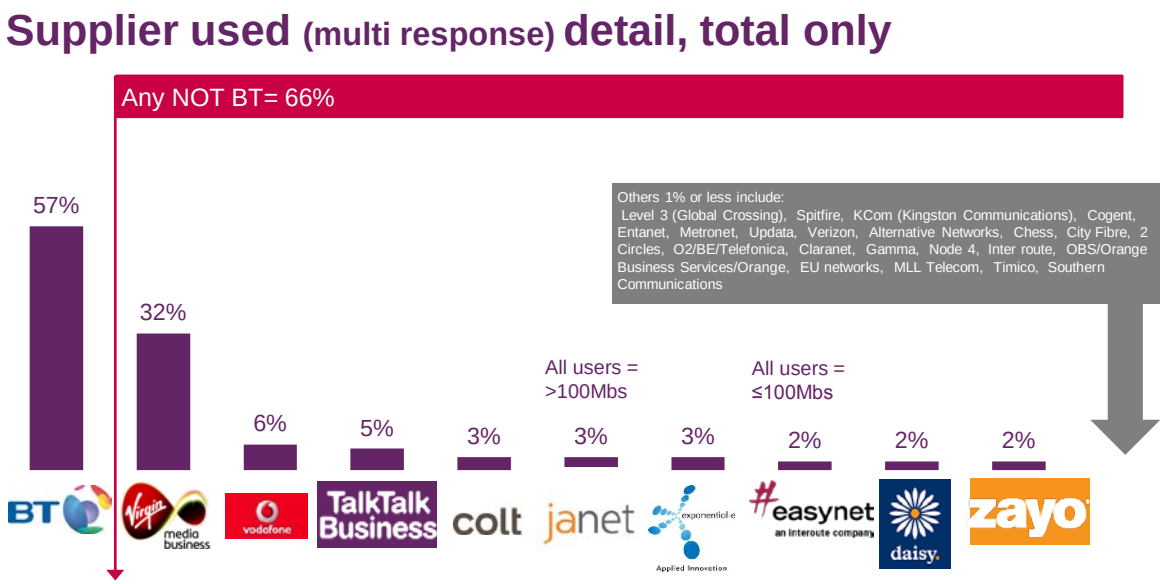
Figure 17 shows at a **total** sample level **all** the different suppliers currently used by respondents for their high bandwidth connection. Other than BT and Virgin, the list of other suppliers was fragmented with low proportions using each one.

Vodafone and TalkTalk were used by approximately one in twenty (6%, 5%). Colt, Janet, Exponential-e, Easynet, Daisy and Zayo were each used by 2 to 3%. The remainder of suppliers were mentioned by 1% or less.

There were no significant differences in supplier used between the different connection types and speeds. However, **all** those using Janet (used by academic institutions) had a WDM or ELL>100Mbit/s connection and **all** those using Easynet used an ELL≤100Mbit/s.

It should be noted that this is not a fully representative sample of high bandwidth users. Hence, supplier data may not be an accurate representation of the overall market composition and is a reflection of the composition of the sample only

Figure 17



NB: Supplier for any other high bandwidth leased lines: Similar pattern with 44% BT, 31% VM, 8% Vodafone, 6% TalkTalk

T1. Which Telecoms supplier or suppliers does your organisation use for your INSERT SAMPLE TYPE?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

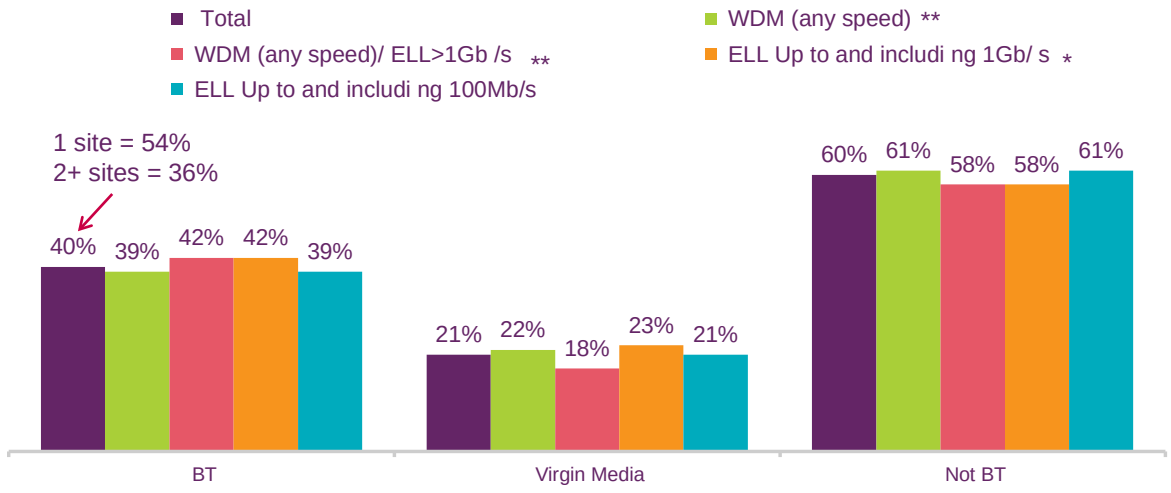
Organisations that **did** use more than one supplier for their high bandwidth line (44%, see figure 20) were asked to name their 'main' supplier. Figure 18 shows the proportion selecting their 'main' supplier and those who use one supplier (and hence this was the 'main' supplier).

The split between those using BT as their main (or only) supplier and a supplier other than BT was 40% vs. 60% and this was very similar across the different connection types and speeds. Virgin Media was used by around one in five (21%), representing 1 in 3 of the 'not BT' suppliers.

It should be noted that this is not a fully representative sample of high bandwidth users. Hence, supplier data may not be an accurate representation of the overall market composition and is a reflection of the composition of the sample only

Figure 18

MAIN supplier used (single-response)



T1. Which Telecoms supplier or suppliers does your organisation use for your INSERT SAMPLE TYPE? / T2. And which would you consider to be your MAIN supplier for INSERT SAMPLE TYPE?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

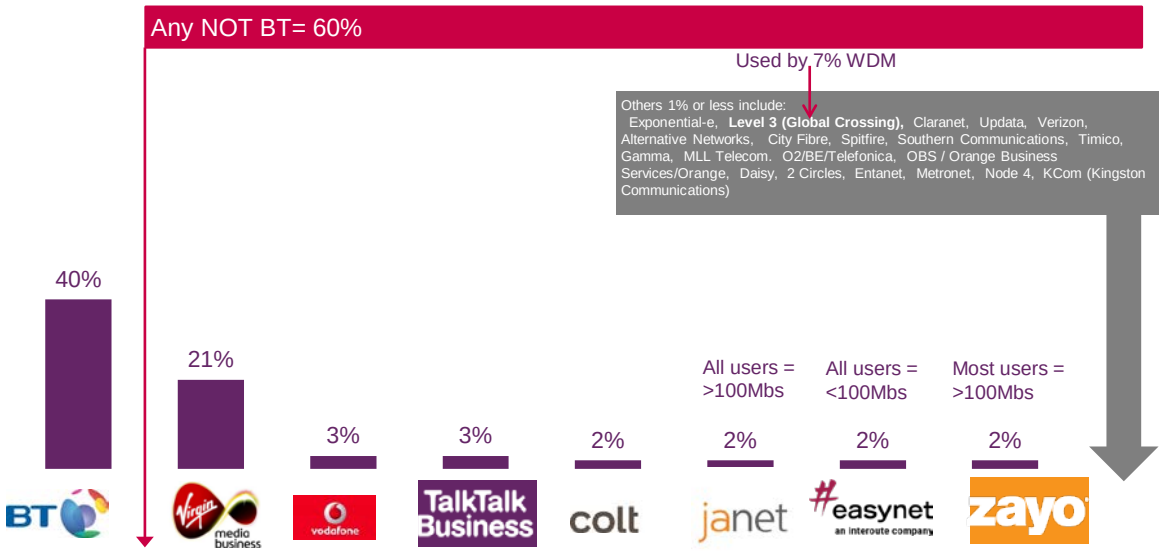
As shown in figure 19, many **different** companies were used as a 'main' supplier for the high bandwidth line **other** than BT. These included Vodafone, Talk Talk, Colt, Janet, Easynet and Zayo (2-3% used as a main supplier). Other companies were the main supplier for 1% or fewer.

There were some differences by the different types of connections and speed sample types. **Most** users of Zayo had WDM or ELL>100Mbit/s connections. Level 3 (Global Crossing) was used by 7% of those with WDM lines.

It should be noted that this is not a fully representative sample of high bandwidth users. Hence, supplier data may not be an accurate representation of the overall market composition and is a reflection of the composition of the sample only

Figure 19

Main supplier used detail (total only)



T1. Which Telecoms supplier or suppliers does your organisation use for your INSERT SAMPLE TYPE? / T2. And which would you consider to be your MAIN supplier for INSERT SAMPLE TYPE?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

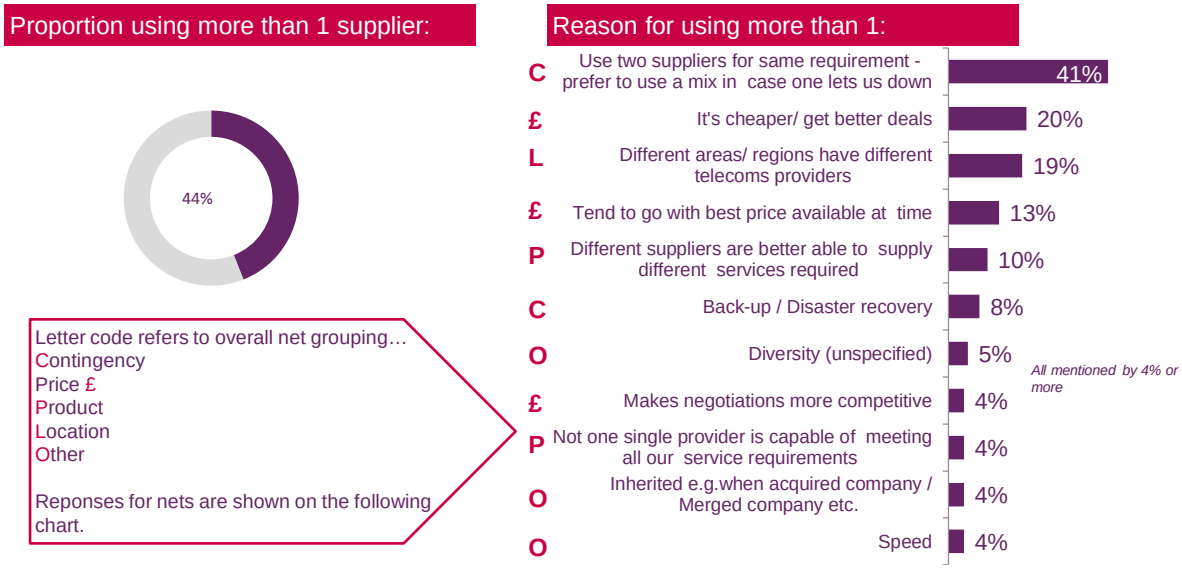
Those organisations who indicated that they used **more than one** supplier for their high bandwidth connection were asked the reason for doing so and results are shown in figure 20. Respondents were read a list of possible reasons and were also given the opportunity to specify another reason.

There were many different areas mentioned which have been grouped into different categories: contingency, price, product, location and other. As shown in the chart below the most commonly mentioned reason for multi-supplier usage was related to 'contingency'; namely 'use two suppliers for the same requirement – prefer to use a mix in case one lets us down' (41%). 'It is cheaper/ get better deals' was mentioned by 20%, followed by 'different areas/ regions have different telecoms providers' (19%).

Figure 20

Reason for using more than one supplier (total)

(of those who use >1)



T7. You mention that you use more than one supplier for your high bandwidth services. What is the reason for doing so?
*Base: All respondents: 105, WDM: 33**/ WDM/ ELL>1Gb/s: 36**/ ELL ≤ 1Gbs >100Mb/s: 24**/ ELL ≤ 100Mb/s >50Mb/s: 45***
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

There were some differences between the sample groups, as shown in figure 21. Those with WDM/ ELL>1Gbit/s connections were relatively more likely to use more than one supplier compared to those with ELL≤1Gbit/s or ELL≤100Mbit/s (65% vs. 39%, 36%).

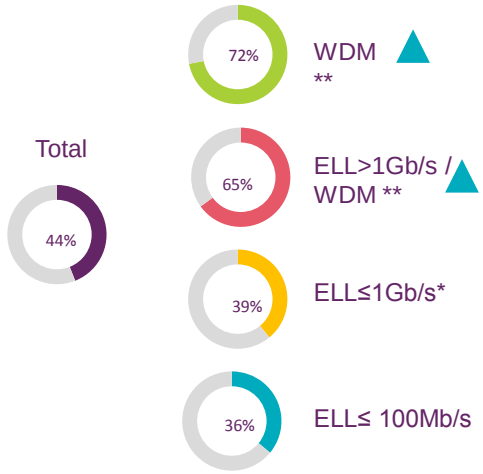
At a net level among the total sample, reasons for using more than one supplier related to 'contingency' were the most frequently mentioned (46%); followed by price (33%), location (21%), and specific details about the product (15%). Contingency was more frequently mentioned by those with WDM/ ELL>1Gbit/s connections (58%) compared to ELL≤100Mbit/s (42%).

Figure 21

Reason for using more than one supplier (detail)

(of those who use >1)

Proportion using more than 1 supplier:



Reason using more than 1 supplier:

Reason (amongst those using >1)	TOTAL	WDM **	ELL>1 Gb/s WDM **	ELL ≤ 1Gb/s **	ELL ≤ 100Mb/s **
NET: Contingency	46%	58% ▲	58% ▲	33%	42%
NET: Price £	33%	21%	22%	58%	29%
NET: Product	15%	9%	8%	29%	13%
NET: Location	21%	27%	25%	25%	16%
NET: Other	19%	15%	17%	17%	22%
Don't know	3%	6%	6%	-	2%

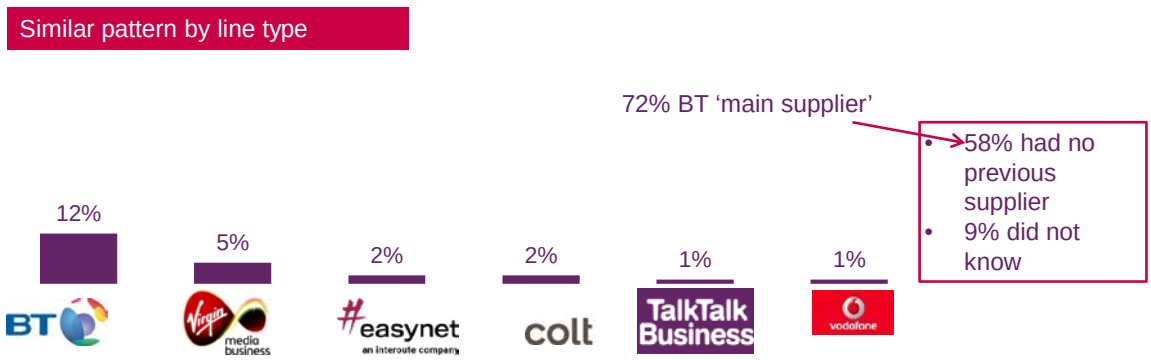
T7. You mention that you use more than one supplier for your high bandwidth services. What is the reason for doing so?
*Base: All respondents: 105, WDM: 33**/ WDM/ ELL>1Gb/s: 36**/ ELL ≤ 1Gbs >100Mb/s: 24**/ ELL ≤ 100Mb/s >50Mb/s: 45***
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Respondents were asked whether they had a **previous** supplier of their current specification of high bandwidth connection that they **no longer** use. As shown in figure 22 most had **no** previous supplier (58%) or did not know whether their company had a previous supplier (9%). The proportion using BT as their 'main' supplier who said they had no previous supplier was 72%.

Of the remainder, 12% had previously used BT, 5% Virgin Media, 2% Easynet, 2% Colt, 1% TalkTalk and 1% Vodafone. There were no significant differences in previous supplier usage by the type or speed of connection.

Figure 22

Previous supplier used (total only)



T4b. Have you had any suppliers that you have previously used for INSERT SAMPLE TYPE that you no longer use? If so can you give me their names?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Respondents were read a list of potential reasons for choosing their current supplier. At a total sample level, the most commonly selected reason was 'price' (85%) as shown in figure 23. This was followed by 'reputation for quality' (71%) and better resilience (68%). Other reasons were chosen by between two and three in five.

Figure 23 also shows the reasons for choosing a supplier for those using BT as their main supplier for their high bandwidth connection, those not using BT (includes those using Virgin Media) and those using Virgin Media. Organisations using BT as their main supplier were more likely than those that were not, to say they chose their supplier because 'it already has a connection to our building' (60% vs. 46% not BT).

Organisations using a company **other** than BT as their main supplier were **more** likely to claim that the reason was 'price' (93%) than those using BT (74%). Similarly there is the same difference for 'good contacts at chosen company (65% not BT, 47% BT), 'chosen supplier(s) understand our business (60% vs. 41%) and 'length of agreement' (50% vs. 35%).

Figure 23

Important selection criteria for HBW supplier

'Main supplier'

	BT*	Not BT	Virgin Media**
Price	74%	93% ▲	92% ▲
Reputation for quality	67%	73%	68%
Better resilience	67%	69%	68%
Good contacts at chosen company	47%	65% ▲	54%
Chosen supplier(s) understand our business	41%	60% ▲	48%
Chosen supplier already has a connection to our building	60% ▲	46%	50%
More financially stable	52%	48%	46%
Length of agreement	35%	50% ▲	54% ▲
Historic links to chosen company(s)	44%	42%	34%
Attractive bundling	44%	36%	40%
Better security	37%	40%	36%

HB2a. Thinking about when you selected your current provider for your INSERT SAMPLE TYPE, that is PROVIDER AT QT1 (IF ONLY ONE PROVIDER AT QT1)/ OR PROVIDER AT QT2 (IF MORE THAN ONE PROVIDER AT QT1 BUT IF BT OR VIRGIN ARE CODED AT T1 BUT NOT MAIN SUPPLIER PRIORITISE THESE) which are criteria were important in choosing that provider
Base: All respondents: 241, BT: 97, Not BT(includes VM): 144, VM: 50**
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Figure 24 shows the reasons for choice of supplier split by the different high bandwidth connection types and speeds used by respondents. Overall the reasons for choice are broadly similar, although there are some notable differences.

'Chosen supplier already has a connection to our building' was **more** likely to be mentioned by those with WDM/ ELL>1Gbit/s (60%) and ELL≤1Gbit/s (61%) connections compared to those using ELL≤100Mbit/s (43%).

'Reputation for quality' is a reason for choice of supplier mentioned by **fewer** respondents with ELL≤100Mbit/s (64%) compared to those with ELL≤1Gbit/s connections (79%).

Figure 24

Important selection criteria for HBW supplier

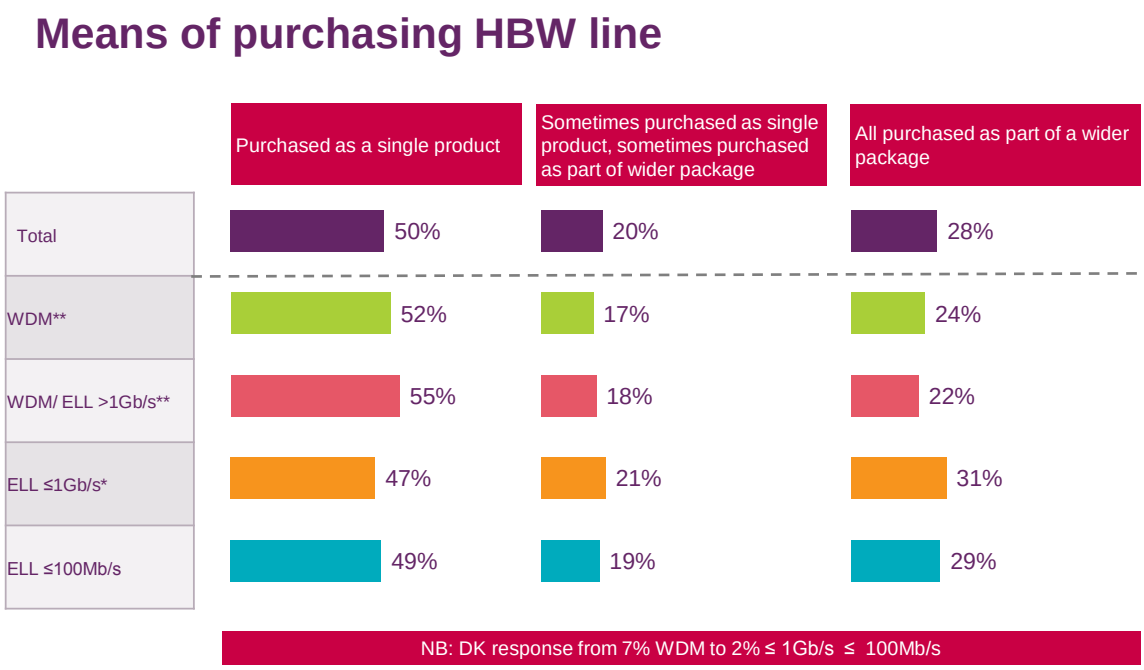
	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s*	ELL ≤ 100Mb/s
Price	85%	85%	87%	89%	83%
Reputation for quality	71%	76%	76%	79% ▲	64%
Better resilience	68%	74%	76%	69%	64%
Good contacts at chosen company	58%	54%	56%	61%	57%
Chosen supplier(s) understand our business	52%	59%	58%	48%	52%
Chosen supplier already has a connection to our building	51%	61% ▲	60% ▲	61% ▲	43%
More financially stable	49%	57%	56%	50%	46%
Length of agreement	44%	48%	45%	52%	40%
Historic links to chosen company(s)	43%	46%	49%	35%	44%
Attractive bundling	39%	39%	40%	44%	37%
Better security	39%	41%	42%	45%	34%

HB2a. Thinking about when you selected your current provider for your INSERT SAMPLE TYPE, that is PROVIDER AT QT1 (IF ONLY ONE PROVIDER AT QT1)/ OR PROVIDER AT QT2 (IF MORE THAN ONE PROVIDER AT QT1 BUT IF BT OR VIRGIN ARE CODED AT T1 BUT NOT MAIN SUPPLIER PRIORITISE THESE) which are criteria were important in choosing that provider
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62**/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Purchasing arrangements

Half (50%) purchased their high bandwidth connection as a single product, and this was similar for the different line types and speeds. Of the remainder, 20% **sometimes** purchased as a single product, sometimes as part of a wider package and 28% purchased **all** as part of a wider package. Results are shown in figure 25.

Figure 25



T8. Do you purchase INSERT SAMPLE TYPE as a single product or as part of a wider network solution or telecoms package?
Base: All respondents: 241, WDM: 46/ WDM/ ELL>1Gb/s: 55/ ELL ≤ 1Gbs >100Mb/s: 62/ ELL ≤ 100Mb/s >50Mb/s: 124
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Respondents that had indicated that their high bandwidth connection was purchased **with** other products (either sometimes or in all cases) were asked **what** product(s) it was purchased with. Results are shown in figure 26a and figure 26b.

At a total sample level, telephony/telephones (25%) and internet/IP addresses (12%) were the most commonly additionally purchased products in a package with the high bandwidth connection. There were many other different types of products/uses mentioned, ranging from 'hosting' (2%) to 'connections between sites' (8%). Organisations using BT as their main supplier were more likely to have purchased their high bandwidth connection with telephony/ telephones (43%).

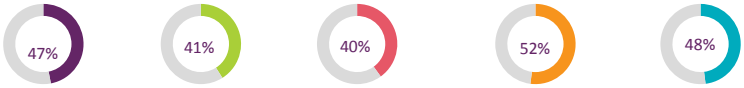
The proportions answering for each high bandwidth connection type and speed are small and therefore differences that emerge are not statistically significant.

Figures 26a and b

What also purchased with HBW line (1 of 2)

Proportion NOT purchasing HBW line as a single element

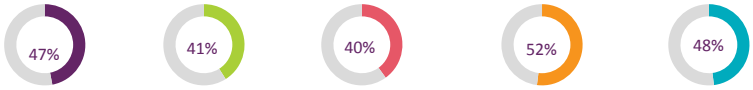
BT main supplier = 43%



What also purchased (of those not purchasing as single element)	TOTAL	WDM	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s **	ELL ≤ 100Mb/s *
Telephony/ telephones	25%	BTS=Base too small to show	18%	38%	20%
Internet/ IP addresses etc	12%	BTS	14%	19%	8%
Connections between sites	8%	BTS	-	9%	10%
Voice/ VOIP	8%	BTS	5%	9%	8%
Firewall	6%	BTS	5%	-	10%
Managed services/ managed router etc	6%	BTS	5%	9%	5%
Maintenance/ support	4%	BTS	-	6%	5%
Data storage	4%	BTS	14%	-	3%
Security	4%	BTS	-	3%	5%

What also purchased with HBW line (2 of 2)

Proportion NOT purchasing HBW line as a single element



What also purchased (of those not purchasing as single element)	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s**	ELL ≤ 100Mb/s *
SIP	4%	BTS = Base too small	-	-	7%
ADSL	4%	BTS	9%	3%	2%
ISDN	3%	BTS	-	-	5%
MPLS	3%	BTS	-	3%	3%
VPN services	3%	BTS	5%	-	3%
Hosting	2%	BTS	-	-	3%
Filtering	2%	BTS	-	-	3%
WAN	2%	BTS	5%	-	2%
IT services	1%	BTS	-	-	2%
Cloud computing	-	BTS	-	-	-
Other	22%	BTS	27%	22%	20%
Don't Know	1%	BTS	-	-	2%

T8. Do you purchase INSERT SAMPLE TYPE as a single product or as part of a wider network solution or telecoms package?/ What other services are included in the package with the INSERT SAMPLE TYPE?
Base: All respondents: 241, WDM: 46/ WDM/ ELL>1Gb/s: 55/ ELL ≤ 1Gbs >100Mb/s: 62/ ELL ≤ 100Mb/s >50Mb/s: 124/ All purchasing as part of a wider package: 114, WDM: 19/ WDM/ ELL>1Gb/s: 22/ ELL ≤ 1Gbs >100Mb/s: 32/ ELL ≤ 100Mb/s >50Mb/s: 60
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

5.2 Market behaviour

Migration to the high bandwidth connection

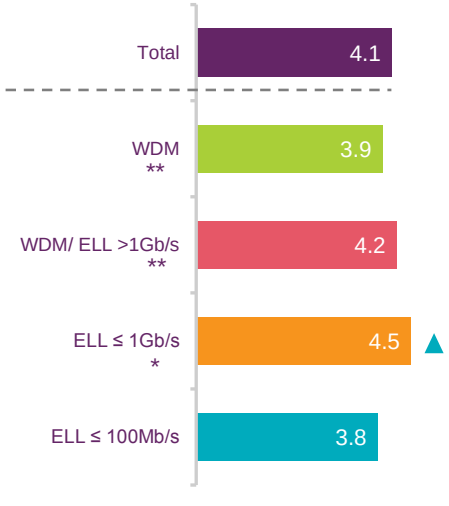
Organisations surveyed had been using their current high bandwidth connection for around 4 years on average (mean) and this was very broadly similar by the different line types and speeds.

As shown in figure 27 there was a great deal of variance within the mean average time, and two in five of the total sample (39%) had had their connection in place for more than 5 years. Those with ELL≤1Gbit/s connections were the most likely to have had them in place for more than 5 years (50% vs. 34% ELL≤100Mbit/s, 28% WDM).

Figure 27

When HBW line usage began

Mean length of time (yrs):



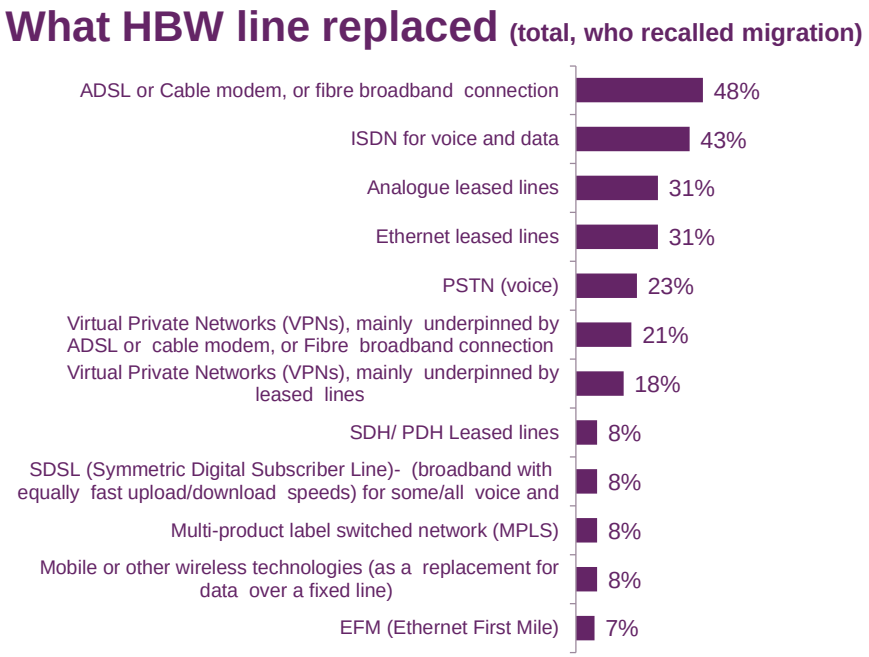
Overall spread of time:

	TOTAL	WDM **	ELL> 1Gb/s or WDM **	ELL ≤ 1Gbs >100Mb/s *	ELL ≤ 100Mb/s >50Mb/s
Less than 6 months	2%	2%	2%	2%	2%
6 months to a year	6%	4%	5%	2%	9%
1-2 years	11%	9%	7%	10%	13%
2-3 years	12%	13%	11%	15%	11%
3-5 years	20%	22%	18%	13%	23%
More than 5 years	39%	28%	38%	50%	34%
Don't know	4%	17%	15%	2%	1%
Was not in the company at the time	7%	4%	4%	8%	7%

QM1 When did your business begin using INSERT SAMPLE TYPE?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Respondents who were in the company at the time of the migration (or who were able to recall it) were asked what the current high bandwidth connection had replaced. Figure 28 shows that, of the total sample, the most common previous connection was 'ASDL, cable modem or fibre broadband connection' (48%). This was closely followed by 'ISDN for voice and data' (43%). Almost a third (31%) had replaced their 'analogue leased lines', and the same proportion had replaced 'Ethernet leased lines'.

Figure 28



QM2. What type of service was the ... replacing?
Base: All respondents recalling migrating: 215, WDM: 36**/ WDM/ ELL>1Gb/s: 45**/ ELL ≤ 1Gbs >100Mb/s: 56**/ ELL ≤ 100Mb/s >50Mb/s: 114
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Figure 29 shows the types of services replaced split by each of the high bandwidth connection and speed groups. Although the types of connections that were most frequently being replaced were broadly similar across the groups there were some variations.

Three in five (59%) of organisations using ELL≤100Mbit/s indicated that this had replaced 'ASDL or cable modem, or fibre broadband' compared to 29% of those with WDM/ ELL>1Gbit/s connections. Around one in five (18%) with WDM/ ELL>1Gbit/s connections said that this had replaced 'SDH/ PDH leased lines' compared to 6% with ELL≤100Mbit/s connections.

Figure 29

What HBW line replaced (detail, who recalled migration)

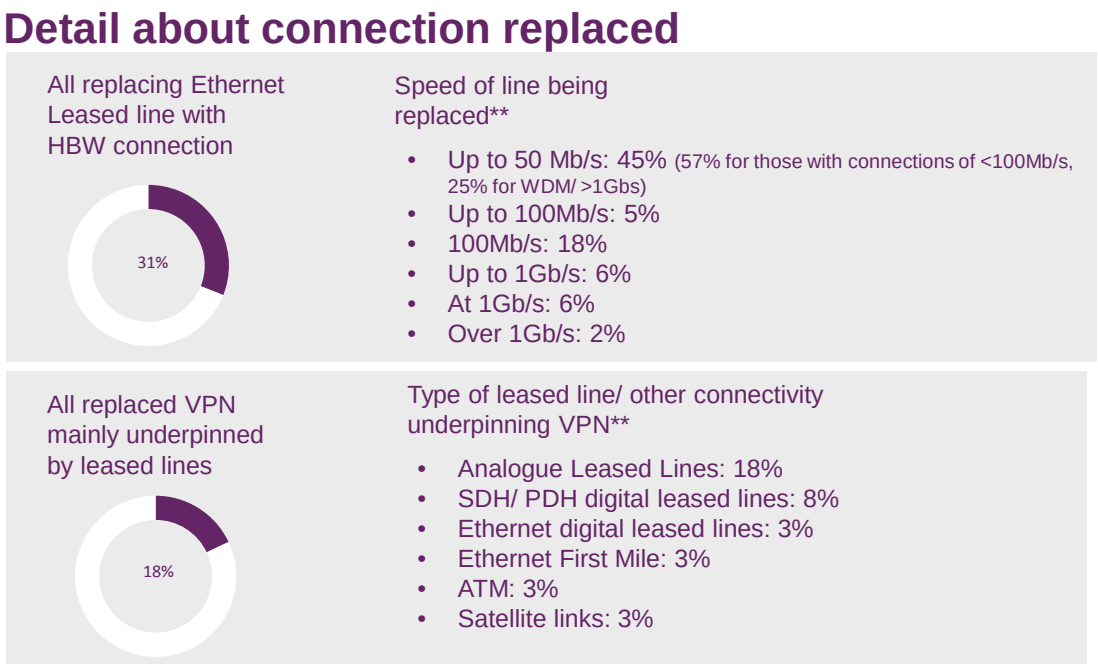
	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs **	ELL ≤ 100Mb
ADSL or Cable modem, or fibre broadband connection	48%	28%	29%	41%	59%
ISDN for voice and data	43%	28%	33%	48%	44%
Analogue leased lines	31%	36%	33%	32%	30%
Ethernet leased lines	31%	31%	36%	39%	25%
PSTN (voice)	23%	17%	18%	25%	24%
Virtual Private Networks (VPNs), mainly underpinned by ADSL or cable modem, or Fibre broadband connection	21%	17%	18%	21%	23%
Virtual Private Networks (VPNs), mainly underpinned by leased lines	18%	22%	24%	16%	17%
SDH/ PDH Leased lines	8%	22%	18%	5%	6%
SDSL (Symmetric Digital Subscriber Line)- (broadband with equally fast upload/download speeds) for some/all voice and	8%	6%	7%	7%	10%
Multi-product label switched network (MPLS)	8%	6%	4%	5%	11%
Mobile or other wireless technologies (as a replacement for data over a fixed line)	8%	8%	7%	7%	10%
EFM (Ethernet First Mile)	7%	3%	4%	9%	8%
Other business connectivity services	10%	11%	9%	13%	9%

QM2. What type of service was the ... replacing?
*Base: All respondents: 215, WDM: 36**/ WDM/ ELL>1Gb/s: 45**/ ELL ≤ 1Gbs >100Mb/s: 56**/ ELL ≤ 100Mb/s >50Mb/s: 114*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Respondents who indicated that their high bandwidth connection had replaced an Ethernet leased line (almost a third of the total sample: 31%) were asked for the speed of the line that had been replaced. Figure 30 shows that for almost half (45%) the previous Ethernet leased line connection was up to 50 Mbit/s. This was more likely to have been the case for those currently using ELL≤100Mbit/s (57%) than those with WDM/ ELL>1Gbit/s connections (25%).

As shown in figure 30, one in five (18%) of the total sample said that they had replaced a VPN mainly underpinned by leased lines with their current high bandwidth connection. The type of leased line or other connectivity underpinning this replaced leased line was for 18% 'analogue leased lines', followed by 'SDH/ PDH digital leased lines' (8%). There was a variety of other types of leased lines or other connectivity that had been replaced (59% said 'other') and these included mentions of ISDN and ADSL, as well as a few who replaced Ethernet digital leased lines, Ethernet first mile and ATM.

Figure 30



QM2a. What was the speed of the previous Ethernet leased line…? M2b. What types of leased lines or other business connectivity services were underpinning your VPN before you moved to INSERT SAMPLE TYPE?
*Base: All respondents: 215, WDM: 36**/ WDM/ ELL>1Gb/s: 45**/ ELL ≤ 1Gbs >100Mb/s: 56**/ ELL ≤ 100Mb/s >50Mb/s: 114/ All replacing ELL: 66**/ All replacing VP: 39***
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

All those who could recall or were present in the company during the migration to the current high bandwidth connection were asked what the reason was for the migration and were read a list of potential reasons (although there was also the opportunity to provide another response).

As shown in figure 31, the most frequently mentioned reason for the change amongst the total sample was that they 'needed a faster connection' (83% of total sample). This was followed by 'the company was expanding' (60%), and 'cost or price reductions in the market' (52%). 'New services offered in the market' was mentioned as a reason by 42%.

There were some differences between the types of high bandwidth connections and speeds, although the types of reasons provided were broadly similar. 'Needing a faster connection' was the most important reason for all the sample groups, however, those with ELL≤100Mbit/s (84%) and ELL≤1Gbit/s (89%) were more likely to mention this than WDM/ ELL>1Gbit/s (71%). 'Redundancy' was only a factor for those with WDM (6%).

Figure 31

Reasons for migrating (total, who recalled migration)

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s*	ELL ≤ 100Mb/s
Needing a faster connection	83% ▲	64%	71%	89% ▲	84% ▲
The company was expanding	60%	56%	60%	68%	57%
Cost or price reductions in the market	52%	58%	58%	59% ▲	46%
New services offered in the market	42%	25%	36%	50%	40%
Reliability	5%	3%	2%	2%	7%
Moved office/ moved into a new building	2%	3%	4%	2%	2%
Stability/ needed a more stable connection	2%	-	-	2%	4%
Resilience	1%	3%	2%	-	2%
Needed more bandwidth/ needed a better connection	1%	-	-	-	3%
Other changes in our needs/ requirements	1%	3%	2%	2%	1%
Redundancy	1%	6% ▲	4% ▲	-	-
A new company	1%	3%	2%	-	1%

QM3. What were the reasons for changing to .... Did they include ... ?
Base: All respondents: 215, WDM: 36/ WDM/ ELL>1Gb/s: 45/ ELL ≤ 1Gbs >100Mb/s: 56/ ELL ≤ 100Mb/s >50Mb/s: 114
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Two in five (41%) of those who were in place during or recalled the migration to a high bandwidth connection said that they experienced an obstacle during this process. As shown in figure 32, recall of an obstacle was relatively higher for those with ELL≤100Mbit/s (45%) compared to those with WDM/ ELL>1Gbit/s (27%) connections.

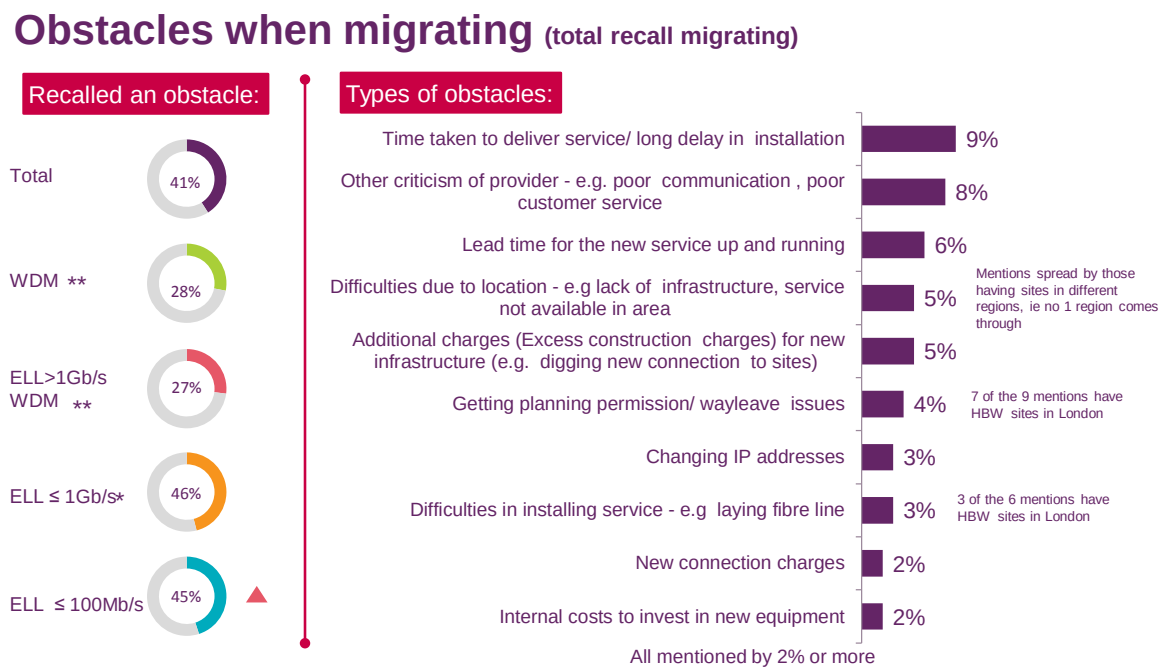
There were many different types of obstacles recalled. Almost one in ten (9%) of those migrating (of the total sample) indicated that 'time taken to deliver service/ long delay in installation' had been an obstacle, and a similar proportion (8%) mentioned another criticism of the provider (e.g. poor communication, poor customer service).

'Lead time for the new service to be up and running' (6%), 'difficulties due to location' (5%), 'additional charges' (5%), and 'getting planning permission/ wayleave issues' (4%) were obstacles for around one in twenty recalling the migration.

Of the nine that mentioned 'Getting planning permission/ wayleave issues', seven had sites in London (ie inside the M25). (NB overall 29% of the sample had sites in London)

There were no differences in obstacles recalled by the different high bandwidth connection types and speeds. Figure 32a shows a display of this data and can be found in Appendix A.

Figure 32



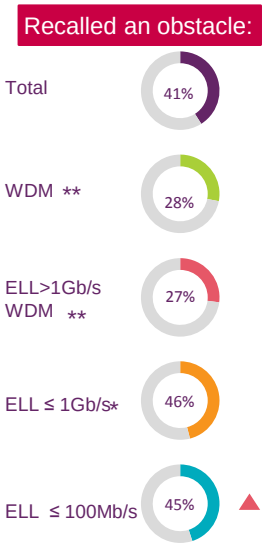
QM4A. What, if any obstacles or difficulties did you face when migrating to ...?
Base: All respondents recalling migrating: 215, WDM: 36/ WDM/ ELL>1Gb/s: 45/ ELL ≤ 1Gbs >100Mb/s: 56/ ELL ≤ 100Mb/s >50Mb/s: 114
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Those who experienced at least one obstacle when migrating to their current high bandwidth connection were asked whether there was any cost associated with the main obstacle they experienced. Almost half (of the total sample) indicated that there was no cost (46%) and a further 10% did not know. Close to one in five (17%) said that the cost was £10,000 or more, but for 27% the cost was below this figure. As shown in figure 33, the incidence and level of costs experienced was broadly similar for the sample groups large enough to show results for.

Figure 33

Cost of main obstacle when migrating

(total, who recalled migration)



Cost of main obstacle (all experiencing at least 1)

	Total*	WDM/ELL >1Gb/s/ Up to and including 1Gb/ s **	ELL Up to and including 100Mb/s **
£1-4k	14%	13%	15%
£5-9k	13%	11%	15%
£10k+	17%	11%	21%
No cost	46%	53%	40%
Don't know / Can't remember	10%	13%	8%

QM7a. Thinking about the INSERT WORD main [IF FACED MORE THAN ONE] obstacle that you faced when migrating to INSERT SAMPLE TYPE…, INSERT FROM QM4A IF SINGLE CODE, QM4B IF ANSWERED, Can you recall if there were any associated costs with this obstacle?…
*Base: All respondents recalling migrating and experiencing an obstacle: 90, WDM/ ELL ≤ 1Gbs >100Mb/s: 38**/ ELL ≤ 100Mb/s >50Mb/s: 52***
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

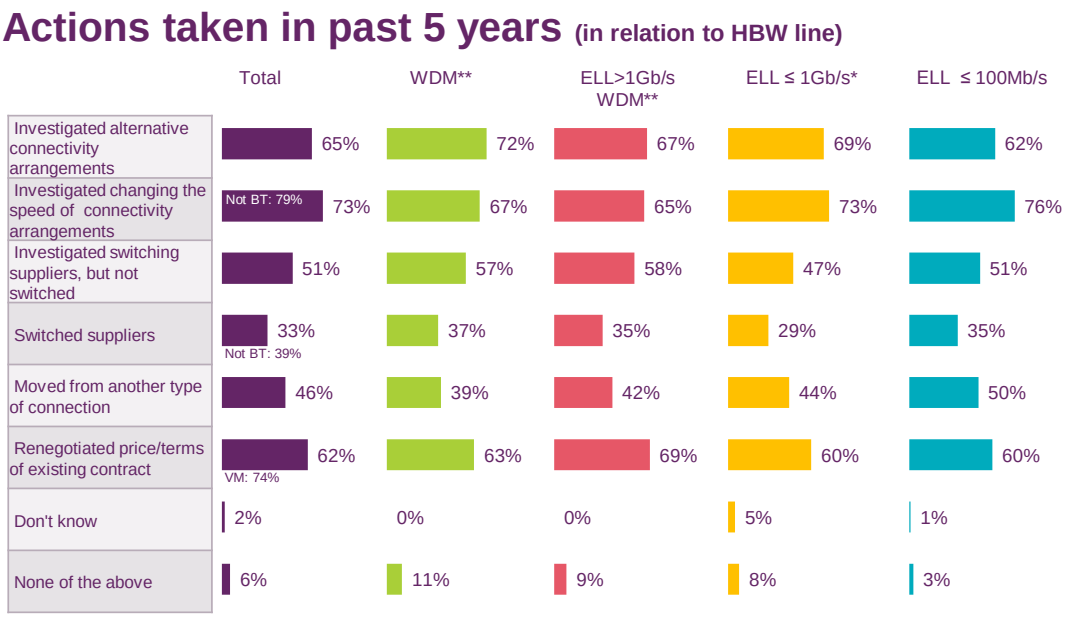
Switching provider and looking at alternative connections

Respondents were asked what activities they had undertaken related to their high bandwidth connection in the past 5 years. All were read a list of potential activities to select from. Figure 34 shows the proportion who said that they had undertaken each activity split by the different connection types and speeds.

There were no significant differences in the types of activities that had been undertaken between the different sample groups. The most common activities claimed to have been undertaken (figures for total sample) were: 'investigated changing the speed of connectivity arrangements' (65%), 'investigated alternative connectivity arrangements' (73%) and 'renegotiated price/terms of existing contract' (62%).

Half claimed to have 'investigated switching suppliers, but not switched' (51%) and a third (33%) said that they had switched suppliers. Around one in twenty (6%) had not taken any action.

Figure 34



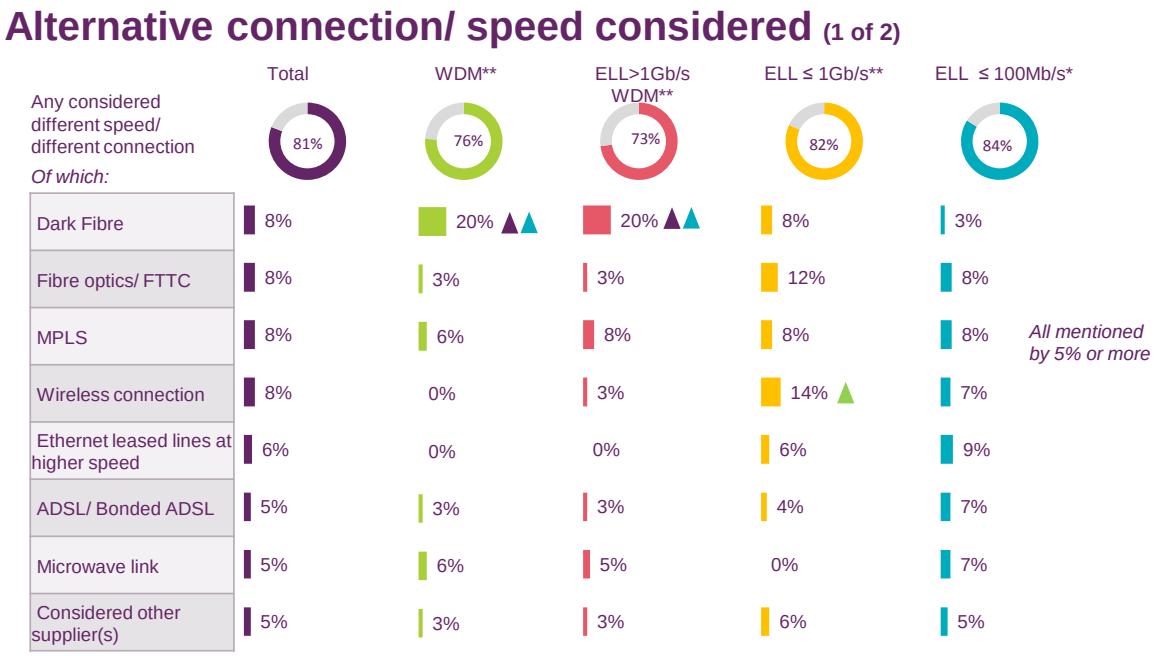
QHB3. Please indicate which of the following have occurred in your business in the past 5 years in relation to your ...
Base: All respondents: Base: 241, WDM: 46/ WDM/ ELL>1Gb/s: 55/ ELL ≤ 1Gbs >100Mb/s: 62/ ELL ≤ 100Mb/s >50Mb/s: 124
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

In total, 81% had considered a different speed or alternative to their high bandwidth connection. This ranged from 73% for organisations with WDM/ ELL>1Gbit/s to 84% for ELL≤100Mbit/s connections (but this difference was not significant). The specific connections or changes to speed considered varied, with no single type of alternative dominating in mentions.

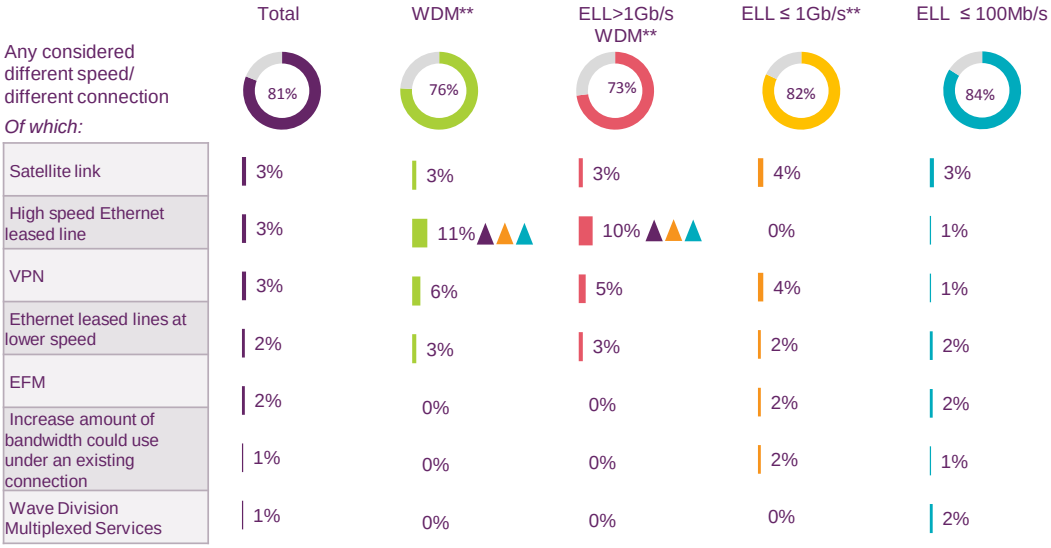
One in five (20%) with WDM/ ELL>1Gbit/s had considered 'dark fibre' and this contrasted to just 3% of those with ELL≤100Mbit/s connections. 'Wireless connections' were not considered by any of those with WDM lines but were considered by 14% of those with ELL≤1Gbit/s connections. One in ten with a WDM connection had considered moving to a high speed Ethernet leased line.

The full range of alternatives considered can be found in figure 34a and figure 34b.

Figure 34a and 34b



Alternative connection/ speed considered (2 of 2)



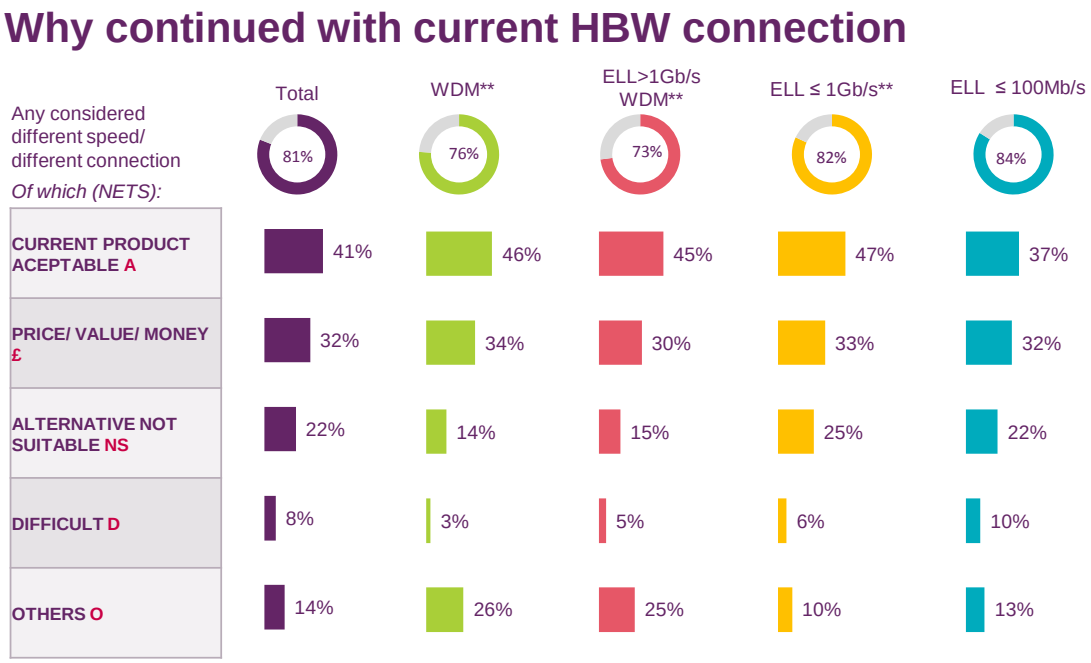
QHB4. What alternatives to INSERT SAMPLE TYPE did you consider?
Base: All respondents: Base: 195, WDM: 35/ WDM/ ELL>1Gb/s: 40/ ELL ≤ 1Gbs >100Mb/s: 51/ ELL ≤ 100Mb/s >50Mb/s: 104
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Those who had considered alternative arrangements or speeds of connection were asked **why** they continued to use their high bandwidth connection rather than move to the alternative arrangements considered. Respondents were not prompted. Responses were grouped into overall nets which are shown in figure 35. The letter/ symbol in red next to the description of the net in figure 35 indicates which of the individual answer codes in figure 36 comprise the net.

For two in five (41% of the total sample), the current product being used was acceptable to them. This ranged from 37% for organisations with ELL≤100Mbit/s to 47% with ELL≤1Gbit/s, although the differences were not significant. Price or value for money was the reason **not** to change for almost a third (32%) and was very similar regardless of connection type and speed.

Over a fifth (22%) indicated that the alternative they had considered was not suitable, which ranged from 15% for WDM/ ELL>1Gbit/s to 25% with ELL≤1Gbit/s connections (not significant). Around one in ten (8%) foresaw a difficulty with making the change so had not done so.

Figure 35



QHB5. Why did you decide to continue to use INSERT SAMPLE TYPE rather than change to INSERT RESPONSES FROM QHB4?
Base: All respondents: Base: 195, WDM: 35/ WDM/ ELL>1Gb/s: 40/ ELL ≤ 1Gbs >100Mb/s: 51/ ELL ≤ 100Mb/s >50Mb/s: 104
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

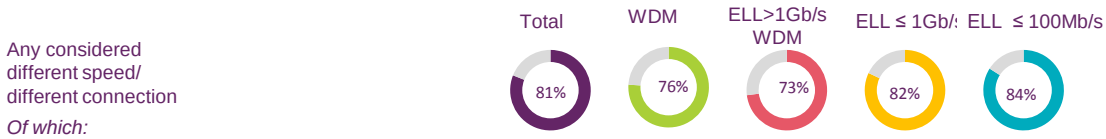
As shown in figure 35, overall responses under the net 'current product being acceptable' were the most common reasons provided for remaining with their present arrangements. However in terms of individual responses (i.e. not netted) 'price/ better value for money' was the **single most mentioned** individual factor by a 20 percentage point margin at a total level (32% saying 'price/ better value for money' vs. 12% saying 'decided to stick with the service I know', the 2nd most frequently mentioned).

There were no significant differences in the types of reasons provided for remaining with their current high bandwidth connection between the different connection types and speeds. Full details can be found in figure 36a and b below.

For one in ten (10%) 'speed would not be sufficient' was the reason given for not changing. This was higher (not significantly) for those with ELL≤100Mbit/s than those with WDM connections (13% vs. 3%). 'Reliability/ it works' was also mentioned by one in ten (9%).

Figure 36a and 36b

Why continued with current HBW connection (1 of 2)

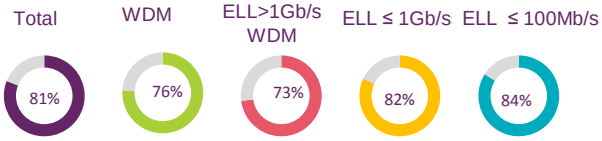


	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s**	ELL ≤ 100Mb/s
Price/ better value for money £	32%	34%	30%	33%	32%
Decided to stick with the service I know A	12%	20%	18%	14%	9%
Speed would not be sufficient NS	10%	3%	3%	10%	13%
Reliability/ it works A	9%	6%	5%	14%	8%
Current has more resilience A	6%	3%	5%	4%	7%
Perceived quality NS	5%	3%	3%	8%	5%
Other services would require me to change hardware/software internally NS	5%	9%	8%	4%	4%
It meets our needs A	4%	3%	3%	4%	5%
Service features of current A	3%	3%	3%	4%	3%
Current offers better security A	3%	3%	3%	4%	2%
Support for different interfaces (e.g. Fibre-Channel, for storage-area networks) A	3%	3%	3%	4%	2%

Why continued with current HBW connection (2 of 2)

Any considered different speed/ different connection

Of which:



	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s**	ELL ≤ 100Mb/s
Tied into a contract with supplier D	3%	-	3%	2%	4%
Too complex to change/ to risky D	3%	3%	3%	4%	3%
For stability/ continuity A	3%	3%	3%	4%	2%
Flexibility to upgrade bandwidth / service A	2%	3%	3%	-	2%
Current bundled with other services A	2%	-	-	4%	1%
Do not require as speedy connection NS	2%	6%	5%	2%	1%
Service not available in areas I need NS	2%	-	3%	4%	1%
The easiest option/ easier to stay with them A	2%	3%	5%	2%	1%
Geographic location D	2%	-	-	-	3%
I need guaranteed low latency/jitter A	1%	3%	3%	-	1%
Current is easier to operate, maintain and fix problems A	1%	-	-	-	1%

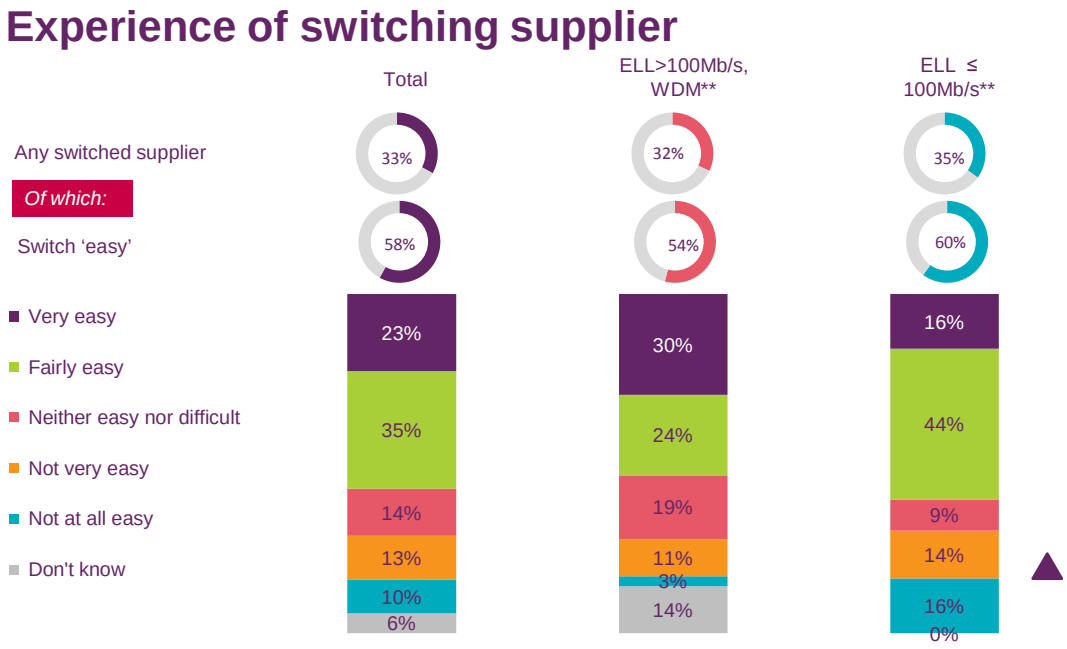
QHB5. Why did you decide to continue to use INSERT SAMPLE TYPE rather than change to INSERT RESPONSES FROM QHB4?
Base: All respondents: Base: 195, WDM: 35/ WDM/ ELL>1Gb/s: 40/ ELL ≤ 1Gbs >100Mb/s: 51/ ELL ≤ 100Mb/s >50Mb/s: 104
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Switching supplier

A third had switched supplier for their high bandwidth connection in the past 5 years. Of these, almost three in five (58%) found the switch to be easy' and this was similar in broad comparison by connection type and speed.

However, as shown in figure 37, a higher proportion of those with ELL≤100Mbit/s indicated that the process had been 'not at all easy' compared to those with WDM/ ELL>100Mbit/s (16% vs. 3%).

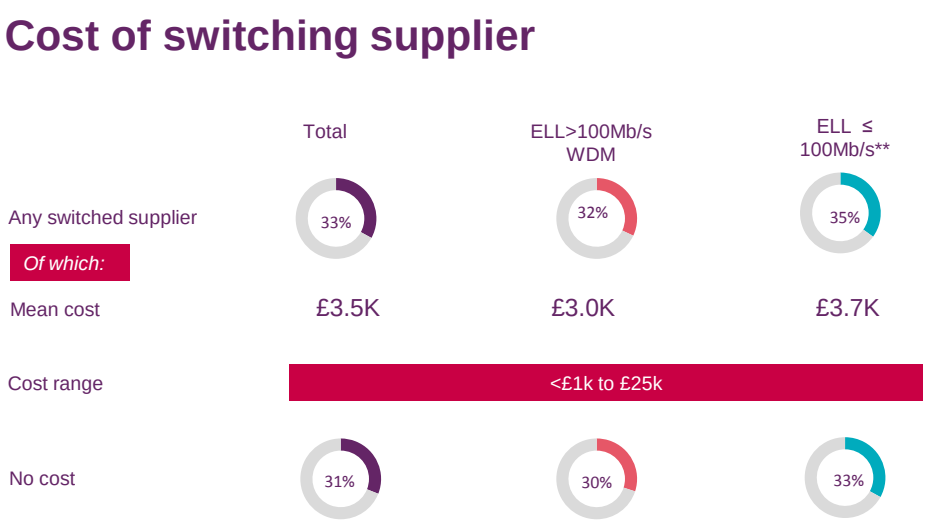
Figure 37



QH7. You mentioned you had switched supplier for your INSERT SAMPLE TYPE. How easy or difficult did you find the experience? Was it READ OUT
Base: All respondents: Base: 80, ELL>100Mb/s, WDM 37, ELL ≤ 100Mb/s >50Mb/s: 43
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Just over three in ten (31%) of those who had switched suppliers indicated that there had been no cost (internal or external) associated with it. Those that had specified a cost gave an average (mean) figure of £3,500. The full range of costs was from £1,000 to £25,000 across users of all current speeds, as shown in figure 38.

Figure 38



QHB8. Was there any cost involved in switching suppliers? That may be internal costs such as time spent researching alternative options & costs as well as any external charges & costs associated with switching suppliers? If YES: Can you give me an estimate of the overall cost?
Base: All respondents: 80, ELL >100Mb/s: 37/ ELL ≤ 100Mb/s >50Mb/s: 43
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

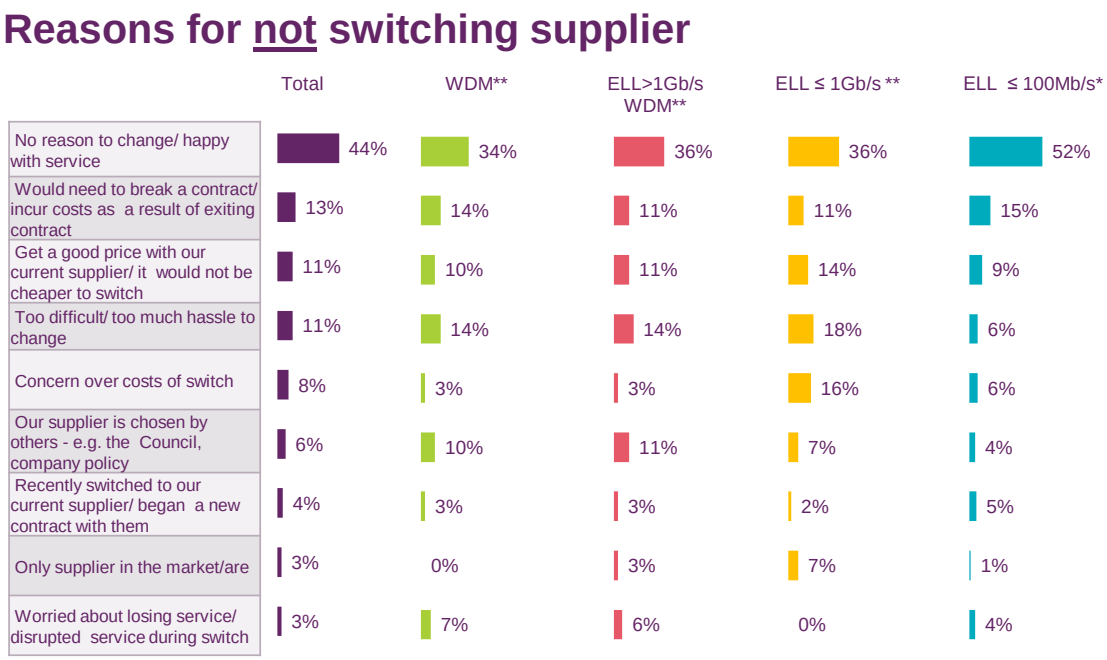
Those that did not switch supplier (67% in total) were asked for the reason they had not done so. As shown in figure 39, the most common reason provided was that they had 'no reason to change/were happy with current service' (44% of the total sample).

One in ten suggested they would need to 'break a contract or incur costs as a result of exiting early' (13%) and a similar proportion (11%) said that they 'get a good price with current supplier'.

Where BT is considered to be the 'main supplier', 14% that indicate it is 'too difficult/ too much hassle to change' compared to 3% where the main supplier is not BT.

'Concern over costs of switch' is a reason for not switching for 16% of 'main' Virgin Media customers compared to 3% of 'main' BT customers.

Figure 39

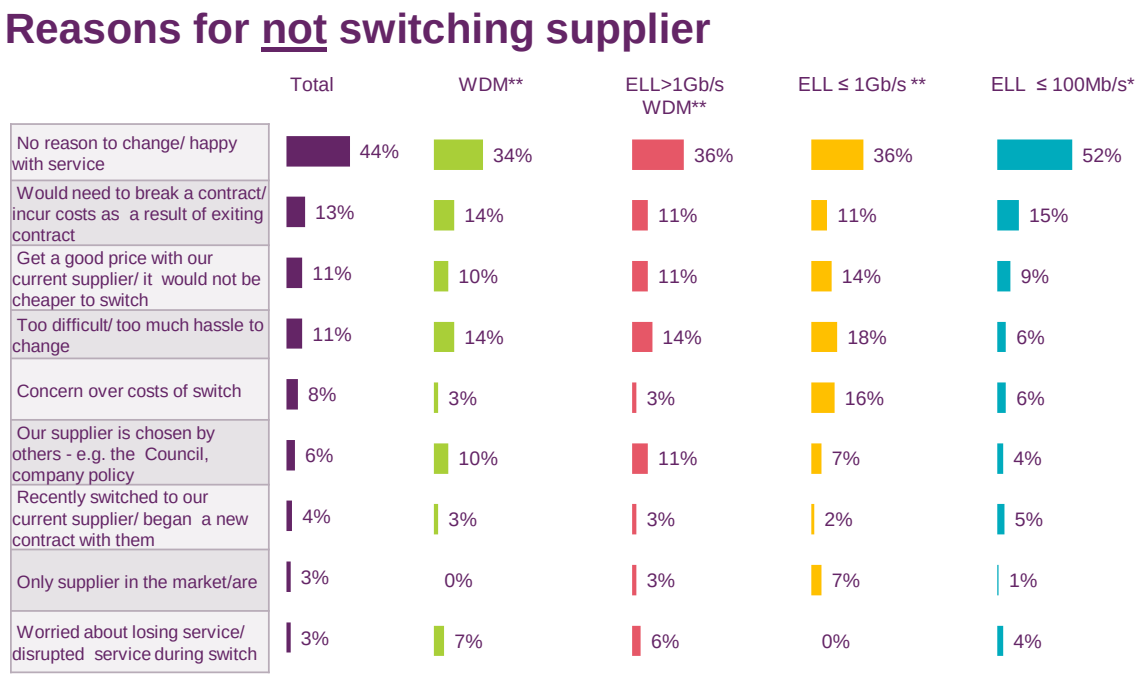


QHB9. You said you have not switched supplier for your INSERT SAMPLE TYPE. Why is this?
Base: All respondents: Base: 161, WDM: 29/ WDM/ ELL>1Gb/s: 36/ ELL ≤ 1Gbs >100Mb/s: 44/ ELL ≤ 100Mb/s >50Mb/s: 81
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

As shown in figure 40, there were no significant differences in reasons for non-switching that could be detected (sample sizes were low) by connection type or speed and the broad distribution of responses was similar.

That said, a higher proportion of those with ELL≤100Mbit/s indicated their reason for not switching was 'no reason to change/ happy with service' (52% vs. 34% of those with WDM lines). 'Concern over costs of switch' was mentioned by 3% with WDM/ ELL>1Gbit/s compared to 16% with ELL≤1Gbit/s.

Figure 40



QHB9. You said you have not switched supplier for your INSERT SAMPLE TYPE. Why is this?
Base: All respondents: Base: 161, WDM: 29**/ WDM/ ELL>1Gb/s: 36**/ ELL ≤ 1Gbs >100Mb/s: 44**/ ELL ≤ 100Mb/s >50Mb/s: 81*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Hypothetical price increases

A hypothetical scenario was outlined to respondents. The scenario was of a 10% increase in the price of their high bandwidth connection imposed by their supplier. They were asked what, if anything, they would do as a result of this increase.

Figure 41 shows that a minority (8% of total sample) said that they would 'not take any action'. Six in seven (86%) claimed that they would 'seek to negotiate with the supplier', 60% that they would 'look into switching supplier', and 46% would 'look into using an alternative type of connection.

There were some differences in the types of actions claimed to be taken between the different connection types and speeds, although in broad terms the types of reactions provided were similar.

Those with WDM/ ELL>1Gbit/s connections were more likely to indicate they would 'use an alternative type of connection' (22%) than those with ELL≤1Gbit/s (6%), or ELL≤100Mbit/s (9%). Although the difference is not statistically significant, fewer with WDM/ ELL>1Gbit/s connections suggest they would negotiate (78%) compared to 90% of with ELL≤1Gbit/s.

Figure 41

Actions (claimed) would take if HBW supplier increased price by 10% (detail)

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s *	ELL ≤ 100Mb/s
I would seek to negotiate with supplier	86%	78%	78%	90%	87%
I would look into switching supplier	60%	59%	56%	65%	60%
I would look into using an alternative type of connection	46%	48%	45%	42%	49%
Avoid paying more by switching to a lower specification service (e.g. lower bandwidth, fewer lines)	21%	26%	25%	18%	21%
I would switch supplier	13%	15%	18%	6%	15%
I would use an alternative type of connection	11%	20%	22%	6%	9%
Would not take any action (i.e. I would pay the price increase)	8%	7%	9%	6%	8%
Other	3%	-	-	5%	3%
Don't know	1%	2%	2%	2%	-

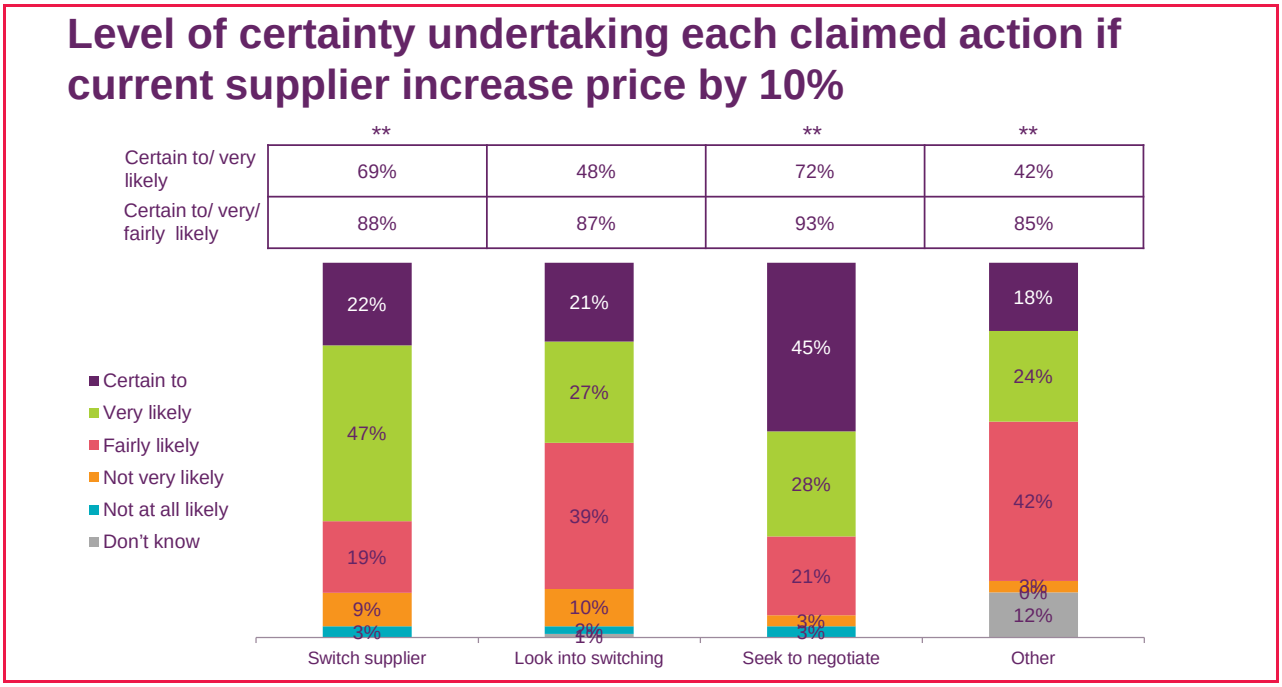
QSSNIP1. If the price of your SAMPLE TYPE provision was increased by 10% by your supplier, what, if anything would you do as a result of this increase?
Base: All respondents: 241, WDM: 46/ WDM/ ELL>1Gb/s: 55/ ELL ≤ 1Gbs >100Mb/s: 62/ ELL ≤ 100Mb/s >50Mb/s: 124
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Each respondent was then asked about their level of 'certainty' that one of the actions they had chosen was something they would actually do. Priority was given to asking certainty of action pertaining to responses of 'switch supplier' or 'look into switching supplier' in order to ensure a sufficient base to be present for analysis. Results are shown in figure 42.

Of those that indicated they would 'switch supplier' as a result of prices for their high bandwidth provision increasing by 10%, over a fifth (22%) said they were 'certain to' do so and 47% were 'very likely' to do so.

A smaller proportion said they were 'certain to' or 'very likely' to 'look into switching' than those who said they would switch supplier (48% vs. 69%). Almost three in four (72%) of respondents who indicated they would 'seek to negotiate' said that they would be 'certain to/ very likely' to do so.

Figure 42



QSSNIP2. You said you think you would INSERT CODE FROM QSSNIP if the price of provision increased by 10%. How certain or uncertain are you that this is what your organisation would and could actually do if the price of SAMPLE TYPE increased by 10%?
Base: All respondents: Switch supplier: 32/ Look into switching: 145/ Seek to negotiate: 29/ Other: 33
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

A similar, but slightly different hypothetical scenario was also outlined to respondents. The scenario was of an increase in the price of their high bandwidth connection by 10%, but this increase being common among all suppliers. They were asked what, if anything, they would do as a result of this increase.

Figure 43 shows that again a minority (13% of total sample) claimed that they would 'not take any action'. The most common claimed action was that they would 'seek to negotiate with the supplier' (82%). Just over half (51%) claimed that they would 'look into switching supplier' and 50% would 'look into using an alternative type of connection.

In general, the responses were broadly similar to claimed actions for current supplier increasing prices.

Figure 43

Actions (claimed) would take if ALL HBW suppliers increase price by 10% (detail)

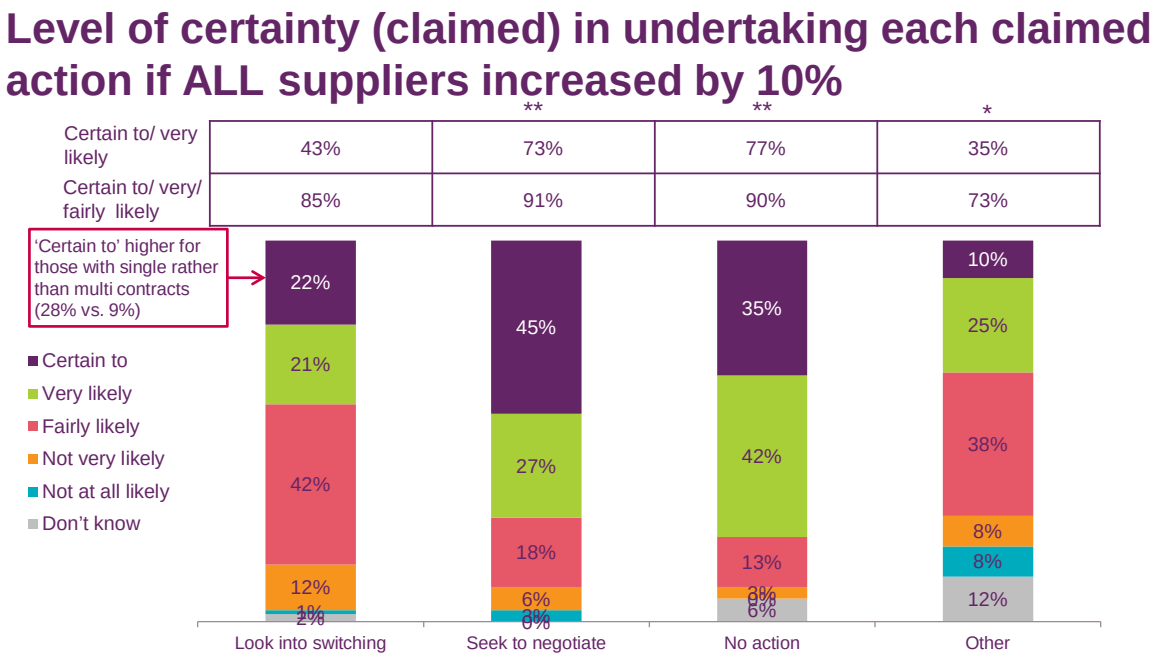
	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s*	ELL ≤ 100Mb/s
I would seek to negotiate with supplier	82%	78%	73%	84%	85%
I would look into switching supplier	51%	52%	45%	55%	51%
I would look into using an alternative type of connection	50%	50%	44%	45%	55%
Avoid paying more by switching to a lower specification service (e.g. lower bandwidth, fewer lines)	20%	24%	22%	15%	23%
I would switch supplier	12%	15%	18% ▲	5%	12%
I would use an alternative type of connection	9%	13%	16% ▲	5%	8%
Would not take any action (i.e. I would pay fewer lines) the price increase)	13%	15%	22% ▲	8%	11%
Other	4%	4%	4%	10%	2%
Don't know	1%	2%	2%	3%	-

QSSNIP3. If the price of this ... provision increased by 10% across all suppliers, what, if anything would you do as a result of this increase?
Base: All respondents: 241, WDM: 46/ WDM/ ELL>1Gb/s: 55/ ELL ≤ 1Gbs >100Mb/s: 62/ ELL ≤ 100Mb/s >50Mb/s: 124
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

A follow-up question was asked of those indicating that they would undertake particular types of actions in the event of a cross-supplier increase of high bandwidth cost by 10%.

As shown in figure 44, a fifth (22%) of those who claimed they would 'look into switching' said they were 'certain' to do so and a further fifth (21%) were 'very likely'. A higher proportion said they would be 'certain to' seek to negotiate (45%) compared to 'look into switching'. Claims to take 'no action' were 'certain' for 35%.

Figure 44



QSSNIP4. You said you think you would INSERT CODE FROM QSSNIP3 if the price of provision increased by 10% across all suppliers. How certain or uncertain are you that this is what your organisation would and could actually do?
Base: All respondents: Look into switching: 122/ Seek to negotiate: 33/ No action: 31/ Other: 52
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

5.3 Interest in upgrading and dark fibre

Upgrading connection

Respondents were asked about their organisation's likelihood to upgrade their speed of service in the next three years to various higher speeds/services *'given any increases in bandwidth you foresee and current maximum capability of your connection'*. Results are shown in full in figure 45 and are summarised below:

Claimed intentions for those with **ELL≤100Mbit/s** were:

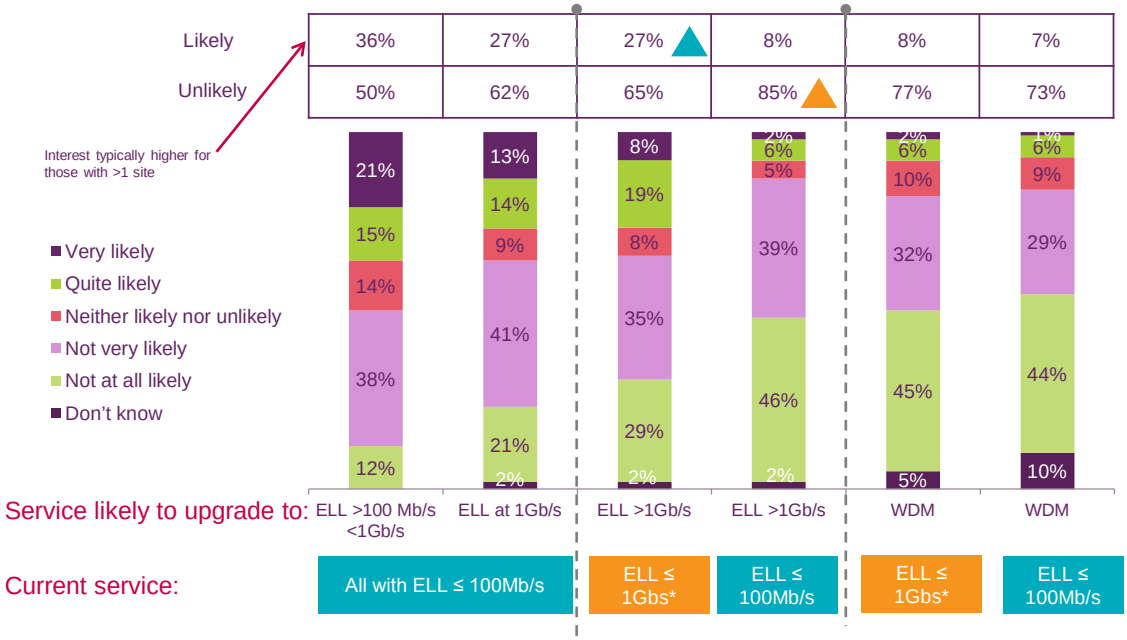
Upgrade option	Very likely	Very or fairly likely
Upgrade to ELL >100Mbit/s <1Gbit/s	21%	36%
Upgrade to ELL 1Gbit/s	13%	27%
Upgrade to ELL >1Gbit/s	2%	8%
Upgrade to WDM	1%	7%

Claimed intentions for those with **ELL≤1Gbit/s** were:

Upgrade option	Very likely	Very or fairly likely
Upgrade to ELL >1Gbit/s	8%	27%
Upgrade to WDM	2%	8%

Figure 45

Likelihood to upgrade to each type of service



QF1. Given any increases in bandwidth you forsee and current maximum capability of your existing connection…
In the next 3 years, how likely is it that your business will need to upgrade its leased line bandwidth from Base: All respondents: All respondents:
ELL ≤ 1Gbs >100Mb/s: 62/ ELL ≤ 100Mb/s >50Mb/s: 124
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

There was some interest in upgrading connection speeds for those with ELL≤100Mbit/s and ELL≤1Gbit/s. This was strongest for the next step up in each sample group, e.g. for those with ELL≤100Mbit/s 36% said they were 'very or fairly' likely to upgrade one step to ELL>100Mbit/s <1Gbit/s. In contrast, just 7% were 'very' or 'fairly' likely to upgrade two steps to WDM.

Claimed intentions for those with ELL≤1Gbit/s were similar for upgrading to WDM (to those with ELL≤100Mbit/s) at 8%, but they were more likely to consider a move to ELL>1Gbit/s (27% vs. 8% for those currently with a connection of ELL≤100Mbit/s).

Respondents were asked whether they were aware of the **current total bearer capacity** of their high bandwidth connection, i.e. the maximum peak speed that could theoretically be supported.

Of the total sample, three in ten (30%) said that they did not know. The proportion who did not know reached 45% for those with WDM/ ELL>1Gbit/s connections. As shown in figure 46, for most of the connection types/speeds there was little awareness of any 'headroom' i.e., a bearer capacity higher than their maximum contracted speed.

Figure 46

Current total bearer capacity

	TOTAL	WDM**	ELL>1Gb/s WDM **	ELL ≤ 1Gbs >100Mb/s *	ELL ≤ 100Mb/s >50Mb/s
Up to 50 Mb/s	2%	2%	2%	3%	2%
50 to 100 Mb/s	1%	-	-	-	2%
100 Mb/s	27% ▲	17%	16%	2%	44%
101Mb/s to 1Gb/s	6%	-	-	10%	6%
At 1Gb/s	24% ▲▲	11%	11%	47% ▲▲▲	19%
Over 1Gb/s	10%	20%	25% ▲▲	10%	3%
Don't know	30%	50%	45%	29%	24%

QCP2a. Do you know the current total bearer capacity (i.e. the maximum peak speed that could theoretically be supported
Base: All respondents: 241, WDM: 46/ WDM/ ELL>1Gb/s: 55/ ELL ≤ 1Gbs >100Mb/s: 62/ ELL ≤ 100Mb/s >50Mb/s: 124
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

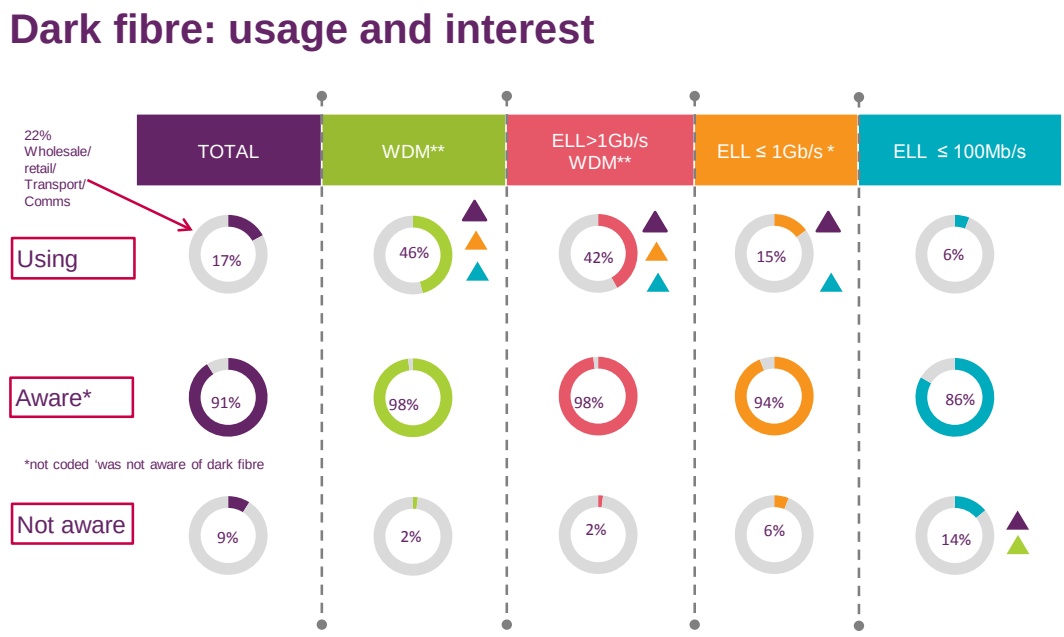
Dark fibre

Respondents were asked if they were currently using dark fibre. The following description was read to them…

"Dark fibre is effectively a do-it-yourself option, where you lease unlit fibre optic cable from a third party which make a physical connection between your sites. You are responsible for purchasing, installing and operating telecoms equipment at each end of the dark fibre connection to deliver telecoms services between your sites."

Almost half those with WDM connections (46%) claim to also be using dark fibre. This contrasts to 6% of those with ELL≤100Mbit/s and 15% with ELL≤1Gbit/s. As shown in figure 47, almost all with WDM/ ELL>1Gbit/s connections were aware of dark fibre (98%). Significantly more with ELL≤100Mbit/s were 'not aware' of dark fibre (14%) compared to the 2% of organisations with WDM/ ELL>1Gbit/s connections.

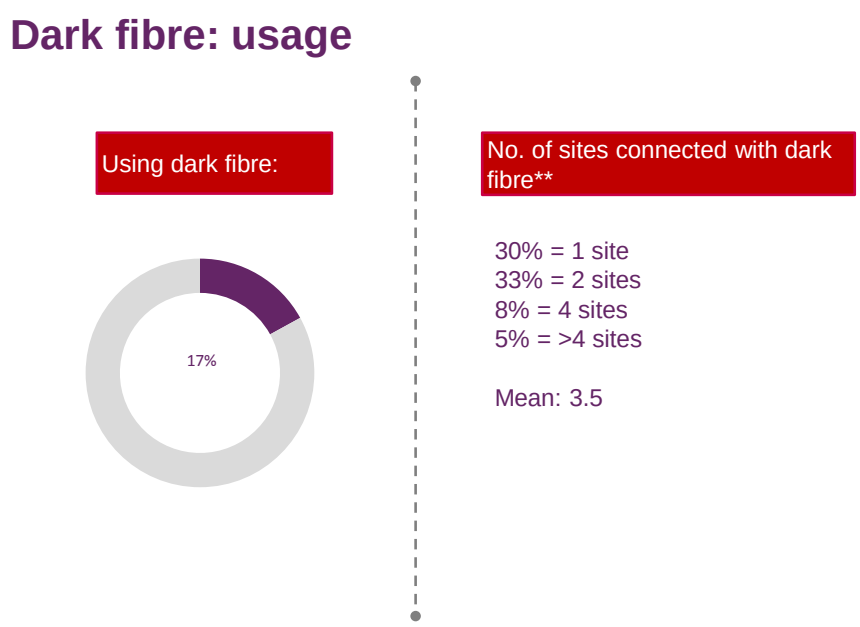
Figure 47



D1. Are you currently making use of dark-fibre solutions to connect any of your business sites? Dark fibre is effectively a do-it-yourself option, where you lease unlit fibre optic cable from a third party which make a physical connection between your sites. You are responsible for purchasing, installing and operating telecoms equipment at each end of the dark fibre connection to deliver telecoms services between your sites.
Base: All respondents: 241, WDM: 46/ WDM/ ELL>1Gb/s: 55/ ELL ≤ 1Gbs >100Mb/s: 62/ ELL ≤ 100Mb/s >50Mb/s: 124
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

As shown in figure 48, the average (mean) number of sites connected with dark fibre was 3.5 among the 17% who claim to be using these connections in addition to their high bandwidth line.

Figure 48



D2. You said previously that your business has [INSERT NUMBER OF SITES FROM QBUS1] linked via business connectivity services. How many of these are connected using dark fibre?
*Base: All respondents using Dark Fibre: 40***
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.
*LOW BASE SIZE, **INDICATIVE ONLY

Those respondents who do not currently use dark fibre were asked:

"Dark fibre services provide access to fibre optic cables contained in ducts within trenches in the ground. It would be for the purchaser of the dark fibre to install necessary equipment to 'light' the service so that it can deliver telecommunications services. Using a scale of 1 to 10 where 1 is not consider at all and 10 is strongly consider, to what extent would you consider or not consider using this as an alternative to your INSERT SAMPLE TYPE?"

Results are shown in figure 49. Users of WDM/ ELL>1Gbit/s connections were the most likely to indicate that they would 'strongly consider' using dark fibre. A fifth (22%) provided a consideration score of 10 out of 10. This compared to 6% of those with ELL≤100Mbit/s and 13% with ELL≤1Gbit/s connections.

Scores of seven to 10 out of 10 for consideration (high consideration) were given by a third (34%) with WDM/ ELL>1Gbit/s WDM/ ELL>1Gbit/s connections, 15% of those with ELL≤100Mbit/s and 23% with ELL≤1Gbit/s connections. The types of reasons expressed for **considering** dark fibre were concerned with flexibility, control, price and independence:

"Because you can scale up without having to pay any more. All you need is the equipment on either side of the dark fibre." (ELL ≤ 1Gbit/s)

"Dark fibre is something I can control. My business is very particular in the way it goes about things. It likes to own and control all elements. If I had a dark fibre I would own the network. It gives accessibility of throughout." (WDM)

"It sounds like an interesting alternative. Especially because of issues here digging up the roads." (ELL ≤ 100Mbit/s)

"Always looking all the time to upgrade to different connections. We need fibre as we need to deliver above 20mega across our sites." (ELL≤100Mbit/s)

"I would consider Dark fibre if there was a supplier in our area. I would definitely look into it if there was a cost benefit. There is no harm in asking especially if there are benefits to it. However in our locality there doesn't seem to be an option."(ELL≤100Mbit/s)

"Independence and control. Potentially cost-dependent upon availability i.e. incumbent suppliers lack of duct sharing." (WDM)

"We believe it gives the most flexible solution to move forward." (ELL≤100Mbit/s)

"We would look into using Dark Fibre. We would look at the price and the resilience and if it gave flexibility. We would look at the pros and cons of using it." (ELL≤1Gbit/s)

"I think if I can get access and light it's attractive as it gives us end to end service management capability." (WDM)

At the other end of the consideration scale, scores of one out of 10 (do not consider at all) were given by over a third of those with ELL≤100Mbit/s and 13% with ELL≤1Gbit/s connections, compared to 22% with WDM/ ELL>1Gbit/s. Over half (53%) of those with ELL≤100Mbit/s and ELL≤1Gbit/s connections gave a score of one to three out of 10 (they would be unlikely to consider).

Factors expressed in non-consideration include a lack of 'need', a preference for third party management, issues over cost and also availability.

"Just because there is no need." (ELL≤100Mbit/s)

"I prefer a provider to do it for us." (ELL≤1Gbit/s)

"Because we are not interested in managing all these services ourselves." ELL ≤ 100Mbit/s)

"We have never had a problem with our existing leased lines. It is much easier to get a managed service from Virgin or Ethernet than supply it ourselves. What we need is we get already." (ELL ≤ 1Gbit/s)

"Dark fibre is more expensive" (ELL≤1Gbit/s)

"I think we are comfortable and happy with what we have got already." (ELL≤100Mbit/s)

"No corporate policy to use dark fibre. Not a route our businesses would globally go in." (ELL≤1Gbit/s)

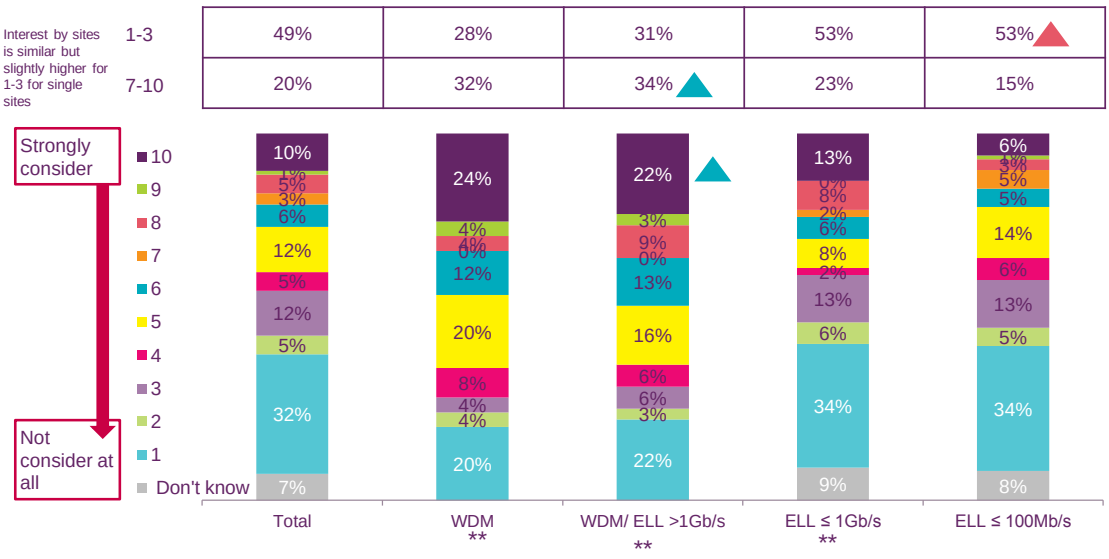
"Would not consider Dark Fibre because we have no expertise in implementing it. That is only reason." (ELL≤1Gbit/s)

"We have already looked into it does not do what we wanted we could not get it to work in Hull." (ELL≤1Gbit/s)

"Just because of the nature of the sites that it's connecting. The distance between them is quite a long way away." (ELL≤100Mbit/s)

Figure 49

Consideration of usage of dark fibre



QD2a. Dark fibre services provide access to fibre optic cables contained in ducts within trenches in the ground. It would be for the purchaser of the dark fibre to install necessary equipment to 'light' the service so that it can deliver telecommunications services. Using a scale of 1 to 10 where 1 is not consider at all and 10 is strongly consider, to what extent would you consider or not consider using this as an alternative to your INSERT SAMPLE TYPE?

Base: All respondents who do not have Dark Fibre: Total : 201, WDM: 25, WDM/ ELL>1Gb/s: 32, ELL ≤1Gb/s: 53, ELL ≤100Mb/s: 116

The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.

*LOW BASE SIZE, **INDICATIVE ONLY

END OF REPORT

Figure 6a, 6b

Detailed sample profile number of employees

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s
Less than 10	2%	2%	5%	-	2%
10-50	22%	26%	24%	16%	24%
51-100	11%	4%	5%	11%	13%
101-250	24%	11%	11%	23%	31%
251-500	12%	11%	11%	10%	13%
501-1000	13%	13%	11%	24% ▲▲	9%
1001+	15%	30% ▲▲▲	31% ▲▲▲	15%	8%
Don't know	1%	2%	2%	2%	-

Detailed sample profile by turnover

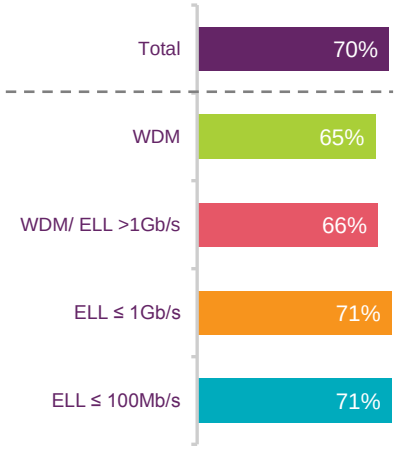
	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s
< 2.5m	12%	15%	13%	6%	14%
£2.5 Million - £20 Million (11.25)	27%	13%	15%	32% ▲▲	29% ▲▲
£21 Million - £50 Million (35.5)	13%	7%	5%	18% ▲	15%
> 50m	20%	28%	31% ▲	19%	15%
REFUSED	4%	9%	9%	3%	2%
DON'T KNOW	24%	28%	27%	21%	25%
Mean (£ Million)	£73	£146	£140 ▲▲▲	£58	£55

Source: Approximately how many employees does your company/organisation have at all sites in the UK? / To the best of your knowledge what would you say is the annual turnover for your company?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.

Figure 11a

Proportion of sites in organisation WITH HBW★ CONNECTIVITY

Average proportion



Proportion in bands

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s
Up to 24%	13%	18%	19%	13%	11%
25% to 49%	10%	11%	11%	10%	10%
50% to 74%	23%	23%	21%	20%	26%
75% or more	53%	48%	49%	57%	53%
100%	50%	45%	47%	48%	51%

★Connectivity = same as sample type assigned in survey

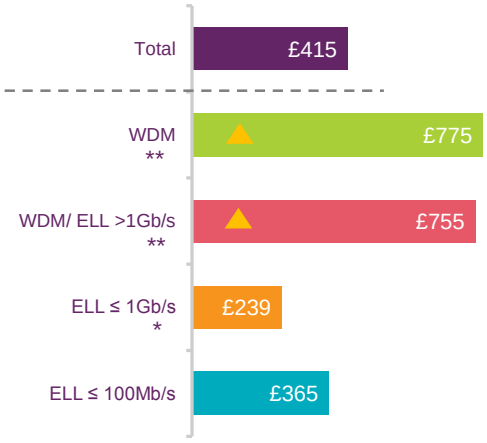
NB: approximately half of this group were businesses with 1 site only

Source: T11d. How many of your (INSERT NUMBER FROM QBUS1) sites have INSERT SAMPLE TYPE connectivity in the UK?
*Base: All respondents excl. DK: 238, WDM: 44/ WDM/ ELL>1Gb/s: 53**/ ELL ≤ 1Gbs >100Mb/s: 61*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.

Figure 12a

Annual spend on business connectivity ALL

Mean spend (£000s, annual)



Overall spread of spend

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gbs >100Mb/s*	ELL ≤ 100Mb/s >50Mb/s
Up to £25k	28%	7%	9%	24%	38%
£25 to £99k	31%	28%	24%	31%	34%
£100k+	29%	48%	49%	34%	18%

C1a.Would you be able to estimate approximately how much your organisation spends annually on business connectivity services within the UK across all sites? Please base this on the whole organisation and not just parts that you may be responsible for.
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.

Figure 15a

	TOTAL	WDM**	ELL>1Gb/s WDM**	ELL ≤ 1Gb/s *	ELL ≤ 100Mb/s
Communication with other sites	4%	4%	4%	3%	4%
Email	3%	-	-	5%	3%
General internet access	3%	-	-	6%	2%
VPN	2%	2%	2%	3%	1%
Communication with customers	1%	-	2%	2%	1%
Disaster recovery	1%	-	-	-	2%
Other	6%	9%	7%	8%	5%
Don't know	1%	2%	4%	-	-

HB1. What are the main purposes of your INSERT SAMPLE TYPE? What is it mainly used for in your organisation?
*Base: All respondents: 241, WDM: 46**/ WDM/ ELL>1Gb/s: 55**/ ELL ≤ 1Gbs >100Mb/s: 62*/ ELL ≤ 100Mb/s >50Mb/s: 124*
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.

Figure 32a

Obstacles while migrating (detail, who recalled migration)

	TOTAL	WDM	ELL>1Gb/s WDM	ELL ≤ 1Gb/s	ELL ≤ 100Mb/s
Time taken to deliver service/ long delay in installation	9%	6%	4%	13%	10%
Other criticism of provider - e.g. poor communication , poor customer service	8%	3%	4%	11%	8%
Lead time for the new service up and running	6%	-	-	7%	8%
Difficulties due to location - e.g lack of infrastructure, service not available in area	5%	-	-	2%	8%
Additional charges (Excess construction charges) for new infrastructure	5%	3%	2%	4%	6%
Getting planning permission/ wayleave issues	4%	-	2%	4%	5%
Changing IP addresses	3%	6%	4%	2%	3%
Difficulties in installing service - e.g laying fibre line	3%	-	-	7%	2%
New connection charges	2%	-	-	4%	2%
Internal costs to invest in new equipment	2%	3%	2%	-	3%
Internal costs to reconfigure new equipment	1%	-	-	4%	1%
Disruption to existing services	1%	-	-	4%	1%
Service migration charges	1%	-	-	2%	1%
Cost of running alternative services/ circuits (e.g. data over mobile) in parallel	1%	-	-	-	2%

QM4A. What, if any obstacles or difficulties did you face when migrating to ...? Base: All respondents: 215, WDM: 36/ WDM/ ELL>1Gb/s: 45/ ELL ≤ 1Gbs >100Mb/s: 56/ ELL ≤ 100Mb/s >50Mb/s: 114
The TOTAL in the charts is the total of the different sample groups. It is not a representative total of high bandwidth line users. Please see figure 1 for details.

Appendix B: Questionnaire

BDRC CONTINENTAL

J22279 Ofcom Very High Bandwidth Questionnaire – FINAL

SURVEY DETAILS Executive names: Tim Barber

FIELD DATES: November 9th to December 3rd week

Client: Ofcom

BRIEFING NOTE TO INTERVIEWERS ON DESIRED RESPONDENT:
We are keen to speak to the person in the organisation who has decision-making responsibility in relation to 'Business Connectivity Services' or services which carry landline telephone calls and/or data traffic over high quality or high speed connections.

In larger companies that have an IT function, we expect this person to be the most senior in that department, the IT Director or equivalent; in some cases the decision maker in very large companies could be a senior person in a procurement team. In smaller companies where there is no dedicated IT function, we *may* talk to the Owner or Managing Director.

We do not want to talk to the person that simply signs off budgets. We want to speak to the person who is either solely or jointly responsible for deciding which Business Connectivity Services and suppliers to choose on behalf of the organisation.

We do not want to talk to an administrator. The only exception to this might be where we are collecting usage data about spend and the senior decision-maker doesn't have this factual information to hand. We would be very happy to start the interview with the senior decision-maker and be referred to more junior personnel in order to collect this type of data.

In cases where there is a parent company and separate sub divisions/brands where autonomous decisions are made, we want to talk to the company making the majority of the decisions. Therefore if the parent company only sets the broad policy and individual sub brands are fairly autonomous in terms of implementation and decision making we want to treat each sub brand as a separate company/interview in the research. However, where the parent company largely dictates decision making, they should be treated as the 'major interview' and then the sub companies can be used to 'fill in gaps' in much the same way as we would do with individuals within any one company.

We are also contacting some government departments and other public sector organisations. When contacting departments it is important that they are not referred to as 'companies' but 'departments' and that it is made clear to the officials that we are conducting the research in order to fulfil our statutory duties and that any other public sector organisations are similarly not referred to as 'companies' but 'organisations'.

AT RECEPTION:

Please could I speak to the person who has responsibility (sole or joint) for IT, telecoms and other communications services? If you have a dedicated IT Manager or Director please could we speak to them?

INTRODUCTION:

Hello my name is ..... from BDRC Continental, calling on behalf Ofcom the independent regulator for the UK's communications industries.

Ofcom wishes to better understand how businesses are using and purchasing 'Business Connectivity Services', in other words, services which carry voice and/or data traffic over high quality or high speed connections. The research will help Ofcom identify areas where there is a need for further advice, information or support. May I ask you some questions? IF NECESSARY: The interview will take around 20 minutes.

BDRC Continental is a member of the Market Research Society and a bona fide and independent market research company. Any opinions you express during this interview will remain confidential and will not be attributed to you directly.

(Central Government Departments only) Ofcom is conducting this research as part of its statutory duties.

Before I start the interview can I just check that you are one of the people in your company who makes decisions about the telephone and IT services at your company?
IF YES, CONTINUE INTERVIEW. IF NO, ASK TO SPEAK TO SOMEONE WHO IS.

IF RESPONDENT QUERIES HOW CALL WAS MADE:
BDRC Continental has selected your organisation from a list of business telecoms users provided to us by Ofcom.

IF RESPONDENT QUERIES CALL AS THEY ARE TPS REGISTERED, PLEASE READ OUT:
"I am calling on behalf of Ofcom the regulatory body for the communications industry; this is a market research call - not a marketing or sales call. We are keen to hear your views on an important issue in the communications sector and need to speak to as many people as possible, including those who have opted out of marketing calls via the Telephone Preference Scheme. Registering for the Telephone Preference Scheme means that you should receive fewer marketing and sales calls, but it does not apply to market research calls"

Should you wish to verify this information I can provide you with both the name and number of the executive in charge of this survey or alternatively you can ring 0500 39 69 99 and be put through to FREEPHONE MARKET RESEARCH SOCIETY who will also be able to confirm our status as a legitimate Market Research Agency.
IF RESPONDENT REQUIRES EXECUTIVE NAME AND NUMBER, THE EXECUTIVES FOR THIS SURVEY ARE JAMES MYRING AND TIM BARBER AND THE NUMBER TO CALL IS 020 7490 1000 (DURING NORMAL WORKING HOURS 9.00 AM - 5.00 PM ONLY)
IF RESPONDENT SAYS THEY WISH TO SPEAK TO A REPRESENTATIVE OF OFCOM, THEN PLEASE REFER THEM TO THE CONSUMER CONTACT TEAM AT OFCOM; THE NUMBER TO CALL IS 0300 123 3333 or 020 7981 3040 (DURING NORMAL WORKING HOURS 9.00AM – 5.00PM ONLY)

ASK PERMISSION TO RECORD SURVEY

IF RESPONDENT QUERIES PURPOSE OF RECORDING, EXPLAIN THAT A PROPORTION OF INTERVIEWS ARE CHECKED FOR QUALITY PURPOSES, TO ENSURE REPLIES ARE BEING CORRECTLY RECORDED.**SCREENER AND QUOTA SECTION**

QS1 ASK ALL
Are you responsible, either solely or jointly, for decision-making on business connectivity services at some or all of the sites your business has?
SINGLE CODE

Yes –solely or jointly responsible for some or all sites 1
CONTINUE
No .....2 CLOSE
Don't know .....3 CLOSE

IF RESPONDENT SCREENS HERE AND REFERS TO ANOTHER COLLEAGUE PLEASE ENSURE QUESTION IS ASKED AGAIN TO RESPONDENT

QBUS1 ASK ALL
Thinking now about your organisation. How many individual sites, outlets, branches and or offices, including the one where you work does your company/organisation have in the UK?
IF NECESSARY: If you're not sure of the exact number, please provide your best estimate.
INTERVIEWER: EXCLUDE ANY PARENT HOLDING COMPANY OR OTHER INDIVIDUAL COMPANIES WITHIN THE GROUP. ALSO EXCLUDE TELE-WORKING E.G. FROM HOME
RECORD EXACT NUMBER OF SITES. SCRIPTER: PLEASE CODE TO THE FOLLOWING BANDS

PLEASE ENTER NUMBER OF SITES_____

1.....1
2.....2
3-5.....3
6-10.....4
11-15.....5
16-20.....6
21-50.....7
51-100.....8
101-500.....9
501+.....10
Don't know – but more than one (DO NOT READ OUT) ..... Y
Don't know (DO NOT READ OUT)..... Y

QQUALAASK ALL
Thinking about all of the connectivity services across all of your UK sites, do you have any of the following?

READ OUT, MULTICODE

Ethernet leased lines (over fibre) 1
SDH or PDH leased lines 2
Wave division multiplexed services (offers very high bandwidth connectivity) 3
VPN underpinned mainly by Ethernet, leased lines or WDM).....4
Multiproduct label switching network (MPLS) underpinned mainly by Ethernet Leased lines or WDM) 5
Don't know (DO NOT READ OUT)..... Y
None of the above (DO NOT READ OUT)..... Z

QQUALB ASK ALL WHO CHOOSE 4/5 AT QQUAL

Which of the following specific leased line service do you have underpinning your…
VPN (if code 4 at QQUALA)
MPLS (if code 5 at QQUALA)?

READ OUT, MULTICODE

Ethernet leased lines (over fibre) 1
SDH or PDH Leased lines 2
Wave division multiplexed services (offers very high bandwidth connectivity) 3
Don't know (DO NOT READ OUT) ..... Y
None of the above (DO NOT READ OUT) .....Z

QQUALC ASK ALL NOT CODED 1 OR 3 AT QUALA/B,
Are you sure you do not have any other types of delivery, ie ?

READ OUT, MULTICODE

Ethernet leased lines (over fibre) 1
Wave division multiplexed services (offers very high bandwidth connectivity) 3
No – neither X

CONTINUE WITH INTERVIEW IF USE LEASED LINE ETHERNET SERVICES (QQUALA/B/C=1) OR WDM SERVICES (QQUALA/B/C=3)

QS1D ASK ALL
What is the maximum contracted speed you pay for on your LEASED LINE ETHERNET(QQUALA/B/C=1 / WAVE DIVISION MULTIPLEXED SERVICES (QQUALA/B/C=3) services?
IF BOTH PLEASE PRIORITISE QQUALA/B/C=3

When responding if you have more than one type of connection that this would apply to please answer for your 'main', i.e. highest speed connection, so that might be at Head Office or at a data centre.
ONLY PROMPT IF NECESSARY. SINGLE CODE.

Up to 50Mbit/s..... 1 CLOSE
Up to and including 100Mb/s 2
Up to and including 1Gb/s 3
Over 1Gb/s 4
Don't know .....x CLOSE UNLESS QQUALA/B/C=3)

QS1Dx ASK ONLY IF QS1D=2-4

Do you know the **exact** maximum contracted speed you pay for on your LEASED LINE ETHERNET(QQUALA/B/C=1 / WAVE DIVISION MULTIPLEXED SERVICES (QQUALA/B/C=3) services?

WHEN RESPONDENT GIVES A RESPOSE CLARIFY:

Is that megabits or gigabits?

Mb 1
Gb 2
DO NOT KNOW EXACT FIGURE

QS1Dy ASK ALL PROVIDING EXACT FIGURE IN MB (CODE 1 AT QS1Dx)

OPEN NUMERIC (CAP AT 3 FIGURES)

QS1Dz ASK ALL PROVIDING EXACT FIGURE IN GB (CODE 2 AT QS1Dx)

OPEN NUMERIC (CAP AT 1 FIGURE)

Q: SAMP

THERE ARE 4 TYPES OF SAMPLE

1 WAVE DIVISION MULTIPLEX USERS (QQUALA/B/C =3).....1
2 VERY HIGH BANDWIDTH USERS (QQUALA/B/C=1 AND QS1d=4.....2
3 1Gb/s USERS (QQUALA/B/C=1 AND QS1d=3).....3
4 100Mbit/s USERS (QQUALA/B/C=1 AND QS1d=2).....4

SCRIPTING: PLEASE ASSIGN TO EACH SAMPLE TYPE WITH THE FOLLOWING PRIORITY:

1, 2, 3, 4 IE IF RESPONDENT =1, 2. PLEASE ASSIGN THEM TO SAMPLE TYPE 1

NOTE: WE HAVE A **MINIMUM** TARGET OF 100 FOR SAMPLE TYPES 1+2. 3 AND 4=100 EACH

QINTRO (ASK ALL WHO QUALIFY)

Thank you. The interview will now MAINLY focus on the….INSERT RELEVANT FROM BELOW… that your company uses in the UK. We may also ask you to think about any other types of high speed leased line provision you have.

Wave Division Multiplexed services ..... SAMP=1
Leased line Ethernet services over 1Gb/s ..... SAMP=2
Leased line Ethernet services services up to and including 1Gb/s.....SAMP =3
Leased line Ethernet services services up to and including 100Mb/s.....SAMP= 4

SUPPLIER DETAILS

QT1 ASK ALL
Which Telecoms supplier or suppliers does your organisation use for your **INSERT SAMPLE TYPE**?
MULTICODE. DO NOT READ OUT, PROMPT IF NECESSARY BRANDS *

QT2 ASK ALL WITH MORE THAN ONE SUPPLIER AT QT1
And which would you consider to be your MAIN supplier for INSERT SAMPLE TYPE?
SINGLE CODE, READ OUT OPTIONS FROM T1

QT3 ASK ALL WITH ANY OTHER HIGH BANDWIDTH LEASED LINES (QQUALA/B/C=1 OR 3 NOT ALREADY ASKED ABOUT AT QT1) AND HAVE MORE THAN ONE SITE (QBUS1≠1)
And which is your supplier for the other high bandwidth leased lines you have?
MULTICODE. DO NOT READ OUT, PROMPT IF NECESSARY BRANDS *

QT4B ASK ALL
Have you had any suppliers that you have previously used for INSERT SAMPLE TYPE that you no longer use? If so can you give me their names?
MULTICODE. DO NOT READ OUT, PROMPT IF NECESSARY ONLY WITH BRANDS WITH AN *, STARTING WITH BT AND VIRGIN FIRST]

Accenture	MLL Telecom
Alcatel	MS3
Alternative Networks	Neos (includes SSE/Scottish and Southern)
AT&T	O2 / BE
BT*	OBS / Orange Business Services
	Opal Communications/Pipex
CapGemini	Orange
Carphone Warehouse	Primus
Chess	Sky
City Fibre*	Spitfire
Claranet	Surf Telecoms
Colt*	Talk Talk*
CSC	Telefonica
Daisy	Timico
Demon	Tiscali
DST (Directsave.com)	Titan
Easynet	T-Mobile
Eclipse	Tooway
EDS	Updata
EU networks*	Vaioni
Everything Everywhere/EE	Verizon
Excel	Virgin Media (NTL/ Telewest)*
Exponential-e	Vodafone (Cable and Wireless / C&W)*
Fibre Speed	Vtesse
Fujitsu	Welcome Telecom
Gamma	Zayo / Geo Networks*

IBM	2E2
Intechnology	”3”
Inter route	Resourced internally
Janet	Other (Specify)
KCom (Kingston Communications)*	Other (2ND other mention ONLY)
Level 3 (Global Crossing)*	Other (3RD other mention ONLY)
	(Don’t know)

QT7 ASK ALL USING MORE THAN ONE SUPPLIER FOR HIGH SPEED BANDWIDTH SERVICES (QT1>1 OR QT3≠QT1)

You mention that you use more than one supplier for your high bandwidth services. What is the reason for doing so?

DO NOT READ OUT, CODE FROM LIST BELOW, MULTICODE		
Tend to go with best price available at time	1	Price
Tend to go with the best/most advanced service available at time	2	Product
Use two suppliers for same requirement - prefer to use a mix in case one lets us down	3	Contingency
Different suppliers are better able to supply different services required	4	Product
Different areas/ regions have different telecoms providers	5	Region
There is more choice in different areas/regions	6	Region
It’s cheaper/ get better deals	7	Price
Makes negotiations more competitive	8	Price
No reason – just happened over the years	9	Bottom of list
Different regions/offices make independent decisions	10	Region
Not one single provider is capable of meeting all our service requirements	11	Product
Other (SPECIFY)	12	
Don’t know	13	

T8 ASK ALL
Do you purchase INSERT SAMPLE TYPE as a single product or as part of a wider network solution or telecoms package?
READ OUT..

All purchased as a single product 1
Sometimes purchased as single product, sometimes purchased as part of a wider package 2
All purchased as part of a wider package 3
Don't know (DO NOT READ OUT) ..... Y

QT10 ASK ALL WHO PURCHASE AS PART OF A PACKAGE QT8=2 OR 3
What other services are included in the package with the INSERT SAMPLE TYPE?

DO NOT READ OUT, MULTICODE, PROBE: ANY OTHERS?

Cloud computing.....2
Hosting.....3
IT services 4
VPN services..... 5
Data storage..... 6
Other (SPECIFY) ..... Y

QT11d ASK ALL ASK ALL WITH MORE THAN 1 SITE (QBUS1>1)
How many of your (NSERT NUMBER FROM QBUS1) sites have INSERT SAMPLE TYPE connectivity in the UK?

OPEN NUMERIC
DK

HIGH BANDWIDTH DETAILS

QHB1 ASK ALL
What are the main purposes of your **INSERT SAMPLE TYPE**? What is it mainly used for in your organisation?
READOUT, MULTICODE, RANDOMISE

Cloud Computing – e.g. access to remote servers in data centres 1
Videoconferencing/broadcasting 2
Access into data storage and backup 3
Specific low latency data transfer requirements (e.g. for high-value securities trading).....4
Resilient links – e.g. mirroring servers and data 5
Just need high speeds into my largest sites (e.g. head office) 6
Using software and applications that require a constant internet connection 7
Specific interface/ File Transfer Protocol.....8
Other (SPECIFY).....10
Don't know (DO NOT READ OUT) ..... Y

HIGH BANDWIDTH DETAILS

QHB2a ASK ALL

Thinking about when you selected your current provider for your INSERT SAMPLE TYPE, that is PROVIDER AT QT1 (IF ONLY ONE PROVIDER AT QT1)/ OR PROVIDER AT QT2 (IF MORE THAN ONE PROVIDER AT QT1 BUT IF BT OR VIRGIN ARE CODED AT T1 BUT NOT MAIN SUPPLIER PRIORITISE THESE) which are criteria were **important** in choosing that provider
READ OUT…
MULTICHOICE, RANDOMISE

Good contacts at chosen company	1
Price	2
Reputation for quality	3
Chosen supplier(s) understand our business	4
Chosen supplier already has a connection to our building	5
Historic links to chosen company(s)	6
Attractive bundling	7
Length of agreement	8
Better resilience	9
Better security	10
More financially stable	11
Other (SPECIFY)	12
Don't know (DO NOT READ OUT)	Y

QHB3 ASK ALL

Please indicate which of the following have occurred in your business in the past 5 years in relation to your INSERT SAMPLE TYPE.
READ OUT…MULTICODE, FLIP

Investigated alternative connectivity arrangements			1
Investigated changing the speed of connectivity arrangements	2		
Investigated switching suppliers but not switched	3		
Switched suppliers			4
Moved from another type of connection	5		
Renegotiated price/terms of existing contract	6		
Don't know (DO NOT READ OUT)			Y

QHB4 ASK ALL WHO HAVE INVESTIGATED ALTERNATIVE CONNECTIVITY ARRANGEMENTS OR SPEED (QHB3=1,2.)
What alternatives to INSERT SAMPLE TYPE did you consider?
DO NOT READ OUT…MULTICODE

Dark Fibre 1
Wave Division Multiplexed Services (ALL NOT SAMPLE TYPE 1) 2
High speed Ethernet leased line (ALL SAMPLE TYPE 1) 6
Ethernet leased lines at higher speed (ALL NOT SAMPLE TYPE 1) 3
Ethernet leased lines at lower speed (ALL) 4
Increase amount of bandwidth could use under an existing connection 7
Other (SPECIFY) 5
Don't know (DO NOT READ OUT) ..... Y

QHB5 ASK ALL WHO HAVE INVESTIGATED ALTERNATIVE CONNECTIVITY ARRANGEMENTS (QHB3=1)
Why did you decide to continue to use INSERT SAMPLE TYPE rather than change to INSERT RESPONSES FROM QHB4?
DO NOT READ OUT…MULTICODE

Speed would not be sufficient 1
Decided to stick with the service I know 2
Do not require as speedy connection 4
Price/ better value for money 5
Perceived quality 6
Current is easier to operate, maintain and fix problems 7
Service features of current 8
Current bundled with other services 9
Current offers better security 11
Current has more resilience 12
Flexibility to upgrade bandwidth / service 13
I need guaranteed low latency/jitter 15
Support for different interfaces (e.g. Fibre-Channel, for storage-area networks). 16
Other services would require me to change hardware/software internally 17
Service not available in areas I need…… 19
Other (SPECIFY) 20
Don't know/can't remember (DO NOT READ OUT) ..... Y

QHB7 ASK ALL WHO HAVE SWITCHED SUPPLIER (QHB3=4)
You mentioned you had switched supplier for your INSERT SAMPLE TYPE. How easy or difficult did you find the experience?
Was it READ OUT…?

Very easy
Fairly easy
Neither easy nor difficult
Not very easy
Not at all easy
Don't know (DO NOT READ OUT)

QHB8 ASK ALL WHO HAVE SWITCHED SUPPLIER (QHB3=4)
Was there any cost involved in switching suppliers? That may be internal costs such as time spent researching alternative options & costs as well as any external charges & costs associated with switching suppliers? If YES: Can you give me an estimate of the overall cost?

SINGLE CODE. PROMPT WITH BANDS IF NECESSARY ESTIMATE OKAY IF NOT SURE

Less than £1k 1
£1k - £1.99k 2
£2k - £4.9k 3
£5k - £9.9k 4
£10k - £24.9k 5
£25k - £49.9k 6
£50k - £99.9k 7
£100k - £249k 8
Over £250k (SPECIFY) 10
Don't know (DO NOT READ OUT) ..... Y
NO COST X

QHB9 ASK ALL WHO HAVE NOT CONSIDERED OR SWITCHED SUPPLIER (QHB3=1/2 or 4=6)
You said you have not switched supplier for your INSERT SAMPLE TYPE. Why is this?
DO NOT READ OUT…MULTICODE

No reason to change/ happy with service 1
Too difficult/ too much hassle to change 2
Worried about losing service/ disrupted service during switch 3
Concern over costs of switch 4
Would need to break a contract/ incur costs as a result of exiting contract 5
Only supplier in the market/area 6
Other (SPECIFY) 7
Don't know (DO NOT READ OUT) ..... Y

MIGRATION

QM1 ASK ALL
When did your business begin using INSERT SAMPLE TYPE?
DO NOT READ OUT, PROMPT IF NECESSARY
SINGLE CODE
INTERVIEWER NOTE THE VARIATION IN DK CODES THAT INCLUDES 'WAS NOT IN THE COMPANY AT THE TIME'

Less than 6 months ago 1
6 months to a year ago 2
1-2 years ago 3
2-3 years ago 4
3-5 years ago 5
More than 5 years ago (SPECIFY) 6
Don't know X
Don't remember ..... Y
Was not in the company at the time ..... Z

QM2 ASK ALL CODED 1-6 AT QM1
What type of service was the INSERT SAMPLE TYPE replacing?
READ OUT, MULTICODE
INTERVIEWER NOTE THE VARIATION IN DK CODES THAT INCLUDES 'WAS NOT IN THE COMPANY AT THE TIME'

SDH/ PDH Leased lines 1
Analogue leased lines 2
Ethernet leased lines 3
Virtual Private Networks (VPNs), mainly underpinned by leased lines(ASK QM2b) 4
Multi-product label switched network (MPLS) 5
PSTN (voice) 6
ISDN for voice and data 7
ADSL or Cable modem, or fibre broadband connection 8
EFM (Ethernet First Mile) 9
SDSL (Symmetric Digital Subscriber Line) – (broadband with equally fast upload/download speeds) for some/all voice and/or some/all data communications 10
Virtual Private Networks (VPNs), mainly underpinned by ADSL or cable modem, or Fibre broadband connection.....11
Mobile or other wireless technologies (as a replacement for data over a fixed line)
IF NECESSARY: this is for data only, not mobile services used by employees for voice
And excludes Wi-Fi within the office.....12
Other business connectivity services (SPECIFY) 13
Don't know..... X
Was not in the company at the time ..... Y

ASK IF ETHERNET LEASED LINES (CODE 3) AT QM2
QM2a What was the speed of the previous Ethernet leased line…?

Is that megabits or gigabits?

Mb 1
Gb 2
DO NOT KNOW EXACT FIGURE

QM2a2 ASK ALL PROVIDING EXACT FIGURE IN MB (CODE 1 AT QM2A)

OPEN NUMERIC (CAP AT 3 FIGURES)

QM2a3 ASK ALL PROVIDING EXACT FIGURE IN GB (CODE 2 AT QM2A)

OPEN NUMERIC (CAP AT 1 FIGURE)

QM2b ASK ALL CODING 4 at M2

What types of leased lines or other business connectivity services were underpinning your VPN before you moved to INSERT SAMPLE TYPE?
ONLY PROMPT IF NECESSARY. MULTICODE.

Analogue Leased Lines 1
SDH or PDH digital Leased Lines (SDH or PDH - time division multiplexed digital leased line) 2
Ethernet digital Leased Lines (Ethernet - packet multiplexed digital leased line) 3
Ethernet First Mile (EFM) 4
ATM (a switching technique for telecommunications networks) 5
Frame Relay (protocol standard for LAN networking) 6
Wave division multiplexed services (offers very high bandwidth connectivity) 7
Storage access networks (SAN) services, e.g. Fibre channel, FICON, ESCON (provides access to consolidated, block level storage) 8
Satellite links 9
Other (specify) 10
Don't know 11

QM3 ASK ALL CODED 1-6 AT QM1

What were the reasons for changing to INSERT SAMPLE TYPE. Did they include…?
MULTICODE. READ OUT…RANDOMISE

Needing a faster connection 1
The company was expanding 2
Cost or price reductions in the market 3
New services offered in the market 4
OTHER (SPECIFY) 5
Don’t know (DO NOT READ OUT) 5

QM4a ASK ALL CODED 1-6 AT QM1

What, if any obstacles or difficulties did you face when migrating to INSERT SAMPLE TYPE ?
DO NOT PROMPT BUT PROBE FULLY. MULTICODE

New connection charges 1
Service migration charges 2
Disruption to existing services 3
Lead time for the new service up and running 4
Additional charges (Excess construction charges) for new infrastructure (e.g. digging new connection to sites) 5
Internal costs to reconfigure new equipment 6
Internal costs to invest in new equipment 7
Cost of running alternative services/ circuits (e.g. data over mobile) in parallel 8
Other (please specify)
.....9
NONE, do not recall any obstacles 10
Don’t know (DO NOT READ OUT) X

QM4b ASK ALL CODED 1-6 AT QM1 AND MULTICODED AT QM4a

Which was the main obstacle or difficulty you faced when migrating to INSERT SAMPLE TYPE ? READ OUT, SINGLE CODE

New connection charges 1
Service migration charges 2
Disruption to existing services 3
Lead time for the new service up and running 4
Additional charges (Excess construction charges) for new infrastructure (e.g. digging new connection to sites) 5
Internal costs to reconfigure new equipment.....6
Internal costs to invest in new equipment 7
Cost of running alternative services/ circuits (e.g. data over mobile) in parallel 8
Other (please specify) 9
Don't know (DO NOT READ OUT)..... X

QM7a ASK FOR MAIN OBSTACLE FROM QM4

Thinking about the INSERT WORD main [IF FACED MORE THAN ONE] obstacle that you faced when migrating to INSERT SAMPLE TYPE…, ie INSERT FROM QM4A IF SINGLE CODE, QM4B IF ANSWERED

Can you recall if there were any associated costs with this obstacle?…

IF YES, ASK - can you provide an estimate of the level of cost in terms of thousands…

INTERVIEWER: PLEASE RECORD ANSWER IN THOUSANDS. SO, FOR EXAMPLE IF THE COSTS INCURRED WERE 250,000, PLEASE WRITE 250 IN THE OPEN NUMERIC. VERY UNLIKELY BUT IF THEY WERE 1 MILLION OR MORE IT WOULD BE 1,000 FOR 1 MILLION, 1,100 FOR 1.1 MILLION ETC.

Yes (OPEN NUMERIC)

No cost

DON'T KNOW/ Can't remember

COSTS

QC1 ASK ALL
Approximately how much does your organisation spend annually on business connectivity services, ie all IT/ telecoms within the UK across all sites? Please base this on the whole organisation and not just parts that you may be responsible for.
SINGLE CODE. PROMPT WITH BANDS

Less than £10k 1
£10k - £24k 2
£25k - £49k 3
£50k - £99k 4
£100k - £249k 5
£250k - £499k 6
£500k - £999k 7
£1m - £4.9 million 8
£5m - £9.9 million 9
Over £10 million.....10
Don't know (DO NOT READ OUT) ..... Y

QC1a ASK ALL SAYING DK AT QC1

Would you be able to estimate approximately how much your organisation spends annually on business connectivity services within the UK across all sites? Please base this on the whole organisation and not just parts that you may be responsible for.

SINGLE CODE. PROMPT WITH BANDS IF NECESSARY ESTIMATE OKAY IF NOT SURE

Less than £10k 1
£10k - £24k 2
£25k - £49k 3
£50k - £99k 4
£100k - £249k 5
£250k - £499k 6
£500k - £999k 7
£1m - £4.9 million 8
£5m - £9.9 million 9
Over £10 million 10
Don't know (DO NOT READ OUT) ..... Y

QC2 ASK ALL

Approximately what proportion of your spend annually on business connectivity services **is on…**

SAMPLE TYPE within the UK across all sites?

OPEN NUMERIC MUST BE >0 AND NO HIGHER THAN 3 DIGITS

PLEASE ASK 50%QQSNIP 1 THEN 2 AND 50% QSSNIP 3 THEN 4

QSSNIPASK ALL

If the price of your SAMPLE TYPE provision was increased by 10% by your supplier, what, if anything would you do as a result of this increase?

READ OUT, MULTICODE, FLIP

INTERVIEWERS NOTE PRESENCE OF 'WOULD NOT TAKE ANY ACTION' CODE AS WELL AS DK

CODE 8= SINGLE CODE

CODES 1,2 EXCLUSIVE TO **EACH OTHER**, IE BOTH CANNOT BE SELECTED

CODES 3, 4 EXCLUSIVE TO **EACH OTHER**, IE BOTH CANNOT BE SELECTED

I would switch supplier.....1
I would look into switching supplier 2
I would use an alternative type of connection 3
I would look into using an alternative type of connection 4
I would seek to negotiate with supplier.....5
Avoid paying more by switching to a lower specification service (e.g. lower bandwidth, fewer lines) 6
Would not take any action (i.e. I would pay the price increase).....8
Other (SPECIFY).....7
Don't know (DO NOT READ OUT) X

QSSNIP2ASK ALLCODED 1-8 AT QSSNIP

You said you think you would INSERT CODE FROM QSSNIP if the price of provision increased by 10%. How certain or uncertain are you that this is what your organisation would and could actually do if the price of SAMPLE TYPE increased by 10%?

READ OUT

SCRIPTER IF MORE THAN 1 OPTION PROVIDED AT QSSNIP SELECT AT RANDOM BUT PRIORITISE 1, 2, 3, 4 IN THAT ORDER IF THESE HAVE BEEN SELECTED

	CODE 1-8 FROM QSSNIP
Certain to	
Very likely	
Fairly likely	
Not very likely	
Not at all likely	
Don't know	

QSSNIP 3. If the price of SAMPLE TYPE provision increased by 10% across **all** suppliers, what, if anything would you do as a result of this increase?

READ OUT, MULTICODE-FLIP

INTERVIEWERS NOTE PRESENCE OF 'WOULD NOT TAKE ANY ACTION' CODE AS WELL AS DK

CODE 8= SINGLE CODE

CODES 1,2 EXCLUSIVE TO **EACH OTHER**, IE BOTH CANNOT BE SELECTED

CODES 3, 4 EXCLUSIVE TO **EACH OTHER**, IE BOTH CANNOT BE SELECTED

I would switch supplier.....1
I would look into switching supplier 2
I would use an alternative type of connection 3
I would look into using an alternative type of connection 4
I would seek to negotiate with supplier.....5
Avoid paying more by switching to a lower specification service (e.g. lower bandwidth, fewer lines) 6
Would not take any action (i.e. I would pay the price increase).....8
Other (SPECIFY).....7
Don't know (DO NOT READ OUT) X

QSSNIP4 ASK ALL CODED 1-8 AT QSSNIP3

You said you think you would INSERT CODE FROM QSSNIP3 if the price of provision increased by 10% across all suppliers. How certain or uncertain are you that this is what your organisation would and could actually do?

READ OUT

SCRIPTER IF MORE THAN 1 OPTION PROVIDED AT QSSNIP SELECT AT RANDOM

	CODE 1-8 FROM QSSNIP
Certain to	
Very likely	
Fairly likely	
Not very likely	
Not at all likely	
Don't know	

CAPACITY UTILISATION

QCP2a ASK ALL
Do you know the current total bearer capacity (i.e. the maximum peak speed that could theoretically be supported on the installed links) for your INSERT SAMPLE TYPE?
SINGLE CODE

Yes (SPECIFY OPEN NUMERIC).....1
No 2
Don't know.....3

QCP2b..... INTERVIEWER RECORD IF ANSWER WAS MB OR GB

MB 1
GB.....2

CURRENT AND FUTURE REQUIREMENTS

QF1 ASK ALL SAMPLE TYPES 2-4
Given any increases in bandwidth you forsee and current maximum capability of your existing connection…
In the next 3 years, how likely is it that your business will need to upgrade its leased line bandwidth from INSERT SAMPLE TYPE to…READ OUT OPTION IN COLUMN
SCRIPTER ASK OPTIONS BASED ON CURRENT SPEED (SEE RULES BELOW)

IF SAMPLE TYPE 2 ASK FOR 4TH COLUMN ONLY
IF SAMPLE TYPE 4 ASK FOR ALL
IF SAMPLE TYPE 3 ASK FOR 3rd and 4th COLUMN ONLY

Are you… READ OUT

	Leased line Ethernet service above 100 M/b but not 1Gbit/s	Leased line Ethernet service **at** 1 Gbit/s	Leased line Ethernet service **above** 1 Gbit/s	Wave Division Multiplexed (WDM) services
Very likely		1	1	1
Quite likely		2	2	2
Neither likely nor unlikely		3	3	3
Not very likely		4	4	4
Not at all likely		5	5	5

DON'T KNOW

DARK FIBRE

QD1 ASK ALL
Are you currently making use of dark-fibre solutions to connect any of your business sites?

Dark fibre is effectively a do-it-yourself option, where you lease unlit fibre optic cable from a third party which make a physical connection between your sites. You are responsible for purchasing, installing and operating telecoms equipment at each end of the dark fibre connection to deliver telecoms services between your sites.
SINGLE CODE, INTERVIEWER NOTE DISTINCTION BETWEEN 'NO', WAS 'NOT AWARE' AND 'DON'T KNOW'

Yes.....1
No 2
Was not aware of dark-fibre solutions 3
Don't know..... X

QD2 ASK ALL THAT HAVE USED DARK-FIBRE SOLUTIONS AT QD1
You said previously that your business has [INSERT NUMBER OF SITES FROM QBUS1] linked via business connectivity services. How many of these are connected using dark fibre?
TYPE IN

_____

IF RESPONDENT IS NOT SURE OF EXACT NUMBER,

_____

Don't know (DO NOT READ OUT) X

QD2a ASK ALL NOT CURRENTLY USING AT QD1
Dark fibre services provide access to fibre optic cables contained in ducts within trenches in the ground. It would be for the purchaser of the dark fibre to install necessary equipment to 'light' the service so that it can deliver telecommunications services.

Using a scale of 1 to 10 where **1** is not consider at all and **10** is strongly consider, to what extent would you consider or not consider using this as an alternative to your INSERT SAMPLE TYPE?

Not consider at all 1
.....2
.....3
.....4
.....5
.....6
.....7
.....8
.....9
Strongly consider.....10
Don't know..... X

QD3 ASK ALL NOT CURRENTLY USING AT QD1 PROVIDING A RESPONSE OF 1-3 AND 7-10 AT QD2
Why do you say that?

WRITE IN

BUSINESS CLASSIFICATION

QS2 (QS2) ASK ALL
Approximately how many employees does your company/organisation have at all sites in the UK?
IF NECESSARY: Excluding any parent or holding company or other individual companies within the group.
SINGLE CODE

Less than 10 1
10-50 2
51-100 3
101-250 4
251-500 5
501-1000 6
1001+ 7
Don't know 8

QS4 (QS4) ASK ALL/ CODE FROM SAMPLE

Primary industry 1
Manufacturing 2
Construction 3
Wholesale/Retail/Transport/Communications 4
Financial Services 5
Other services 6
Public admin and services (EXCLUDING CENTRAL GOVERNMENT ORGS) 7
Public admin and services (CENTRAL GOVERNMENT ORGS ONLY) 8
Other 9

QA1 (QA1) ASK ALL

To the best of your knowledge what would you say is the annual turnover for your company? SINGLE CODE. DO NOT INCLUDE OVERSEAS TURNOVER IF ASKED

Less than £150,000	1
£150,000 - £249,999	2
£250,000 - £499,999	3
£500,000 - £999,999	4
£1 Million - £2.5 Million	5
£2.5 Million - £20 Million	6
£21 Million - £50 Million	7
£51 Million-£100 Million	8
£101 Million - £500 Million	9
Over £500 Million	10
Refused	11
Don't know	12

QS5 (QS5) ASK ALL

In which nation or region of the UK your sites with very high bandwidth connections located?

MULTICODE

(20)

Scotland	1
Wales	2
Northern Ireland	3
London (inside M25)	4
South East	5
South West	6
East of England	7
East Midlands	8
West Midlands	9
North East	10
North West	11
Yorkshire and Humber	12
