

Business Connectivity ServicesReview

Market research

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Introduction

Background

- 1.1 Ofcom is carrying out a market review "The 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.
- 1.2 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
- 1.3 In order to inform the definition of the business connectivity market on a forward-looking basis, market research was conducted by Holden Pearmain, on behalf of Ofcom, in early 2007 to provide evidence from the perspective of end-users. This document summarises the main results of this market research and the methodology used to conduct the research.

Research Objectives

- 1.4 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,
 - 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). And 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;

- Given end-users' commercial requirements, what are their intended purchases and potential migration to new business connectivity services going forward and why?; and
- To understand how business end-users would react to a small but significant change in price on one of their current business connectivity services. Where end-users were unlikely to use their existing service at an increased price – what action would they take? For example, this might entail: substituting to another product; being willing to sacrifice quality or other service characteristics for price; or withdrawing from using that product.

Research Methodology

- 1.5 A sample of 450 companies that purchase Business Connectivity Services was interviewed by telephone in January and February 2007. More detail on the methods used and sample analysis is provided in Section 3.
- 1.6 Care was taken to ensure that all respondents had a good understanding of business connectivity service terminology and either a primary or a secondary role in the procurement of these services for their companies.
- 1.7 Qualitative interviews were undertaken with a small number of companies before the main research to ensure user-friendly terminology was used and to ensure that end-users were aware of the factors we wished to assess.

Executive Summary

Larger companies spend more on Business Connectivity Services, have a greater number and wider range of connections

- 2.1 Expenditure on Business Connectivity Services varied greatly across the sample. However, there was a strong relationship between this spend and company annual turnover.
- 2.2 With regard to the types of connection used, the companies surveyed were most likely to have digital leased lines, followed by VPNs and ADSL/cable modem to access VPN. Use of VPN was more common in larger companies, in terms of staff numbers. Large companies did not just have more Business Connectivity connections; they also used a wider range of services than smaller companies did.

Business Connectivity Services were most commonly used for email/internet, shared enterprise data and remote network access

- 2.3 Business Connectivity Services were most commonly used for email/internet, shared enterprise data and remote network access. VPN was particularly used for the latter.
- 2.4 Analogue lines were still very common, used by nearly all the sample.

 Analogue lines were most often used exclusively for voice traffic, whereas other services tended to be used either exclusively for data traffic, or for a mixture of data and voice.

Companies were most likely to manage Business Connectivity Services themselves

- 2.5 Direct management of Business Connectivity Services by the company itself was the most common arrangement (more than half the sample). A further third outsourced to a third party, most commonly to BT, but also a multitude of other suppliers. A quarter of the sample had a managed VPN, this being more common amongst companies with a large annual turnover. The vast majority of managed VPNs had a broadband underlying infrastructure.
- 2.6 Half the sample had some contention on their Business Connectivity Services, one in ten had completely contended services.

Resilience and availability are critical features of Business Connectivity Services and these are expected to grow in importance

- 2.7 Resilience, availability and a dedicated connection were rated the most important features of Business Connectivity Services by nearly all the sample. Download speed was also important.
- 2.8 Symmetry was deemed least important of the features assessed.
- 2.9 Resilience and availability were perceived to be of growing importance, whilst a dedicated connection was expected to retain the importance it has now over the next 2 years. Bandwidth capacities, in terms of both upload and download speed, were also seen to be of growing importance.

Regular service reviews were common and often resulted in changes, more so to services than suppliers, primarily for financial reasons

2.10 The vast majority of the sample had reviewed their Business Connectivity Services in the last 3 years. Of these, over half had changed at least some of their services (55% of total sample). It was less common to have changed supplier over this period (40% of sample). Price was most commonly cited as the reason for changing services, by those who had changed either services or suppliers.

A hypothetical price rise commonly encouraged switching services, although perceived hassle could discourage this for essential services

2.11 A SSNIP test revealed that two thirds of the sample would change the Business Connectivity Services they use to avoid a hypothetical 10% price rise for voice traffic. Slightly fewer (56%) said they would switch to avoid a similar price rise for data traffic. The most common reasons given for **not** switching to avoid a price rise were that the current services were needed, the price rise was considered small and that switching would be too much hassle. Long contracts and historical links with the supplier were the least likely barriers to switching.

End-users comprised voice services more than data services to avoid a hypothetical price rise. Resilience was the least likely sacrifice in either case.

2.12 Respondents were more likely to say they would compromise voice services rather than data services in order to avoid a 10% price rise. For both voice and data services, respondents most commonly claimed that they would be least likely to compromise resilience, and most likely to compromise symmetry.

- 2.13 A hypothetical 10% rise in the cost of Business Connectivity Services encouraged nearly half of those companies currently without VPN to say that they would consider changing to VPN to avoid the additional cost. Conversely current users of VPN were less likely to return to point-to-point services to avoid the additional cost (a third of them would do so).
- 2.14 Detailed analysis, by service and combination of services, was performed in consultation with Ofcom. As this analysis also depended on outputs held by Ofcom that related to supply side costs, the results of the SSNIP analysis are outlined in the Ofcom consultation document "Business Connectivity Market Review" (Annex 9).

BT was by far the most common supplier, especially amongst large companies, in terms of both total and exclusive use

2.15 BT was by far the most common supplier of Business Connectivity Services, used by 72% of the sample. Large companies were not only more likely than smaller companies to use BT *per se*, they were also more likely to using this company exclusively.

The Business Connectivity Services market is perceived to be competitive, although awareness of alternative services is low

- 2.16 The vast majority of the sample believed the Business Connectivity Services market was competitive in terms of the range of services offered, and the quality and price of those services.
- 2.17 Four fifths of the sample were unaware of other Business Connectivity Services that would better suit their needs
- 2.18 Half the sample had contracts for Business Connectivity Services of up to 2 years duration; a further third had contracts of 2-5 years. Smaller companies tended to be on shorter contracts.
- 2.19 Half the sample were taking just single products from Business Connectivity Service suppliers, although this was more common amongst small companies. A third of all companies took only bundled products.

Views varied as to whether single or multiple suppliers reduced costs

2.20 Two fifths of the sample used more than one supplier of Business Connectivity Services, primarily for cost reasons. Respondents using just a single supplier were most likely to claim that this made the relationship easier to manage. However, they also cited that they could negotiate better discounts with a single supplier.

Lack of awareness of comparable products may inhibit switching, together with the perceived hassle of doing so

- 2.21 A third of users for both voice and data Business Connectivity Services who were aware of other comparable services said that they were likely to switch or add at least one service in the next 12 months. Perhaps not surprisingly this was less likely amongst those who were unaware of alternative services.
- 2.22 The principal reasons cited for **not** switching or adding services was the hassle involved and the ease of managing the current relationship. Some also said they were tied into a current contract.

Methodology

Research methodology

- 3.1 A sample of 450 companies that purchase Business Connectivity Services was interviewed. These services are defined as services that "connect" different parts of an enterprise and included: traditional leased lines, Ethernet, ADSL and cable modem, SDSL, ATM, Frame Relay and Wavelength (i.e. wave division multiplexed services).
- 3.2 Quotas were set to permit analysis of the results in terms of size of company, type of company and geographical split. Quotas of approximately one third of the sample were set for each of small (0-100 employees), medium (101-250 employees) and large (over 500 employees) companies.
- 3.3 The aim was to obtain 25 in each of the English regions and nations and at least 25 in each industry grouping. However, these quotas were relaxed, as it proved very difficult to meet quotas in East Anglia and Northern Ireland. Central government was deliberately targeted to ensure that at least 10 organisations of this type were interviewed.
- 3.4 At the very end of fieldwork, quotas on size were relaxed to enable the fulfilment of quotas of region and industry size. This was to ensure that there was sufficient sample by category to report at a robust level.

Figure 3.1: Breakdown of sample by number of employees

Number of employees	All Respondents (450)
Less than 50	14%
50-100	18%
101-250	21%
251-500	13%
501-1000	10%
1001+	24%

- 3.5 The resulting sample comprised: 32% small companies, 34% medium-sized companies, and 34% large companies, as defined above.
- 3.6 As Ofcom has no detailed evidence of the distribution of different business connectivity products in the UK market, no weightings have been applied to this research and the companies sampled may or may not be representative of the wider UK business connectivity market.

- 3.7 Fieldwork was undertaken, on Ofcom's behalf, by Holden Pearmain.
- 3.8 Fieldwork took place in January and February 2007. There was a three-week interval between interviewing the first 150 respondents and the remainder. This was to assess the incidence of business services and the resulting impact on reporting. It also providing an opportunity to ensure the questionnaire was working and to revise some areas of concern.

Questionnaire

3.9 The questionnaire was administered via CATI (Computer Assisted Telephone Interviewing) and averaged 30 minutes in duration. The questionnaire (appended) was straightforward, and included a line of questioning designed to mimic a SSNIP (Small but Significant Non-transitory (i.e. permanent) Increase in Price) test. Great care was also taken address technical issues such as distinguishing between traditional PSTN voice traffic as opposed to that carried over digital leased lines.

Limitations

3.10 There are limitations involved in any research, and this section details what these are generally, as well as limitations that pertain to this research specifically.

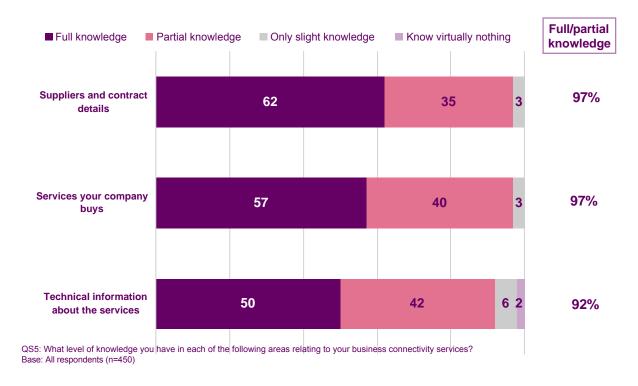
Limitations and uncertainties involved in any research

- 3.11 Sampling error means that percentages quoted in quantitative research are the views of a particular sample and may or may not be representative of the total population. Due to this, it is usual to compare differences in percentages between groups or services in the context of levels of confidence. The confidence levels are based on the range of values obtained from a certain percentageage (dependent on whether 95%, 90% or 99%) of the sample.
- 3.12 Respondents may not be willing to answer questions openly. This is more of a concern with sensitive subject matter and is unlikely to have had a significant impact on this research.
- 3.13 The snapshot aspect of a research study means that even if sampling error is very low, we are only measuring opinion and behaviour at the time of the research. Opinion is subject to constant change, not always in a steady direction, and can move relatively quickly in the realm of technological progress.

Limitations and uncertainties involved in this research

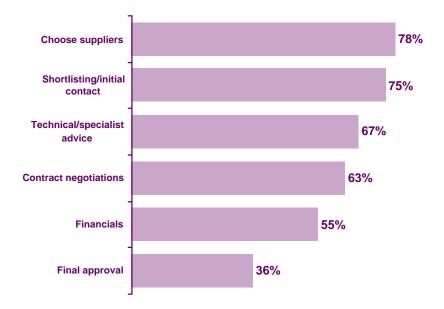
3.14 In large, multi-site companies in particular it is possible that the respondent will not be able to answer questions about the entire company, or have knowledge of all suppliers and contracts. However, questions included to assess these issues show that the majority of those we spoke to had wide knowledge of suppliers and contracts across the company. Figure 2 shows the level of knowledge held about the company's Business Connectivity Services.

Figure 3.2: Respondent Knowledge level with regard to Company Business Connectivity Services



- 3.15 Furthermore, four-fifths of respondents claimed that they could answer questions about Business Connectivity Services for the entire company.
- 3.16 Even if a respondent has the requisite knowledge, if they play little or no part in the relevant purchasing decisions then their views on suppliers, services and business needs will carry less weight. Here too responses indicated that the substantial majority of those we spoke to were involved in the decision making process with regard to Business Connectivity Services. The majority of respondents were either jointly responsible for all sites (40%) or solely responsible for all sites (35%). 17% were jointly responsible for some sites and only 8% were solely responsible for some sites. Of those who were jointly responsible for decision-making across all or some company sites, four-fifths choose the supplier (Figure 3.3), although only a third gave the final approval.

Figure 3.3: Role played when choosing a telecoms supplier



QS4: You mentioned that you are jointly responsible for telecoms decision-making including business connectivity services. What role do you play when choosing a telecoms provider or telecoms services?
Base: Respondents jointly responsible for decision-making (n=258)

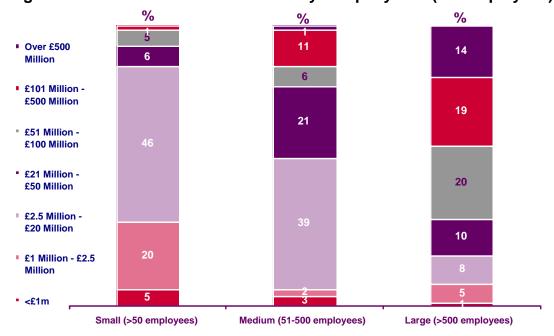
Profile of Businesses purchasing Business Connectivity Services

Size of company by annual turnover and number of employees

There is a strong relationship between annual turnover and expenditure on Business Connectivity Services

4.1 The annual turnover for the businesses in the survey varied hugely. The median range for small businesses with business connectivity was between £2.5m-£20m. For medium-sized businesses with 51-500 employees, the equivalent figure was closer to the top end of that range i.e. £20m. The large businesses surveyed (>500 employees) turned over £51-£100m as a median figure.

Figure 4.1: Annual Business Revenue by company size (no. employees)



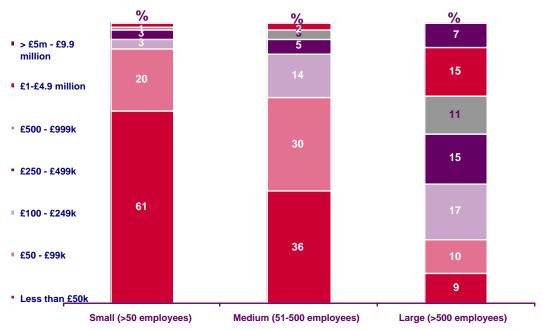
QA1 Base: To the best of your knowledge what would you say is the annual turnover for your company? (don $\tilde{\Phi}$ know and refused not charted) Total n=450, small companies n = 143, medium companies n = 155, large companies n = 152

4.2 Large companies are significantly more likely to have an annual turnover of over £50m (53%), medium companies more likely to have a spend of between £2.5m and £50m (50% have turnover within this range) whereas 71% of small companies turnover £20m or less.

Expenditure on Business Connectivity Services

4.3 There is a large difference in Business Connectivity spend between businesses of different sizes, based on number of employees. Even amongst large businesses, there is a huge variety of spend levels with less than £50k and more than £1m not being uncommon at either end of the scale. For small businesses, the majority (61%) spend less than £50k per annum on Business Connectivity Services. Two thirds of medium sizes businesses spend less than £100k per annum.

Figure 4.2: Annual spend on Business Connectivity by number of employees



QA2 Approximately how much does your organisation spend annually on business connectivity services within the UK across all sites? (don®know and refused not charted)

Base: Total n=450, small companies n = 143, medium companies n = 155, large companies n = 152

There is a strong relationship between annual turnover and expenditure on Business Connectivity Services, as can be seen in Figure 4.3.

Figure 4.3: Annual spend on Business Connectivity by annual turnover

	Annual Turnover										
	Less than £250k	£250k - £500k	£500k - £1m	£1m - £2.5m	£2.5m - £20m	£21m - £50m	£51m - £100m	£101m - £500m	Over £500m		
BCS Spend		•	l	Abs	olute num	bers	I	l			
Less than £50k	4		3	23	65	22	7	1			
£50 - £99k		2	4	6	37	18	10	6			
£100 - £249k			1	2	15	7	10	9	1		
£250 - £499k				2	4	2	9	8	1		
£500 - £999k				1	4	1	3	7	3		
£1-£4.9m				2	4		2	8	7		
More than £5m							2	1	5		

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

QA2 Approximately how much does your organisation spend annually on business connectivity services within the UK across all sites? (don@know and refused not charted)

4.5 However, the relationship between number of company sites and spend on business connectivity is less clear.

Figure 4.4: Annual spend on Business Connectivity by number of sites

		Number of sites									
	1	2	3-5	6-10	11-15	16-20	21-50	51-100	101-500	501+	
BCS Spend					Absolu	ite Numb	ers				
Less than £50k	78	21	29	15	6	2	2	1	2		
£50 - £99k	24	17	25	11	5	37	2	4			
£100 - £249k	5	6	17	8	2	5	3	2	2		
£250 - £499k	4	4	3	6	2	1	4	7	3		
£500 - £999k	4	1	1	6	1	2	3	4	1		
£1-£4.9m	1	1	2	2			7	8	3	2	
More than £5m	1	1		1				3	1	2	

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? Please do not include tele-working sites.

QA2 Approximately how much does your organisation spend annually on business connectivity services within the UK across all sites? (don@know and refused not charted)

QA6

4.6 Although there is expected to be a close relationship between the number of company sites and the number of sites connected (Figure 4.5), there were some companies where the number of sites connected exceeded the number of company sites. This may reflect connections to external organisations, or given this occurs primarily with large companies, may reflect lack of complete knowledge on behalf of the respondent.

Figure 4.5: Number of sites connected by Business Connectivity services by number of sites

	Number of sites										
	1	2	3-5	6-10	11-15	16-20	21-50	51-100	101-500	501+	
Number of sites connected		Absolute Numbers									
0	5	2	1	2			1		1		
1	114	4	1								
2	2	52	2	1							
3-5	2		76	9	1				2		
6-10	1	2	3	43	2	3		1			
11-15	2		1		13		1				
16-20						9	1	1			
21-50							21	1		1	
51-100			3	2	1	1	2	19	2		
101-500								12	10	1	
501+								2		2	

QA3 And how many individual sites, outlets, branches and or offices, including the one where you work does your company/ have in the UK? Please do not include tele-working sites.

Summary of numbers of rural, suburban and urban sites which have business connectivity

organisation

- 4.7 Companies with only one site were perhaps not surprisingly heavily weighted towards small businesses (56% of businesses with up to 50 staff had only one site compared with 5% of large business with 500+ staff). Therefore, it also follows that one-site businesses had lower turnover.
- 4.8 There were also certain business types which were more likely to operate from a single site Manufacturing, Communications, IT, Transport, Utilities, Wholesale / Retail, Media. These types of business were more prevalent in London, the South East and East Anglia.
- 4.9 In terms of Business Connectivity Services, single site companies were more likely to be using an ADSL/cable modem to access VPNs, and to get these services from a company other than BT.

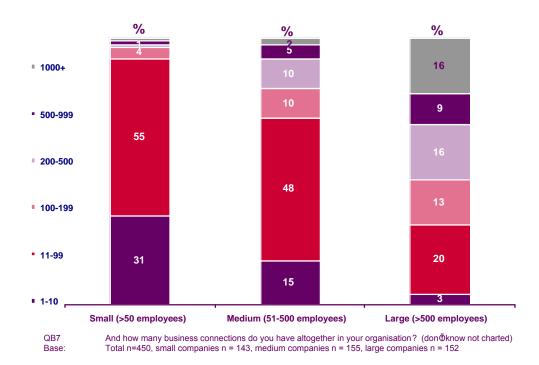
Business Connectivity Services and suppliers used

The number and types of Business Connectivity Services used

Digital leased lines were most common, although analogue was still in widespread use for voice traffic

5.1 The number of business connections a company has increased with size of the organisation in terms of staff (Figure 5.1). For large organisations, there was a large range in number of connections and more uncertainty as to the total number. For the vast majority (86%) of small organisations, there were less than 100 business connections.

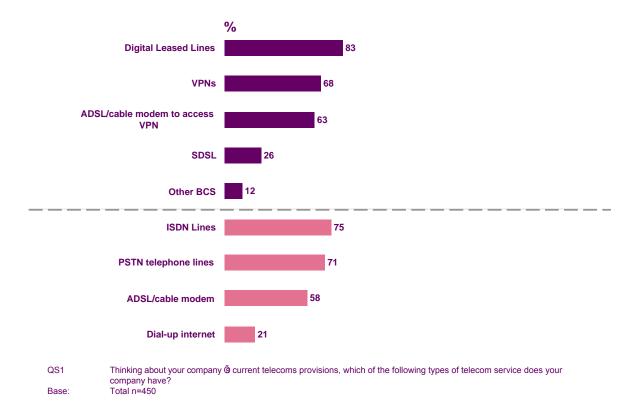
Figure 5.1: Number of business connections in the company



With regard to the types of connection used (Figure 5.2), the companies surveyed were most likely to have digital leased lines (83%), followed by VPNs (68%) and ADSL/cable modem to access VPN (63%). Use of VPN was related to company size, in terms of staff numbers, ranging from 60% of small companies, to 78% of large companies.

5.3 It should be noted that a business had to have at least one of the services above the dotted line in Figure 5.2 in order to qualify for the survey.

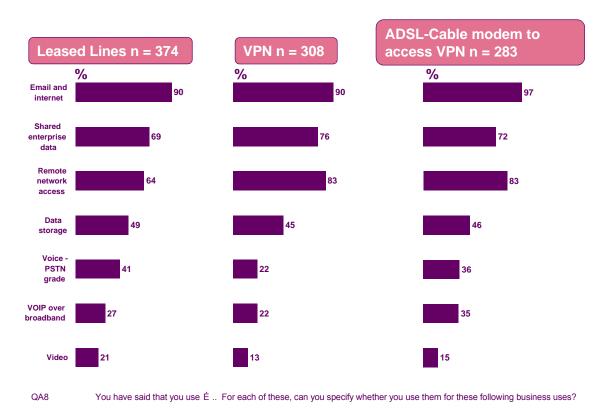




- 5.4 SDSL and other business connectivity products (such as ATM, Frame Relay, and Wavelength) were less popular with only 26% and 12% of companies using them.
- There was also a link between the number of business connection types used and size of company. In brief, larger companies were more likely to be using more types of qualifying business connections (i.e. those above the dotted line in Figure 5.2). More specifically:
 - Those using just one type of BCS (20% of the sample) were more likely to have less than 500 staff on just one site; spend less than £50k per annum on these services; and likely to be using mainly digital leased lines
 - Those using two types of BCS (28%) were primarily businesses with less than 100 employees on one or two sites
 - Those using 3 types of BCS (34%) tended to have 3 or more sites
 - Those using 4 or 5 types of BCS (18%) were more likely to have 1000 or more employees across 11 or more sites

5.6 The respondent was then asked what use they made of the service for each of the Business Connectivity Services that their organisation purchased. Results are shown in Figures 5.3 and 5.4.





5.7 The most common uses for business connectivity were email/internet, shared enterprise data and remote network access. VPNs were particularly used for remote network access.



Figure 5.4: Uses for business connectivity services (2)

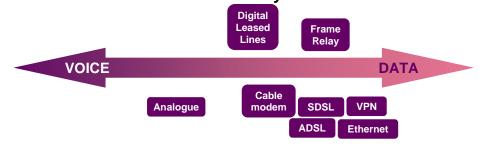
- QA8 You have said that you use É .. For each of these, can you specify whether you use them for these following business uses?
- 5.8 Analogue lines were still extremely prolific with 92% of those companies sampled having them. Other services that more than half of the sample had were digital leased lines (74%), ADSL (76%) and VPN (63%).
- 5.9 Broadband was most often the underlying infrastructure behind managed VPNs (69%).
- 5.10 The majority of services used had a 34 M/bit capacity or less. However, the majority of those using Ethernet services were operating above this bandwidth.

Figure 5.5: Bandwidth of services used

	Type of connection									
	Analogue	Digital leased line	Ethernet	ADSL	Cable modem	ATM	VPN	SDSL	Frame Relay	Wave- length
Total	92%	74%	32%	76%	27%	9%	63%	29%	11%	3%
Under 2 M/bits		40%		46%	18%	4%	37%			
2-34 M/bits		26%	12%	30%	9%	4%	20%			
35-154 M/bits			15%				3%			2%
155 M/bits		4%				2%	0%			0%
Over 155 M/bits		5%	6%				2%			1%

5.11 Analogue was the service most often used for exclusively voice traffic. Other services tended to be used for either data only or a mix of data and voice traffic.

Figure 5.6: Use of business connectivity services



QA5A, B Which of the following types of services does your company have? For each of the services that you have mentioned, which of the following bandwidths do you have?

Base: Different for each service n=450 x relevant figure on previous slide

Figure 5.7: Bandwidth of services used, by voice and data

		Type of connection									
	Analogue	Digital leased line	Ethernet	ADSL	Cable modem	ATM	VPN	SDSL	Frame Relay	Wave- length	
Total	49% VO 13% DO 38% Both							2% VO 68% DO 30% both	4% VO 73% DO 24% both		
Under 2 M/bits	1	11%VO 42% DO 47% both	-	2% VO 75% DO 22% both	6% VO 79% DO 15% both	6% VO 94% DO 0% both	1% VO 86% DO 13% both	-	-	-	
2-34 M/bits	-	16% VO 35% DO 50% both	2% VO 67% DO 30% both	2% VO 66% DO 32% both	2% VO 71% DO 27% both	0% VO 56% DO 44% both	0% VO 67% DO 33% both	-	-	-	
35-154 M/bits	·	-	0% VO 61% DO 39% both	-	1	-	13% VO 60% DO 27% both	-	-	0% VO 56% DO 44% both	
	1	105 VO 305 DO 605 both	-	-	1	0% VO 57% DO 43% both	0% VO 100% DO 0% both	-	-	0% VO 0% DO 100% both	
Over 155 M/bits		14% VO 29% DO 57% both	0% VO 23% DO 77% both	-	-	-	13% VO 50% DO 38% both	-	-	0% VO 100% DO 0% both	

Note: In table below, VO means Voice Only, DO means Data Only

QA5A, B Which of the following types of services does your company have? For each of the services that you have mentioned, which of the

following bandwidths do you have?

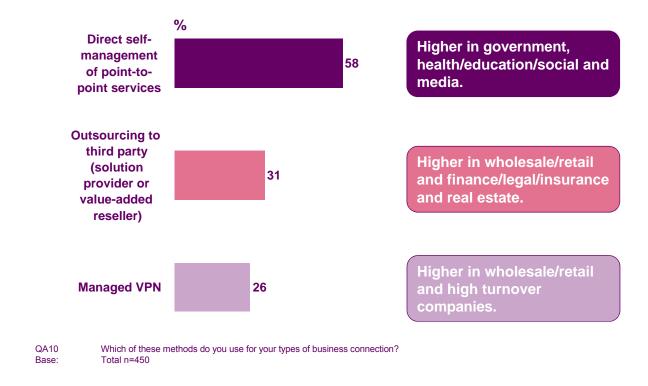
Base: Different for each service n=450 x relevant figure on previous slide

Management of Business Connectivity Services

Business Connectivity Services are most commonly managed in-house, but a third outsource

5.12 All respondents were read a list of methods of managing Business Connectivity services and asked which their organisation used. Results are shown in Figure 5.8.

Figure 5.8: Method of Managing Business Connectivity services



- 5.13 The majority (58%) of organisations managed the services themselves. This method was more common in government, health, education, social and media organisations.
- 5.14 A third of organisations outsourced management of Business Connectivity Services to a third party, this being more common amongst wholesale/retail, financial, legal, insurance and real estate organisations. Of these companies, 16% were outsourcing to BT, with 4% outsourcing to each of Cable and Wireless, Easynet and Verizon, followed by a long tail of a multitude of suppliers. A quarter used a managed VPN, which was more common in the wholesale/retail sector, and amongst companies with a high turnover.
- 5.15 Respondents from companies that were outsourcing the management of their Business Connectivity Services were asked which services they were outsourcing. Figure 5.9 shows that the pattern of outsourcing broadly follows that of services taken by the total sample, indicating that there are not particular services that are relatively more likely to be outsourced.

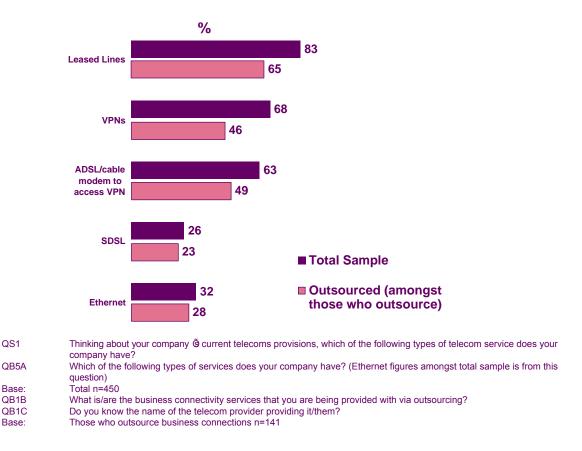
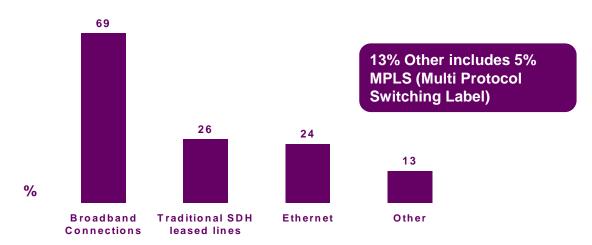


Figure 5.9: Method of Managing Business Connectivity services

- 5.16 Only a quarter of those who outsourced management of business connectivity services knew that BT provided the services they were receiving via outsourcing.
- 5.17 Respondents from a company that had a managed VPN were asked what the underlying technology or infrastructure was that enabled their VPN. The vast majority were underpinned by broadband, as can be seen in Figure 5.10.

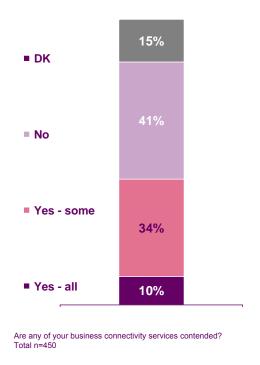




- 5.18 Traditional SDH leased lines and Ethernet each accounted for a further quarter of managed VPNs. The remaining 13% other includes 5% MPLS (Multi Protocol Switching Label).
- 5.19 All respondents were asked if any of their Business Connectivity Services were contended. Around half had at least some contention, as Figure 5.11 shows, and for one in ten all of their services were contended.

Figure 5.11: Contention

QB5C



5.20 Contention was slightly less likely for those organisations that only had leased lines, but slightly more likely for those who had other Business Connectivity Services.

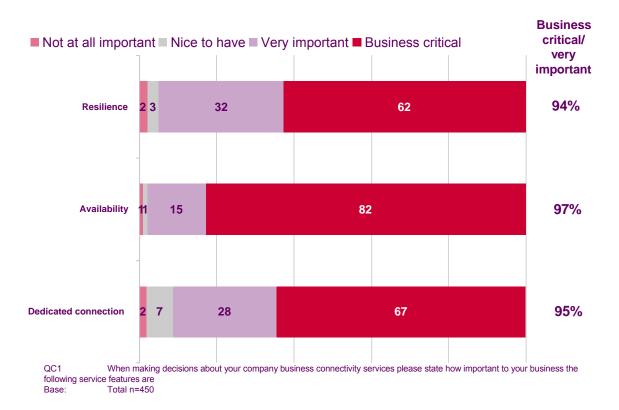
Business needs

Importance of service features

The resilience and availability of the service, together with a dedicated connection were seen to be the most important features at the present time

6.1 All respondents were read out a list of several features of Business Connectivity Services and asked to rate them on a scale from Business Critical to Not at all important. Figure 6.1 shows what were considered to be the most important features (out of those presented to respondents).

Figure 6.1: Most important features of Business Connectivity Services



The resilience and availability of the service, together with a dedicated connection were seen to be the most important features, with nearly all respondents saying these aspects of Business Connectivity Services were either Business Critical or Very Important. Four-fifths (82%) said that availability of the service was Business Critical.

- Resilience, availability and a dedicated connection were all relatively more important for the finance/legal/insurance/real estate sector. In addition, Resilience was relatively more important for the Comms/IT/transport/utilities sector, whilst availability was also more important for the government and media sectors.
- 6.4 Given the high ratings for these three features, there was a high level of overlap between respondents considering each feature important. However, as Figure 6.2 shows, a quarter of those who considered availability as Business Critical viewed Resilience as less important.

Figure 6.2: Most important features of Business Connectivity Services

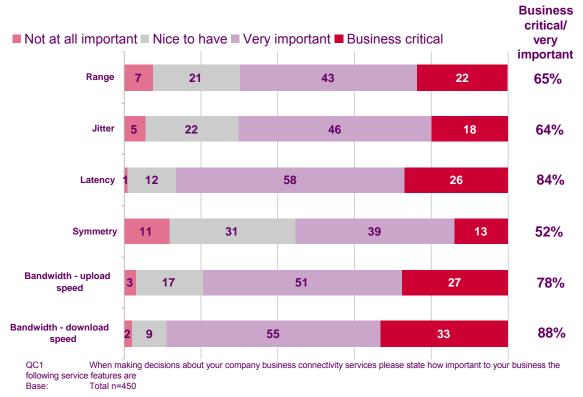
	Resilience							
Availability:	Business Critical	Very Important	Nice to have/Not at all important					
Business Critical	59%	22%	2%					
Very Important	4%	11%	1%					
Nice to have/Not at all important	0%	1%	2%					

QC1 When making decisions about your company business connectivity services please state how important to your business the following service features are

Base: Total n=450

6.5 Figure 6.3 shows features that were considered by respondents to be of lesser importance.





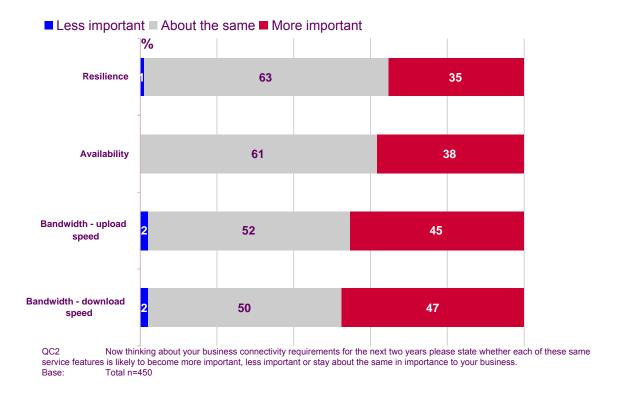
Of the remaining features, the download speed was seen to be of most importance, considered by a third to be Business critical, and Business Critical or Very Important by nearly nine in ten respondents. At the other end of the spectrum, symmetry was seen to be least important, with a lower proportion seeing it as either Business Critical or Business Critical/Very Important. However, symmetry was relatively more important for the finance/legal/insurance/real estate sector, and larger companies.

Importance of service features in the future

The resilience and availability of the service were thought to be growing in importance, together with bandwidth

6.7 All respondents were read the same list of service features and asked to think about the business needs of their organisation in two years' time, and to assess whether each feature would be more or less important at that time than it is now.

Figure 6.4: Features of Business Connectivity Services that will increase in importance



- 6.8 Bandwidth in terms of both upload and download speed were most likely to be seen as of growing importance. In terms of download speed, this was most commonly seen as Very Important now, but of increasing importance in the future. Resilience and availability, both seen as amongst the most important features currently, were thought to be of increasing importance in the future.
- 6.9 Figure 6.5 shows those features that were largely considered to retain their importance in the future, but not to increase it.

25

22

28

Less important About the same More important

Range 3 72 24

Jitter 4 72 22

72

71

67

Figure 6.5: Features of Business Connectivity Services that will retain importance

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.

Base: Total n=450

6.10 Thus although a dedicated connection was currently one of the features most likely to be considered Business Critical, fewer thought it would increase in importance when compared to resilience, availability and bandwidth. In fact the most commonly held view (by 41% of the sample) was that it is Business Critical now, and will retain the same importance in the future.

Review of Business Connectivity Services

Latency

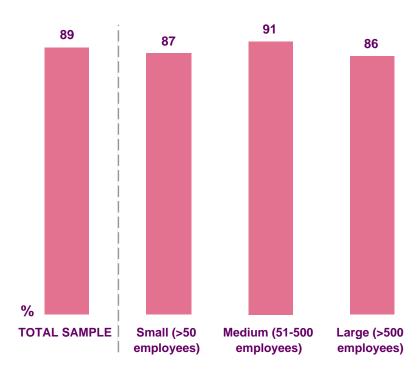
Symmetry

Dedicated connection

Business Connectivity Services are regularly reviewed, often leading to pricedriven changes, more commonly to services than suppliers

6.11 All respondents were asked whether their organization had reviewed their Business Connectivity Services in the last 3 years. The vast majority (89%) had done so.

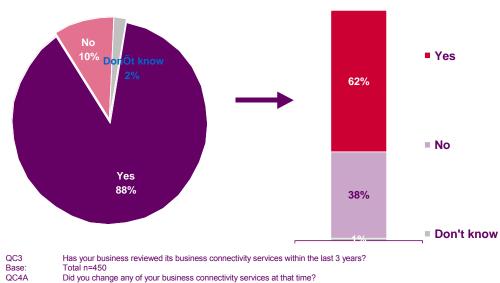
Figure 6.6: Review of Business Connectivity Services in last 3 years



Has your business reviewed its business connectivity services within the last 3 years? QC3 Base:

6.12. Due to the small number of organisations that had **not** held a review in the last 3 years it is not possible to describe with any accuracy those organisations.

Figure 6.7: Changes made to Business Connectivity Services as a result of **Review**



Those who have considered in last 3 years n=399

6.13 Of those who had conducted a review of Business Connectivity Services in the last 3 years, three fifths (62%) had changed at least some of their services as a result. This equates to 55% of the total sample. These organisations were asked which services they had stopped receiving. As Figure 6.8 shows, a wide range of services had been curtailed, most commonly leased lines, that at least in part appears to reflect the predominance of this service in the market.

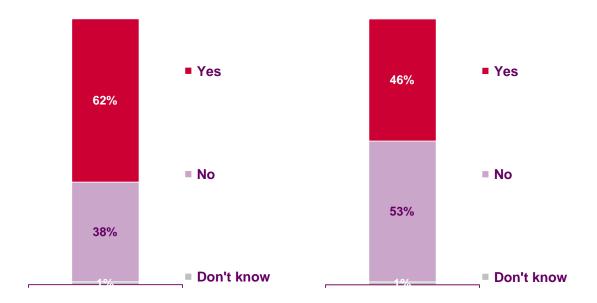
Figure 6.8: Which Business Connectivity Services discontinued in last 3 years

Leased lines	14%
ADSL	9%
ISDN	9%
Analogue	7%
Old lower	6%
bandwidth	
VPN	5%
Frame Relay	5%

QC4B What was the type of previous service (s) you had, but no longer do Base: All who have changed some/all services in last 3 years n=247

6.14 All those who had conducted a review of Business Connectivity Services in the last 3 years were also asked whether they had changed any suppliers of these services because of the review.

Figure 6.9: Changes made to Business Connectivity Suppliers as a result of Review



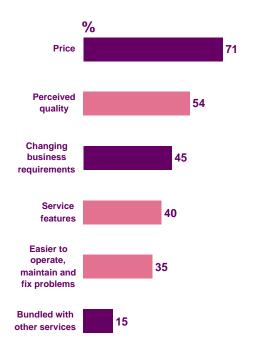
QC4A Did you change any of your business connectivity services at that time?

QC5A Did you change suppliers for any of your business connectivity services at that time?

Base: Those who have considered changing service or supplier in last 3 years n=399

- 6.15 Changes had been made to suppliers less often than had been made to the services received (46% of those holding a review, compared with 62%). This equates to two –fifths (40%) of the total sample having changed a supplier of Business Connectivity Services in the last 3 years. These findings possibly indicate that it is easier to switch services than suppliers.
- 6.16 All those who had changed either a service or supplier over the last 3 years were asked what were the key factors that made them choose one service or supplier over another. Price was the major reason given for making such changes, as shown in Figure 6.10.

Figure 6.10: Key Factors Driving Change of Service or Supplier



QC7A Base: What were the key factors driving you to select one business connectivity service type over the others at this time? Those have changed supplier or service for some/all of BCS in last 3 years n=292

6.17 These factors were mainly consistent across the sample. However, changing business requirements were a more common factor in the nations (63%). (Scotland, Wales, Northern Ireland. In addition, bundling appealed more to those organizations with a large spend on Business Connectivity services.

Switching Services

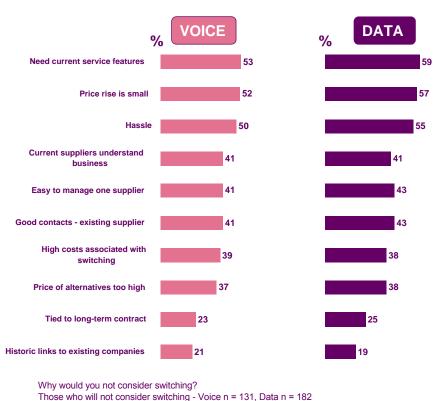
Response to SSNIP test

Many would switch services to avoid a 10% price increase, particularly voice services

- 7.1 The end-user research posed SSNIP questions, which sought to determine what a user of business connectivity services would be likely to do if there were a 'Small but Significant Non-transitory (i.e. permanent) Increase in Price', in this case 10%. The exercise assumes that the price for a service across the market has increased, so if exactly the same service is required, the price increase cannot be avoided by simply switching supplier. Either the price increase must be accepted (i.e. the user would stay on their current service); they would have to switch away from their current service to another product or service; or they would cease to consume the product in question.
- 7.2 If there is sufficient reduction in demand from consumers of the product being considered (due to the relative price increase), this may suggest that other products and services act as a competitive constraint on that focal product in question. In this case, the market definition should be widened to include other products and services as well as the focal product being considered.
 - The SSNIP questions sought to test the extent of likely switching from their current business connectivity services and the services that they would be likely to switch to. In this way, this provides useful information on the particular services which are possible substitutes for each other (and therefore potentially form part of the same market) and those which are not.
- 7.3 In this research, each respondent completed either one or two SSNIP exercises, depending on whether they used business connectivity for voice and data services. These exercises were focused mainly on those services for which incidence of use suggested a robust sample would be possible. In total, 843 SSNIP exercises were obtained in order to allow analysis of the services.
- 7.4 Two-thirds (66%) said they would switch to another service to avoid a 10% price rise within services used for voice traffic.
- 7.5 Fewer (56%) said that they would switch to avoid a similar price rise within services used for data.
- 7.6 Those respondents (6%) who said they would switch but who could not answer the questions concerning what services features they would compromise on were excluded from the calculations below.

- 7.7 Smaller turnover and manufacturing companies were more likely to say they would switch services to avoid a price rise in voice services. Otherwise, the claimed rate of switching was very consistent across company demographics.
- 7.8 Amongst the Business Connectivity Services, there was no great variation of switching rate (amongst those with an analysable base) it tends to be in the 50-60% range.
- 7.9 For voice and data services, the principal reasons that respondents gave for **not** switching services were similar the current services were needed, the hypothetical price rise was small, or because they thought switching would be too much hassle.

Figure 7.1: Reasons for not switching services



Base: Those who will not consider switching - Voice n = 131, Data n = 182

QD2

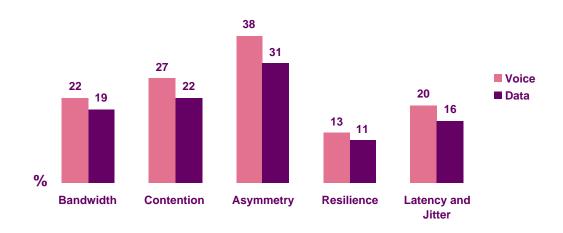
7.10 Long term contracts and historical links were of lesser importance relative to the other reasons given.

Compromising service features to avoid price rises

Many would also compromise services to avoid a 10% price increase, particularly voice services

7.11 Respondents were also asked whether they would compromise on certain features of voice and/or data services in order to avoid a 10% price increase, specifically bandwidth, contention, asymmetry, resilience and latency and jitter. As Figure 7.2 shows, in this hypothetical test respondents appeared more willing to compromise voice services than data services.

Figure 7.2: Features that would be compromised to avoid a 10% price increase

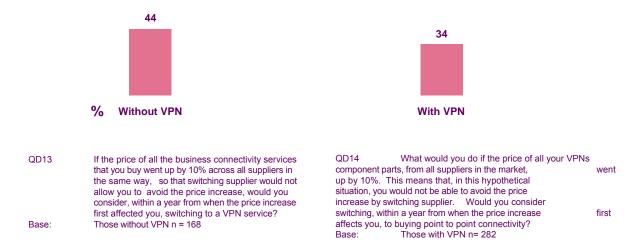


QD5A,6,7,8,9 Would you accept [for example] a lower bandwidth or speed for the business connectivity service you use for VOICE/DATA services than you currently have to avoid the 10% price increase?

Base: Those who will switch to a service they do not know the name of Š Voice n = 225 Data n = 230

- 7.12 For both voice and data services respondents were most likely to compromise on asymmetry, and least likely to compromise on resilience.
- 7.13 The interview also assessed the impact of a hypothetical 10% price rise on the uptake and retention of VPN services. All respondents from organisations that did not currently have a VPN were asked whether a 10% price rise across all Business Connectivity Services would make them consider switching to a VPN service within a year of the price rise. Respondents from organisations that already used a VPN service were asked whether a hypothetical price rise of 10% across all VPN component parts would make them consider switching to point-to-point connectivity services within a year of the price rise. Responses to both questions are illustrated in Figure 7.3.

Figure 7.3: Effect of 10% price rise on uptake and retention of VPN



7.14 44% of businesses that were currently without VPN services would consider a VPN to avoid a 10% price rise. This compares to 34% of those who currently had a VPN but would not switch to point-to-point connectivity to avoid the 10% increase. Of the latter, those who do **not** use ADSL or cable modem to access their VPN were slightly less likely to consider switching to a point-to-point service (28%).

Section 8

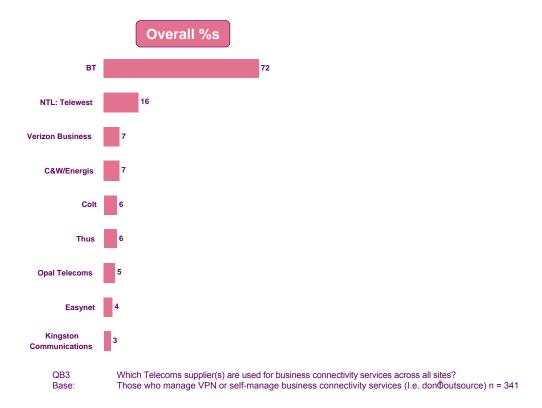
Attitude to Suppliers

Business Connectivity Services Suppliers Used

BT is by far the most common supplier, with even greater penetration amongst large companies, in terms of both overall and exclusive use

8.1 BT was by far the most commonly used supplier of Business Connectivity Services amongst this sample, followed by NTL: Telewest and a host of smaller suppliers.

Figure 8.1: Business Connectivity Suppliers used



- 8.2 Large businesses were more likely to use BT, NTL: Telewest, C&W/Energis and Thus. Thus was primarily used by companies within Scotland. Companies in the nations (Scotland, Wales and Northern Ireland) were also somewhat more likely to use NTL: Telewest. Colt was almost exclusively used by companies in South / East of England. Companies in this region were also somewhat more likely to use Verizon and Easynet.
- 8.3 As Figure 8.2 shows, not only were larger companies (in terms of staff) more likely to use BT, these organisations were also more likely than smaller companies to be exclusive users of BT for Business Connectivity Services.

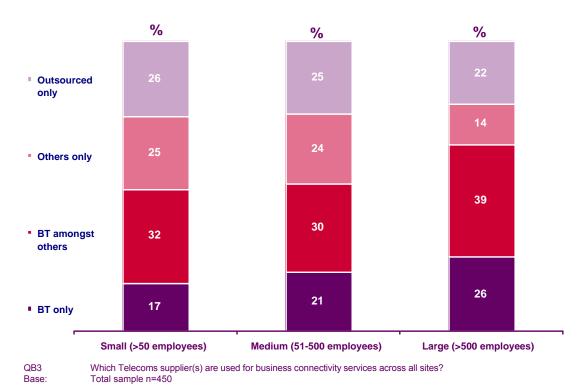


Figure 8.2: Business Connectivity Suppliers used by company size

Business Connectivity Services Market Competitiveness

The vast majority thought the market competitive in terms of range, quality and price, although awareness of alternative services is low

8.4 All respondents were asked how competitive they thought the Business Connectivity Services market was in terms of the range of services offered, and the quality and price of those services. For all three areas more than four fifths of respondents thought that the market was extremely or fairly competitive.



Figure 8.3: Business Connectivity Services Market Competitiveness (1)

QE14: How competitive do you believe the market for business connectivity services to be in terms of range of services, price and quality Base: All respondents (n=450)

- 8.5 Finance/ legal/ insurance/ real estate businesses were more likely to rate the market as extremely competitive on all three measures and companies in Scotland/ Wales /NI were more likely to rate the markets as extremely competitive in terms of quality.
- 8.6 Overall, seven in ten respondents considered the market extremely or fairly competitive on all measures (Figure 8.4).

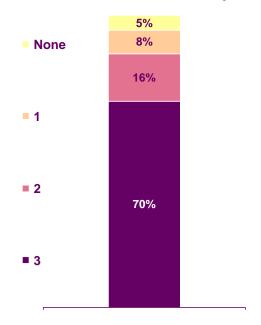


Figure 8.4: Business Connectivity Services Market Competitiveness (2)

QE14: How competitive do you believe the market for business connectivity services to be in terms of range of services, price and quality Base: All respondents (n=450)

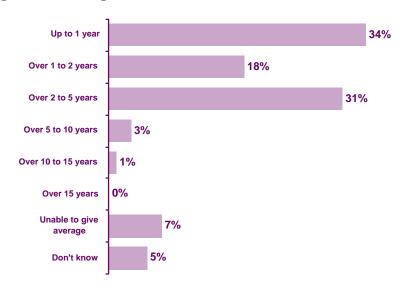
- 8.7 For those respondents who deemed the market was not extremely or fairly competitive on all three measures, quality was most likely and price least likely to be deemed competitive.
- 8.8 There were no significant differences in response amongst those who are supplied by BT, either exclusively or in conjunction with another supplier. Similarly, there was no significant difference amongst those whom wholly outsource their Business Connectivity Services.
- 8.9 All respondents were asked whether they were aware of any other Business Connectivity Services that would suit the needs of their company better than the services they currently received. The vast majority (82%) were not aware of any such services.
- 8.10 Amongst those who were aware of more suitable services, the most common alternative mentioned was VOIP (20%), followed by leased lines, ADSL, MPLS (all 10%) and SDSL (7%).

Current Business Connectivity Services Contracts

Short, single product, single supplier contracts are most common, driven by small companies, and the desire for an easily managed relationship

8.11 All respondents were asked how long their current contract was with their Business Connectivity Services supplier(s). Just over half (52%) had a contract lasting up to two years, with a further 31% having a contract of 2-5 years' duration.

Figure 8.5: Length of Contract with Business Connectivity Services Supplier(s)



QE2: From start to end how is your current business connectivity service contract with the company? Base: All respondents (n=450)

- 8.12 Smaller companies generally had shorter contracts. 44% of small companies had a contract of up to one year, compared with 32% of medium-sized companies and 26% of large ones.
- 8.13 Smaller companies were also more likely to purchase single products from Business Connectivity suppliers, rather than larger product packages. Nearly half of the companies surveyed purchased all their Business Connectivity Services as single products (Figure 8.6), whereas amongst small companies this rises to 59%.

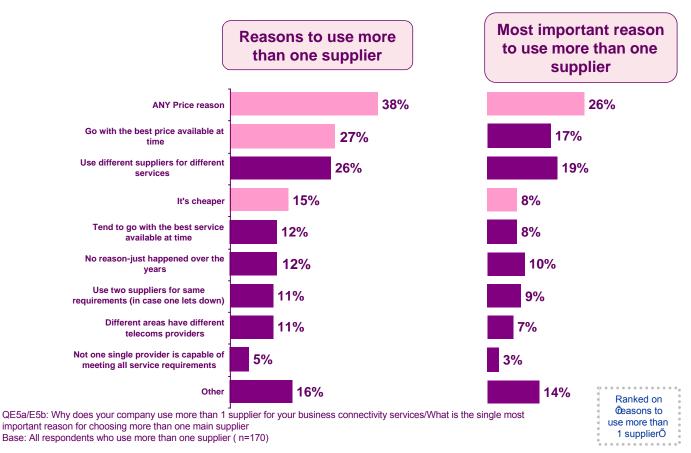


Figure 8.6: Single product purchase versus bundled products

QE4: Do you purchase business connectivity services as a single product or as a part of a wider network solution or telecom package? Base: All respondents (n=450)

- 8.14 On the other hand, a third of the sample only bought Business Connectivity Services as part of a wider package, with the remainder (17%) varying between single and multi-product purchases.
- 8.15 Nearly two fifths of the sample (38%) purchased Business Connectivity Services from more than one supplier. These respondents were asked why they used more than one supplier. Price was most commonly given (26%) as the single most important reason (Figure 8.7). Some did not believe that a single supplier would be capable of delivering all the services required.

Figure 8.7: Reasons for using more than one Business Connectivity services Supplier



8.16 The remainder of the sample (62%) who used only a single supplier of Business Connectivity services were asked why this was so. Most commonly the motivation was that this arrangement made it easier to manage the relationship (Figure 8.8).

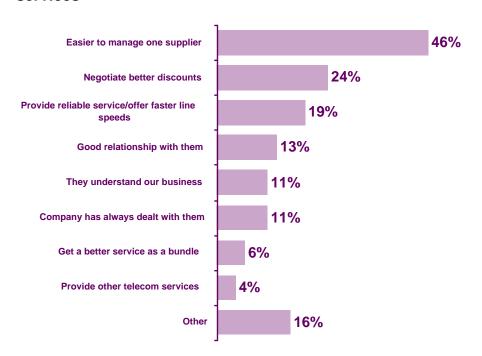


Figure 8.8: Reasons for using a single supplier for Business Connectivity services

QE7: Why does your company use only one supplier for your business connectivity services? Base: All respondents who use only one supplier (n=167)

- 8.17 However, some thought there was a cost advantage to having a single supplier as they were able to negotiate better discounts, and others that this arrangement delivered a better service.
- 8.18 All respondents who used more than one supplier for Business Connectivity Services were asked whether they purchased any other services from these suppliers. Only a quarter (26%) of these companies bought services other than Business Connectivity Services from these suppliers.

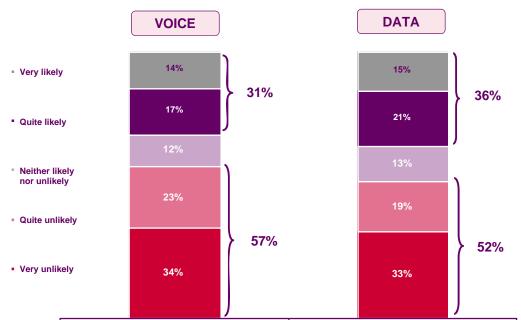
Section 9

Switching Behavior

Both price and lack of awareness of alternative services may inhibit switching

9.1 All respondents who were aware of other Business Connectivity Services comparable to the one(s) they were currently receiving were asked the likelihood of switching or adding services. There was little difference in response for voice and data services (Figure 9.1). Approximately a third of users of each claimed they were very or quite likely to switch or add services in the next 12 months. Just over a half of users of each claimed they were very or fairly unlikely to change or add services.

Figure 9.1: Likelihood of switching to or adding other voice or data services in the next 12 months

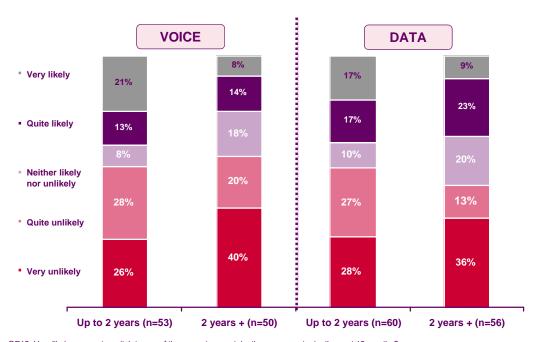


QE12: How likely are you to switch to any of these services or take them on as extra in the next 12 months?

Base: All respondents who are aware of any other business connectivity services and have voice business connectivity (n=121) or data business connectivity

9.2 It may be expected that those on longer contracts of two or more years stated that they are less likely to change or add services in the next 12 months. This applies to voice services, where those on shorter contracts (less than 2 years) were more likely to say they might switch/add services than those on longer (2+ years) – 34% and 22% respectively. However, for data services, contract length made no significant impact on the likelihood of switching, although as for voice services, those on longer contracts were more likely to say they would **not** switch.

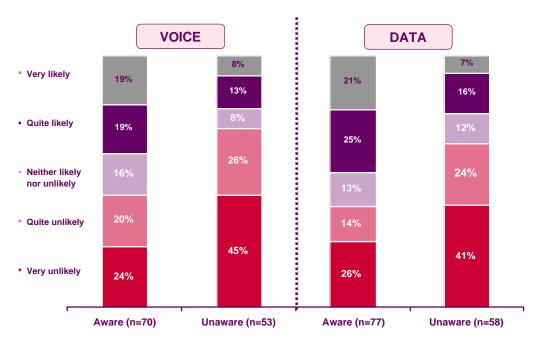
Figure 9.2: Likelihood of switching to or adding other voice or data services in the next 12 months by length of contract



QE12: How likely are you to switch to any of these services or take them on as extra in the next 12 months? Base: All respondents who are aware of any other business connectivity services

9.3 Awareness of other Business Connectivity Services also had an impact on the likelihood of switching/adding services (Figure 9.3). Respondents who were aware of other services comparable to the ones they were currently receiving were more likely than those who were unaware of such services to say they would change or add voice services in the next 12 months (38% very/fairly likely to change compared with 21%). The same pattern of response is observable for data services (46% and 23% respectively).

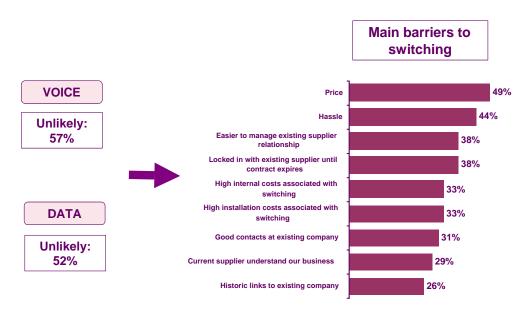
Figure 9.3: Likelihood of switching to or adding other voice or data services in the next 12 months by awareness of other services



QE12: How likely are you to switch to any of these services or take them on as extra in the next 12 months? Base: All respondents who are aware of any other business connectivity services

9.4 Price was the main reason cited by respondents who claimed they were unlikely to switch or add voice or data services in the next 12 months (Figure 9.4). The hassle of switching, the ease of managing the current relationship and being tied in to a contract were other common barriers.

Figure 9.4: Barriers to switching Business Connectivity services



QE13: What are the main barriers to you switching to other services? Base: All respondents @ot likely @o switch services (n=102)

Annex 1

Questionnaire

Good morning /afternoon, I am calling from ______ on behalf of Ofcom. We'd like to invite you to take part in an important national survey on telecom business connectivity services (namely services that enable voice and data communications between your business' different sites). Your feedback on this topic would help all business users receive effective business connectivity services.

We appreciate we are taking your time and therefore would like to give a £15 donation to Cancer Research, Childline or St Mungo's charity for the homeless as a thank you. Would you be willing to take part in this survey?

Thank you for agreeing to participate in this research. Assuming your business meets the Ofcom criteria for inclusion, the survey should take around 30 minutes to complete. I'd like to send you by email a simple 1-page introduction to this survey to explain what we mean by certain terms. Could you give me your email address so I can send you this and then re-contact you once you have read it?

SAY IF FURTHER ASSURANCE REQUIRED: This is a genuine market research study about business connectivity on behalf of Ofcom and no sales call will result from our contact to you. The answers you give will be held in strictest confidence; they will be added to those from several hundred others and presented to our client as statistical summaries only.

The interview will be carried out in strict accordance with the Market Research Society's Code of Conduct, and as part of the quality control processes some interviews may be verified.

SCREENER SECTION (4 MINUTES)

ASK ALL

QS1 Thinking about your company's current telecoms provisions, which of the following types of telecom service does your company have? MULTICODE

Regular PSTN telephone line(s) only for all voice communications	
SDSL for some/all voice and/or some/all data communications	
CONTINUE Leased lines for some/all voice and/or some/all data communications	
CONTINUE Virtual private networks for some/all voice and/or some/all data communications	
CONTINUE Other business connectivity services for voice and/or data communications	
CONTINUE None of these	
CLOSE DK99	
CLOSE	

COMPANY MUST HAVE AT LEAST ONE OF CODES 5, 6, 7, 8 or 9

QS2	ASK ALL 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 50			2 3 4 5		
QUOT	AS TO BE SUPPLIED					
QS3	Are you responsible for decision the sites your business has? PROBE TO CODE: SINGLE C	•	•	at some or all of		
	Yes – solely responsible for all Yes – jointly responsible for all Yes – solely responsible for so Yes – jointly responsible for so	sites me sites, but not all		2 3		
QS4	ASK IF JOINTLY RESPONSIB AT QS3) OTHERS GO TO QS You mentioned that you are joi business connectivity services. telecoms services? PROBE FL	5 ntly responsible for tele What role do you play	ecoms decision-makino when choosing a tele	g including		
	Choose suppliers Contract negotiations Financials Technical /specialist advice Final approval Shortlisting / Initial contact Other (2 4 5		
QS5	And can I ask you what level of your business connectivity serv READ OUT SCALE - SINGLE	vices?	in each of the following	g areas relating to		
		Service(s) your company buys	Supplier(s) and contract details	Technical information about the service(s)		
	Full knowledge	1	1	1		
	Partial knowledgeOnly slight knowledge	2	2	2 3		
	Know virtually nothing	4 £	4	4		

ASK ALL

QS6 Can I just confirm the main area of business your company is involved in? CODE AGAINST LIST, DO NOT PROMPT

	Agriculture, Forestry & Fishing. 1 Mining. 2 Construction 3 Manufacturing 4 Transportation 5 Communication & IT – IF TELECOMS, CLOSE 6 Utilities 7 Wholesale 8 Retail 9 Finance 10 Insurance 11 Real Estate 12 Services 13 Health 14 Legal 15 Education 16 Social 17 Local government 18 Central government 19 Media 20 Don't know 99	
QUOTA	AS TO BE SUPPLIED	
QS7	ASK ALL What part of the UK is the main UK office of your company located? Scotland	_
QS8A	ASK ALL Are you able to answer questions on business connectivity for the whole of your company only part of it? Whole company	or
QS8B	IF PART COMPANY TO QS8A Which part of the company or region(s) are you able to answer for?	
SPONT	TANEOUS ANSWER	

FURTHER BUSINESS CLASSIFICATION AND BCS OUTLINE (4 MINUTES)

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.

QA1	ASK ALL To the best of your knowledge what would you say is the annual turnover for your DO NOT INCLUDE OVERSEAS TURNOVER IF ASKED Less than £250, 000. £250, 000 - £499, 999. £500, 000 - £999, 999. £1 Million - £2.5 Million. £2.5 Million - £20 Million. £21 Million - £50 Million. £51 Million - £50 Million. £101 Million - £500 Million. £101 Million - £500 Million. Over £500 Million. Refused. Don't know	123456789
QA2	£ - EXCLUDE CODE 4 QS5 FOR MARKED CATEGORY Approximately how much does your organisation spend annually on business conservices within the UK across all sites? Please exclude spending for the services in the introduction. SINGLE CODE. PROMPT WITH BANDS IF NECESSARY ESOKAY IF NOT SURE DO NOT INCLUDE OVERSEAS TURNOVER IF ASKED Less than £50k	mentioned STIMATE
QA3	ASK ALL And how many individual sites, outlets, branches and or offices, including the one work does your company/organisation have in the UK? Please do not include telesites. INTERVIEWER: EXCLUDING ANY PARENT HOLDING COMPANY OR OT INDIVIDUAL COMPANIES WITHIN THE GROUP. SINGLE CODE. PROMPT WITTIN	eworking FHER FH BANDS 123456789

QA4	How many teleworking sites (ie. teleworking employees) does your company have?						
QA5	What %age of your total number of company sites, not including teleworking sites are connected via business connectivity services. INTERVIEWER: ASK FOR AN ESTIMATE IF RESPONDENT CANNOT GIVE A PRECISE ANSWER						
QA6	each of the foll	ites which have bu lowing types of are ST - MULTICODE		ity services, how	many sites are ther	re in	
	Suburban / bus	siness park in subu	urbs				
ASK II QA7	How many tele	KING SITES MEN eworking sites are MATE IF RESPON	connected to you	ır enterprise netw	ork? INTERVIEWE E ANSWER	R: ASK	
QA8	You have said	that you use [LIST	WHAT IS CODE	ED FOR 5-9 AT (QS1].		
For e	READ OUT LIS	n you specify whet ST – MULTICODE INCLUDE THOSE	FOR EACH TYP	PE OF CONNECT	ing business uses? ΓΙΟΝ		
	BRING UP LIST FROM QS1	ADSL or cable modem to access voice and/or data Virtual Private Network(s) (VPNs)	SDSL for some/all voice and/or some/all data communications	Leased lines for some/all voice and/or some/all data communications	Virtual private networks for some/all voice and/or some/all data communications	Other business connectivity services for voice and/or data communications	
	Data - E-mail Data - Shared Data - Storage	oice over broadba & internet enterprise applica	ation, information	& knowledge			
	CATI CODE A	SEPARATE MUL	TICODE LIST FO	OR EACH SERVI	CE CODED AT QS	1	
QA9		EWORKING SITE r company enable			e enterprise network	?	
	Via a ISDN line Via a ADSL co Via a cable mo Via a SDSL co Via a leased lin Other	e				2 4 5 6	

QA10 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 inhouse.

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 then do you use for each of your types of business connection? MULTICODE – THIS QUESTION IS SIMPLIFIED – ONLY USE ONE SIMPLE LIST NOW

CURRENT BUSINESS CONNECTIVITY SERVICE FEATURES (3 MINUTES)

- \$ ASK IF CODE 1 AT QA10
- 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 QA10
- QB1B What is/are the business connectivity service(s) that you are being provided with via outsourcing?

CODE AGAINST LIST - PROMPT ONLY IF RESPONDANT 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).
 5

 Other business connectivity services (please specify)
 6

 DK.
 99 (DO

 NOT READ OUT)

QB1C Do you know the name of the telecom provider providing it/them?

SPONTANEOUS ANSWER – IF MORE THAN 1 RECORD ALL - PROBE FULLY TO CONSIDER ALL BUSINESS CONNECTIVITY SERVICES RECORDED IN QB1B

£-ASK IF CODE 2 AT QA10 OR IF CODE 5 AT QB1B

QB2	You mention that your company is being provided with VPNs. VPNs can be delivered over a variety of business connectivity services. Do you know what the underlying access technolog or infrastructure that you use for enabling your VPNs?			
	MULTICODE - READ IF NECESSARY			
	Traditional SDH leased lines Ethernet			
	Broadband connections (ADSL and/or SDSL)			
	Other (please specify)			
	DK(DO NOT READ OUT)	99		
	ASK ONLY IF CODED 2 OR 3 AT QA10			
QB3	Which Telecoms supplier or suppliers does your organisation use for your busine connectivity services across all your sites? DO NOT PROMPT BUT PROBE FUI CONSIDER ALL BUSINESS CONNECTIVITY SERVICES ACROSS THE COMP	LY TO		
	AT&T	1		
	BT	2		
	C&W/Energis	3		
	Carphone Warehouse	4		
	Colt	5		
	Easynet			
	EntaNet (Enta Group)			
	Exponential-e			
	Global Crossing			
	Fibernet			
	Kingston Communications			
	Level 3			
	Mistral Internet			
	MLL Telecom			
	Neos Networks			
	Netservices			
	NewNet			
	NTL:Telewest			
	Opal Telecoms			
	Orange Business Services			
	Redstone Telecoms			
	Surf Telecoms			
	Tiscali			
	Thus			
	Verizon Business			
	Viatel			
	Vtesse	_		
	ZenDirect			
	Other (please specify)			
	Don't know			

ASK IF MORE THAN 1 CODED AT QB3

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

CATI BRING UP SUPPLIERS MENTIONED AT QB3

CATI BRING UP LIST FROM QS1

BRING UP LIST FROM QS1	ADSL or cable modem to access voice and/or data Virtual Private Network(s) (VPNs)	SDSL for some/all voice and/or some/all data communications	Leased lines for some/all voice and/or some/all data communications	Virtual private networks for some/all voice and/or some/all data communications	Other business connectivity services for voice and/or data communications
BT					2
Carphone	Warehouse				4
Colt					5
	•				
		าร			
		es			

ASK ALL

QB5A Which of the following types of services does your company have?

READ OUT THE SERVICE LIST - MULTICODE Analogue lines 1

· · · · · · · · · · · · · · · · · · ·	
Digital Leased Lines (SDH/PDH)	. 2
Ethernet Leased Lines	3
SDSL	. 4
ADSL	. 5
Cable Modem	. 6
ATM	. 7
Frame Relay	. 8
Wavelength connectivity services	
VPNs	

ASK ALL

QB5B For each of the services that you have mentioned, which of the following bandwidths do you have?

READ OUT THE BANDWIDTH LIST (WITH THE EXCEPTION OF FRAME RELAY AND ANALOGUE) FOR EACH SERVICE CODED AT QB5A - MULTICODE

NOT ALL BANDWIDTHS AVAILABLE FOR ALL SERVICES – FOLLOW THE SCHEME IN THE GRID WHERE A BLACKED OUT BOX INDICATES NO AVAILABILITY AT THAT SPEED

	IF YES TO QB5A					
	Up to 2 Mbit/s	2 to 34 Mbit/s	35 to 154 Mbit/s	155 Mbit/s	Above 155 Mbit/s	
Digital Leased Lines (SDH/PDH)	£	\$		%	!	
Ethernet Leased Lines					!	
ADSL	£	\$				
Cable Modem	£	\$				
ATM	£	\$				
Wavelength connectivity						
services			&	%	!	
VPNs	£	\$	&	%	!	

QB5C Are any of your business connectivity services contended? SINGLE CODE

Yes - all	1
Yes – some	
No	
Don't know	

ASK IF QB5C=2; CATI - BRING UP LIST FROM QB5A

QB5D Of the above services you mentioned, which are contended?

	Yes, contended	Not contended
SDSL		
ATM		
Frame Replay		
VPNs		

QB6 Of the above services you mentioned could you tell us which you use for the following business uses:

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

CATI - BRING UP LIST FROM QB5A – ALSO LOOKUP FROM QB5B FOR DIGITAL LEASED LINES , Ethernet, ADSL, Cable Modem, ATM, Wavelength connectivity services AND VPNS

SINGLE CODE EACH ROW

Analogue lines	1:	2	3	99
Digital Leased Lines				
(SDH/PDH) Up to 2 Mbit/s	1	2	3	99
Digital Leased Lines				
(SDH/PDH) 2 to 34 Mbit/s	1 :	2	3	99
Digital Leased Lines				
(SDH/PDH) 155 Mbit/s	1	2	3	99
Digital Leased Lines				
(SDH/PDH) Above 155 Mbit/s	1	2	3	99
Ethernet Leased Lines				
35 to 154 Mbit/s	1	2	3	99
Ethernet Leased Lines				
Over 155 Mbit/s				
SDSL				
ADSL Up to 2 Mbit/s	1	2	3	99
ADSL 2 to 34 Mbit/s or more	1	2	3	99
Cable Modem Up to 2 Mbit/s	1	2	3	99
Cable Modem 2 to 34 Mbit/s	1	2	3	99
ATM Up to 2 Mbit/s	1	2	3	99
ATM 2 to 34 Mbit/s	1	2	3	99
ATM 155 Mbit/s	1	2	3	99
Frame Relay	1	2	3	99
Wavelength connectivity services 35 to 154 Mbit/s	1	2	3	99
Wavelength connectivity services 155 Mbit/s				
155 Mbit/s	1	2	3	99
Wavelength connectivity services				
Over 155 Mbit/s	1 2	2	3	99
VPNs Up to 2 Mbit/s				
VPNs 2 to 34 Mbit/s				
VPNs 35 to 154 Mbit/s				
VPNs 155 Mbit/s				
VPNs Over 155 Mbit/s	1	2	3	99

CODING REQUIRED FOR REFERENCE IN SECTION D

QB7

ASK ALL And how many business connections do you have altogether in your organisation? ESTIMATE OKAY IF NOT SURE
INTERVIEWER: WE NEED THE NUMBER OF LINES FOR THE WHOLE BUSINESS, NOT JUST THE PARTS THAT THE RESPONDENT IS RESPONSIBLE FOR – CONFIRM THAT YOU HAVE THIS.
Don't know99

QB8 We would like to know more details about the number of business connectivity connections across different speeds; can you tell me for each of the following connection types/speeds approximately how many connections you have?

CATI – BRING UP ONLY THOSE SPEEDS CODED IN QB5B RANGES $(\pounds, \$, \&, \%, !)$ CATI – ONLY BRING UP ANALOGUE IF CODED AT QB5A

£ - Under 64 kbit/s	DK
£ - 64kbit/s	DK
£ - 1Mbit/s	DK
£ - 2Mbit/s	DK
\$ - 8Mbit/s	DK
\$ - 10 Mbit/s	DK
\$ - 34Mbit/s	DK
& - 45Mbit/s	DK
& - 100 Mibt/s	DK
& - 140Mbit/s	DK
% - 155Mbit/s	DK
! - 622Mbit/s	DK
! - 1Gbit/s	DK
Analogue	DK

CURRENT AND FUTURE REQUIREMENTS (6 MINUTES)

QC1 ASK ALL

When making decisions about your company business connectivity services please state how important to your business the following service features are in 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, 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	1	2	3	4	96
Bandwidth (download	1	2	3	4	96
speed)					
Bandwidth (upload speed)	1	2	3	4	96
Symmetry	1	2	3	4	96
Availability	1	2	3	4	96
Resilience	1	2	3	4	96
Latency	1	2	3	4	96
Jitter	1	2	3	4	96
Range	1	2	3	4	96
•					

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

Dedicated connection	More Important 1	Less Important 2	About the same 3	Don't know / not sure 96
Bandwidth (download speed	•	2 2	3 3	96 96
Bandwidth (upload speed Symmetry	, ' 1	2 2 2 2	3 3 3	96 96 96
Availability	1			
Resilience	1			
Latency	1	2	3	96
Jitter	1	2	3	96
Range	1	2	3	96
QC3 ASK ALL Has your business rev	ewed its business connectivity	services within	the last 3 year	s? 1

IF YES AT QC3

QC4A Did you change any of your business connectivity services at that time?

Yes	
No	2 GO TO QC5A
Don't know	

IF YES AT QC4A

QC4B What was the type of previous service (s) you had, but no longer do

SPONTANEOUS ANSWER - IF MORE THAN ONE - RECORD ALL

QC5A Did you change supplier(s) for any of your business connectivity services at that time?

Yes	1
No	2 GO TO QC6B
Don't know	2 CO TO CECTION D

QC6A Were there any other service types that you considered at the time as potential substitutes that you can remember the name(s) of? PROMPT REQUIRED TO ENSURE THAT NOT ASKING ABOUT DIFFERENT SERVICE PROVIDERS.

SPONTANEOUS ANSWER - IF MORE THAN ONE - RECORD ALL

ASK IF YES AT QC4A OR QC5A - OTHERWISE GO TO SECTION D

QC7A	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 Other 96 DK/Can't remember 99 (DO NOT READ OUT)			
QC7B	ASK IF CODE 1 AT QC7A You mentioned that you changed service(s) as a result of changing business requirements; could you indicate which those requirements were? CODE AGAINST LIST BELOW – READ OUT IF NECESSARY – MULTICODE More bandwidth required to support increasing enterprise data/voice traffic			
QC7C	ASK IF YES AT QC5A What were the key factors driving you to select one service provider over the others? READ OUT – MULTICODE Good contacts at chosen company			

MARKET DEFINITION (SSNIP TESTING) (5 MINUTES FOR EITHER VOICE/DATA, 8 MINUTES FOR BOTH)

FOR THOSE WITH VOICE BUSINESS CONNECTIVITY – ANY 'VOICE' CODED AT QB6 (CODES 1/3)

I'd like now to ask about your attitude to different types of business connectivity services. QD1 You've told us that one of the services you are buying is [INSERT CATEGORY CODED AT QB6, CHOSEN AT RANDOM]. What would you do if the price of all [CATEGORY AS ABOVE] services, from all suppliers in the market, went up by 10%. This means that, in this hypothetical situation, you would not be able to avoid the price increase by switching supplier. Would you consider switching, within a year, to a different type of service?" QD2 Why would you not consider switching? READ OUT - MULTICODE High internal costs associated with switching9 None of the above......99 **VOICE - SKIP TO SSNIP QUESTIONS ON DATA** DATA - GO TO QD14 Do you know the name of the service(s) that you would switch to? QD3 IF YES AT QD3 What is the name of the service(s) that you would switch to for VOICE services? QD4 SPONTANEOUS ANSWER - IF MORE THAN ONE - RECORD ALL GO TO QD11 QD5A Would you accept a lower bandwidth or speed for the business connectivity service you use for VOICE services than you currently have to avoid the 10% price increase? DO NOT READ OUT - PROBE IF NECESSARY AND SINGLE CODE

	ANSWER NO ABOVE Would you accept a <u>higher bandwidth or speed</u> for the business connectivity service you use for VOICE services than you currently whilst accepting a price increase?
	DO NOT READ OUT – PROBE IF NECESSARY AND SINGLE CODE Yes
QD6	Would you accept more <u>contention</u> in your VOICE services than you currently have to avoid the 10% price increase?
	DO NOT READ OUT – PROBE IF NECESSARY AND SINGLE CODE Yes 1 £ No 2 Is contended already 3 Don't know 99
QD7	Would you accept an <u>asymmetric component</u> in your VOICE services to avoid the 10% price increase? DO NOT READ OUT – PROBE IF NECESSARY AND SINGLE CODE Yes
QD8	Would you accept a VOICE service with reduced <u>resilience</u> to avoid the 10% price increase? DO NOT READ OUT – PROBE IF NECESSARY AND SINGLE CODE Yes
QD9	Lastly, would you accept any compromise in <u>latency and jitter</u> in your VOICE service to avoid the 10% price increase? DO NOT READ OUT – PROBE IF NECESSARY AND SINGLE CODE Yes
QD10	You have not specified any area you would consider compromising when switching VOICE services to avoid the 10% price increase. After consideration of all the options, what would you do in this situation? Please assume it is not possible to stay on the same service for the same price.
	DO NOT READ OUT UNLESS NECESSARY AND SINGLE CODE Accept 10% price increase

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GO	TO	IJL	<i>)</i> 2

QD11	I'd now like to ask which functional areas you would consider compromise in to avoid a 10% price increase. Please can you indicate below which of the areas you would consider compromising?
	READ OUT - MULTICODE Compromise on bandwidth/speed
QD12	So, just to confirm you would be prepared to substitute your current VOICE services for a service with some or all of the following features in order to avoid the 10% price increase
	CATI – USE LOOKUP ON RESPONSES TO QD5 TO QD11 TO INSERT DESCRIPTIONS OF THE SERVICE THAT THEY WOULD USE INSTEAD.
	Yes 1 No 2 Don't know 3
	REPEAT SSNIP QUESTIONS FOR DATA SERVICES IF CODED AT QB6 (CODES 2/3)
	ASK ALL <u>WITHOUT</u> VPN CODED AT QB6
QD13	If the price of all the business connectivity services that you buy went up by 10% across all suppliers in the same way, so that switching supplier would not allow you to avoid the price increase, would you consider, within a year from when the price increase first affected you, switching to a VPN service?
	Yes 1 No 2 Don't know 99
	ASK ALL <u>WITH</u> VPN – CODED AT QB6
QD14	You've told us that one of the services you buy is VPN. VPNs are built by linking access components to a telecom provider's network to route traffic on their VPN core networks. In order to have a VPN, users need to buy various components (the access services, for example a xDSL or leased line or Ethernet line, and the core network VPN capacity).
	What would you do if the price of all your VPNs component parts, from all suppliers in the market, went up by 10%. This means that, in this hypothetical situation, you would not be able to avoid the price increase by switching supplier. Would you consider switching, within a year from when the price increase first affects you, to buying point to point connectivity?"
	Yes 1 No 2 Don't know 99

AWARENESS OF ALTERNATIVE SERVICES AND BARRIERS TO SWITCHING (5 MINUTES)

QE2 ASK ALL

From start to end, how long is your current business connectivity service contract with (INSERT COMPANY MENTIONED)? 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	
Over 2 years to 5 years	
Over 5 years to 10 years	
Over 10 years to 15 years	5
Over 15 years	6
Unable to give average - contracts are too different. ONLY ACCEPT IF THEY REALL	_Y
CANNOT GIVE ANY OTHER ANSWER	7
Don't know	8

QE4 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
Sometimes purchased as single product, some purchased as part of a wider package 2
All purchased as part of a wider package
Don't know

ASK IF MORE THAN ONE SUPPLIER USED (MULTICODE AT QB3) OTHERS GO TO QE7
QE5a 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

QE5b 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 QE5A. SINGLE CODE

	QE5a	QE5b
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

QE6	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			
QE7	ASK IF ONLY ONE SUPPLIER USED (SINGLE CODE AT QB3) Why does your company use only one supplier for your business connectivity services? PROBE FULLY CODE ALL THAT APPLY DO NOT READ OUT			
	Easier to manage one supplier Negotiate better discounts/ best price They understand our business Provide good/reliable service Offer more advanced/faster line speeds Good relationships with them Historic (Company always dealt with them) Provide other telecoms services to us Get a better service as a bundle Other specify 1 1 1 1 1 1 1 1 1 1 1 1 1			
QE8	Are you aware of any other business connectivity services (i.e. service types rather than service providers) in particular that would meet your company's needs better than your current set-up?			
	Yes			
QE9	Which services are these?			
	OPEN ENDED – TAKE A MAXIMUM OF THREE DIFFERENT SERVICES			
QE12	How likely are you to switch to any of these services, or take them on as extra services, in the next 12 months? (CATI – IF USE BOTH VOICE AND DATA AT QB6) Please can you firstly answer for your VOICE services. Now how about your DATA services?			
	CATI – BRING UP VOICE AND/OR DATA DEPENDING ON CODING AT QB6			
	Voice DATA Very likely 1 GOTO QE14 .1 GOTO QE14 Quite likely 2 GOTO QE14 .2 GOTO QE14 Neither likely nor unlikely 3 ASK QE13 3 ASK QE13 Quite unlikely 4 ASK QE13 4 ASK QE13 Very unlikely 5 ASK QE13 5 ASK QE13 Don't know 99 GOTO QE1499 GOTO QE14			

QE13 What are the main barriers to you switching to these other services that would meet your needs better?

READ OUT - MULTICODE

Good contacts at existing company	
Price	2
Hassle	
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
Other (specify)	96
DK	99
(DO NOT READ OUT)	

QE14: How competitive do you believe the market for business connectivity services to be in terms of:

(Scale: Very Competitive, Fairly Competitive, Not Very Competitive, Not at all Competitive, No Opinion (DO NOT READ OUT))

Range of services	1	2	3	4	99
Quality	1	2	3	4	99
Price	1	2	3	4	99

CATI ROUTING INSTRUCTION FORMAT

QX1 Ofcom will be publishing a summary of the results of this research in due course. So, we can notify you of this event which may be in several months away, we would need to pass back your details (ie your e-mail address or postal address) to Ofcom – however, any comments you have made will be kept separate and will not be passed back to Ofcom in any way that might identify you. Would you be happy for us to pass back your contact details to Ofcom so they can notify you when the results are ready?

Yes – pass back	1
No – remain anonymous	2

THANK AND CLOSE INTERVIEW