Jigsaw Research

Business Connectivity Services Review

2011

Prepared for

Ofcom

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Contents

1 Introduction

1.1 Background and objectives

Ofcom has a statutory requirement to conduct regular reviews of the business connectivity market. With this in mind, Ofcom is carrying out a "business connectivity market review" that focuses on the market for business connectivity services, which carry voice and/or data traffic between business sites to enable all types of communications within an organisation.

Services which were included in the definition of Business Connectivity Services were:

- SDSL[1] for some/all voice and/or some/all data communications
- Virtual Private Network/s(VPNs[2]), mainly underpinned by ADSL[3] or cable modem access
- Virtual Private Network/s (VPNs), mainly underpinned by leased lines access links
- Leased lines[4]for some/all voice and/or some/all data communication

Most businesses with 10 or more employees were using a variety of services. Questions were used to screen out any respondents NOT using any of the key business connectivity services:

Ofcom's market reviews have three broad stages:

- Defining the relevant market (s) in terms of product and geography
- Assessing the level of competition in the markets identified
- Assessing the regulatory options within that market

In order to inform the definition of the business connectivity market on a forward-looking basis, market research was first conducted in 2007 to provide evidence from the perspective of end-users of business connectivity services. This process was repeated in the summer of 2011 by Jigsaw Research. This document summarises the main results of the 2011 market research study and the methodology used to conduct the research.

1.2 Research objectives

The main objective of this review is to understand the end-users' preferences with respect to products and supply conditions, including suppliers, and establish how these have changed since the last review.

The specific objectives of this research were to establish:

- Business end-users' commercial needs (now and going forward) so that we can identify the different characteristics end-users value in relation to business connectivity services.

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[1]**SDSL:** Symmetrical Digital Subscriber Line. Like ADSL but with equal upload and download speeds.

[2]**VPN:** Virtual Private Network- A service provided on a public telecommunications network that provides businesses with inter-site connections emulating those of a private network.

[3]**ADSL:** Asymmetric digital subscriber line is a type of digital subscriber line technology, a data communications technology that enables faster data transmission over copper telephone lines than a conventional voice band modem can provide.

[4]**Leased Line**: A service contract between a provider and a customer, whereby the provider agrees to deliver a symmetric telecommunications line connecting two or more locations in exchange for a monthly rent (hence the term lease). Typically, leased lines are used by businesses to connect geographically distant offices. Unlike dial-up connections, a leased line is always active.

- Information on the current data services and voice services they use (i.e. using dedicated leased lines, traditional public switched telephone networks, or using internet protocols). Information on whether they purchase these services separately and/or from different providers.
- What characteristics of connectivity services business end-users place most value on, and whether and how they trade-off these characteristics against each other.
- Business end-users' perceptions of available business connectivity products and whether they consider that different products are capable of meeting their business connectivity needs and any barriers they face to switching between products.

2 Executive summary

The following findings are the key highlights from a survey of 461 companies with 10 or more employees across the UK which use business connectivity services (BCS). BCS carry voice and/or data traffic between business sites to enable all types of communications within an organisation.

2.1 Background, objectives & research methodology

Ofcom is carrying out a" business connectivity market review" that focuses on the market for business connectivity services, which carry voice and/or data traffic between business sites to enable all types of communications within an organisation.

The main objective is to understand end-users' preferences with respect to products and supply conditions, including suppliers, and establish how these have changed since the last review in 2007. Market research was conducted by Jigsaw Research in the summer of 2011.

The research involved a quantitative study comprising 461 interviews via CATI (Computer Assisted Telephone Interviewing) with companies with 10 or more employees that purchase business connectivity services (BCS). 70% of all companies with 10 or more employees have any BCS (as defined in section 3), but it is important to note that most companies with 10 or more employees who qualified for the main survey because they use BCS services also use non-BCS services.

2.2 Profile of businesses purchasing business connectivity services

Businesses with fewer than 10 employees were excluded from the survey.

The sample was structured to ensure an even split between small (10-100 employees), medium (101-500) and large (501+) companies. Sector and region were broadly represented but some of the low incidence sectors or regions were boosted to allow for analysis.

Company size (in terms of employees) is clearly correlated with annual turnover and number of sites i.e. large companies with lots of employees tend to have higher turnover and operate across a wider number of different offices/sites and locations.

2.3 Business connectivity services & suppliers used

Annual spend on business connectivity is significantly lower than in 2007, with 52% of companies with 10 or more employees spending less than £50k (compared with 35% in 2007).

Spend is clearly correlated with business size; only 15% of large companies spend less than £50k, compared with 81% of small ones. Bandwidth requirement is clearly correlated with business size and spend on BCS; larger companies spend more on BCS and have a greater bandwidth requirement than small or medium ones.

2 in 5 companies with 10 or more employees outsource some BCS, across a variety of services. There is more outsourcing and less self-management than was observed in 2007.

In terms of suppliers, BT is widely used (67%), followed by Virgin Media (16%) and Cable & Wireless (10%) and followed by a long tail of smaller suppliers. 47% of businesses with 10 or more employees use multiple suppliers. Small companies are less likely to do this, and large companies more so.

72% of BCS are contended, and this proportion is significantly higher than in 2007 (44%). Universal contention is higher in small companies.

2.4 Business needs

The top 3 requirements rated as either business critical or very important are availability[5] (97%), bandwidth[6] – download speed (88%) and resilience[7] (87%). Availability and resilience are core service features that businesses with 10 or more employees regard as "business critical". Companies with 10 or more employees are more likely to say that bandwidth download speed is "very important" than "critical".

Availability and resilience will continue to be crucial to business success, with around 60% expecting these to retain their current high levels of importance, and 40% expecting them to grow in importance.

As was the case in 2007, businesses with 10 or more employees say bandwidth (both upload and download speed) are most likely to increase in future importance.

9 in 10 businesses with 10 or more employees have reviewed business connectivity services within the last 3 years, and 6 in 10 have made changes as a result of a review. The most likely changes are adding a service or changing a supplier. Around 2 in 5 are likely to take-up new voice or data services in the next 12 months.

2.5 Switching

Businesses with 10 or more employees are more likely to take on new voice or data services than they are to switch existing services. 2 in 3 companies with 10 or more employees say they are very or quite unlikely to switch voice or data services in the next 12 months (around 1 in 5 are likely to switch).

Several issues affect a company's ability and desire to switch supplier for BCS:

- 40% of companies with 10 or more employees are currently locked into existing contracts for 2 to 5 years.
- Only 41% of companies with 10 or more employees say that their BCS are all purchased as single products; for the rest, bundles and packages could restrict the ease with which switching might take place.
- 53% of businesses with 10 or more employees use a single supplier for all BCS. Switching to another could be risky; taking on an extra could be perceived as more difficult to manage.

Price is a key barrier to switching (presumably because of existing deals/relationships and/or bundling packages), but many (especially large companies) are locked into contracts or concerned about the hassle and risk factors a switch might entail.

[5] **Availability**: A measure of the reliability of the service

[6] **Bandwidth:** The amount of data that can be carried from one point to another in a given time period (usually a second). This kind of bandwidth is usually expressed in kilobits (kbit/sec) or megabits (of data) per second (Mbits/sec).

[7] **Resilience**: A resilient service provides an option for a second data path to provide higher availability

More than half of businesses with 10 or more employees show an interest in switching services in future in order to benefit from superfast broadband.

3 Research methodology

The research involved a quantitative study comprising 461 interviews via CATI (computer assisted telephone interviewing) with companies with 10 or more employees that purchase business connectivity services (BCS); a full definition of these can be found in section 3.2.

Interviews were conducted with the primary decision maker for business connectivity services.

Quotas were set to permit analysis of the results in terms of size of company, type of company and geographical split across England, Scotland, Wales and Northern Ireland.

The aim was to obtain 25 in each of the English regions and nations and at least 25 in each industry grouping. Central government was deliberately targeted to ensure that at least 10 organisations of this type were interviewed.

Figure 3.1 Breakdown of sample by number of employees

Number of employees	All respondents with BCS
10-50	15%
50-100	18%
101-250	21%
251-500	13%
501-1000	11%
1001+	22%

Base: All respondents with BCS n=461

Question: QS2 Approximately how many employees does your company/organisation have at all sites in the UK?

The resulting sample comprised: 33% small companies (10-100 employees), 34% medium sized companies (101-500 employees) and 33% large companies (501+ employees).

Although the profile of 2007 and 2011 sample was close, the 2011 data was weighted by size and nation so that the profile of businesses was matched with the profile of businesses surveyed in 2007.

Fieldwork was conducted between 30th June and 12th August 2011. The first ten interviews conducted between 30th June and 4th July were treated as 'pilot' interviews and fieldwork was temporarily halted between 5th and 7th July so that the initial results could be examined to assess whether any modifications needed to be made to the questionnaire for the remaining interviews (the results of this pilot stage are included in the appendix).

The questionnaire was 20 minutes in length and, where possible, questions were kept consistent with those used in 2007 for tracking purposes. A copy of the 2011 questionnaire can be found in the Appendix.

In total, interviewers attempted to contact 9,474 businesses in order to achieve 461 interviews with companies with 10 or more employees that purchase business connectivity services (BCS). This means that 4.9% of businesses who were contacted (or were attempted contact) qualified for the survey and took part in the full interview. 30% refused to take part in the interview and 32% were ineligible for the survey i.e. they had fewer than 10 employees, they didn't have business connectivity services, they worked in sectors where the quotas had already been fulfilled etc. The remainder were generally respondents who couldn't be contacted (on holiday, off sick etc).

3.1 About the analysis and report

Sub-group analysis has been conducted for this report, with a particular focus on company size (small, medium and large), region across the UK and industry sector. Where such differences are reported they are statistically significant to a 99% confidence level.

Where possible, 2011 findings are compared with those of the previous 2007 survey. Although this survey was very similar to the 2011 research, there are limitations with regard to questionnaire differences and changes in the market (for example it is not possible to compare banded bandwidth speeds between 2007 and 2011).

This report focuses on the main findings of interest from this research. However, all data are available in the Market Data and Research section of Ofcom's website – http://stakeholders.ofcom.org.uk/market-data-research/

This report is collaboration between Ofcom and Jigsaw Research and it is presented in the following sections:

- **Section 4** provides profiling information about businesses with 10 or more employees that purchase BCS; their regional distribution, industry sector, company size, annual turnover and number of sites or offices.
- **Section 5** examines the different BCS used and the suppliers who provide these, exploring how BCS are managed within organisations, levels of service contention and bandwidth needs.
- **Section 6** focuses on seven specific BCS in terms of bandwidth, voice and data usage, and suppliers providing these services.
- **Section 7** explores business needs; the relative importance of service features, reviews and changes to services in the past and planned for the future.
- **Section 8** looks at switching, in terms of potential barriers, future likelihood and the impact of newer technologies on propensity to switch suppliers and/or services.
- **Appendix**: 2011 research questionnaire, Glossary of Terms, Pilot Interviews

3.2 Definition of "business connectivity services (BCS)"

Business connectivity services are defined as those which carry voice and/or data traffic between business sites to enable communication within an organisation.

Survey respondents were asked to think only about their enterprise network excluding public telephone services and/or IDSN[8] and/or dial up Internet.

Most businesses with 10 or more employees were using a variety of services. Questions were used to screen out any respondents NOT using any of the key business connectivity services:

[8]**ISDN:** Integrated Services Digital Network - A digital telephone line service that supports the simultaneous digital transmission of voice, video, data, and other network services over the PSTN.

Figure 3.2 Services included for the purposes of research

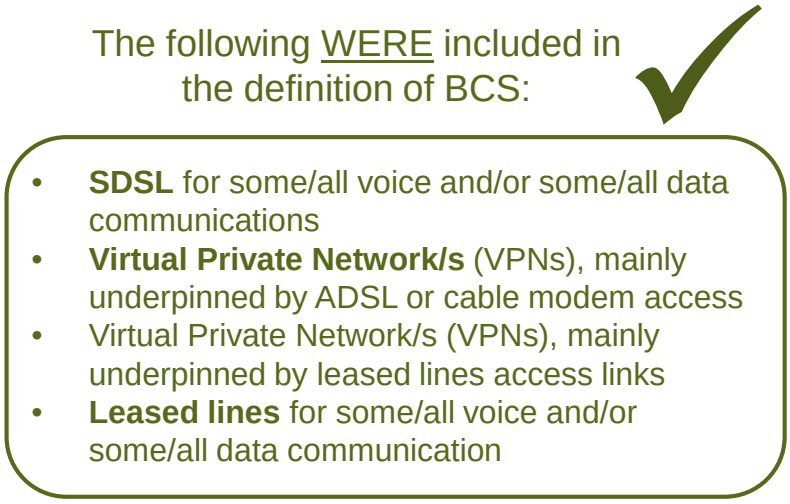
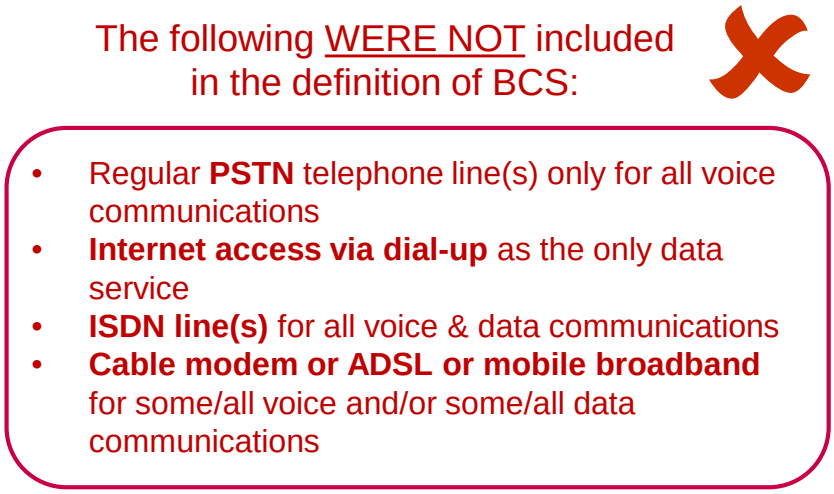


Figure 3.3 Services NOT included for the purposes of research



It is important to note that most who qualified for the main survey because they use BCS services (as defined above) also use non-BCS services. As we see in section 3.3, 70% of companies with 10 or more employees have any BCS (92% amongst large companies; 52% amongst small) as defined by:

- SDSL (22%)
- Leased lines (42%)
- VPNs underpinned by either ADSL/cable modem (49%) OR leased lines (34%)

3.3 Incidence of business connectivity services

During the initial phase of the survey, respondents were asked about a multitude of telecom services that their companies with 10 or more employees might have, in order to "screen-out" those without the key business connectivity services required for further discussion and analysis.

Figure 3.4 looks at the incidence of ALL telecom services. Those highlighted in green represent the "business connectivity services" as focussed upon in this report overall. As figure 3.4 shows, there is considerable usage of multiple services. On average, companies with 10 or more

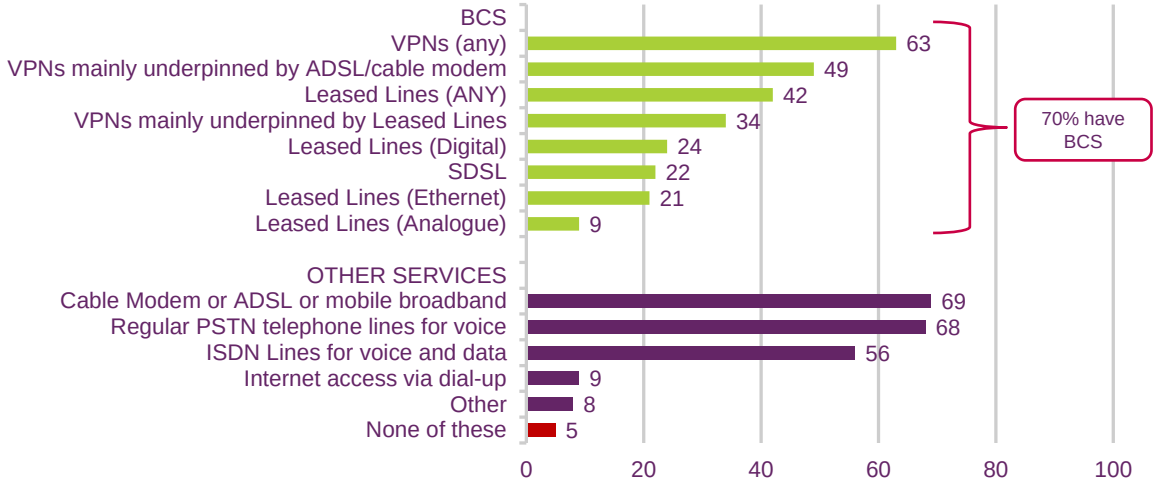
employees use 3.9 different telecom services, rising to 5.1 amongst large companies with more than 500 employees.

More than 2 in 3 use regular PSTN[9] telephone lines for voice services or cable modem, ADSL or mobile broadband for data or voice. More than half have ISDN lines, but less than 1 in 10 still has dial-up internet.

70% of companies with 10 or more employees have any "business connectivity services" as defined for the purposes of this research (and shaded green in figure 3.4) as:

- SDSL for some/all voice and/or some/all data communications
- Virtual Private Network/s (VPNs), mainly underpinned by ADSL or cable modem access
- VPNs, mainly underpinned by leased lines access links
- Leased lines for some/all voice and/or some/all data communications
  - Analogue, Digital, Ethernet

Figure 3.4 Incidence of types of business connectivity



Base: Total initial sample (n=656) (Small n=298; Medium n=194; Large n=164)

Question: QS1a Thinking about your company's current telecoms provisions, which of the following types of telecom service does your company have? QS1b What type of leased lines do you have?

The incidence of "business connectivity services" varies greatly by company size. 92% of large companies (more than 500 employees) have any of these services compared with 52% amongst small companies (10-100 employees).

VPNs represent a key BCS, with almost two-thirds (63%) of businesses with 10 or more employees having these in some capacity; VPNs are more likely to be underpinned by ADSL/cable modem than leased lines (although the latter are used by more than a third of businesses overall).

Two-fifths (42%) use any variety of leased lines. Digital and Ethernet leased lines are more prevalent than analogue.

[9] **PSTN:** A public switched telephone network- The international network that provides circuit switched voice telephone services under end-user control.

Large companies are significantly more likely than small or medium ones to have SDSL (44%), VPNs underpinned by ADSL (68%) or by leased lines (59%), or to have leased lines in general (68%).

Manufacturing companies with 10 or more employees are significantly more likely than average to have VPNs underpinned by ADSL (60% vs. 49% overall).

For non-BCS, 21% claimed not to have PSTN or ISDN lines for voice/data (68% have PSTN and 56% have ISDN – 44% have both).

4 Profile of businesses purchasing business connectivity services

4.1 Summary

Businesses with fewer than 10 employees were excluded from the survey.

The sample was structured to ensure an even split between small (10-100 employees), medium (101-500) and large (501+) companies. Sector and region were broadly represented but some of the low incidence sectors or regions were boosted to allow for analysis.

We found a higher proportion of the Public Administration & Services sector amongst large companies. Large companies were more likely than others to be located in London (inside the M25)

Company size (in terms of employees) is clearly correlated with annual turnover and number of sites i.e. large companies with lots of employees tend to have higher turnover and operate across a wider number of different offices/sites and locations.

Average annual turnover in 2011 was £124m (£25m amongst small companies, £66m medium and £278m large).

4.2 Location

As figure 4.1 shows, region was broadly represented amongst companies with 10 or more employees with business connectivity services. Some of the low incidence regions were boosted to allow for analysis. 2011 data was then weighted so that the profile of 2011 and 2007 businesses was matched.

Almost 9 in 10 companies with 10 or more employees with business connectivity services were located in England, with 12% across Wales, Scotland and Northern Ireland.

More than a third (36%) of businesses with 10 or more employees were located in London and the South East. Larger businesses (those with 501+ employees) were significantly more likely to be located in London (26% vs. 16% overall).

Figure 4.1 Region

Nation / Region	
	All
Unweighted base	461
	%
North East	6
North West	10
Yorkshire and the Humber	7
East Midlands	7
West Midlands	7
East of England	6
South East (outside M25)	20
South West	8
London (inside M25)	16
ENGLAND	88
WALES	3
SCOTLAND	7
NORTHERN IRELAND	2

Base: All respondents with BCS n=461

Question: QS6What part of the UK is the main UK office of your company located?

4.3 Industry sector & company size

As figure 4.2 shows, industry sector was broadly represented. Some of the low incidence sectors were boosted slightly to allow for analysis. 2011 data was then weighted so that the profile of 2011 and 2007 businesses was matched.

Around a fifth (19%) of businesses with 10 or more employees with business connectivity services were in Public Administration & Services, which includes local and central government organisations. The proportion of this category is significantly higher amongst larger businesses with 501+ employees (30% vs. 19% overall).

As we will see in the next section, company size (employee numbers) clearly has a positive correlation with annual turnover (larger companies have higher turnover) as does the number of sites or offices across which an organisation is spread (larger companies have more).

As we will see later in the report, larger companies also spend more on business connectivity services, and have a requirement for higher bandwidths across their networks.

Figure 4.2 Industry sector by company size

Company Size	Total	Small 10-100	Medium101-500	Large501+
Un-weighted base	461	152	154	155
	%	%	%	%
Sector				
Primary industry	6	6	6	7
Manufacturing	15	16	17	13
Construction	6	7	6	5
Wholesale/retail/ transport/communications	16	17	16	14
Financial services	5	4	6	6
Public admin & services	19	11	15	30
Other services	27	32	28	22
Other	5	6	5	4

Base: All respondents with BCS n=461

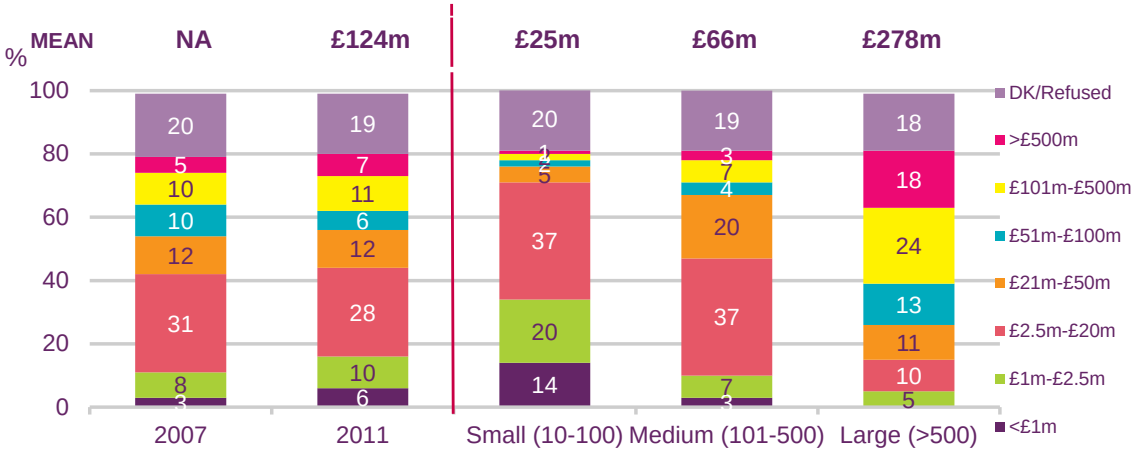
Question: QS5 Sector coded automatically from sample (telecoms was excluded)

4.4 Annual turnover

Figure 4.3 looks at the correlation between turnover and size of business (in terms of the number of employees). Respondents were asked to estimate their company's annual turnover (excluding overseas turnover if this was present). As in 2007, around a fifth (19%) either did not know or refused to answer.

On average, the businesses with 10 or more employees surveyed had an average (mean) annual turnover of £124m, but, as expected, turnover correlates strongly with number of employees. On average, small businesses had an annual turnover of £25m, medium businesses of £66m and the average was £278m amongst larger organisations.

Figure 4.3 Size of company by annual turnover and number of employees



Base: All respondents with BCS n=461

Question: Q1a To the best of your knowledge what would you say is the annual turnover for your company?

Mean scores cannot be compared between 2007 and 2011 due to differences in calculation and turnover bandings used, but it is evident that turnover levels are similar in both surveys.

4.5 Number of sites/offices

Figure 4.4 shows that company size (by number of employees) is strongly correlated with the number of sites or offices across which an organisation is spread. Respondents were asked how many individual sites, outlets, branches and/or offices their company had in the UK. Any parent holding companies or other individual companies within the group were to be excluded, along with any teleworking (e.g. from home).

The number of sites varies significantly by company size. Twice as many small businesses (53% vs. 26%) only have one site. Around a third (34%) of medium sized businesses (101-500 employees) operates across 3-5 sites in the UK. Only 5% of larger companies have just one site.

Figure 4.4 Size of company by number of sites and number of employees

Base: *All respondents with BCS n=461*

Question: *QA3 And how many individual sites, outlets, branches and or offices, including the one where you work does your company/organisation have in the UK?*

5 Business connectivity services &suppliers used

5.1 Summary

Annual spend on business connectivity is significantly lower in 2011 than in 2007, with 52% of companies spending less than £50k. Spend is clearly correlated with business size; only 16% of large companies spend less than £50k, compared with 81% of small ones

2 in 5 companies with 10 or more employees outsource some BCS, across a variety of services. There is more outsourcing and less self-management than was observed in 2007.

In terms of suppliers, BT is widely used (67%), followed by Virgin Media (16%) and Cable & Wireless (10%). A number of other suppliers have 5% or less of this market. 47% of businesses with 10 or more employees use multiple suppliers. Small companies are less likely to do this, and large companies more so.

72% of BCS are contended, and this proportion is significantly higher than in 2007 (44%). Universal contention is higher in small companies.

Bandwidth requirement is clearly correlated with business size and spend on BCS; larger companies spend more on BCS and have a greater bandwidth requirement than small or medium ones.

The majority of VPNs are underpinned by broadband connections.

5.2 Incidence of business connectivity services

Figure 5.1 looks at the incidence of different types of business connectivity services amongst those companies with 10 or more employees which had any of them (and therefore qualified for the full survey).

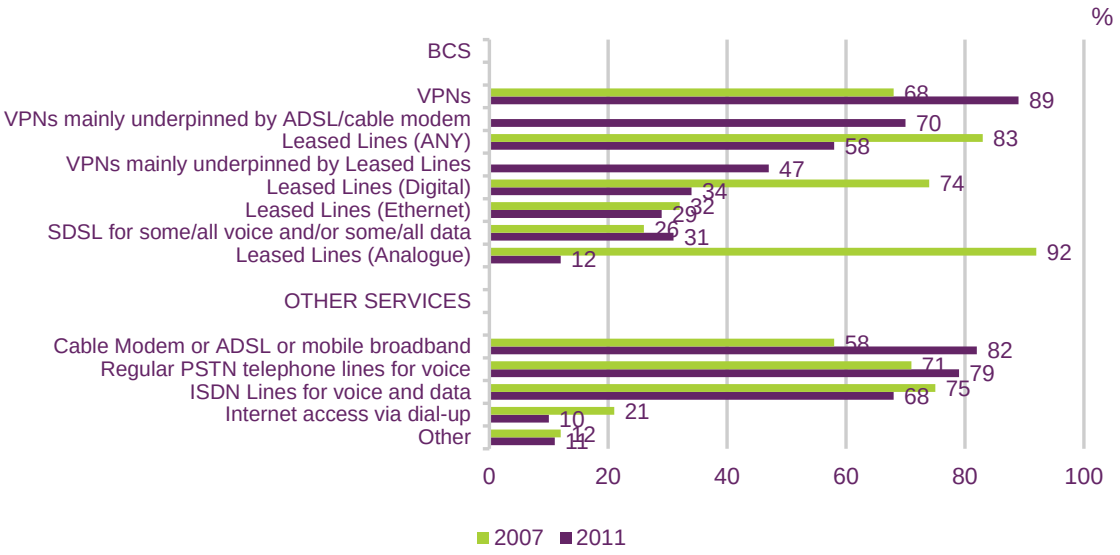
It is important to clarify that comparisons cannot always easily be made between the 2011 and 2007 surveys. The following are key differences between surveys:

- Mobile broadband was added to the definition “cable modem or ADSL or mobile broadband” in 2011
- In 2007, the definition was for “analogue lines”; in 2011 it was “analogue leased lines”
- In 2007, VPNs were asked about generally as “virtual private networks for some/all voice and/or some/all data communications”; in 2011, respondents were asked to differentiate between VPNs mainly underpinned by ADSL or cable modem access and VPNs mainly underpinned by leased lines access links.

Although many comparisons are therefore difficult to make, figure 5.1 does show that leased lines other than Ethernet show considerable decline in usage between 2007 and 2011. Usage of dial-up internet has halved in the same period. Usage of VPNs has increased in 2011, with 89% of respondents using these (either underpinned by ADSL/cable modem or leased lines – or both) compared with 68% in 2007.

The proportion of businesses with 10 or more employees claiming to have SDSL as a BCS in 2011 (31%) and 2007 (26%) is higher than we would expect. One reason is that some businesses may have misunderstood or misheard the term SDSL and confused it with other services that use DSL technology (such as standard broadband).

Figure5.1Incidence of types of business connectivity (amongst those with any BCS)



Base: All respondents with BCS n=461

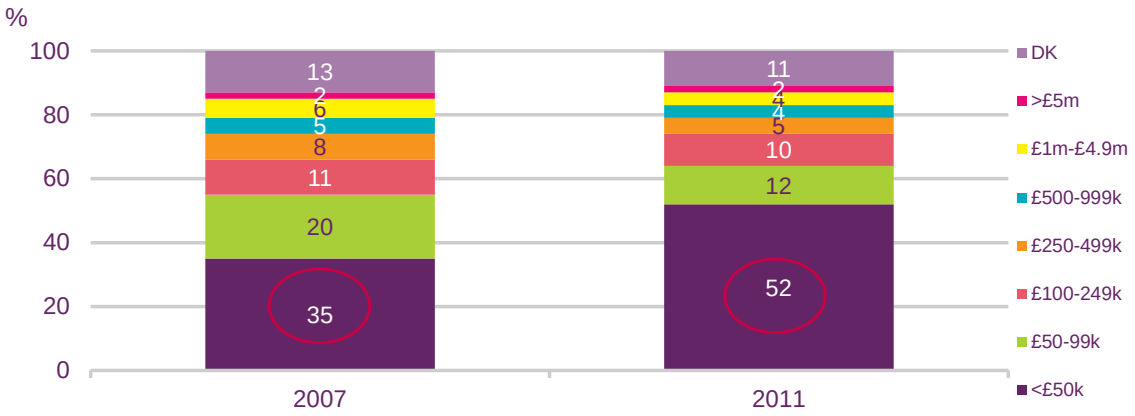
Question: QS1a Thinking about your company's current telecoms provisions, which of the following types of telecom service does your company have? QS1b What type of leased lines do you have?

5.3 Overall spend on business connectivity services

Respondents were asked to estimate how much their organisation spends annually on business connectivity services within the UK, across all sites. They were asked to exclude spending on public telephone services and/or ISDN and/or dial-up internet, and to focus upon the whole organisation (not just parts that they may be responsible for).

Figure 5.2 shows that more than half of businesses with 10 or more employees spend less than £50,000 per annum on business connectivity. This is significantly more than in 2007, when around a third (35%) said they were spending at this lowest level. Just over 1 in 10 is unable to estimate the organisational spend.

Figure 5.2 Annual spend on business connectivity



Base: All respondents with BCS n=461

Question: QA2 Approximately how much does your organisation spend annually on business connectivity services within the UK across all sites?

The lower spend in 2011 cannot be explained by differences in the profile of consumers surveyed. The 2011 survey was set up to match that of 2007 as closely as possible, and the data has been weighted to correct any sampling mismatches. In addition turnover levels are very similar.

Although the survey did not investigate the reasons, a number of hypotheses might be proposed:

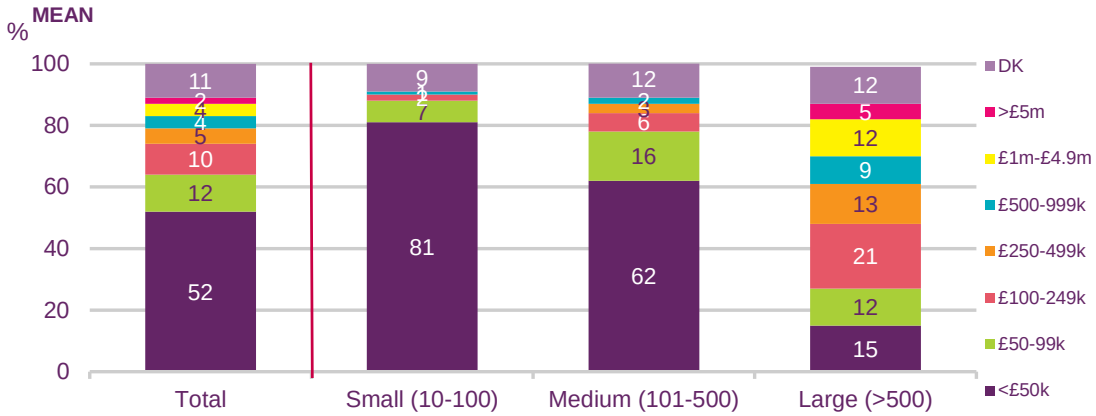
- Enforced / planned lower spending as a result of the recent recession.
- Take up of more economical supplier deals, either as a result of heightened market competition or bundling options.
- Reduction over time in the pricing of certain technologies/services or the infrastructure supporting them (e.g. companies spending less on BCS).
- The fact that services have improved and so businesses do not always need to purchase the higher spend options.

The average (mean) spend on business connectivity in 2011 is £445,000, but we can see from figure 5.3 and 5.4 that spend is highly variable across different sizes of business.

Figure 5.3 examines annual BCS spend by number of employees, and figure 5.4 looks across four annual turnover bands. Both of these tell us that there is a clear correlation between company size/turnover and the amount they spend on business connectivity services. Large companies with high turnover and lots of employees spend more on BCS (presumably because they have more sites and employees and/or higher overall bandwidth requirements and therefore the need for more connectivity; and have the means with which to purchase it).

In figure 5.3 we see that more than 8 in 10 (81%) of small companies (10-100 employees) spend less than £50,000 on business connectivity in the average year. Only 16% of large companies (more than 500 employees) spend at this lowest level. The average (mean) spend of large companies (£1.26 million) is over 40 times that of small ones (£29,000).

Figure 5.3 Annual spend on business connectivity (by number of employees)



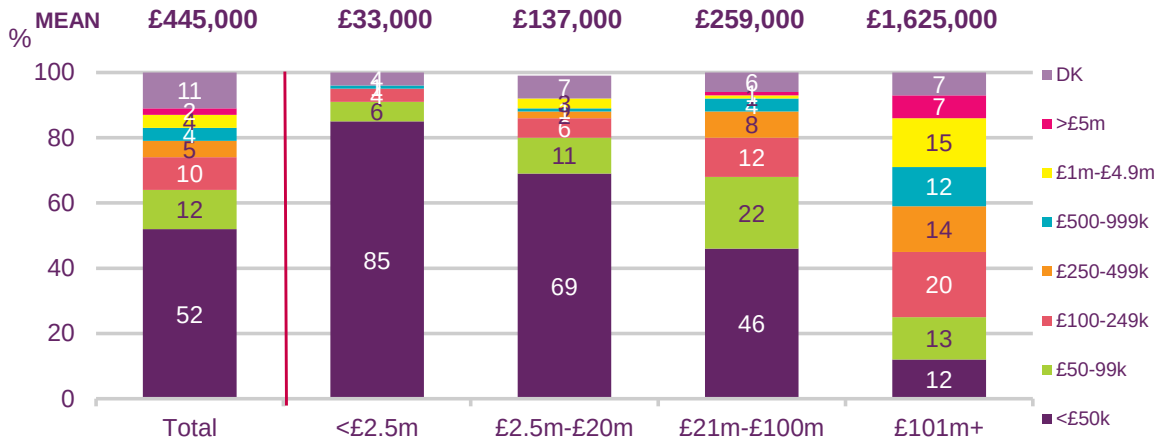
Base: *All respondents with BCS n=461*

Question: *QA2 Approximately how much does your organisation spend annually on business connectivity services within the UK across all sites?*

In figure 5.4 we see that more than 8 in 10 (85%) of companies with 10 or more employees with turnover less than £2.5m spend less than £50,000 on business connectivity in the average year. Only 12% of companies turning over more than £100m spend at this lowest level.

The average (mean) spend of high turnover companies (£1.63 million) is almost 50 times that of those with the lowest turnover (£33,000).

Figure 5.4 Annual spend on business connectivity (by company turnover)



Base: *All respondents with BCS n=461*

Question: *QA2 Approximately how much does your organisation spend annually on business connectivity services within the UK across all sites?*

5.4 How business connectivity services are managed

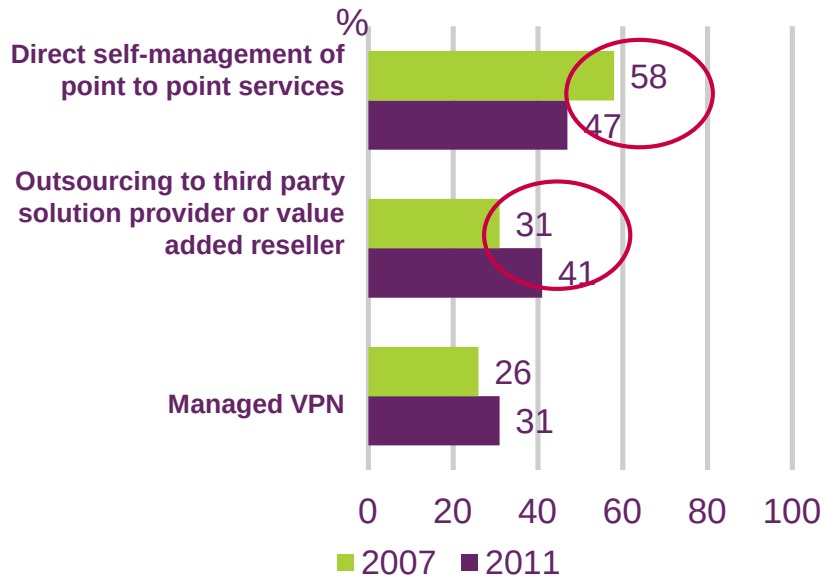
Respondents were asked to consider how their organisation managed business connectivity services, and three potential methods were described by the interviewer.

- Outsource to a third-party solutions provider (i.e. an IT/telecom consulting and/or system integrator). Outsourcing implies the transfer to a third party of management of some or all of the enterprise network (which include all/some of the business connectivity services that make it up, but can also include the management of servers' and desktop maintenance).
- A managed virtual private network can be purchased directly from a telecoms provider with the management and operations of the enterprise network being provided in-house.
- Company could purchase point to point connectivity services and manage them in-house with the management and operations of the enterprise network being provided in-house.

Respondents could select any of these to describe the management of their business connectivity services. In many cases, organisations used more than one method.

Figure 5.5 shows that as in 2007, the majority of organisations with 10 or more employees managed the services themselves, but in 2011 there is more outsourcing and less self-management than was the case in the 2007 survey.

Figure 5.5 Method of management of business connectivity services

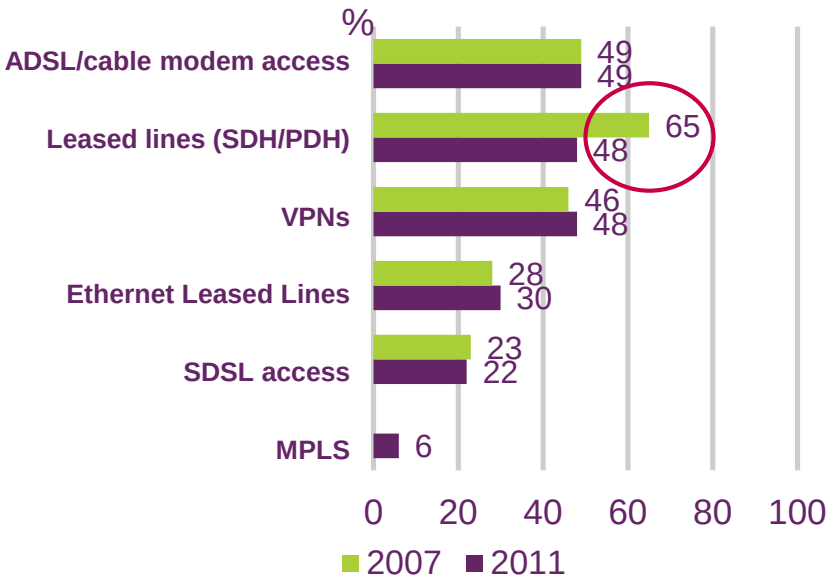


Base: All respondents with BCS n=461

Question: QA5 Which of these methods do you use to manage your business connectivity services?

Respondents from companies with 10 or more employees that were outsourcing the management of some of their business connectivity services were asked which services they were outsourcing. Figure 5.6 shows that around half of those outsourcing services in 2011 outsource ADSL/cable modem access, digital leased lines or VPNs. The proportion outsourcing digital leased lines (SDH/PDH) is significantly lower than it was in 2007 (48% vs. 65%), which would fit with the general trend towards fewer companies with 10 or more employees using these types of leased lines overall.

Figure 5.6 Services outsourced (amongst those outsourcing any services)



Base: All respondents with BCS n=461

Question: Q1b What is/are the business connectivity service(s) that you are being provided with via outsourcing?

As in 2007 (when it had a 16% market share), BT is a common provider of outsourced services. 14% of those outsourcing any business connectivity in 2011 named BT as their third party solution provider or value added reseller; leading a long tail of other suppliers each with less than 4% incidence.

5.5 Suppliers used

Respondents who did not solely outsource all of their business connectivity services were asked to name the telecom supplier(s) that their organisation uses for business connectivity services across all of their sites.

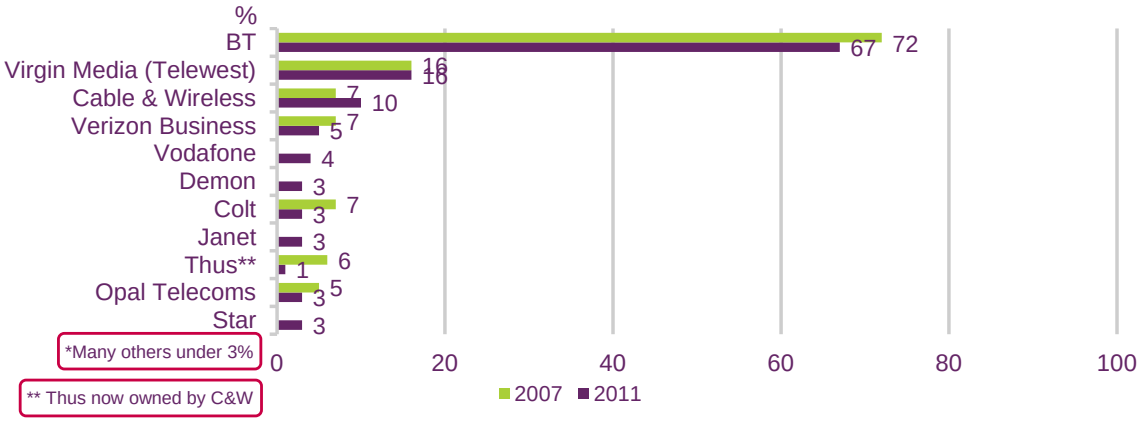
47% of respondents said they used more than one supplier (compared with 50% in 2007), and 53% use a single supplier for all BCS. The average number of suppliers used is 1.8 (rising to 2.0 amongst large businesses with more than 500 employees).

Figure 5.7 shows that 67% of our sample used BT for business connectivity services. This is a smaller proportion than we found in our 2007 sample, although BT remains the most used supplier for these services.

BT's key challengers for share of business customers with more than 10 employees are Virgin Media with 16% of our sample using this provider, (called NTL:Telewest in 2007 – also 16%) and Cable & Wireless (10%; 7% in 2007). This increase in Cable & Wireless usage is probably explained by the fact that Thus is now part of Cable & Wireless (Thus accounted for a 6% share in 2007 whereas in 2011 only 1% mentioned Thus as a supplier). Multiple smaller suppliers hold 5% or less of the market. Amongst these is Easynet (2%) and Global Crossing (1%). The latter is not used by small or medium sized companies, but represents 3% of the market amongst large companies.

Large companies (more than 500 employees) are significantly more likely to use Virgin Media (24%) or Cable & Wireless (23%) than are small or medium businesses.

Figure 5.7 business connectivity suppliers used



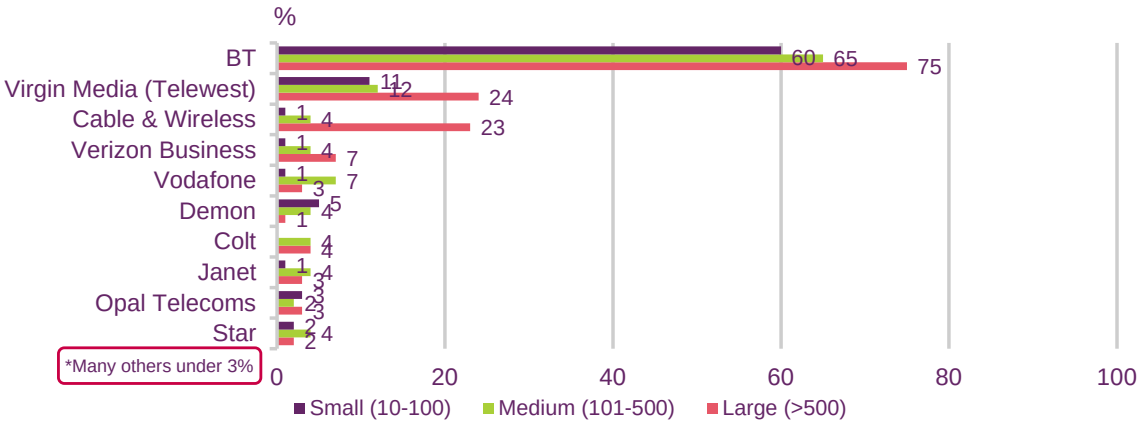
Base: *All who manage VPN or self-manage BCS i.e. don't only outsource BCS (2007 n=341; 2011 n=324)*

Question: *QB3 Which telecoms supplier or suppliers does your organisation use for your business connectivity services across all your sites?*

Figure 5.8 examines the differences in suppliers used by small, medium and large companies with 10 or more employees.

Around a quarter of large companies (more than 500 employees) use Virgin Media or Cable & Wireless for business connectivity services – significantly higher than the proportion using these in small or medium organisations.

Figure 5.8 business connectivity suppliers used



Base: *All who manage VPN or self-manage BCS i.e. don't only outsource BCS (2011 n=324) Small n=95* **CAUTION LOW BASE**; Medium n=110; Large n=119)*

Question: *QB3 Which telecoms supplier or suppliers does your organisation use for your business connectivity services across all your sites?*

Figure 5.9 offers some analysis by company size which shows that overall, larger businesses are more likely than small ones to use multiple suppliers for business connectivity services.

More than half (54%) of large companies (more than 500 employees) use more than one supplier for BCS, compared with around a third (36%) of small companies (100 employees or less). On average, a small company uses 1.5 suppliers and a large company uses 2 suppliers.

More than half (52%) of large companies use BT in addition to other suppliers. We know that large companies tend to have a greater number of different business connectivity services than do small companies.

Interestingly, figure 5.9 shows us that small companies have the greatest level of polarisation when it comes to usage of the largest supplier, BT. Although a third (33%) of small companies use BT as their sole supplier, more than a third (37%) do not use BT at all and only use other suppliers.

Figure 5.9 Number of business connectivity suppliers used

Base: *All who manage VPN or self-manage BCS i.e. don't only outsource BCS (2011 n=324) Small n=95* **CAUTION LOW BASE**; Medium n=110; Large n=119)*

Question: *QB3 Which telecoms supplier or suppliers does your organisation use for your business connectivity services across all your sites?*

5.6 Overall bandwidth available across all business connectivity

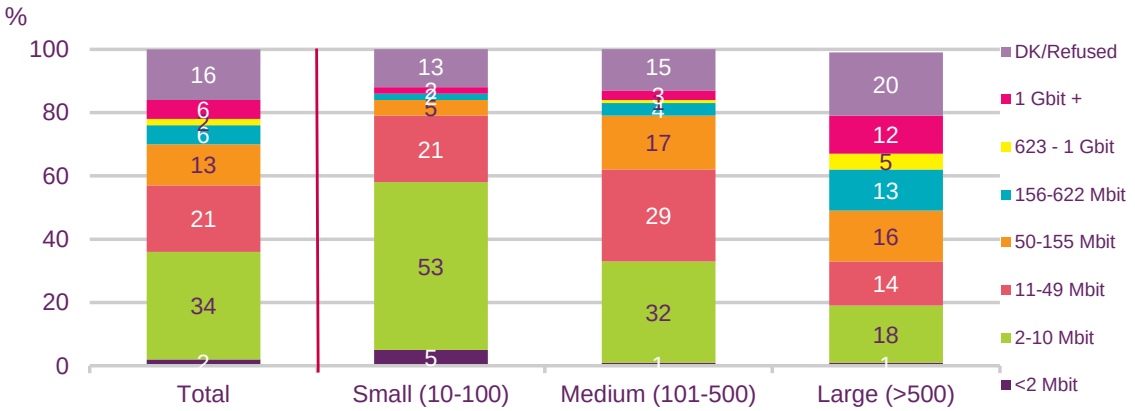
Respondents were asked to estimate the overall bandwidth available to their company for the whole of its business connectivity. They were advised that as a proxy they might consider the total number of bandwidth units they are billed for by their business connectivity provider(s).

This question was new to the 2011 survey and therefore it is not possible to make any comparisons with businesses in 2007.

Figure 5.10 shows that more than a third (34%) of all respondents (and more than half of small companies) said their company has 2-10 Mbits of bandwidth. A further fifth have 11-49 Mbit. Only 6% have more than 1 Gbit overall, but twice as many (12%) require this in large companies with more than 500 employees.

A fifth of large companies were unable to estimate their bandwidth requirements in this way.

Figure 5.10 Overall bandwidth available across all business connectivity



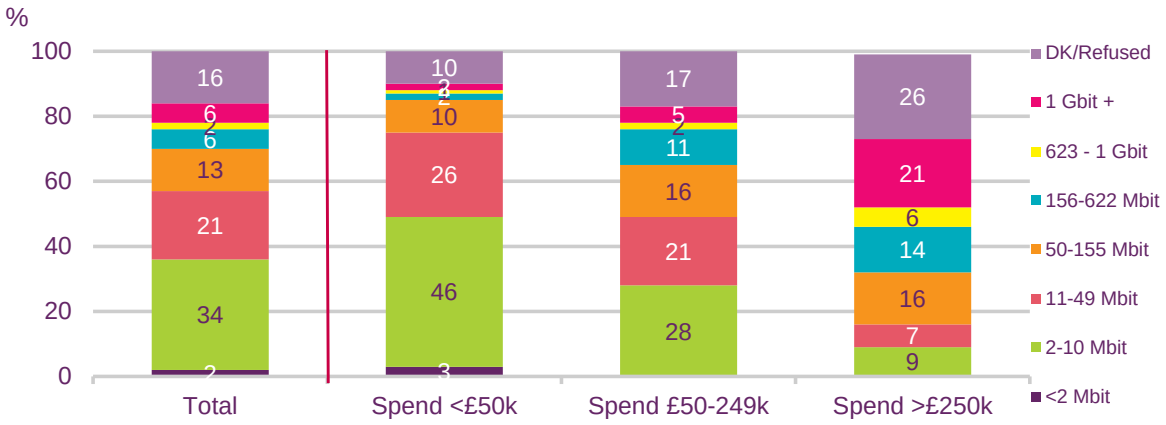
Base: *All respondents with BCS n=461*

Question: *QB8 What is the overall bandwidth needed by your company for the whole of its business connectivity? As a proxy, you could consider the total number of bandwidth units you are billed for by your business connectivity provider(s)*

Figure 5.11 looks at bandwidth needs by level of overall spend on business connectivity. There is a positive correlation; 1 in 5 of those organisations with 10 or more employees spending more than £250k per annum on BCS require 1 Gbit+ of bandwidth (and are therefore paying more to get it). Half of those spending less than £50k require only 2-10 Mbit of bandwidth.

However, those spending the most on BCS also display a lack of knowledge of the specifics of their organisational needs, with more than a quarter (26%) of those spending upwards of £250k on BCS unable to estimate the overall bandwidth availability of their company. As large companies are likely to have lots of different services across several different sites, it is perhaps not surprising that this may be difficult to calculate or estimate with any accuracy.

Figure 5.11 Overall bandwidth available across all business connectivity



Base: All respondents with BCS n=461. CAUTION LOW BASE for those spending >£250k (n=68)

Question: QB8 What is the overall bandwidth needed by your company for the whole of its business connectivity? As a proxy, you could consider the total number of bandwidth units you are billed for by your business connectivity provider(s)

5.7 Contention

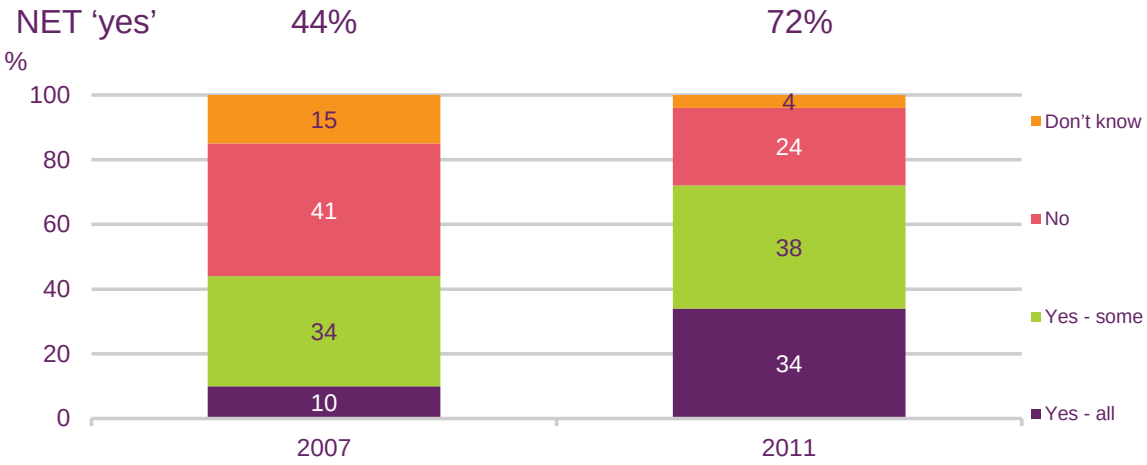
Respondents were asked whether some or all of their business connectivity services are 'contended' (figure 5.12). If required, an explanation was provided that "the bandwidth is shared amongst multiple users rather than being dedicated or reserved to a single user". This explanation was not explicit in the 2007 survey, which should be borne in mind when considering the differences between survey findings.

Business connectivity services are significantly more likely to be contended in 2011 (72% vs. 44%). A third of respondents in 2011 say that ALL such services are contended (compared with 1 in 10 in 2007).

Universal contention is higher amongst smaller companies. 48% of small companies (10-100 employees) say that all of their business connectivity services are contended, compared with 34% overall.

Bandwidth speeds have increased since 2007 and, because of this, contention may be less of a concern to businesses with 10 or more employees.

Figure 5.12 Whether some or all BCS 'contended'



Base: *All respondents with BCS n=461*

Question: *QB6B Are some or all of your business connectivity services 'contended'? In other words, the bandwidth is shared amongst multiple users rather than being dedicated or reserved to a single user*

6 Focus on specific telecom service areas

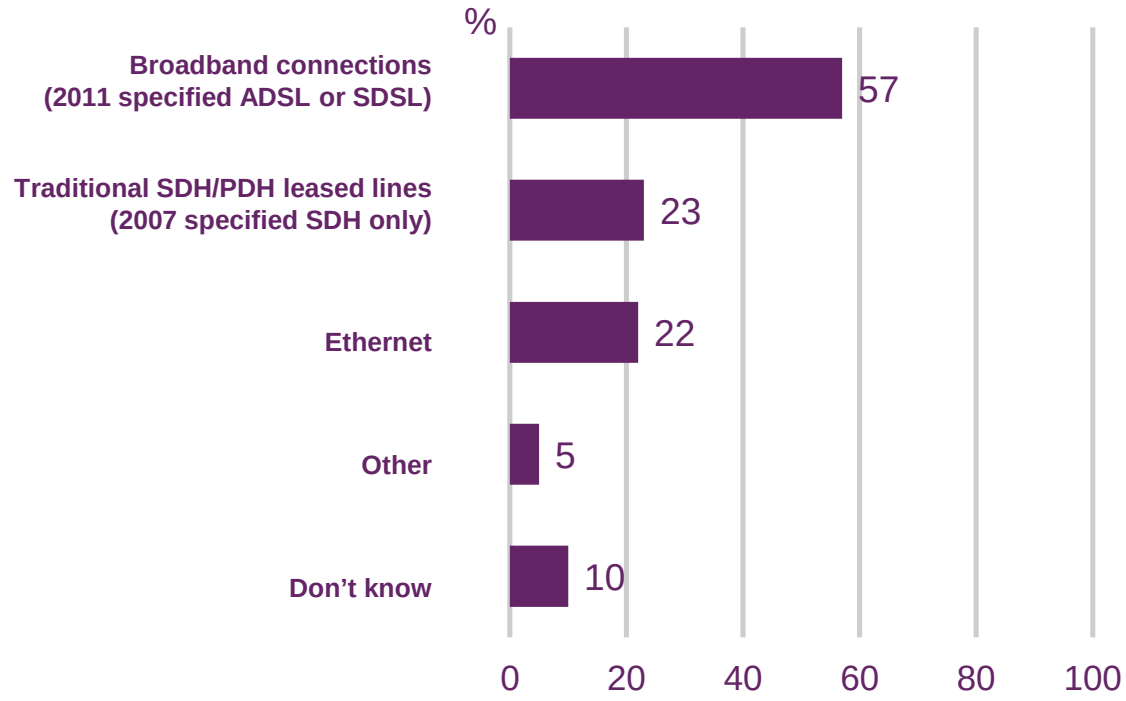
This section focuses on the specific BCS telecom services used by companies with 10 or more employees. It is important to note that at the beginning of each section, when we comment on the proportion of companies using each of these services overall, it is based on all companies with 10 or more employees (including those not using any BCS at all) i.e. a real reflection on the usage of these BCS services among companies with 10 or more employees (not just those who have use at least one BCS).

6.1 VPNs

63% of all businesses with 10 or more employees have VPNs (either underpinned by cable modem/ADSL or leased lines access links). Respondents who said that their company was being provided with Virtual Private Networks/VPNs (of either variety) were reminded that these can be delivered over a variety of business connectivity services. They were asked if they knew the underlying access technology or infrastructure used for enabling their company VPN(s).

Figure 6.1 shows that the majority (57%) of VPNs are underpinned by ADSL or SDSL broadband connections. Digital or ethernet leased lines account for just under a quarter of VPNs. 1 in 10 respondents were not sure about the underlying infrastructure of their company VPN(s).

Figure 6.1 Underlying infrastructure behind VPN(s)



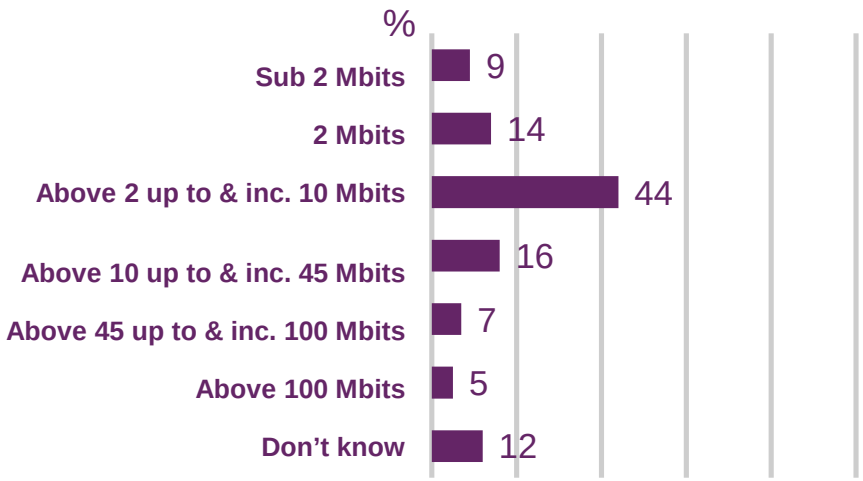
Base: All with VPNs (n=406)

Question: Do you know what the underlying access technology or infrastructure is that you use for enabling your VPNs?

Figure 6.2 examines the different bandwidths companies with 10 or more employees have for their VPN(s). Respondents were asked about bandwidths for the access links underlying VPNs, or (if unknown), the VPN bandwidth itself. Around 1 in 10 could not estimate this.

Figure 6.2 shows that more than 2 in 5 (44%) claim to have VPNs with bandwidth of above 2 up to and including 10Mbits, with smaller proportions at lower or higher levels of bandwidth. Although it is difficult to compare with 2007 due to the different bandwidths asked in the questionnaire, one consistent band tested was 'sub 2Mbits' and in 2007 59% fell into this category (compared with only 9% in 2011) demonstrating the increased VPN bandwidths used four years later.

Figure 6.2 VPN bandwidths



Base: All with VPNs (n=406)

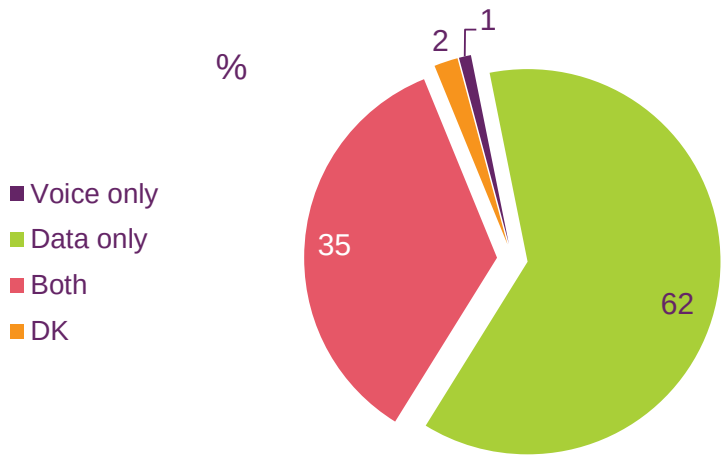
Question: QB6A For each of the following services that you use, which of the following bandwidths do you have?

6.2 VPNs underpinned by ADSL or cable modem

49% of all businesses with 10 or more employees have VPN(s) underpinned by ADSL or cable modem (rising to 68% amongst large companies with 501+ employees). Key suppliers of this type of VPN are BT (56%), Virgin Media (10%) and Cable & Wireless (5%).

Just under two thirds use ADSL/cable modem VPN(s) for data only, and around a third (35%) for both data and voice (figure 6.3).

Figure 6.3 What ADSL/cable modem VPN(s) used for (general)



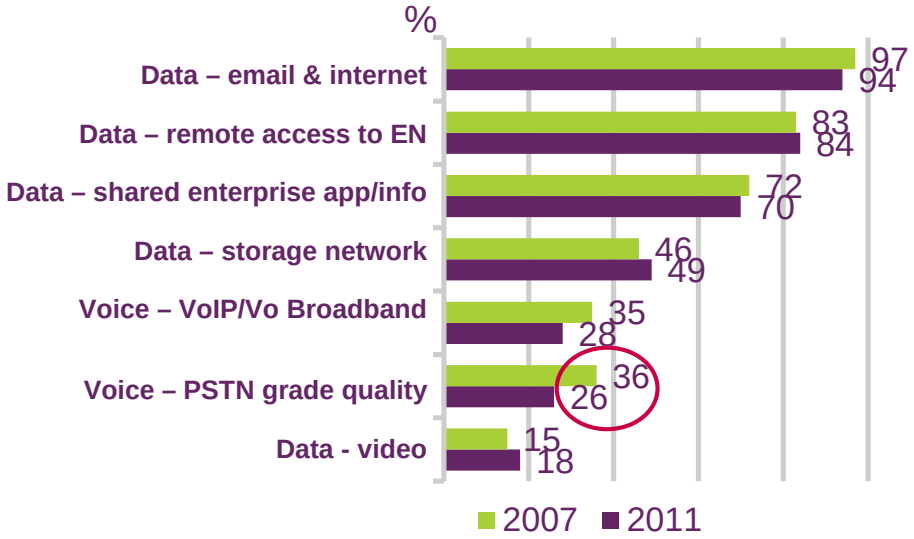
Base: All using VPNs underpinned by ADSL or cable modem (n=321)

Question: QB5A Of each of these services that you use, could you tell us whether you use it only for voice, only for data or for both services?

Looking at specific usage (figure 6.4), data is clearly the core element of these VPNs, with more than 9 in 10 using them for email/internet, more than 8 in 10 for remote access to enterprise networks and 7 in 10 for shared enterprise applications or information.

Compared with 2007, ADSL/cable modem VPN(s) are significantly less likely to be used for voice (PSTN grade quality) in 2011.

Figure 6.4 What ADSL/cable modem VPN(s) used for (specific)



Base: All using VPNs underpinned by ADSL or cable modem (2011 n=321; 2007 n=283)

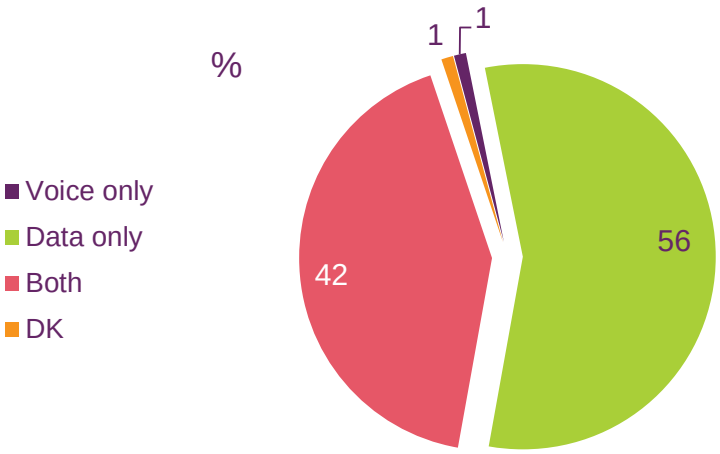
Question: QA4 For each of these can you specify whether you use them for the following business uses?

6.3 VPNs underpinned by leased lines access links

34% of all businesses with 10 or more employees have VPN(s) underpinned by leased lines access links (rising to 59% amongst large companies with 501+ employees). Key suppliers of this type of VPN are BT (50%), Virgin Media (13%), Cable & Wireless (8%) and Verizon Business (5%).

Just over half use this type of VPN(s) for data only, and two-fifths (42%) for both data and voice (figure 6.5).

Figure 6.5 What leased lines access links VPN(s) used for (general)

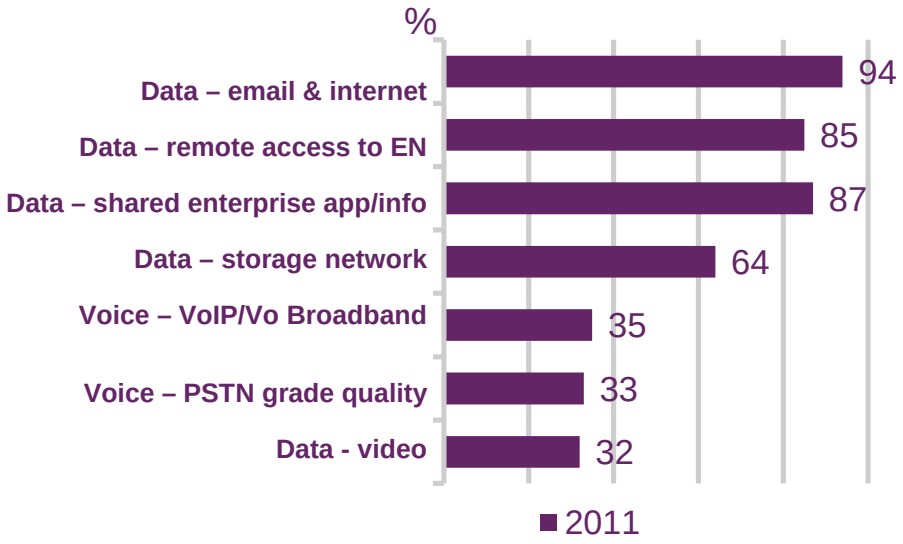


Base: *All using VPNs underpinned by leased lines across links (2011 n=217)*

Question: *QB5A Of each of these services that you use, could you tell us whether you use it only for voice, only for data or for both services?*

Looking at specific usage (figure 6.6), data is clearly the core element of these VPNs, with more than 9 in 10 using them for email/internet, and more than 8 in 10 for remote access to enterprise networks or for shared enterprise applications or information.

Figure 6.6 What leased lines access links VPN(s) used for (specific)



Base: All using VPNs underpinned by leased lines across links (2011 n=217)

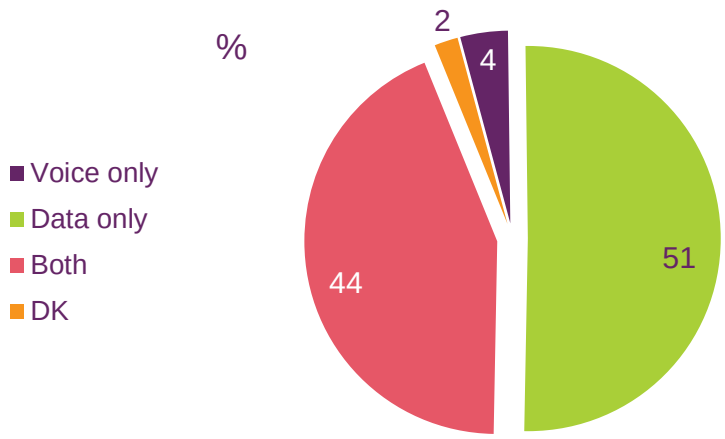
Question: QA4 For each of these can you specify whether you use them for the following business uses?

6.4 SDSL

22% of all businesses with 10 or more employees claim to have SDSL (rising to 44% amongst large companies with 501+ employees).This figure is higher than we would expect and it is quite possible that some businesses misunderstood or misheard the term and confused it with DSL (standard broadband).

Key suppliers of SDSL are BT (40%), Virgin Media (7%), Cable & Wireless (5%) and Easynet (5%). Just over half use SDSL for data only, and two-fifths (44%) for both data and voice (figure 6.7).

Figure 6.7 What SDSL used for (general)

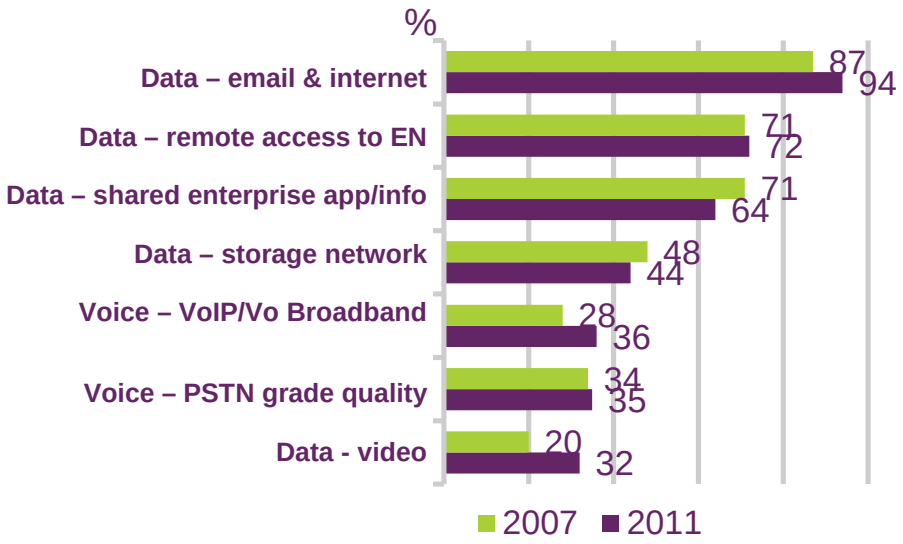


Base: *All using SDSL (n=143)*

Question: *QB5A Of each of these services that you use, could you tell us whether you use it only for voice, only for data or for both services?*

Looking at specific usage (figure 6.8), data is clearly the core element of these VPNs, with more than 9 in 10 using them for email/internet, around 7 in 10 for remote access to enterprise networks and almost two-thirds (64%) or for shared enterprise applications or information.

Figure 6.8 What SDSL used for (specific)

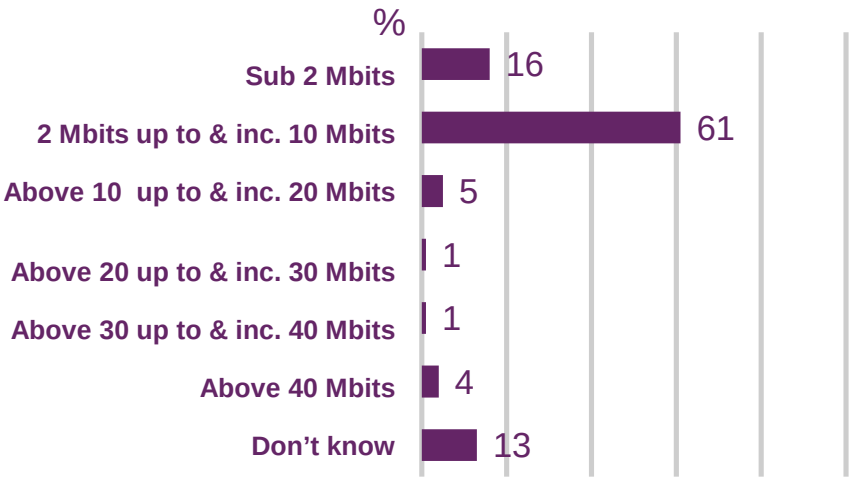


Base: All using SDSL (2011 n=143; 2007 n=116)

Question: QA4 For each of these can you specify whether you use them for the following business uses?

Figure 6.9 examines the different bandwidths companies with 10 or more employees have for SDSL. Around 1 in 10 could not estimate this. Figure 6.9 shows that 3 in 5 (61%) have SDSL with bandwidth of 2-10 Mbits (inclusive), with smaller proportions at lower or higher levels of bandwidth. At the time of this research, the highest-speed SDSL solution available was 8Mbit/s and so it's clear that knowledge levels are fairly low when 11% claim to have bandwidths of over 10 Mbit/s. When combined with the 13% not knowing, we have one in four either saying "don't know" or giving an implausible answer.

Figure 6.9 SDSL bandwidths



Base: All using SDSL (n=143)

Question: QB6A For each of the following services that you use, which of the following bandwidths do you have?

6.5 Analogue leased lines

Less than 1 in 10 (9%) of all businesses with 10 or more employees have analogue leased lines. This rises to a fifth (20%) of larger companies (with 501+ employees). Because of this low incidence (representing only 58 respondents), statistical analysis is not suitable here, but some of the characteristics of analogue leased lines are detailed below:

- They are used for both voice and data, but unlike other business connectivity services, a higher proportion of businesses with 10 or more employees use analogue leased lines for voice only.
- Core uses are voice (PSTN grade quality) and data (email & internet).
- The most likely provider is BT, with smaller proportions using Virgin Media, Cable & Wireless or Vodafone.[10]

[10] **Ofc**om's market data suggests that Vodafone is not a provider of analogue leased lines. This may suggest that some respondents may have confused analogue leased lines with standard voice services. So the actual proportion of businesses surveyed using analogue leased lines may have been lower if this were taken into account.

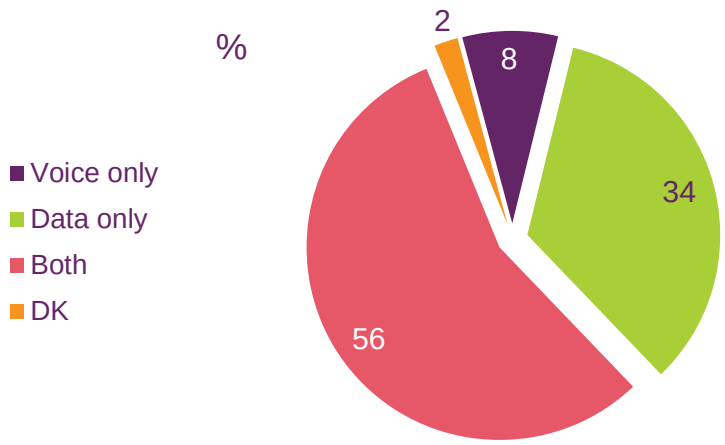
6.6 Digital (SDH/PDH) leased lines

24% of all businesses with 10 or more employees have digital (SDH/PDH) leased lines (rising to 40% amongst large companies with 501+ employees).

Key suppliers of digital leased lines are BT (49%), Virgin Media (15%) and Cable & Wireless (9%).

More than half (56%) use digital leased lines for both voice and data, and a further third (34%) for data only (figure 6.10).

Figure 6.10 What digital leased lines used for (general)

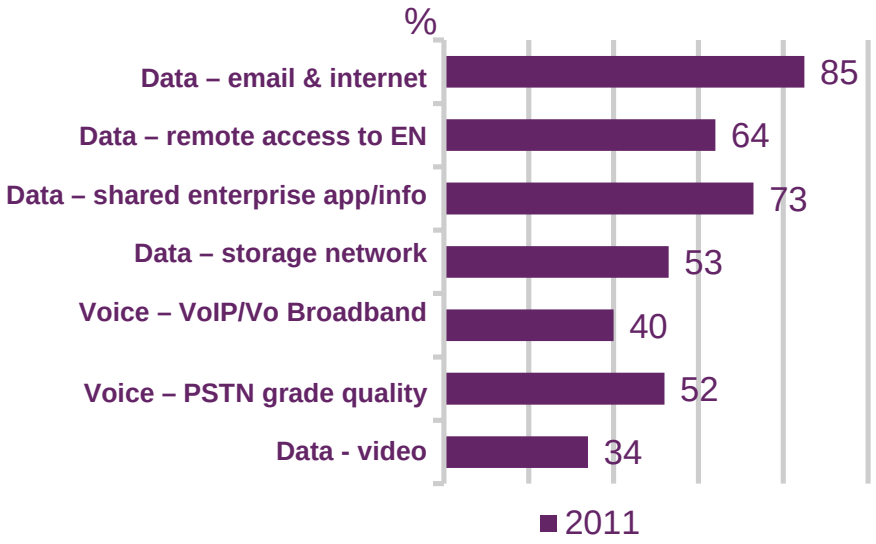


Base: *All using Digital (SDH/PDH) Leased Lines (n=155)*

Question: *QB5A Of each of these services that you use, could you tell us whether you use it only for voice, only for data or for both services?*

Looking at specific usage (figure 6.11), data is the core element, with more than 8 in 10 using digital SDH/PDH leased lines for email & internet, three-quarters (73%) for shared enterprise applications or information, and just under two-thirds (64%) for remote access to enterprise networks.

Figure 6.11 What digital SDH/PDH leased lines used for (specific)

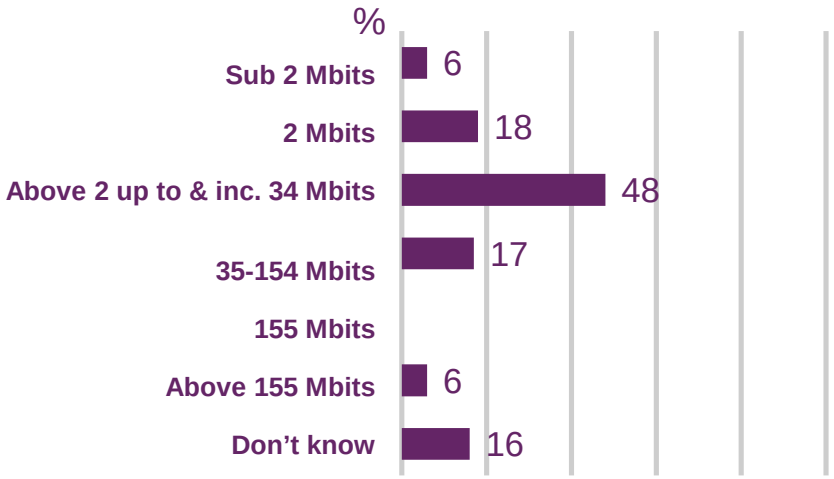


Base: All using Digital (SDH/PDH) Leased Lines (n=155)

Question: QA4 For each of these can you specify whether you use them for the following business uses?

Figure 6.12 examines the different bandwidths that companies with 10 or more employees have for digital SDH/PDH leased lines. 16% could not estimate this. Figure 6.12 shows that around half (48%) have digital leased lines with bandwidth of above 2 up to and including 34 Mbits, with smaller proportions at lower or higher levels of bandwidth. Although it is difficult to compare with 2007 due to the different bandwidths asked in the questionnaire, one consistent band tested was 'sub 2Mbits' and in 2007 53% fell into this category (compared with only 6% in 2011) demonstrating the increased SDH/PDH bandwidths used four years later.

Figure 6.12 Digital (SDH/PDH) leased lines bandwidths



Base: All using Digital (SDH/PDH) Leased Lines (n=155)

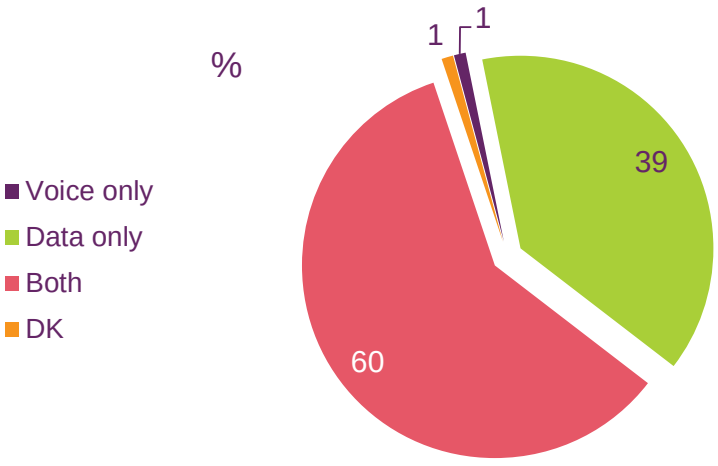
Question: QB6A For each of the following services that you use, which of the following bandwidths do you have?

6.7 Ethernet leased lines

20% of all businesses with 10 or more employees have Ethernet leased lines (rising to 40% amongst large companies with 501+ employees). Key suppliers of Ethernet leased lines are BT (55%), Virgin Media (20%), Cable & Wireless (7%) and Colt (5%).

60% use Ethernet leased lines for both voice and data, and 39% for data only (figure 6.13).

Figure 6.13 What Ethernet leased lines used for (general)

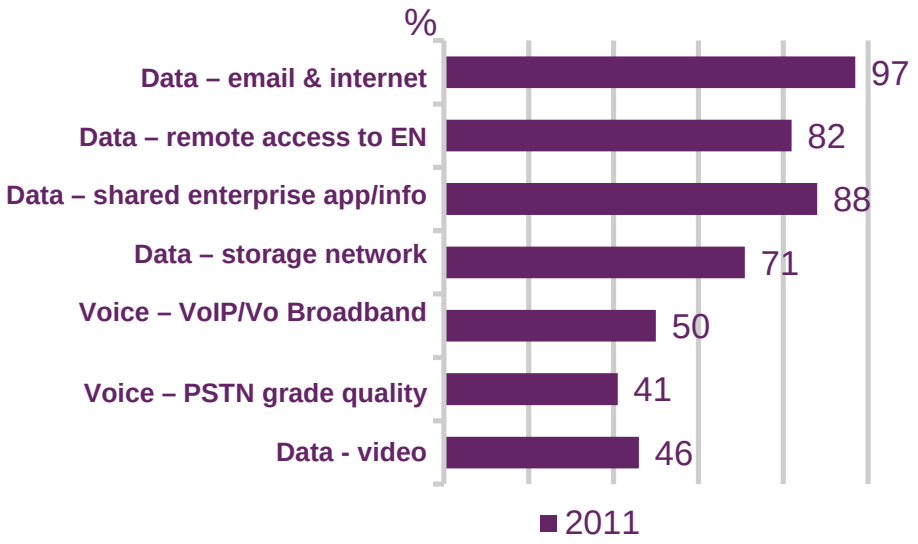


Base: All using Ethernet Leased Lines (n=133)

Question: QB5A Of each of these services that you use, could you tell us whether you use it only for voice, only for data or for both services?

Looking at specific usage (figure 6.14), data is clearly the core element of Ethernet leased lines, with more than 9 in 10 using them for email/internet, around 9 in 10 for shared enterprise applications or information, and 8 in 10 for remote access to enterprise networks.

Figure6.14 What Ethernet leased lines used for (specific)

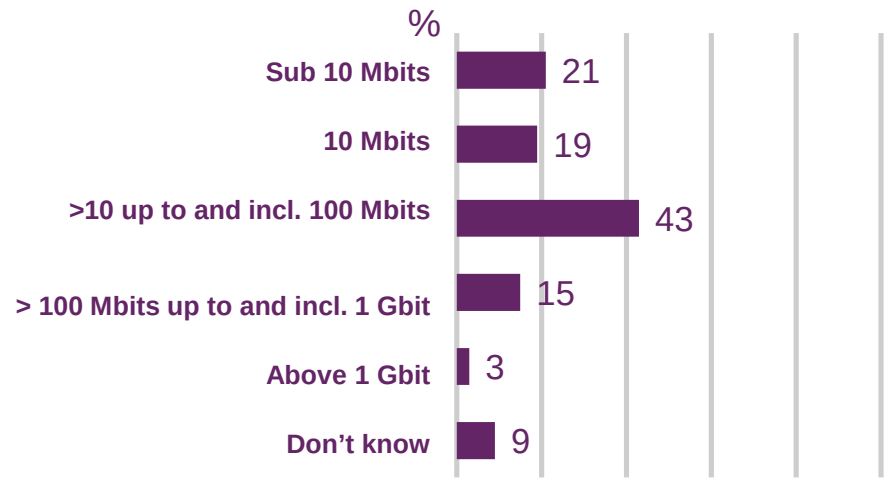


Base: All using Ethernet Leased Lines (n=133)

Question: QA4 For each of these can you specify whether you use them for the following business uses?

Figure 6.15 examines the different bandwidths companies with 10 or more employees have for Ethernet leased lines. Around 1 in 10 could not estimate this. Figure 6.15 shows that more than two-fifths (43%) have Ethernet leased lines with bandwidth of above 10 up to and including 100 Mbits, with smaller proportions at lower or higher levels of bandwidth. Although indicative (due to small sample sizes), it is likely that smaller companies have lower Ethernet bandwidths than larger ones.

Figure 6.15 Ethernet leased lines bandwidths



Base: All using Ethernet Leased Lines (n=133)

Question: QB6A For each of the following services that you use, which of the following bandwidths do you have?

7 Business needs

7.1 Summary

The top 3 requirements rated as either business critical or very important are availability (97%), bandwidth – download speed (88%) and resilience (87%).

Availability and resilience are core service features that businesses with 10 or more employees regard as "business critical". 8 in 10 companies with 10 or more employees say that **availability** is business critical and more than half say the same about **resilience**. Bandwidth download speed is also a key factor, but companies with 10 or more employees are more likely to say it is "very important" than critical.

Availability and resilience will continue to be crucial to business success, with around 60% expecting these to retain their current high levels of importance, and 40% expecting them to grow in importance.

As was the case in 2007, businesses with 10 or more employees say bandwidth (both upload and download speed) are most likely to increase in future importance. Around half say that these will become more important over the next couple of years.

9 in 10 businesses with 10 or more employees have reviewed business connectivity services within the last 3 years, and 6 in 10 have made changes as a result. The most likely changes are adding a service or changing a supplier. Around 2 in 5 are likely to take-up new voice or data services in the next 12 months.

7.2 Relative importance of different service features

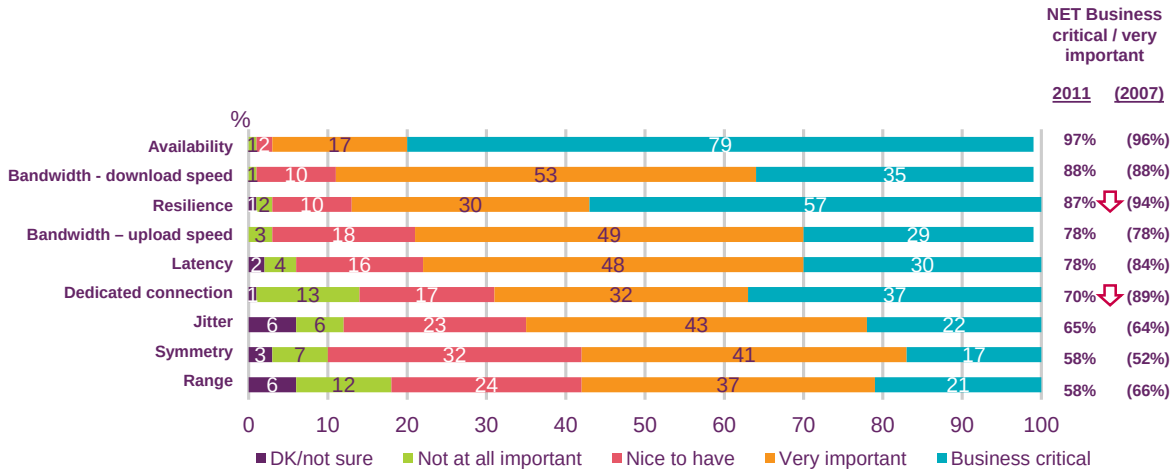
Respondents were asked to consider how important various service features were to them when making decisions about their company's business connectivity services. They were asked to rate nine features on a semantic scale of 1 to 4; where 1 means "business critical", 2 means "very important", 3 means "nice to have" and 4 means "not at all important".

Figure 7.1 shows what were considered to be the most important features out of those presented to respondents.

Although we compare the 2007 and 2011 research findings, it's important to bear in mind that in 2011 (unlike in 2007), full definitions of the service features were provided to support any respondent uncertainty. These were:

- Dedicated connection (reserved for one user)
- Bandwidth - download speed
- Bandwidth - upload speed
- Symmetry (guarantees same upload and download bandwidth)
- Availability (a measure of reliability)
- Resilience (provides option for a second data path to provide higher availability)
- Latency (a measure of the end to end delay in transmission of data)
- Jitter (a measure of variation of delay in transmission of data)
- Range (the distance between end-user premises over which the service is available)

Figure 7.1 Relative importance of service features



Base: All respondents with BCS (2011 n=461; 2007 n=450)

Question: QC1 When making decisions about your company business connectivity services, please state how important to your business the following service features are on a scale of 1 to 4 where 1 means business critical, 2 means very important, 3 means nice to have and 4 means not at all important.

Figure 7.1 shows that availability, bandwidth-download speed and resilience are rated business critical or very important by more than 8 in 10 businesses with 10 or more employees. More than three-quarters (79%) say that the availability of the service is "business critical". Resilience is rated "business-critical" by more than half. Bandwidth-download speed is more likely to be seen as "very important" (53%) than "business-critical" (35%).

Compared with 2007, ratings of services being "business critical/very important" have decreased significantly for resilience and dedicated connection. Whereas resilience continues to rank in the top 3 most important factors, dedicated connection slips from third to sixth position in 2011. 61% rated dedicated connection as "business critical" in 2007, compared with only 37% in 2011.

Dedicated connection polarises opinion somewhat. Although more than a third (37%) describes it as "business critical", a similar proportion (30%) rate it as "nice to have" or "not at all important"; and its relative importance is in decline. Dedicated connection is significantly more important to large companies; with 77% rating it "business critical/very important") compared with 61% of small ones.

Compared with small companies (10 to 100 employees), large companies (with more than 500 employees) place significantly more importance on latency, resilience & dedicated connection. Compared with small or medium-sized (101-500 employees) companies, large companies place significantly more importance upon jitter (76% rating it "business critical/very important").

We found no significant differences in ratings of the importance of resilience amongst those using a single supplier or multiple suppliers.

7.3 Anticipation of changes in future importance over the next 2 years

Using the same list and definitions of service features, respondents were then asked to think about the business connectivity requirements of their company over the next two years, and consider whether these service features were likely to become more important, less important or to stay about the same.

Figure 7.2 shows which service features respondents feel will grow, decline or stay the same in terms of importance to business connectivity. There were no significant differences by company size or other key sub-groups.

As in 2007, respondents feel that bandwidth (both download and upload speed) is the area most likely to grow in importance. In 2007, few thought that dedicated connection would increase in importance with most feeling it would retain the same importance in future. In fact, as we have discussed earlier, dedicated connection has actually decreased in relative importance over the past four years.

Figure 7.2 Features of BCS that will increase in importance over next 2 years

Base: All respondents with BCS (2011 n=461; 2007 n=450)

Question QC2: Now thinking about your business connectivity requirements for the next two years please state whether each of these same service features is likely to become more important, less important or stay about the same in importance to your business?

Figure 7.2 shows that just under half of respondents (similar to 2007) think that bandwidth download or upload speed will become more important to their company over the next two years. Availability and resilience will continue to be crucial to business success, with around 3 in 5 expecting these to retain their current high levels of importance, and around 2 in 5 expecting them to grow in importance.

Very few respondents think that these services are likely to decline in importance. 5% feel this is true of dedicated connection, in which case it would continue its downward trajectory from a top 3 ranked factor in 2007.

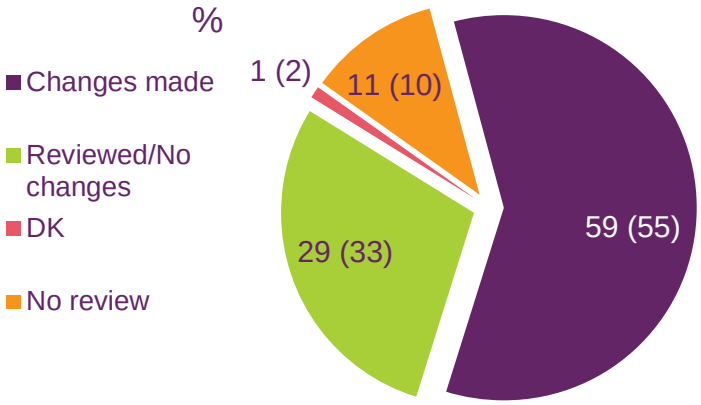
7.4 Reviews & changes of services in past 3 years

Respondents were asked whether or not their business had reviewed its business connectivity services within the last 3 years and, as in 2007, the vast majority had done so.

Figure 7.3 shows that 9 in 10 (89%) of businesses with 10 or more employees had reviewed their BCS and 6 in 10 (59%) of all businesses with 10 or more employees had made changes as a result of such a review.

Small companies (10-100 employees) are significantly less likely to have reviewed (80%) their business connectivity services than are medium (92%) or large companies (95%).

Figure 7.3 Whether reviewed/changed any BCS

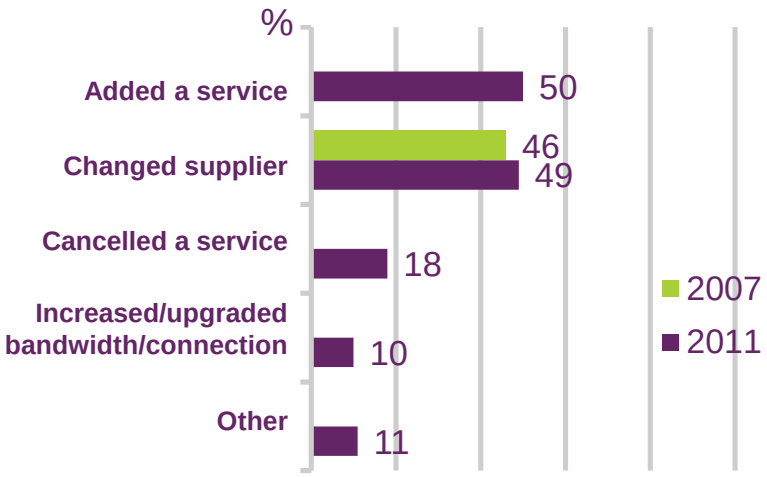


Base: *All respondents with BCS (2011 n=461, 2007 n=450)*

Question: *QC3 Has your business reviewed its business connectivity services within the last 3 years? QC4 Did you change any of your business connectivity services at that time?*

Figure 7.4 shows that amongst those making changes as a result of a review of BCS, around half added a service or changed a supplier for a service. Cancelling a service is much rarer – with just under 1 in 5 stating this as a change they had made.

Figure 7.4 What changes were made to business connectivity services (amongst those making changes)



Base: All making changes (2011 n=270; 2007 n=247)

Question: QC4B What changes did you make to your business connectivity services at that time?

50% of those making changes had added a service, and figure 7.5 shows that a myriad of services might be included in this; notably leased lines or ADSL.

Figure 7.5 Services added (based on all making changes)

	%
ANY	50
Leased line	11
ADSL	7
Ethernet/Ethernet leased line	5
MPLS	5
Increased/upgraded bandwidth	5
Broadband service	3
Fibre	3
VPNs	2
Other	16

Base: All making changes (n=270)

Question: QC4B What changes did you make to your business connectivity services at that time?

Only 48 respondents (18% of those making changes) had cancelled services as a result of a review to their business connectivity services, and figure 7.6 shows which services were cancelled in terms of absolute numbers.

Figure 7.6 Services cancelled (based on all making changes)

	#
ANY	48
ADSL	11
Digital leased line/leased line	8
ISDN	6
SDSL	5
Broadband	4
Point to point lines	2

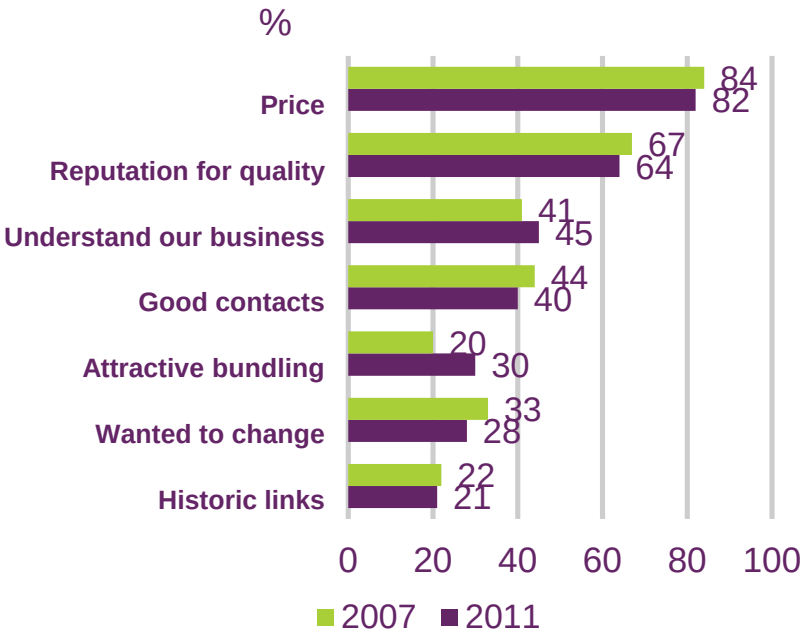
Base: All making changes (n=270)

Question: QC4B What changes did you make to your business connectivity services at that time?

49% of those making changes had changed a supplier (similar to 46% recorded in 2007), and figure 7.7 shows that price was the key driver of new supplier choice. Those changing supplier were asked what had been the key factors driving them to select one service provider over the others.

Amongst those changing supplier, more than 8 in 10 (82%) cited price as a driving factor and 64% mentioned the supplier's reputation for quality. More than a quarter (28%) simply wanted to change.

Figure 7.7 Drivers of supplier selection (amongst those changing supplier)



Base: All changing supplier for any of their services (2007 n=185; 2011 n=132)

Question: QC5 What were the key factors driving you to select one service provider over the others?

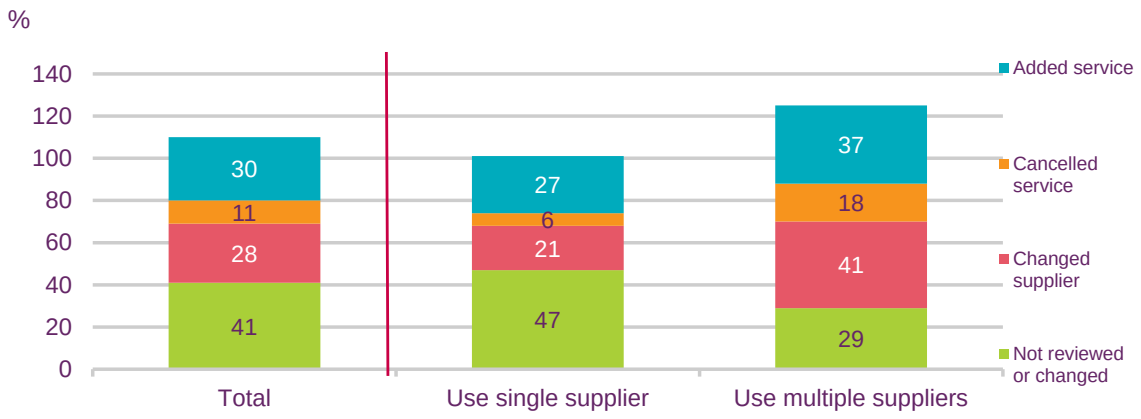
Those with multiple suppliers are significantly more likely than businesses with 10 or more employees with a single supplier to have made changes as a result of a review (71% vs. 53%). In particular (Figure 7.8), businesses with 10 or more employees with multiple suppliers are more likely to have changed a supplier or cancelled a service than are businesses using a single provider of business connectivity services.

Figure 7.8 looks at the incidence of certain changes amongst the market as a whole. 59% have made changes to their business connectivity services as a result of a review in the past 3 years, whilst 41% have either not reviewed or reviewed but not made any changes.

Just under a third of all respondents have added a service or changed supplier, whilst around 1 in 10 has cancelled a service.

Businesses with 10 or more employees using multiple suppliers are three times as likely to have cancelled a service (18% vs. 6%) and twice as likely to have changed a supplier (41% vs. 21%) than are those using a sole supplier for their business connectivity services.

Figure 7.8 What changes were made to business connectivity services (based on all)



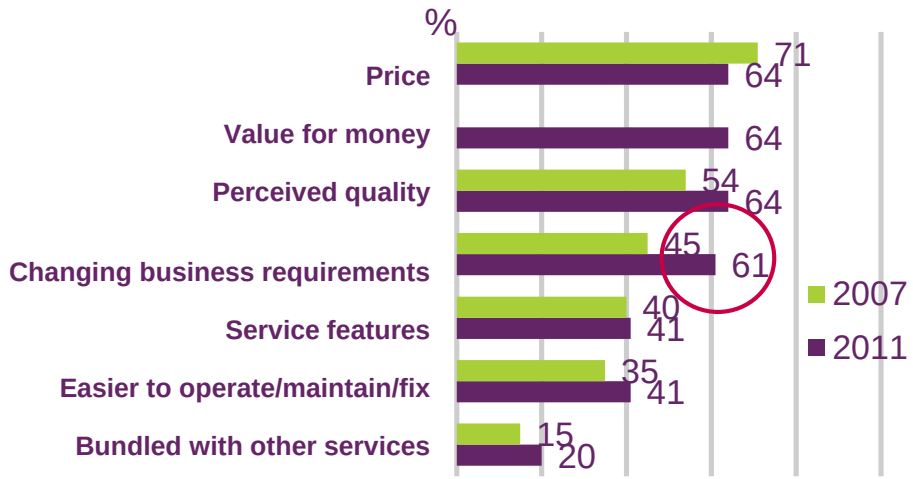
Base: *All respondents with BCS (2011 n=461; use one supplier only n=172; use more than one supplier n=152)*

Question: *QC3 Has your business reviewed its business connectivity services within the last 3 years? QC4A Did you change any of your business connectivity services at that time? QC4B What changes did you make to your business connectivity services at that time?*

Those making any changes were asked about the key factors driving them to select one business connectivity service type over others at the time of review.

Figure 7.9 shows that driving forces are a combination of price and perceptions of the quality of the product/service received; value for money in other words. Around 2 in 3 (64%) of those making changes cite price, value or perceived quality as reasons behind their choosing one business connectivity service rather than another. These factors were consistent across the sample. Please note that 'value for money' was asked as a separate factor in 2011 (not in 2007).

Figure 7.9 Key factors driving selection of one BCS type over others at time of review (amongst those making changes)



Base: All making changes (2011 n=270; 2007 n=247)

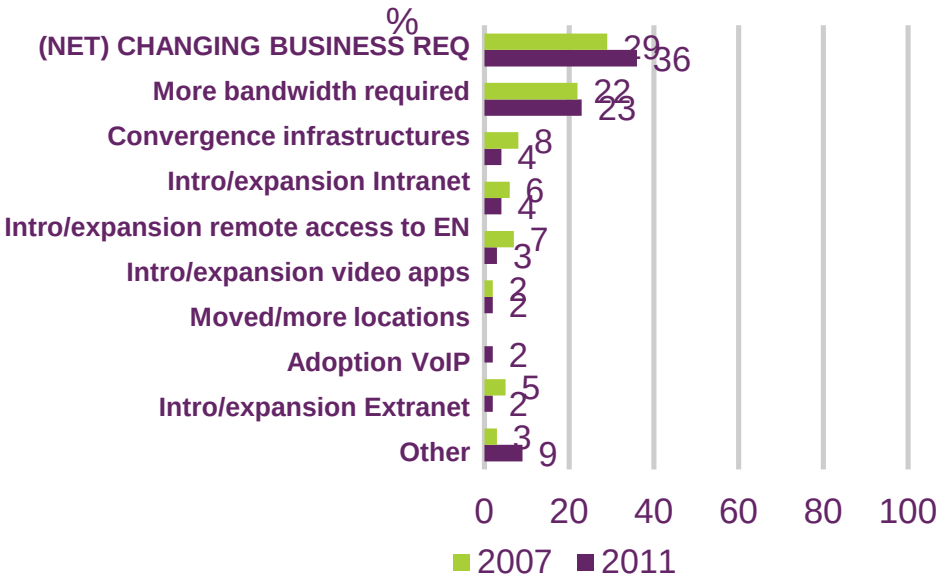
Question: QC4C What were the key factors driving you to select one business connectivity service type over the others at this time?

61% of those making any changes say that changes to their business requirements was a key factor behind selection of BCS type – a significantly higher proportion than it was amongst those making changes in 2007(when 45% gave this as a reason).

If we look at the overall proportion of businesses with 10 or more employees citing changes to business requirements (figure 7.10), the data is more in line across the two surveys, with more than a third (36%) of all respondents in 2011 (vs. 29% in 2007) saying that they made changes to BCS as a result of changing business requirements.

The key change to business requirements is a need for more bandwidth (figure 7.10). Almost a quarter (23%) overall (and 63% amongst those who have made changes as a result of changed business requirements) cite "more bandwidth required" as the business need behind the change.

Figure 7.10 Detail on changes to business requirements (based on all respondents)



Base: *All respondents with BCS (2007 n=450; 2011 n=461)*

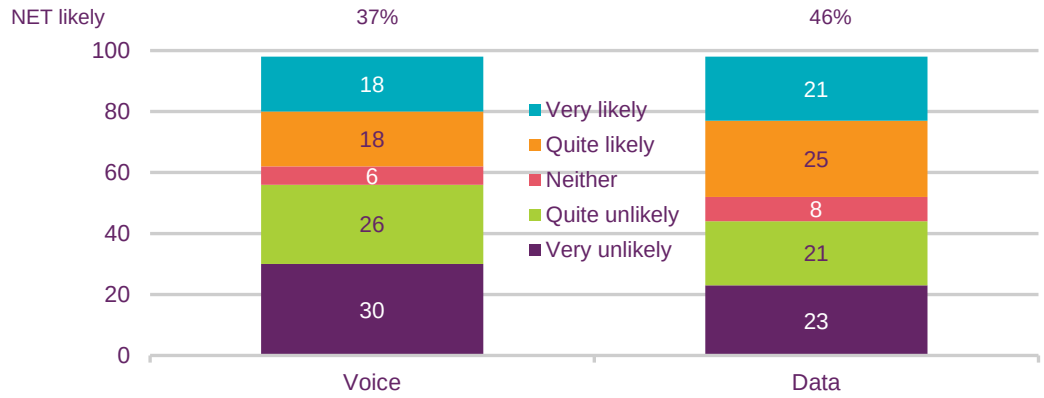
Question: *QC4C What were the key factors driving you to select one business connectivity service type over the others at this time? QC4D You mentioned that you changed service(s) as a result of changing business requirements; could you indicate what those requirements were?*

7.5 Likelihood of taking on extra services in the next 12 months

Those using voice or data services were asked how likely they would be to take on any extra voice or data services in the next 12 months (figure 7.11).

Just over a third (37%) said they would be very or quite likely to take on extra voice services, and approximately a half (46%) said the same about extra data services.

Figure 7.11 Likelihood of take-up of extra services in next 12 months



Base: All respondents with BCS and using VOICE (n=258); All respondents with BCS and using DATA (n=442)

Question: QD6A How likely are you to take on any extra VOICE / DATA services, in the next 12 months?

Large businesses (with more than 500 employees) are more likely than small ones (10-100) to plan the take-up of new voice (43% vs. 21% "likely") or data services (59% vs. 30% "likely").

8 Switching

8.1 Summary

Businesses with 10 or more employees are more likely to take on new voice or data services than they are to switch existing services. 2 in 3 companies say they are very or quite unlikely to switch voice or data services in the next 12 months.

Several issues affect a company's ability and desire to switch supplier for BCS:

- 49% of companies with 10 or more employees are currently locked into existing contracts for 2 to 5 years.
- Only 41% of companies with 10 or more employees say that their BCS are all purchased as single products; for the rest, bundles and packages could restrict the ease with which switching might take place.
- 53% of businesses with 10 or more employees use a single supplier for all BCS. Switching to another could be risky; taking on an extra could be more difficult to manage.

Price is a key barrier to switching (presumably because of existing deals/relationships and/or bundling packages), but many (especially large companies) are locked into contracts or concerned about the hassle and risk factors a switch might entail.

More than half of businesses with 10 or more employees show an interest in switching services in future in order to benefit from superfast broadband.

8.2 Issues potentially affecting switching

Business connectivity services are vital to today's companies, so switching them is unlikely to be a straightforward decision; not least because of a number of barriers likely to be in place.

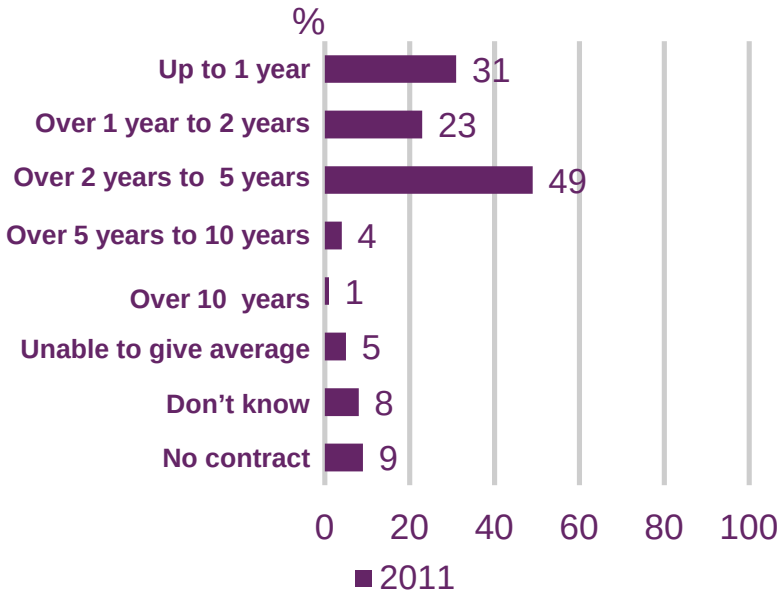
Contracts, bundling and supplier management issues are three key areas potential switchers will need to consider before taking the plunge to switch a service and/or a supplier of business connectivity services.

8.2.1 Contracts

Figure 8.1a shows that around half of companies with 10 or more employees are locked into a 2-5 year contract with an existing supplier for a business connectivity service. A quarter will have to wait 1-2 years before a switch might be possible, and a further third could start to shop around within the next 12 months.

Contracts more than 5 years in duration are rare – but still experienced by 5% of businesses with 10 or more employees.

Figure 8.1a Typical length of BCS contract

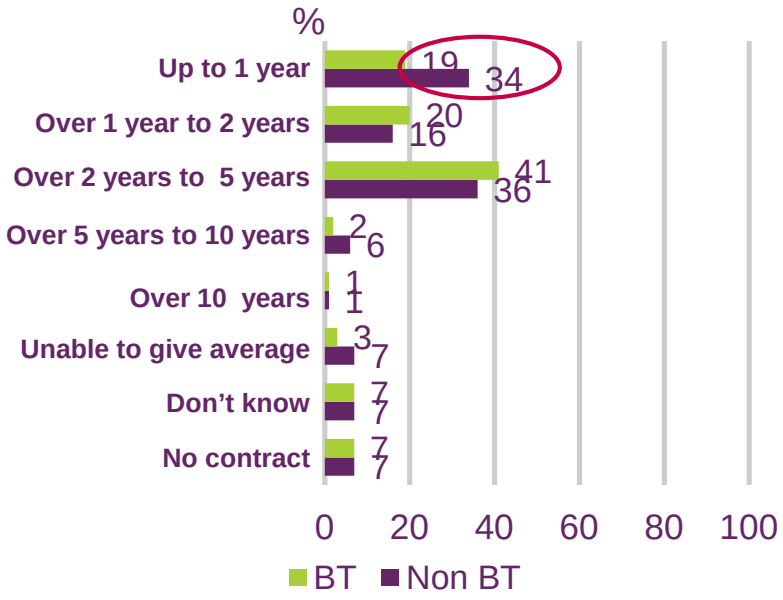


Base: All respondents not outsourcing all BCS and naming a BCS supplier (2011 n=319 (multiple coding as respondent was asked about each company used))

Question: QD1 From start to end, how long is your current business connectivity contract with (COMPANY)?

Figure 8.1b compares BT contract lengths (respondents specifically answering about their contracts with BT) with non-BT (a combination of respondents specifically answering about their contracts with providers other than BT). This shows that BT contracts do differ from non-BT contracts in that significantly fewer BT contracts are for less than one year in length (19% vs. 34%). The average (mean) contract length is the same: 2.7 years.

Figure 8.1b: Typical length of BCS contract (BT vs. non-BT combined)



Base: All respondents not outsourcing all BCS and naming a BCS supplier (BT n=218; non-BT n=101)

Question: QD1 From start to end, how long is your current business connectivity contract with (COMPANY)?

8.2.2 Bundling

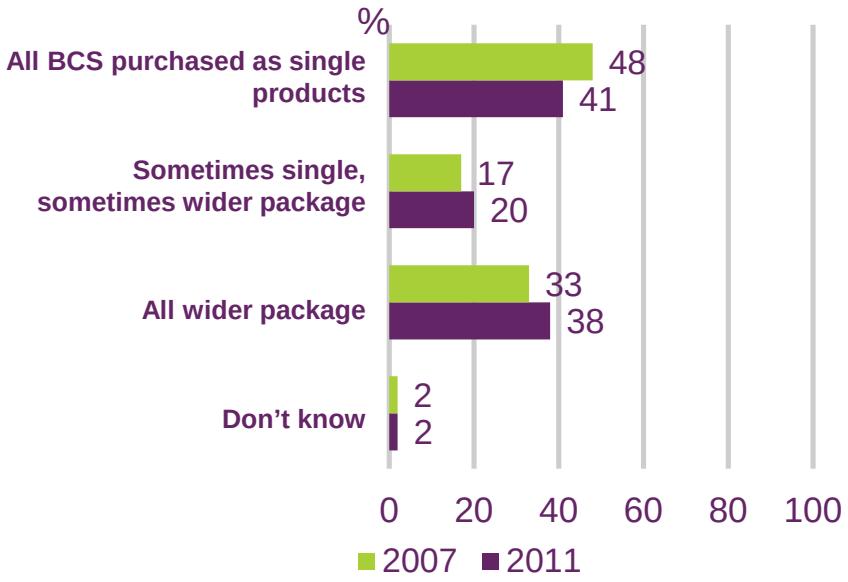
In addition to the presence of long term contracts, it is important to bear in mind that many businesses with 10 or more employees buy business connectivity services as wider packages (or "bundles") rather than as discrete single products; so complicating the prospect of switching to something else.

Figure 8.2 shows that businesses with 10 or more employees buy a mix of single products and wider packages. Only 2 in 5 purchase ALL business connectivity services as single products. Many others will have to consider the impact of any potential switch of service or supplier on the other products which make up a bundled service or grant them the benefits of preferential pricing or service elements as a result of taking packages rather than single products.

Those with just one supplier for all business connectivity services are significantly more likely than those with multiple suppliers to say they purchase all BCS as part of a wider package (40% vs. 26%). Switching is therefore likely to affect multiple business connectivity services and potentially impact more widely and significantly across the business.

We found no significant differences by those who are with BT or other suppliers (combined due to low individual supplier sample sizes) regarding their means of buying services.

Figure 8.2 Product vs. package



Base: All respondents (2011 n=461; 2007 n=450)

Question: QD2 Do you purchase business connectivity services as a single product or as part of a wider network solution or telecoms package?

8.2.3 Supplier management issues

As we described in Section 5, 47% of businesses with 10 or more employees use more than one supplier for business connectivity services and the other 53% use a single supplier.

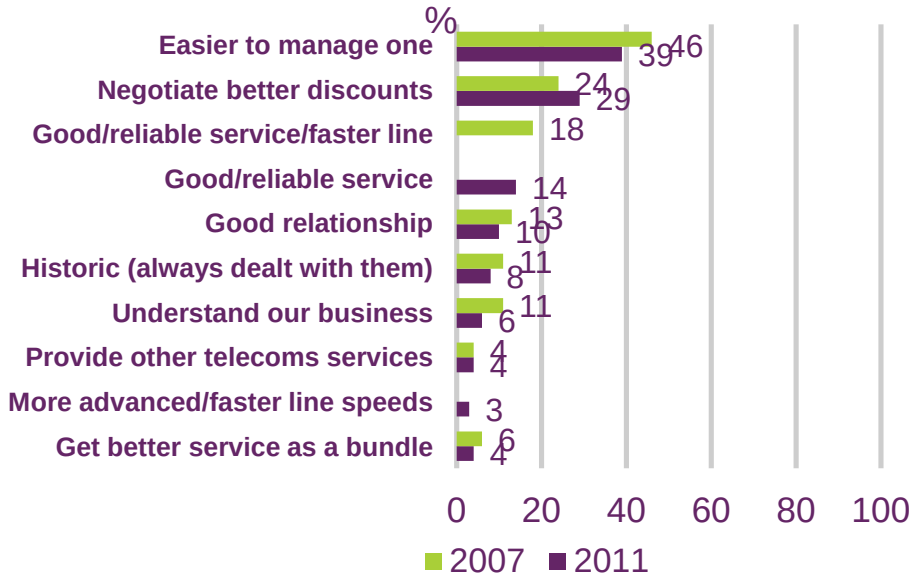
Respondents were asked to give their reasons for using either a single (Figure 8.3) or multiple suppliers (Figure 8.4), and their thinking reveals more about potential barriers and challenges to switching services.

Around 2 in 5 of those using a single supplier say that it is "easier to manage" one supplier than multiple (Figure 8.3). More than a quarter of businesses with 10 or more employees (29%) believe that having a sole supplier enables them to negotiate better discounts. When considering a switch of BCS therefore, businesses with a single supplier must consider the hassle factor of either switching everything to a new supplier, or breaking up the existing package (and related "relationship benefits").

Those using multiple suppliers display something of a "switcher" mentality in that a quarter say that they go with the best price at the time or use different suppliers for different services (Figure 8.4). This gives the impression that they are happy to mix and match their BCS in order to get the right products at the right price, regardless of any drawbacks in ease of managing multiple suppliers or discounts to be achieved by bundling everything with one company.

For 1 in 5, using multiple suppliers offers a safety cushion of sorts (i.e. resilience). If one supplier lets the company down, the others can step into the breach and avoid a disruption to their connectivity that might occur following the failure of a single supplier's services.

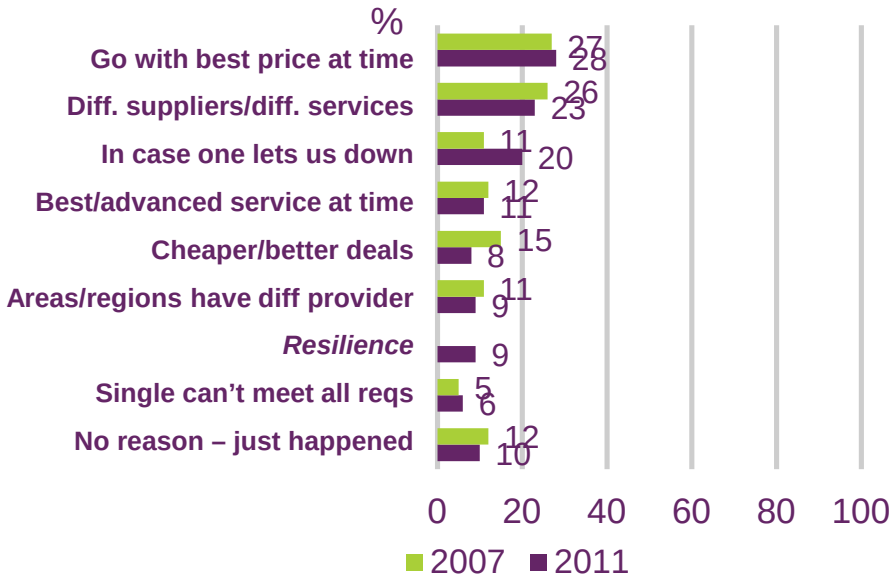
Figure 8.3 Reasons for using a single supplier



Base: Base: All NOT simply outsourcing and using a single supplier (2011 n=172; 2007 n=167)

Question: QD5 Why does your company use only one supplier for your business connectivity services?

Figure 8.4 Reasons for using more than one supplier



Base: All NOT simply outsourcing and using more than one supplier (2011 n=152; 2007 n=170)

Question: QD3a Why does your company use more than one supplier for your business connectivity services?

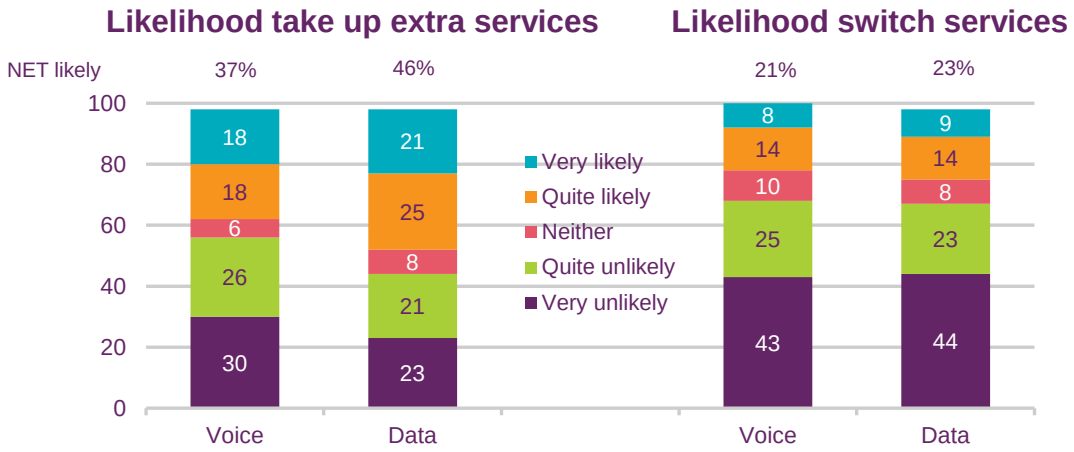
8.3 Likelihood of switching services in the next 12 months

Those using voice or data services were asked how likely they would be to take on any EXTRA voice or data services in the next 12 months, then how likely they would be to SWITCH to another voice or data service in the same time period.

Figure 8.5 shows that businesses with 10 or more employees are significantly more likely to take on extra services than they are to switch existing ones.

Just over a third (37%) said they would be very or quite likely to take on extra voice services, and just less than half (46%) said the same about extra data services. Looking at potential switching, only 1 in 5 (21% for voice, 23% data) say that they are "likely" to switch existing services within the next 12 months, whereas more than 2 in 5 say that this is "very unlikely".

Figure 8.5 Likelihood of take-up or switching of extra services in the next 12 months



Base: All respondents with BCS and using VOICE (n=258); All respondents with BCS and using DATA (n=442)

Question: QD6a How likely are you to take on any extra VOICE / DATA services in the next 12 months? QD6b How likely are you to switch to another VOICE / DATA service in the next 12 months?

There are no significant differences across sample sub-groups in terms of their likelihood to switch existing services in the future.

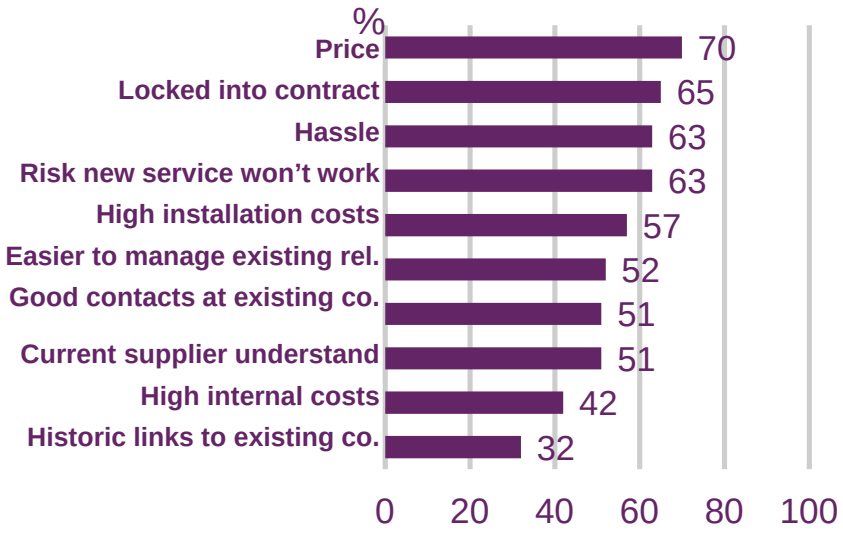
We also found no significant differences when looking at the types of service respondents are currently using. This is to be expected given the large level of crossover in terms of service usage and the fact that respondents were asked about switching in general (rather than in relation to a specific service).

8.4 Key barriers to switching

Regardless of their actual switching intentions, respondents were given a list of potential obstructions and asked whether any of them represented main barriers to their switching of any data and/or voice services.

Figure 8.6 shows that price of services is a key concern (70% cited this), but a significant proportion are locked into existing contracts (65%) or have worries about the hassle (63%) of a switch or the risk that the new service won't work as well as the existing one (63%).

Figure 8.6 Barriers to the take-up or switching of extra services in next 12 months



Base: All respondents with BCS (n=461)

Question: QD7 What, if any, of the following are the main barriers to you switching any data and/or voice services?

Large companies (more than 500 employees) are significantly more likely than small ones (10-100) to cite contract issues (74% vs. 57%), high installation costs (66% vs. 46%) or high internal costs (49% vs. 33%) associated with switching.

8.5 Replacing leased lines with ADSL or mobile broadband

All respondents were asked whether or not their company had ever replaced leased lines with ADSL or mobile broadband services. The majority (75%) had not done so.

A fifth (20%) had replaced leased lines with ADSL, and 7% had replaced these with mobile broadband services. Base sizes are too small to report further on these in terms of statistics, but in summary:

Characteristics of replacement ADSL services:

- The most likely provider is BT or one of a multitude of smaller providers.
- More than half cannot remember the name of the specific package they have.
- Around a third do not know the degree of contention offered; others named various.
- Around three quarters could estimate the download or upload speeds achieved – across varying levels.

Characteristics of replacement Mobile Broadband services:

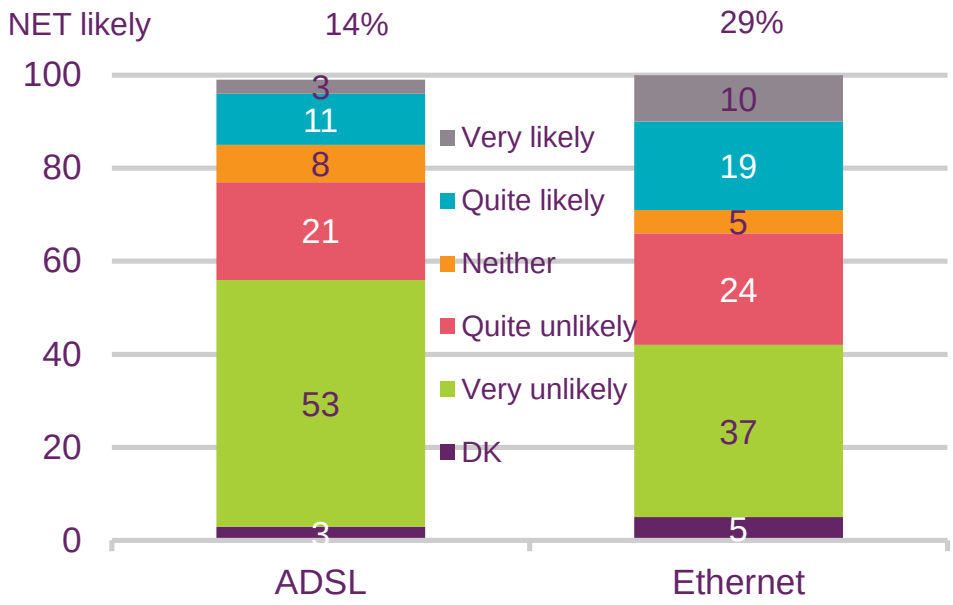
- The most likely provider is Vodafone, O2 or BT
- Almost three-quarters cannot remember the name of the specific package they have
- Vast majority do not know the degree of contention offered
- Around half did not know the download or upload speed achieved.

8.6 Replacing leased lines with ADSL or Ethernet

Respondents whose companies with 10 or more employees had leased lines access links were asked to consider the likelihood of their company replacing these leased lines with either ADSL or Ethernet.

Figure 8.7 shows that leased lines are twice as likely to be replaced with Ethernet rather than ADSL, although most companies with 10 or more employees say they are unlikely to replace them with these services at all. 14% say they are likely to replace leased lines with ADSL and 29% that they are likely to replace them with Ethernet.

Figure 8.7 Likelihood of replacing leased lines with ADSL or Ethernet



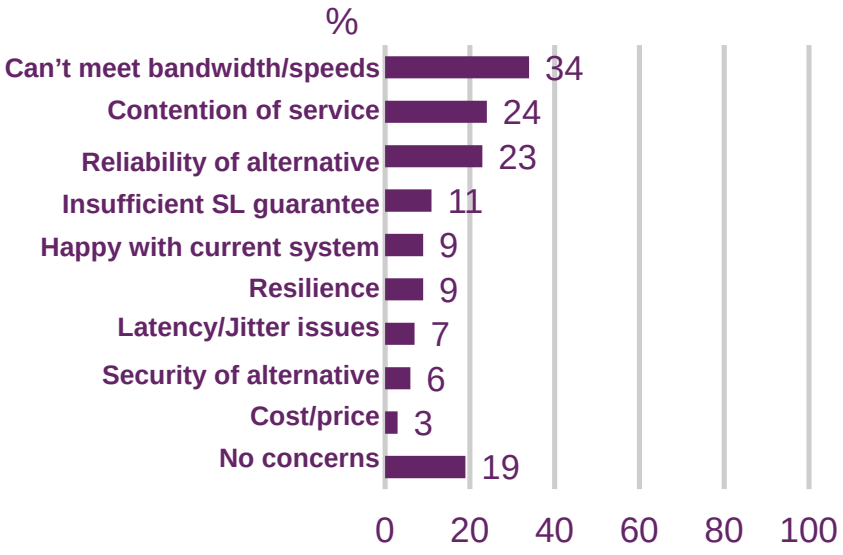
Base: All with leased lines access links (n=308)

Question: QE2 How likely is your company to replace leased lines with any of the following services?

Regardless of their likelihood to replace them, those with leased lines access links were then asked to consider the service characteristics of ADSL and leased lines, and then comment on any challenges or concerns they might have about replacing leased lines with ADSL.

Figure 8.8 shows that a third (34%) of those with leased lines are concerned that ADSL cannot meet the bandwidth or speed required. Around a quarter of businesses with 10 or more employees (24%) have concerns about contention of service, and a similar proportion (23%) about the reliability of the alternative. Around 1 in 5 (19%) had no concerns about replacing leased lines with ADSL.

Figure 8.8 Challenges or concerns about ADSL



Base: All with leased lines access links (n=308)

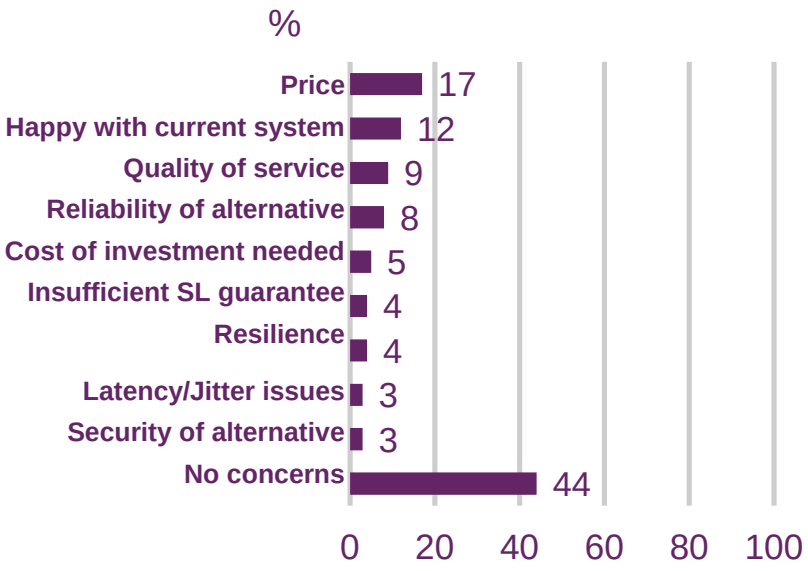
Question: QE3 Considering the service characteristics of ADSL and leased lines, what challenges or concerns do you have about replacing leased lines with ADSL?

8.7 Concerns about replacing analogue or SDH/PDH leased lines with Ethernet

Respondents with analogue or digital (SDH/PDH) leased lines were asked to consider the service characteristics of these compared with Ethernet leased lines, and then to examine what challenges or concerns they might have about replacing their analogue or SDH/PDH leased lines with Ethernet lines.

Figure 8.9 shows that more than 2 in 5 (44%) of those with analogue or SDH/PDH leased lines have no concerns about replacing them with Ethernet. Price is an issue for 17%, quality or reliability of the alternative is a challenge for around 1 in 10.

Figure 8.9 Challenges or concerns about replacing analogue/SDH/PDH with Ethernet



Base: All with analogue or SDH/PDH leased lines (n=177)

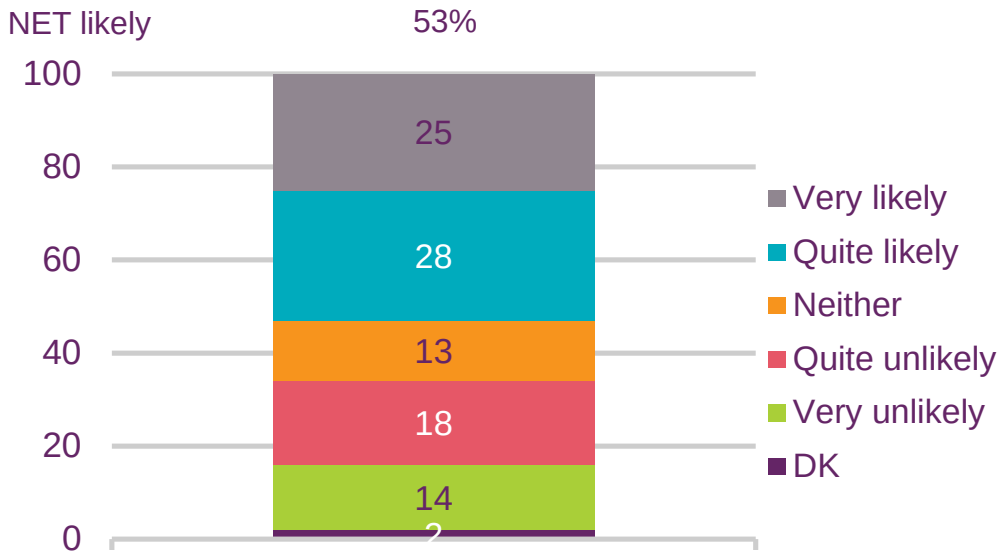
Question: QE5 Considering the service characteristics of analogue or SDH/PDH leased lines compared to Ethernet leased lines, what challenges or concerns do you have about replacing your analogue or SDH/PDH leased lies with Ethernet lines?

8.8 Switching to superfast broadband

All respondents were asked to consider the fact that in the next few years, superfast broadband (with likely download speeds above 20Mbits) will offer much higher upload and download speeds than are currently available with existing ADSL technology.

They were asked whether the emergence of superfast broadband would be likely to prompt them to switch from their current services. Figure 8.10 shows that more than half are interested in switching services in future, in order to benefit from superfast broadband, while around a third say it would be "unlikely". But no time limit was set on this question, and so it is probably more a reflection of a general interest in this service than a concrete desire to take it up in the short to medium term. In addition, no information was given on the wider set of service features (e.g. latency, jitter, range) of superfast broadband and these features are also likely to have an impact on the switching decision.

Figure 8.10 Likelihood that superfast broadband will prompt switching from current services



Base: All respondents with BCS (n=461)

Question: QE4 In the next few years, superfast broadband (with likely download speeds above 20 Mbit/s) will offer much higher upload and download speeds than are currently available with existing ADSL technology. How likely is this to prompt you to switch from your current services?

There were no significant differences across sample sub-groups.

Appendices

A. 2011 Questionnaire

Ofcom Leased Line Review 2011– FINAL

BRIEFING NOTE TO INTERVIEWERS ON DESIRED RESPONDENT:

We are keen to speak to the person in the organisation who has decision-making responsibility within organisations in relation to 'Business Connectivity Services' or services which carry voice and/or data traffic between business sites to enable communication within an organisation.

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 smaller companies where there is no dedicated IT function, we would expect to talk to the Owner or Managing Director in most instances.

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. 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.

IF IN DOUBT, PLEASE CHECK WITH YOUR JIGSAW PROJECT MANAGERS:

Monique Rotik: mrotik@jigsaw-research.co.uk

James Flack: jflack@jigsaw-research.co.uk

AT RECEPTION:

Please could I speak to the person within the organisation 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:

Good morning/afternoon, my name is _____ from Lake Research. I am calling on behalf of Ofcom, the regulator for communications industries in the UK.

Ofcom have asked us to conduct a research project to better understand how businesses are using 'Business Connectivity Services', in other words services which carry voice and/or data traffic between business sites to enable communication within an organisation The research will help Ofcom identify areas where there is a need for further advice, information or support. We would appreciate some of your time to contribute to this important study. The interview will take around 20 minutes depending on your responses.

(Central Government departments ONLY) Ofcom is conducting this fieldwork as part of its statutory duties to meet the requirements as laid out in the 2003 Communications Act.

YES, CONTINUE WITH SCREENER. IF REFUSED, THANK AND CLOSE

IF NECESSARY ADD:

- We would like to reassure you that your answers will be held in the strictest confidence. Your open and honest views are incredibly important in helping Ofcom to understand the challenges that businesses face when making decisions about communications services and the sort of advice, information or support might make this easier.
- If it is more convenient we are happy to call back at another time.
- We would like to reassure you that this is a genuine piece of market research. No-one will try to sell you anything as a direct result of this research and the project is not designed to test your knowledge but to gauge your opinions and understand how you make decisions.
- We got your company name and telephone number from a standard list provider, a commercial database of businesses in the UK. We are interested in speaking to people responsible for IT and telecoms across a wide range of businesses.
- Central government departments ONLY: Research being conducted in line with section 47.2 of the 2003 Communications Act. Contact details taken from the 2011 Civil Service Companion and their details will not be used for anything else other than to contact them to take part in this research.
- If you would like to verify that is a legitimate piece of research commissioned by Ofcom we can also email or fax you a letter that Ofcom have written for this purpose.
- If you would like to check our credentials, you can call the Market Research Society, free of charge, on 0500 39 69 99.

SCREENER AND QUOTA SECTION

ASK ALL

QS1a Thinking about your company's current telecoms provisions, which of the following types of telecom service does your company have? *READ OUT - MULTICODE*

Regular PSTN telephone line(s) only for all voice communications 1
SCREEN
Internet access via dial-up as the only data service… ……2
SCREEN
ISDN line(s) for all voice and data communications…… ... 3
SCREEN
Cable modem or ADSL or mobile broadband for some/all voice and/or some/all data communications 4
CONTINUE TO LAST SECTION
SDSL for some/all voice and/or some/all data communications…
……5 ***CONTINUE***
Virtual Private Network/s (VPNs), mainly underpinned by ADSL or cable modem access.. 6
CONTINUE
VPNs, mainly underpinned by leased lines access links 7
CONTINUE
Leased lines for some/all voice and/or some/all data communications 8
CONTINUE
Other business connectivity services for voice and/or data communications 9
CONTINUE
None of these
..... 9
6 ***CLOSE***
(Don't
know)……99
CLOSE

CODES 1-3, 9 COMPLETE SCREENING QUESTIONS ONLY AND THEN CLOSE.

CODE 4 ONLY COMPLETE SCREENING QUESTIONS AND THEN SKIP TO QE1a-QE4.

CODES 5-8 WILL COMPLETE SURVEY

IF CODE 8 IN QS1a:

QS1b What type of leased lines do you have?
INTERVIEWER TO PROMPT IF NECESSARY

Analogue Leased Lines 1
Digital Leased Lines (SDH/PDH) 2
Ethernet Leased Lines 3
Don't know 4

QS1c **IF CODE 9 in QS1a:** What type of other business connectivity services do you have?
INTERVIEWER TO PROMPT IF NECESSARY AND READ OUT EXPLANATION IN BRACKETS IF REQUIRED

ATM (a switching technique for telecommunications networks) 1
Frame Relay (protocol standard for LAN internetworking) 2
Wavelength connectivity services (offers very high bandwidth connectivity) 3
Storage Access Networks (SAN) services, e.g. Fibre channel, FICON, ESCON (provides access to consolidated, block level storage) 4
Other (specify) 5

ASK ALL

QS2 Approximately how many employees does your company/organisation have at all sites in the UK? INTERVIEWER: EXCLUDING ANY PARENT HOLDING COMPANY OR OTHER INDIVIDUAL COMPANIES WITHIN THE GROUP. SINGLE CODE

Less than 10	1	CLOSE
10-50	2	2-7 CO
51-100	3	
101 - 250	4	
251 – 500	5	
501-1000	6	
1001+	7	
Don't know	99	
		CLOSE

QUOTAS TO BE SUPPLIED

QS3 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	CONTINU
No	2	CLOSE
Don't know	3	CLOSE

QS5 **CODED AUTOMATICALLY FROM SAMPLE** (TELECOMS TO BE EXCLUDED)

Primary industry (01-14)	1
Manufacturing (15-37)	2
Construction (45)	3
Wholesale/Retail/Transport/Communications (50-52 and 60-64)	4
Financial Services (65-67)	5
Other services (55, 70-74, 92-93)	6
Public admin and services (75-90)	7
Other (91, 95, 99)	8

QUOTAS TO BE SUPPLIED

ASK ALL

QS6 What part of the UK is the main UK office of your company located?

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

FURTHER BUSINESS CLASSIFICATION AND BCS OUTLINE

I'd now like to ask you a few more background questions about your company before going on to talk more about your business connectivity services. This survey is about your enterprise network excluding public telephone services and/or ISDN and/or dial-up internet.

ASK ALL

QA1 To the best of your knowledge what would you say is the annual turnover for your company?
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

ASK ALL

QA2 Approximately how much does your organisation spend annually on business connectivity services within the UK across all sites? Please exclude spending for the services mentioned in the introduction (i.e. excluding public telephone services and/or ISDN and/or dial-up Internet) and 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)	11

ASK ALL

QA3 And how many individual sites, outlets, branches and or offices, including the one where you work does your company/organisation have in the UK? . INTERVIEWER: EXCLUDE ANY PARENT HOLDING COMPANY OR OTHER INDIVIDUAL COMPANIES WITHIN THE GROUP. ALSO EXCLUDE TELE-WORKING E.G. FROM HOME SINGLE CODE. PROMPT WITH BANDS IF NECESSARY

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) 11
(Don't know) 12

QA4 You have said that you use [**LIST WHAT IS CODED FOR 5-9 AT QS1A PLUS CODES 1-3 FROM QS1B].**

For each of these, can you specify whether you use them for the following business uses?
READ OUT LIST – MULTICODE FOR EACH TYPE OF CONNECTION
CATI – ONLY INCLUDE THOSE WITH FOLLOWING CODES AT QS1a/b

BRING UP LIST FROM QS1a/b	SDSL for some/all voice and/or some/all data communications (Code 5 QS1a)	Virtual Private Networks, mainly underpinned by ADSL or cable modem access (Code 6 QS1a)	Virtual private networks, mainly underpinned by leased lines access links (Code 7 QS1a)	Analogue or Leased lines for some/all voice and/or some/all data communications (Code 1 QS1b)	SDH/PDH Leased lines for some/all voice and/or some/all data communications (Code 2 QS1b)	Ethernet leased lines for some/all voice and/or some/all data communications (Code 3 QS1b)	Other business connectivity services for voice and/or data communications (Code 9 QS1a)
Voice - PSTN grade quality							
Voice - VoIP/Voice over broadband							
Data - E-mail & internet							
Data - Shared enterprise application, information & knowledge							
Data - Storage network							
Data - Remote access to enterprise network							
Data - Video							
Others							

CATI CODE A SEPARATE MULTICODE LIST FOR EACH SERVICE CODED AT QS1A/B

ASK ALL

QA5 I'd now like to ask you about how you manage your business connectivity services that we've been discussing. Basically, there are three ways a company can arrange this.

Firstly they can outsource to a third party solutions provider (i.e. an IT/telecom consulting and/or system integrator). Outsourcing implies the transfer to a third party of management of some or all of the enterprise network (which include all/some of the business connectivity services that make it up, but can also include the management of servers' and desktop maintenance).

Secondly, a managed Virtual Private Network can be purchased directly from a telecoms provider with the management and operations of the enterprise network being provided in-house.

Thirdly, your company could purchase point to point connectivity services and manage them in-house with the management and operations of the enterprise network being provided in-house.

.

Which of these methods do you use to manage your business connectivity services?
READ OUT - MULTICODE

Outsourcing to third party solution provider or value added reseller…….. 1
Managed Virtual Private Network or VPN…….....2
Direct self management of point to point services…… 3
(Don't know) (DO NOT PROMPT)
..... …….. 4

CURRENT BUSINESS CONNECTIVITY SERVICE FEATURES

$ - ASK IF CODE 1 AT QA5

QB1A What is the name of this third party solution provider or value added reseller that you outsource to?

SPONTANEOUS ANSWER – IF MORE THAN ONE - RECORD ALL

$ - ASK IF CODE 1 AT QA5

Q1B What is/are the business connectivity service(s) that you are being provided with via outsourcing?

CODE AGAINST LIST – PROMPT ONLY IF RESPONDENT NOT SURE - RECORD ALL

ADSL or cable modem access 1
SDSL access 2
Leased line(s) (SDH/PDH) 3
Ethernet line(s) 4
Virtual Private Network(s) or VPNs 5
Other business connectivity services (please specify) 6
DK
..... 9
9 (DO NOT READ OUT)

QB1C FOR EACH TYPE OF OUTSOURCED SERVICE ASK: Do you know the name of the telecom provider providing it/

SPONTANEOUS ANSWER

£ -ASK IF CODES 6 & 7 AT QS1a

QB2 You mention that your company is being provided with Virtual Private Networks or VPNs. VPNs can be delivered over a variety of business connectivity services. Do you know what the underlying access technology or infrastructure that you use for enabling your VPNs?

MULTICODE – READ IF NECESSARY

Traditional SDH/PDH leased lines 1
Ethernet 2
Broadband connections (ADSL and/or SDSL) 3
Other (please specify_____) 4
DK……..99
(DO NOT READ OUT)

ASK ONLY IF CODED 2 OR 3 AT QA5

QB3 Which Telecoms supplier or suppliers does your organisation use for your business connectivity services across all your sites? DO NOT PROMPT BUT PROBE FULLY TO CONSIDER ALL BUSINESS CONNECTIVITY SERVICES ACROSS THE COMPANY

AT&T 1
BT 2
C&W 3

Carphone Warehouse/TalkTalk 4
Colt 5
Easynet 6
EntaNet (Enta Group) 7
Exponential-e 8
Geo 9
Global Crossing 10
KCOM 11
Level 3 12
MLL Telecom 13

Opal Telecoms 14
Orange Business Services 15
Redstone Telecoms 16
Surf Telecoms 17
Verizon Business 18
Viatel 19
Virgin Media 20
Vtesse 21
ZenDirect 22
Other (please specify_____) 23
Other (2ND other mention ONLY) 24
Other (3RD other mention ONLY) 25
Don't know 99

ASK IF MORE THAN 1 CODED AT QB3

QB4 You mentioned that use more than one company for your business connectivity services. Which business connectivity services do you take with each supplier?

CATI BRING UP SUPPLIERS MENTIONED AT QB3
CATI BRING UP LIST OF FOLLOWING CODES FROM QS1a/b

BRING UP LIST FROM QS1a/b	SDSL for some/all voice and/or some/all data communications (Code 5 QS1a)	Virtual Private Networks, mainly underpinned by ADSL or cable modem access (Code 6 QS1a)	Virtual private networks, mainly underpinned by leased lines access links (Code 7 QS1a)	Analogue or Leased lines for some/all voice and/or some/all data communications (Code 1 QS1b)	SDH/PDH Leased lines for some/all voice and/or some/all data communications (Code 2 QS1b)	Ethernet leased lines for some/all voice and/or some/all data communications (Code 3 QS1b)	Other business connectivity services for voice and/or data communications (Code 9 QS1a)

AT&T 1
BT 2
C&W 3
Carphone Warehouse/TalkTalk 4
Colt 5
Easynet 6
EntaNet (Enta Group) 7
Exponential-e 8
Geo 9
Global Crossing 10
KCOM 11
Level 3 12
MLL Telecom 13
Opal Telecoms 14

ASK ALL

QB5A Of each of these services that you use, could you tell us whether you use it only for voice, only for data or for both services?

	Only for voice	Only for data	For both services	Don't know

BRING UP LIST FROM QS1a/b	SDSL for some/all voice and/or some/all data communications (Code 5 QS1a)	Virtual Private Networks, mainly underpinned by ADSL or cable modem access (Code 6 QS1a)	Virtual private networks, mainly underpinned by leased lines access links (Code 7 QS1a)	Analogue or Leased lines for some/all voice and/or some/all data communications (Code 1 QS1b)	SDH/PDH Leased lines for some/all voice and/or some/all data communications (Code 2 QS1b)	Ethernet leased lines for some/all voice and/or some/all data communications (Code 3 QS1b)

ASK ALL

QB6A

For each of the following services that you use, which of the following bandwidths do you have?

READ OUT THE BANDWIDTH LIST () FOR **THE SPECIFIC SERVICE BELOW (PART OF THOSE CODED AT QS1a-c).** MULTICODE

	Sub 2Mbit/s	2Mbit/s	Above 2Mbit/s to 10 Mbit/s	Above 10 Mbit/s up to and including 45 Mbit/s	Above 45Mbit/s up to and including 100 Mbit/s	Above 100 Mbit/s up to and including 155 Mbit/s	Above 155 Mbit/s up to and including 622 Mbit/s	Above 622 Mbit/s up to and including 1 Gbit/s	Above 1 Gbit/s up to and including 2.5 Gbit/s	Above 2.5 Gbit/s	Don't know

The access links underlying VPNs. If unknown, the VPN bandwidth itself (codes 6-7 in QS1a)											

	Sub-2 Mbit/s	2 Mbit/s up to and including 10 Mbit/s	Above 10 Mbit/s up to and including 20 Mbit/s	Above 20 Mbit/s up to and including 30 Mbit/s	Above 30 Mbit/s up to and including 40 Mbit/s	Above 40 Mbit/s	Don't know
Cable Modem or ADSL (code 4 in QS1a)							

	Sub-2 Mbit/s	2 Mbit/s up to and including 10 Mbit/s	Above 10 Mbit/s up to and including 20 Mbit/s	Above 20 Mbit/s up to and including 30 Mbit/s	Above 30 Mbit/s up to and including 40 Mbit/s	Above 40 Mbit/s	Don't know
SDSL (code 5 in QS1a)							

	Sub-2 Mbit/s	2 Mbit/s	Above 2 to 34 Mbit/s	35 to 154 Mbit/s	155 Mbit/s	Above 155 Mbit/s	Don't know
Digital leased lines (SDH/PDH) (code 2 in QS1b)							

	Below 10 Mbit/s	10 Mbit/s	Above 10 Mbit/s up to and including 100 Mbit/s	Above 100 Mbit/s up to and including 1 Gbit/s	Above 1 Gbit/s up to and including 2.5 Gbit/s	Above 2.5 Gbit/s	Don't know
Ethernet leased lines							

(code 3 in QS1b)							

	Below 1 Gbit/s	1 Gbit/s	2.5 Gbit/s	10 Gbit/s	Above 10 Gbit/s (please ask for estimate of total bandwidth)	Don't know
Wavelength connectivity services (code 3 in QS1c)						

QB6B Are some or all of your business connectivity services 'contended'? EXPLAIN IF REQUIRED: In other words, the bandwidth is shared amongst multiple users rather than being dedicated or reserved to a single user?
SINGLE CODE

Yes - all 1
Yes – some 2
No 3
Don't know 99

ASK ALL

QB7 We would like to know more details about the number of business connectivity circuits/connections across different speeds; can you tell me for each of the following connection types/speeds approximately how many circuits/connections do you have?

CATI - BRING UP FULL LIST FROM Q6A (I.E. ALL SERVICES AND BANDWIDTHS SELECTED)
CATI – ALSO BRING UP LIST OF ANALOGUE AND FRAME RELAY FROM Q5B
WRITE IN NUMBER OR D/K

QB8 What is the overall bandwidth needed by your company for the whole of its business connectivity? As a proxy, you could consider the total number of bandwidth units you are billed for by your business connectivity provider/s. (OPEN END)

Less than 2 Mbit/s	1
2 to 10 Mbit/s	2
1 to 19 Mbit/s	3

20 to 49 Mbit/s	4
50 to 99 Mbit/s	5
100 Mbit/s to 155 Mbit/s	6
156 Mbit/s to 622 Mbit/s	7
623 Mbit/s to 1 Gbit/s	8
1 Gbit/s to 2.5 Gbit/s	9
2.5 Gbit/s to 10 Gbit/s	10
10 Gbit/s to 20 Gbit/s	11
21 Gbit/s plus	12
Other (specify)	98

CURRENT AND FUTURE REQUIREMENTS

QC1 **ASK ALL**
When making decisions about your company business connectivity services please state how important to your business the following service features are on a scale of 1 to 4 where 1 means business critical, 2 means very important, 3 means nice-to-have and 4 means not at all important. SINGLE CODE PER FEATURE
IF RESPONDENT IS NOT SURE WHAT TERM MEANS, READ OUT EXPLANATION IN BRACKETS. IF STILL UNSURE, CODE AS 'DON'T KNOW/NOT SURE

	Business critical	Very important	Nice-to-have	Not at all important	Don't know/ not sure
Dedicated connection (reserved for one user	1	2	3	4	5
Bandwidth - download speed	1	2	3	4	5
Bandwidth - upload speed	1	2	3	4	5
Symmetry (guarantees same upload and download bandwidth)	1	2	3	4	5
Availability (a measure of reliability)	1	2	3	4	5
Resilience (provides option for a second data path to provide higher availability	1	2	3	4	5
Latency (a measure of the end to end delay in transmission of data)	1	2	3	4	5
Jitter (a measure of variation of delay in transmission of data)	1	2	3	4	5
Range (the distance between end-user premises over which the service is available)	1	2	3	4	5

QC2 **ASK ALL**
Now thinking about your business connectivity requirements *for the next two years* please state whether each of these same service features is likely to become more important, less important or stay about the same in importance to your business.
SINGLE CODE PER FEATURE – CATI DO NOT SHOW FEATURES CODED AS 96 IN QC1

	More Important	Less Important	About the same	Don't know / not sure
Dedicated connection (same explanations will be included as above)	1	2	3	4
Bandwidth - download speed	1	2	3	4
Bandwidth - upload speed	1	2	3	4
Symmetry	1	2	3	4
Availability	1	2	3	4
Resilience	1	2	3	4
Latency	1	2	3	4
Jitter	1	2	3	4
Range	1	2	3	4

QC3 **ASK ALL**
Has your business reviewed its business connectivity services within the last 3 years?

Yes 1
No 2
Don't know 3

IF YES AT QC3
QC4A Did you change any of your business connectivity services at that time?

Yes 1
No 2
Don't know 3

IF YES AT QC4A

QC4B What changes did you make to your business connectivity services?

Added a service (specify) 1
Cancelled a service (specify) 2
Changed supplier for any of your services 3
Other (specify)

ASK IF YES AT QC4A
QC4C What were the key factors driving you to select one business connectivity service type over the others at this time?
READ OUT – MULTICODE

Changing requirements of my business 1
Price 2
Perceived quality..... 3
Easier to operate, maintain and fix problems..... 4
Service features 5
Bundled with other services..... 6
Value for Money 7
Other 97
(Don't know/Can't remember)..... 99
(DO NOT READ OUT)

(ASK IF QC4C = 1 Changing requirements of my business)
QC4D You mentioned that you changed service(s) as a result of changing business requirements; could you indicate what those requirements were?
CODE AGAINST LIST BELOW – READ OUT IF NECESSARY – MULTICODE

More bandwidth required to support increasing enterprise data/voice traffic.....1
Adoption of VoIP for enterprise voice.....2
Introduction/expansion of intranet.....3
Introduction/expansion of extranet.....4
Introduction/expansion of remote access to enterprise network.....5
Introduction/expansion of video applications.....6
Convergence of different infrastructures.....7

Other (please specify_____)……..97
(Don't know/Can't remember)…… ... 99
(DO NOT READ OUT)

ASK IF CODE 3 AT QC4B (CHANGED SUPPLIER FOR ANY OF YOUR SERVICES)

QC5 What were the key factors driving you to select one service provider over the others? READ OUT – MULTICODE

Good contacts at chosen company..... 1
Price 2
Reputation for quality……3
Chosen supplier(s) understand our business 5
Historic links to chosen company(s) 6
Attractive bundling……7
Wanted to change supplier(s)……8
Other 97
(Don't know/Can't remember)……99 (DO NOT READ OUT)

AWARENESS OF ALTERNATIVE SERVICES AND BARRIERS TO SWITCHING

QD1 **ASK ALL**
From start to end, how long is your current business connectivity service contract with (INSERT COMPANY MENTIONED AT QB3 IF MORE THAN ONE COMPANY ASK QUESTION FOR EACH)? INTERVIEWER: IF IT VARIES PLEASE OBTAIN AN ANSWER FOR A TYPICAL CONTRACT. SINGLE CODE

Up to 1 year..... 1
Over 1 year to 2 years..... 2
Over 2 years to 5 years..... 3
Over 5 years to 10 years..... 4
Over 10 years to 15 years..... 5
Over 15 years..... 6
Unable to give average – contracts are too different. ONLY ACCEPT IF THEY REALLY CANNOT GIVE ANY OTHER ANSWER 7
No contract..... 8
Don't know 9

QD2 **ASK ALL**
Do you purchase business connectivity services as a single product or as part of a wider network solution or telecoms package? PROBE TO CODE: SINGLE CODE

All purchased as a single product 1
Sometimes purchased as single product, some purchased as part of a wider package..... 2
All purchased as part of a wider package 3
Don't know 4

ASK IF MORE THAN ONE SUPPLIER USED (MULTICODE AT QB3) OTHERS GO TO QD5

QD3a Why does your company use more than one supplier for your business connectivity services? DO NOT READ OUT. PROBE FULLY. CODE ALL THAT APPLY.

ASK ALL

QD3b And what is the single most important reason for choosing more than one main business connectivity service provider? REDUCE LIST TO ALL THOSE STATED AT QD3A. SINGLE CODE – RANDOMISE STATEMENTS

	QD3a		QD3b
Tend to go with best price available at time	1		1
Tend to go with the best/most advanced service available at time	2		2
Use two suppliers for same requirement - prefer to use a mix in case one lets us down	3		3
Use different suppliers for different services	4		4
Different areas/ regions have different telecoms providers	5		5
There is more choice in different areas/regions	6		6
It's cheaper/ get better deals	7		7
Makes negotiations more competitive	8		8
No reason – just happened over the years	9		9
Different regions/offices make independent decisions	10		10
Not one single provider is capable of meeting all our service requirements	11		11
Other specify	12		12
Don't know	13		13

ASK IF MORE THAN ONE SUPPLIER USED (MULTICODE AT QB3)

QD4 You said you used more than one supplier for your business connectivity services. Do any of these suppliers provide services other than your business connectivity services? SINGLE CODE

Yes – (_____specify what) 1
No 2
Don't know 99

ASK IF ONLY ONE SUPPLIER USED (SINGLE CODE AT QB3)

QD5 Why does your company use only one supplier for your business connectivity services? PROBE FULLY CODE ALL THAT APPLY DO NOT READ OUT – RANDOMISE STATEMENTS

Easier to manage one supplier	1
Negotiate better discounts/ best price	2
They understand our business	3
Provide good/reliable service	4
Offer more advanced/faster line speeds	5
Good relationships with them	6
Historic (Company always dealt with them)	7
Provide other telecoms services to us	8
Get a better service as a bundle	9
Other specify	10

ASK ALL
ASK QD6a (i) IF USE VOICE SERVICES AT QB5A / ASK QD6a (ii) IF USE DATA SERVICES AT QB5A

QD6a (i) How likely are you to take on any extra VOICE services, in the next 12 months?
(ii) How likely are you to take on any extra DATA services, in the next 12 months?

	VOICE	DATA
Very likely	1	1
Quite likely	2	2
Neither likely nor unlikely	3	3
Quite unlikely	4	4
Very unlikely	5	5
Don't know	99	99

ASK QD6b (i) IF USE VOICE SERVICES AT QB5A / ASK QD6b (ii) IF USE DATA SERVICES AT QB5A

QD6b (i) How likely are you to switch to another VOICE service, in the next 12 months?
(ii) How likely are you to switch to another DATA service, in the next 12 months?

	VOICE	DATA
Very likely	1	1
Quite likely	2	2
Neither likely nor unlikely	3	3
Quite unlikely	4	4
Very unlikely	5	5
Don't know	99	99

ASK ALL

QD7 What, if any, of the following are the main barriers to you switching any Data and/or Voice services?

READ OUT – MULTICODE. CATI TO RANDOMISE LIST

Good contacts at existing company 1
Price 2
Hassle 3
Current supplier(s) understand our business 4
Historic links to existing company(s) 5
Easier to manage existing supplier relationship 6
High internal costs associated with switching 7
High installation costs associated with switching 8
Locked in with existing supplier until contract expires 9
Risk of new service not working as well as the old service
Other (specify) 96
DK……..99
(DO NOT READ OUT)

EXTRA QUESTIONS

ASK ALL WITH CODES 4-9 IN QS1a

QE1a Has your company ever replaced leased lines with ADSL or mobile broadband services?

READ OUT – MULTICODE

Yes with ADSL 1
Yes with mobile broadband 2
No 3
Don't know 4

IF CODE 1 IN QE1a:
QE1b Can you provide details of the characteristics of the ADSL services which your company introduced to replace leased lines?

(I) What is their download speed achieved in Mbit/s? Please provide a representative value.

SPONTANEOUS ANSWER

(II) What is their upload speed achieved in Mbit/s? Please provide a representative value.

SPONTANEOUS ANSWER

(III) What is their degree of contention offered, which is measured as a ratio (such as 5 to 1 or 10 to 1, etc.)? Please provide a representative value for this ratio to 1.

SPONTANEOUS ANSWER

(IV) What is the name of the provider of these ADSL services?

SPONTANEOUS ANSWER – IF MORE THAN ONE - RECORD ALL

(V) What is the name of the specific ADSL package or product provided to your company, which your company introduced to replace leased lines?

SPONTANEOUS ANSWER – IF MORE THAN ONE - RECORD ALL

IF CODE 2 IN QE1a:
QE1cCan you provide details of the characteristics of the mobile broadband services which your company introduced to replace leased lines?

(I) What is their download speed achieved in Mbit/s? Please provide a representative value.

SPONTANEOUS ANSWER

(II) What is their upload speed achieved in Mbit/s? Please provide a representative value.

SPONTANEOUS ANSWER

(III) What is their degree of contention offered, which is measured as a ratio (such as 5 to 1 or 10 to 1, etc.)? Please provide a representative value for this ratio to 1.

SPONTANEOUS ANSWER

(IV) What is the name of the provider of these mobile broadband services?

SPONTANEOUS ANSWER – IF MORE THAN ONE - RECORD ALL

(V) What is the name of the specific mobile broadband package or product provided to your company, which your company introduced to replace leased lines?

SPONTANEOUS ANSWER – IF MORE THAN ONE - RECORD ALL

ASK ALL WITH LEASED LINES ACCESS LINKS (CODES 7- 8 IN QS1a)

QE2 How likely is your company to replace leased lines with any of the following services?

(VI) ADSL

Very likely.....1
Quite likely.....2
Neither likely nor unlikely 3
Quite unlikely.....4
Very unlikely.....5
Don't know 99

(VII) Ethernet

Very likely.....1
Quite likely.....2
Neither likely nor unlikely 3
Quite unlikely.....4
Very unlikely.....5
Don't know 99

ASK ALL WITH LEASED LINES ACCESS LINKS (CODES 7- 8 IN QS1a)

QE3 Considering the service characteristics of ADSL and leased lines, what challenges or concerns do you have about replacing leased lines with ADSL?

Cannot meet the bandwidth/speeds	1
Contention of service	2
Reliability of alternative	3
Latency / jitter issues	4
Insufficient service level guarantees	5
Security of alternative	6
Requires additional software / service support	7
Resilience	8
No concerns about moving to ADSL	9
Happy with current system	10
Other (specify)	98
Don't Know	99

SPONTANEOUS ANSWER – IF MORE THAN ONE - RECORD ALL

ASK ALL

QE4 In the next few years superfast broadband (with likely download speeds above 20Mbit/s) will offer much higher upload and download speeds than are currently available with existing ADSL technology. How likely is this to prompt you to switch from your current services?

Very likely.....1
Quite likely.....2
Neither likely nor unlikely 3
Quite unlikely.....4
Very unlikely.....5
Don't know 99

ASK ONLY THOSE WITH ANALOGUE OR SDH/PDH LEASED LINES (CODES 1-2 IN QS1b)

QE5 Considering the service characteristics of analogue or SDH/PDH leased lines compared to Ethernet leased lines, what challenges or concerns do you have about replacing your analogue or SDH/PDH leased lines with Ethernet lines?

Reliability of alternative	1
Quality of service	2
Latency / jitter issues	3
Insufficient service level guarantees	4
Security of alternative	5
Price	6
Cost of investment needed	7
No concerns about moving to Ethernet	8
Happy with current system	9
Resilience	10
Other (specify)	98
Don't Know	99

SPONTANEOUS ANSWER – IF MORE THAN ONE - RECORD ALL

Thanks again for your participation in this survey. The research will be published later this year and available on the Ofcom website.

CLOSE INTERVIEW

B. Glossary of Terms

The following glossary of terms helps explain the acronyms used in this report and was used by interviewers during the interview if needed:

- **ADSL:** Asymmetric Digital Subscriber Line - A type of digital subscriber line technology, a data communications technology that enables faster data transmission over copper telephone lines than a conventional voice band modem can provide.
- **Availability**: A measure of the reliability of the service
- **Bandwidth:** The amount of data that can be carried from one point to another in a given time period (usually a second). This kind of bandwidth is usually expressed in kilobits (kbit/sec) or megabits (of data) per second (Mbits/sec).
- **BCS:** Business Connectivity Services are defined as those which carry voice and/or data traffic between business sites to enable communication within an organisation.
- **Bundling:** A marketing strategy that involves offering several products for sale as one combined product
- **Business Data Connectivity**: A communications service that is used to link a number of end-user business premises for the purposes of intercommunication between those premises
- **Contended/dedicated:** A dedicated service reserves all the available bandwidth for the exclusive use of one end-user/customer; a contended service shares the available bandwidth among more than one end-user/customer
- **ISDN:** Integrated Services Digital Network - A digital telephone service that supports the simultaneous digital transmission of voice, video, data, and other network services over the PSTN.
- **Jitter:** A measure of the variation of delay in the transmission of data
- **Latency**: A measure of the end to end delay in the transmission of data
- **Leased Line**: A service contract between a provider and a customer, whereby the provider agrees to deliver a symmetric telecommunications line connecting two or more locations in exchange for a monthly rent (hence the term lease). Typically, leased lines are used by businesses to connect geographically distant offices. Unlike dial-up connections, a leased line is always active.
- **MPLS**: Multiprotocol Label Switching - A packet based network technology typically used to provide VPN services to businesses.
- **PSTN:** Public Switched Telephone Network - The international network that provides circuit switched voice telephone services under end-user control.

- **Range:** The distance between end-user premises over which the service is available
  - *Access:* Up to the first serving exchange;
  - *Metro:* Within a geographic region or city
  - *Long:* Any distance
- **Resilience**: A resilient service provides an option for a second data path to provide higher availability
- **SDSL:** Symmetrical Digital Subscriber Line. Like ADSL but with equal upload and download speeds.
- **Symmetry**: A symmetric service guarantees the same upload and download bandwidth
- **Voice over Internet Protocol** (**Voice over IP**, **VoIP**): a family of technologies, methodologies, communication protocols, and transmission techniques for the delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks, such as the Internet. Other terms frequently encountered and often used synonymously with VoIP are *IP telephony*, *Internet telephony*, *voice over broadband* (VoBB), *broadband telephony*, and *broadband phone*.
- **VPN:** Virtual Private Network- A service provided on a public telecommunications network that provides businesses with inter-site connections emulating those of a private network.

C. Pilot interviews

The first ten interviews conducted between 30th June and 4th July were treated as 'pilot' interviews and fieldwork was temporarily halted between 5th and 7th July so that the initial results could be examined to assess whether any modifications needed to be made to the questionnaire for the remaining interviews.

The pilot involved:

- Listening in to some of the interviews to check the questionnaire ran smoothly and respondents generally understood the questions and able to provide answers.
- Checking the average length of the questionnaire (to check it wasn't too onerous).
- Analysing the answers to the open-ended questions to see whether respondents raised any key issues not covered in the core questionnaire.
- Talking to the interviewers themselves to ensure they fully understood the questionnaire and whether they themselves had noticed any respondent difficulty with the survey.

There were no major changes recommended as a result of the pilot although two minor adjustments were made. The following changes were recommended by Jigsaw and implemented as a result of these pilot interviews:

- Respondents were originally able to qualify for the interview if they said they had "Other business connectivity services for voice and/or data communications" but no other specific business connectivity services (QS1a in the questionnaire). However, when we examined these 'other' answers we spotted that they weren't actually business connectivity services and so we recommended that respondents could not qualify via this code. This change was implemented for the full survey.
- We noticed respondents mentioning 'value for money' rather than 'cost/price' throughout and so recommended that 'value for money' was added as pre-coded answer at QC4C (key factors driving you to select one business connectivity service type over another). This change was implemented for the full survey.