



# The Communications Market

## Special Report

### Niche ISPs

**Market Research conducted by  
Recom, Research in Communications  
on behalf of Ofcom**

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## Section 1

# Summary of the research findings

## 1.1 Niche ISPs - Size and total value of the market

The UK niche ISP market is made up of approximately 686 service providing businesses, of which:

- 390 provide 'Hosting, Connections and other services'<sup>1</sup>
- 224 provide 'Hosting and other services'
- 72 provide 'Connections and other services'

In total, they claim to serve approximately 1.9 million customers (including both business and residential consumers) in the UK, and the estimated value of turnover is £1.15 billion per annum. The actual proportion of their turnover relating to Internet connections (i.e. connections via broadband / dial up and hosting services excluding all other services) is approximately £740m and niche ISPs that provide connections and hosting and other services serve approximately 1.3m customers (both business and consumer/home) in the UK.

In terms of the total market, Niche ISPs (irrespective of the type of services provided) serve approximately:

- 30% of the total enterprises<sup>2</sup> in the UK  
and
- 5% of UK households

According to the niche ISPs surveyed, 16% of all UK businesses and 2% of UK households have an internet connection service supplied by a niche ISP.

## 1.2 Niche ISPs – Profile

The vast majority (83%) of niche ISPs have less than 20 employees, equally split between technical and non-technical staff. 61% of ISPs have only one office location and tend to generate less than £1m annual turnover. Most of the niche ISPs approached are located in England and more precisely in the South (South East: 27%, London: 15% and South West: 7%).

In terms of types of businesses they serve, the focus is on smaller companies with one to 30 employees.

Niche ISPs offer internet connections, web-hosting and other IT services, as part of a tailored, consultative service to businesses.

Niche ISPs claim to offer a higher quality of customer care than large ISPs.

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<sup>1</sup> Connections services = broadband, leased lines and / or dial-up.

Other services = domain registration, consultancy, tailor made solutions, managed services, website management, design.

<sup>2</sup> According to DTI Small Business Analytical Unit, they are approximately 4.4m enterprises in the UK

## Section 2

# Background and research objectives

## 2.1 Background

Ofcom worked with The Internet Service Providers' Association UK (ISPA) in designing this research. The research focussed on niche ISPs - by ISPs, we mean companies that provide broadband, leased lines, dial-up (connection services) and / or hosting services, and that have a direct relationship with customers / end users in the UK (i.e. that they bill directly).

## 2.2 Research Objectives

Ofcom undertook this research project to better understand the niche ISP market and to determine its magnitude.

The specific objectives were to establish the following:

- The size and the total value of the market
  - The number of business and residential connections they have
  - The revenues
  - The number of seats (PC terminals) they serve
- Profile of the niche ISPs in terms of
  - Number of employees and the ratio between technical and non-technical staff they have
  - The type of services they provide, i.e. broadband, leased lines, dial-up, hosting, managed services, etc.
  - The type of customers they serve and the geographic spread of the UK customer base
  - The type and level of customer service they provide
  - Level of any discounts available
- Industry membership and support

## 2.3 Methodology

To ensure that accurate market sizing was obtained, we needed to establish how many niche ISPs there are in the UK. An extensive desk research project was carried out. See appendix A for the methodology used to obtain the sample frame.

The methodology used for the research was telephone interviews, lasting 12 minutes on average.

- The fieldwork took place between March and April 2006.
- All niche ISPs identified by the desk research were approached and, of these, **313 ISPs** were interviewed.
- Overall, there was a high interest in taking part:

- the refusal rate was very low (7%)
  - 98% of the respondents agreed to be contacted again
  - 92% of the respondents asked to be notified when the report is published.
- It was often necessary to contact organisations several times before obtaining an interview. In some cases, it was also necessary to speak to several people within the company in order to complete one questionnaire.
  - The following people were interviewed:
    - MD / Partner (51%)
    - Sales / Marketing director (12%)
    - Technical director (12%)
    - Customer service director (8%)
    - Operations director (9%)
    - Legal, financial directors (8%)
  - The following types of ISPs were approached:

<b>Services provided<sup>3</sup></b>	<b>Total achieved</b>	<b>Total Universe<sup>4</sup></b>	<b>Hosting vs. Connections</b>
Hosting + other services	68	224	33%
Connections + other services	33	72	67%
Hosting + Connections + other services	212	390	
	313	686	100%

<sup>3</sup> Connections services = broadband, leased lines and / or dial-up services.

Other services = domain registration, consultancy, tailor made solutions, managed services, website management, design services.

<sup>4</sup> Best estimates through desk and telephone research.

### Section 3

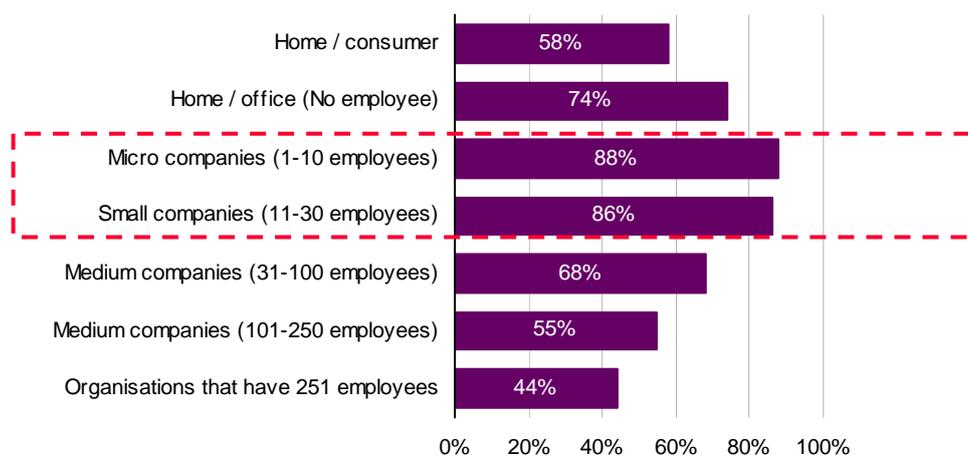
## Size and total value of the market

### 3.1 Size / number of connections

Irrespective of type of ISPs ('Connections services' vs. 'Hosting services'), over 85% of these niche ISPs provide services to companies with 1 to 30 employees.

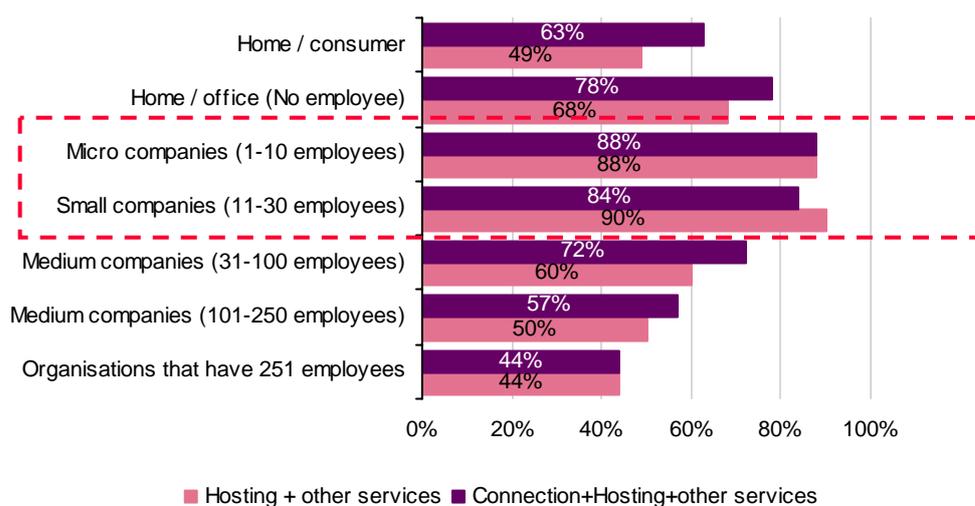
**Figure 3.1 Type of customers served**

Q. Considering your customer base in the UK only, which of the following do you provide services for?



Base: All respondents, n = 313

**Figure 3.2 Type of customers served by type of ISPs<sup>5</sup>**



<sup>5</sup> Base 'Hosting + other services' = 68 Base 'Connections + hosting + other services' = 245

The total number of customers served in the UK is estimated to be approximately 1.9m of which 1.3m (67%) are business customers, including home / office, and approximately 600,000 (33%) are residential consumers.

Niche ISPs that provide ‘Connections’ services, say they serve approximately 1.3m customers in the UK of which:

- Approximately 600,000 are home consumers
- and
- Approximately 700,000 are business

**Figure 3.3 Estimated number of UK customers served by type of customers and by type of ISPs, based on respondent estimates**

Types of customers	Total number of customers	Number of customers served by ISPs that provide		
		..hosting + other services	...connections + other services	...connections + hosting + other services
<b>Home / Consumer</b>	<b>634,000</b>	<b>68,000</b>	<b>13,000</b>	<b>553,000</b>
<b>Business customers total</b>	<b>1,295,000</b>	<b>588,000</b>	<b>26,000</b>	<b>681,000</b>
Home / Office (no employees / self employed)	174,000	27,000	3,000	144,000
Micro companies (1 – 10 employees)	324,000	146,000	7,000	171,000
Small companies (11 – 30 employees)	434,000	278,000	10,000	146,000
Medium companies (31 – 100 employees)	137,000	45,000	2,000	90,000
Medium companies (101 – 250 employees)	89,000	18,000	1,000	70,000
Organisations that have 251+ employees	138,000	74,000	2,000	61,000
<b>Total</b>	<b>1,930,000</b>	<b>656,000</b>	<b>39,000</b>	<b>1,234,000</b>

Base: All respondents, n = 313

**= 1,273,000**

Comparing the number of customers served by the niche ISPs with the statistics from the DTI, there are approximately 4.4m<sup>6</sup> enterprises in the UK (considering all enterprises irrespective of size), which indicates that the niche ISPs serve approximately 1.3m businesses which is approximately 30% of the total enterprises in the UK.

Similarly, if we compare the residential market, the niche ISPs serve an estimated 600,000 residential consumers, equal to approximately 4% of all UK households with internet.

Niche ISPs that provide ‘Connections’, serve an estimated 1.3m customers in the UK, which represents :

- 16% (approximately 700,000 business customers) of the total enterprises in the UK
- and
- 2.3% (approximately 600,000 home consumers) of UK households.

*For statistical analysis procedure, see Appendix B, Estimate of total universe of customers.*

<sup>6</sup> Source: Small Business Service Analytical Unit (DTI)

**Figure 3.4 Actual number of UK customers served by type of niche ISPs (in relation to the services they provide)**

Services provided <sup>7</sup>	Total Universe	Total Number of Customers	Percentage
Hosting + other services	224	656,000	34%
Connections + other services	72	39,000	66%
Hosting + Connections + other services	390	1,234,000	
<b>Total</b>	<b>686</b>	<b>1,930,000</b>	<b>100%</b>

Of the niche ISPs that provide 'Connections' to customers, of which there are 1.3m (66%) the total number of 'seats' (computer terminals) served is estimated to be approximately 8.4 million.

*For statistical analysis procedure, see Appendix B, Estimate of total universe of seats.*

### 3.2 Total value of the market

The total annual turnover generated by the niche ISPs (based on respondent claims) is approximately £1.15 billion, however the actual proportion of their turnover relating to internet connections only (i.e. connectivity via broadband / dial up and hosting services, excluding all other services) is approximately £740m.

*For statistical analysis procedure, see Appendix B, Estimate of total revenue generated.*

<sup>7</sup> Connections services = broadband, leased lines and / or dial-up services.

Other services = domain registration, consultancy, tailor made solutions, managed services, website management, design services

## Section 4

# Profile of niche ISPs

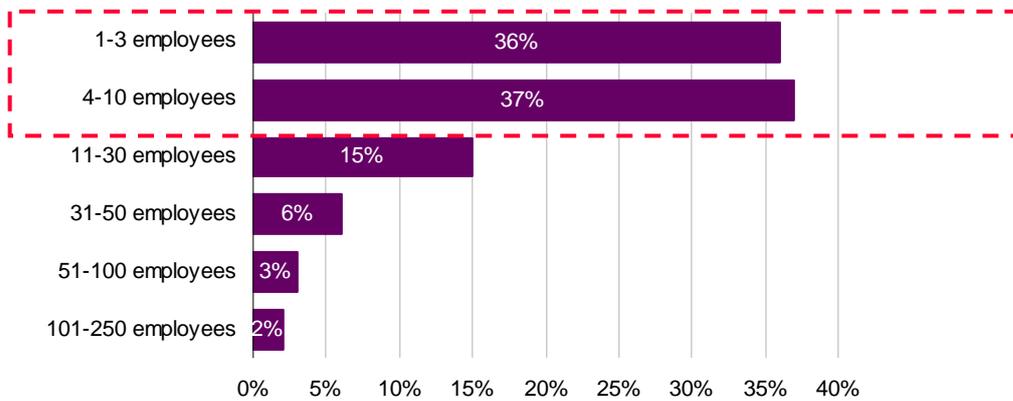
### 4.1 Size

The majority of the niche ISPs:

- Have up to 10 employees (73%).
  - On average, the ratio between technical staff and non-technical staff is 50/50.
- Are single site (65%).
- Have up to £1million turnover (61%).

**Figure 4.1** Number of employees

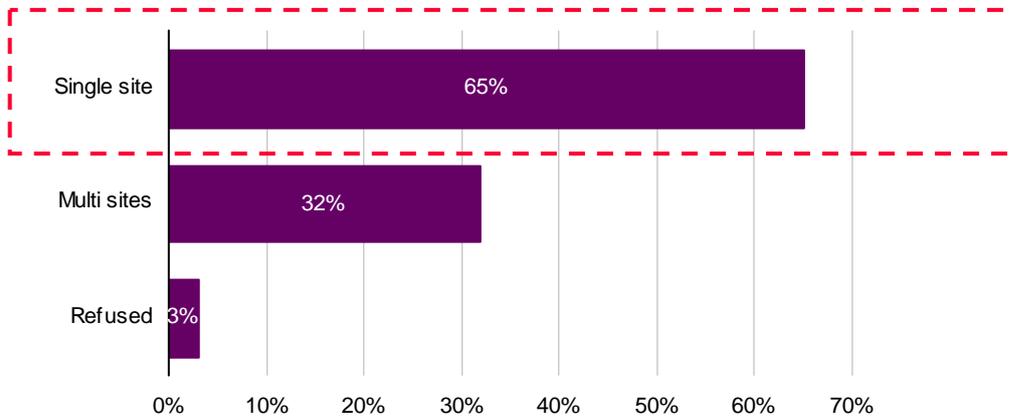
Q. How many permanent employees are there in your company in total?



Base: All respondents, n = 313

**Figure 4.2** Number of office locations

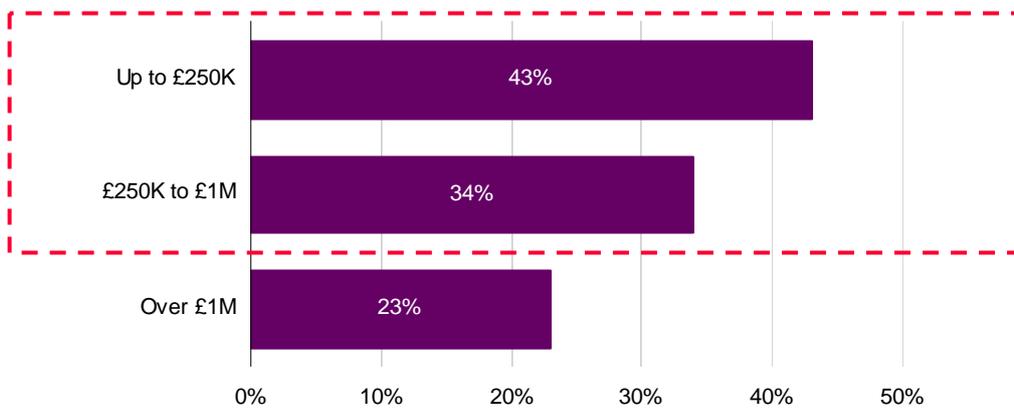
*Q. How many office locations does your company have in the UK? And outside the UK?*



Base: All respondents, n = 313

**Figure 4.3** ISPs' annual turnover

*Q. What is your organisation's annual turnover?*



Base: All respondents who gave an answer, n = 244

## 4.2 Types of services provided

The majority of the niche ISPs provide numerous services, and for simplicity and practical purposes we have grouped the services provided as follows:

- Connections + other services
- Hosting + Connections + other services
- Hosting + other services

‘Connections’ means if the ISP provides any of the following: broadband, leased lines and/or dial-up.

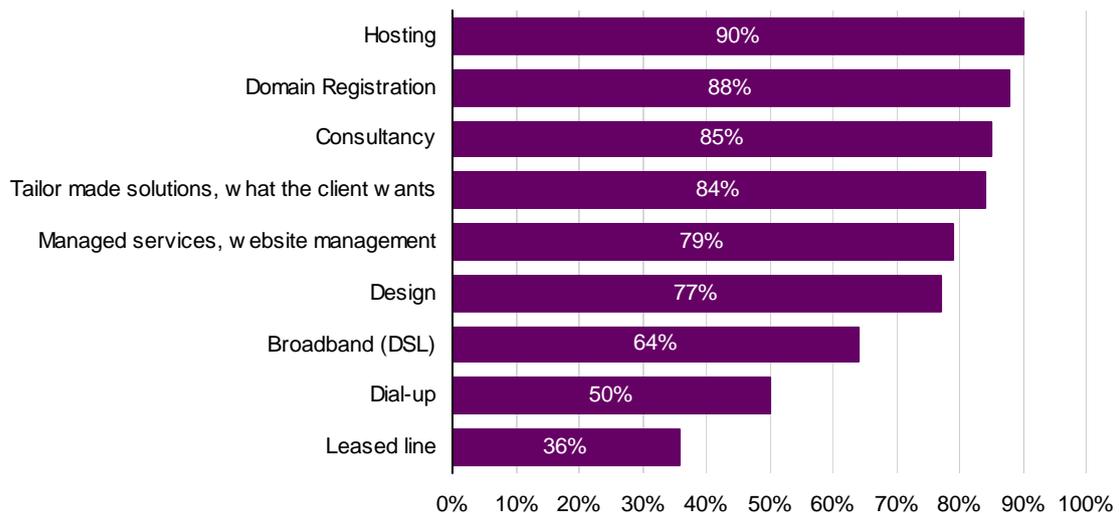
‘Other services’ means if the ISP provides any of the following: domain registration, consultancy, ‘tailor made solutions’, managed services, website management, website design)

**Figure 4.5 Summary of ‘other services’ provided in relation to the universe**

Types of services provided	Total “Universe” estimates <sup>8</sup>
Hosting + other services	224
Connections + other services	72
Hosting + Connections + other services	390
	686

**Figure 4.6 Types of services provided**

Q. Which of the following services do you provide for your customers?



Base: All respondents, n = 313

<sup>8</sup> Best estimates through desk and telephone research

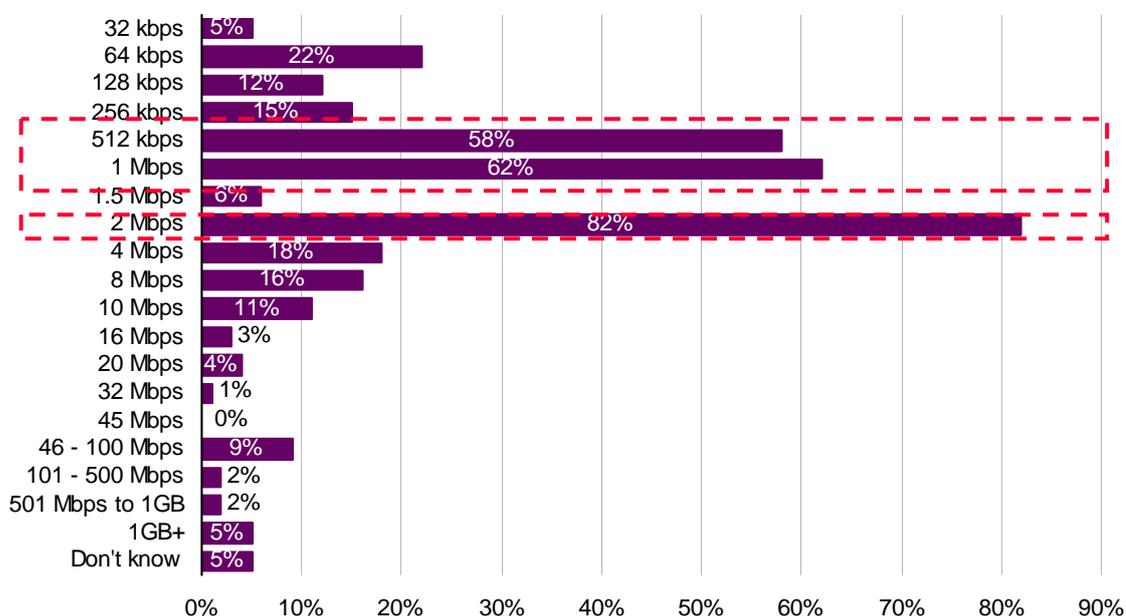
### Broadband (DSL), dial-up or leased lines services

As shown in the chart below, the most common bandwidth sizes provided are:

- 2 Mbps (82%),
- followed by
- 1 Mbps (62%)
- and
- 512 Kbps (58%)

**Figure 4.7 Type of bandwidth size provided**

*Q. What types of bandwidth size do you provide to your clients?*



Base: All who provide broadband, leased line or dial up, n = 245. Fieldwork took place beginning March and mid April 2006

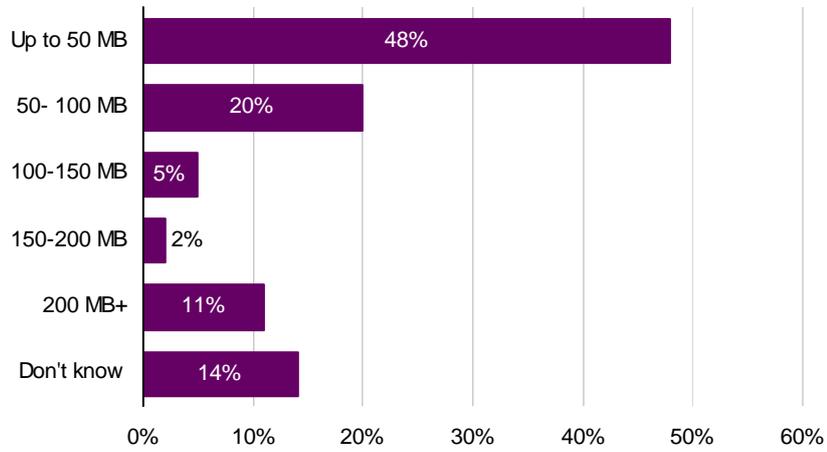
### Hosting services

Amongst ISPs that offer website hosting:

- The average size of customer's web space provided is less than 50 MB.
- A variety of webpages are hosted, ranging from static to those with databases, e-commerce and interactive pages.
- Niche ISPs' customers are mainly offered Linux and Microsoft as operating systems for hosting.

**Figure 4.8 Average size of customer's web space**

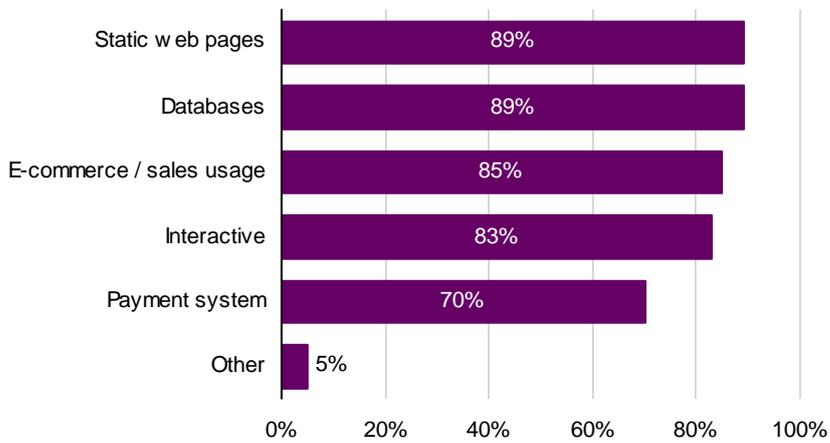
*Q. What is the average size of your customers' web space?*



Base: All who provide hosting, n = 279

**Figure 4.9 Types of websites hosted**

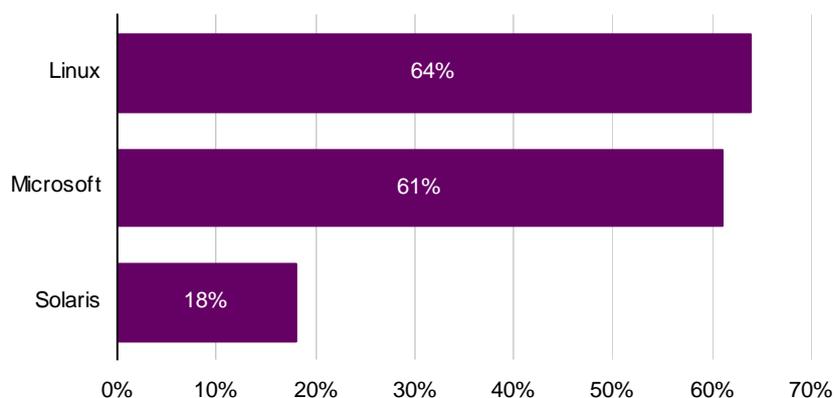
*Q. How complex are the websites you host/manage?*



Base: All who provide hosting, n = 279

**Figure 4.10 Operating systems offered to customers**

Q. Which operating system are you offering to your customers for hosting?



Base: All who provide hosting, n = 279

- Number of sessions and hits served

When asking the respondents how many sessions they have per month accessing their services:

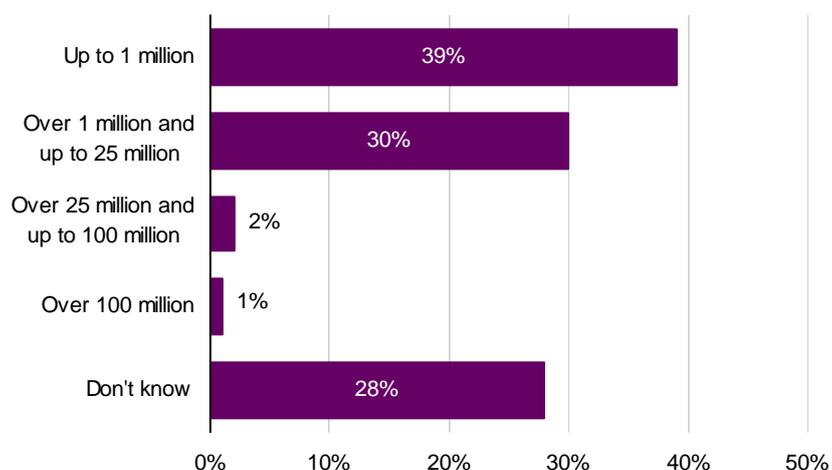
- 39% estimated to have up to 1 million sessions
- 30% thought between 1 million and 25 million sessions

With regard to the number of hits served per month:

- 35% of the niche ISPs think they serve up to 5 million hits per month
- 26% between 5 million and 25 million hits per month

**Figure 4.11 Number of sessions accessing niche ISPs' services per month**

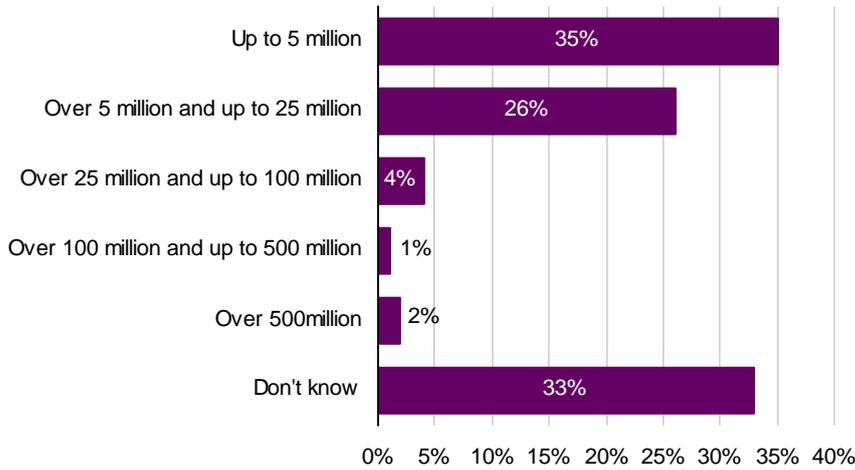
Q. How many sessions do you have per month accessing your service?



Base: All who provide hosting, n = 279

**Figure 4.12** Number of hits served per month

Q. How many hits per month are your machines serving?



Base: All who provide hosting, n = 279

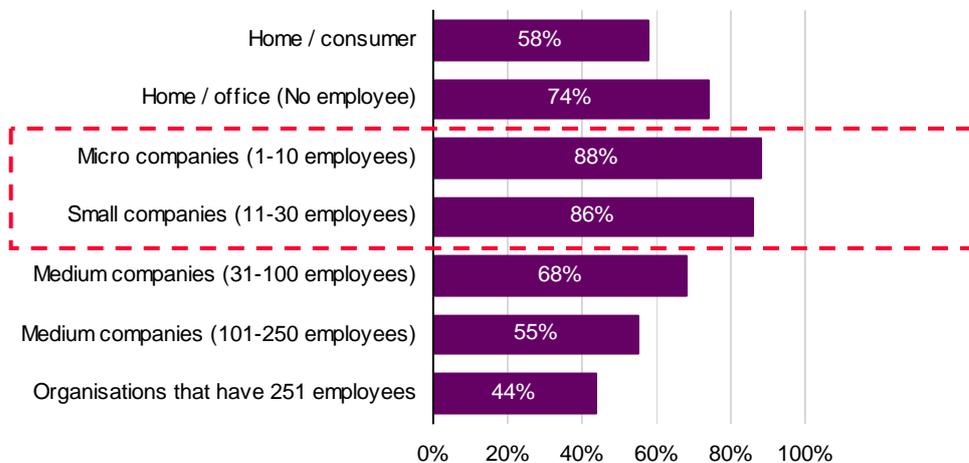
### 4.3 Types of customers niche ISPs serve

In terms of the profile of customers the niche ISPs serve, as shown in the chart below 4.13 the focus is on:

- micro companies (1 to 10 employees)  
and
- small companies (11 to 30 employees)

**Figure 4.13** Types of customers served by niche ISPs

Q. Which of the following do you provide services for?



Base: All respondents, n = 313

It appears that:

- Niche ISPs that provide 'Hosting + other services' tend to focus on the smallest businesses as customers (1 to 10 employees).
- Niche ISPs that provide 'Connections + other services' have approximately a third of their customers that are home / consumer .
- Considering all niche ISPs, on average 20% of the customer base tends to be consumer and 80% business

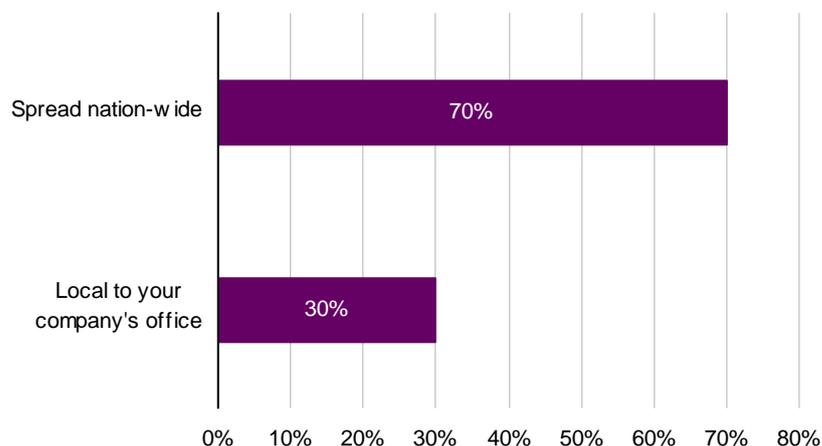
### Customers' geographic base

In terms of where the niche ISPs' customers are based:

- All have customers in the UK; most (70%) of the ISPs interviewed have customers nationwide while a sizeable minority (31%) have customers only in their local region. (In Northern Ireland and Scotland, there seems to be a focus on local customers with 67% and 44% respectively, having customers local to their offices. However, bases are very low so this should be treated as an indicative finding).
- 57% of the niche ISPs have also customers outside the UK; these are mainly in Europe (42%) and North America (24%).

**Figure 4.15 UK Customers' geographic spread**

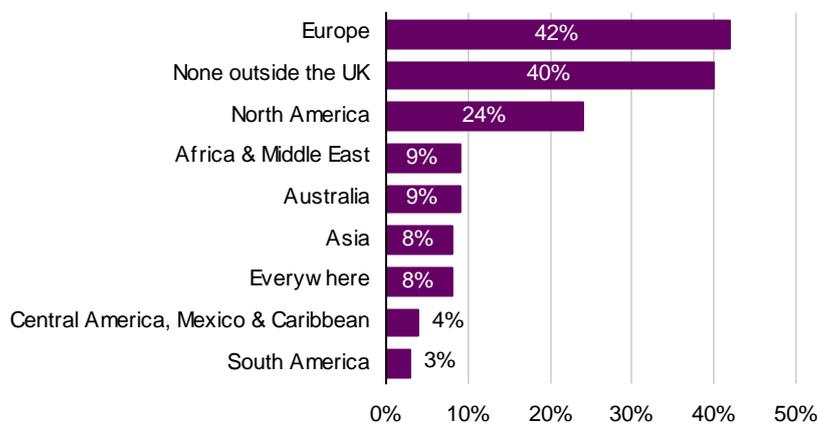
*Q. Would you say that your UK customers are spread nation-wide or are local to your company's office?*



Base: All respondents, n = 313

**Figure 4.16 Customers' location**

Q. *Where outside the UK are your customers based?*



Base: All respondents, n = 313

**Niche ISPs' customer base: Any common factors?**

A third of the niche ISPs do not think their customers share any common factors. The remainder believe that most of their customers require:

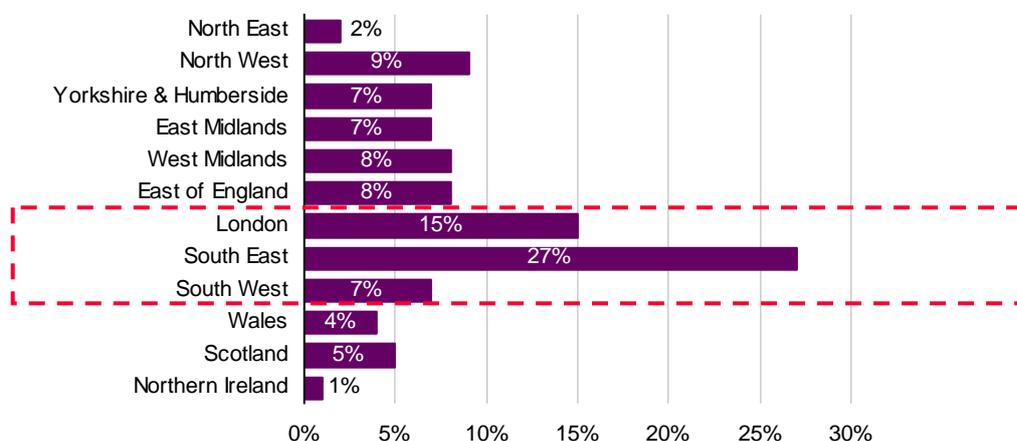
- a high level of customer service with reliable technical support and / or
- a customised service, offering a total solution.

The majority (68%) of the niche ISPs have customers from all types of industry. However, looking at the types of services they provide, there is a higher proportion of customers in financial services with niche ISPs that provide 'Connections, Hosting + other services' compared with niche ISPs that provide only 'Hosting + other services'.

## 4.4 Location of Niche ISPs

The niche ISPs approached spread throughout the UK with a concentration in the South of England.

**Figure 4.17 Niche ISPs' location by UK regions**



Base: All respondents, n = 313

## Level of customer service provided and level of discount available

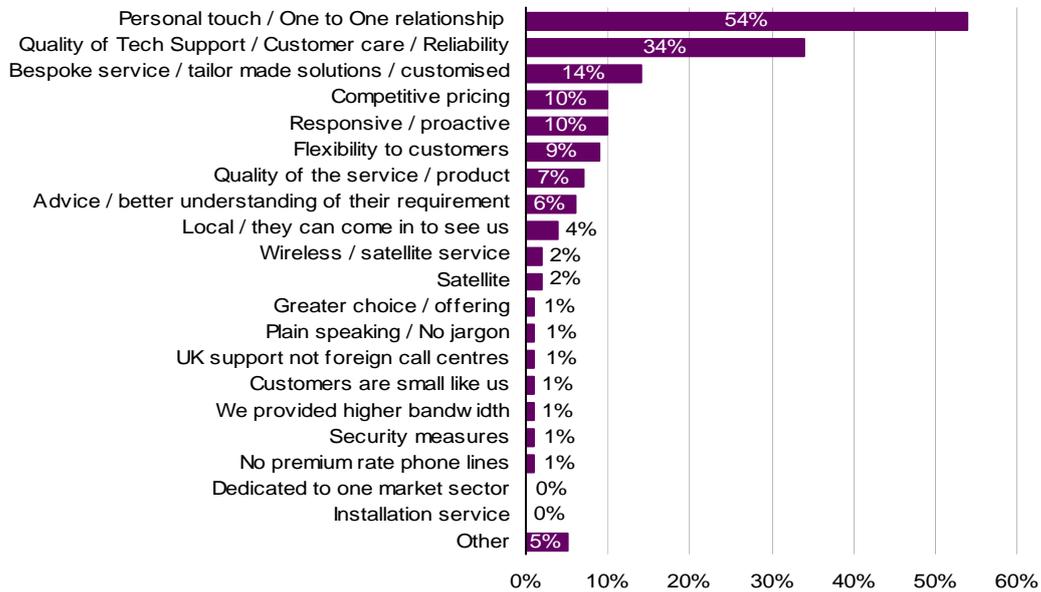
### What makes the niche ISPs different from larger ISPs?

Niche ISPs claim that their advantages over larger ISPs are:

- the personalised service they can offer (54%)  
and
- the quality of their technical support, with 'a technical advisor / assistant always there to help them' as opposed to 'automated voices' or long 'queues on the line' with larger ISPs (34%)

**Figure 4.18 Perceived advantages of niche ISPs over large ISPs**

Q. What are the advantages of the service you provide for your clients compared to larger ISP companies?



Base: All respondents, n = 313

Illustrative examples of verbatim comments are shown below:

*“We spend more time on the phone if necessary, we provide a more technical service, multiple IP addresses, 24 hour monitoring, we’re much more proactive in resolving issues.”*

*“We’re able to tailor our services certainly for our business customers, and we can offer a more personal customer experience.”*

*“We’re cheaper, more efficient; it’s a one-to-one service, and all the support is in the UK.”*

*“Delivery by fully qualified engineers, not a call centre. We can identify/diagnose problem and surgically solve the problem in real time.”*

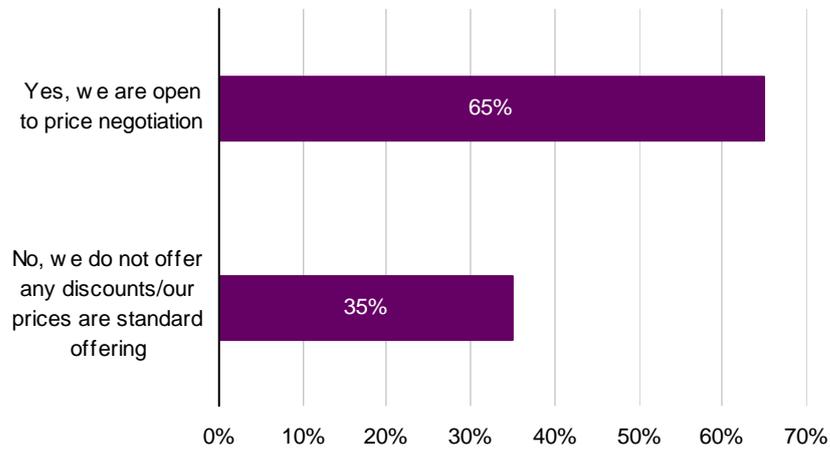
*“We don’t oversubscribe our pipe. Foreign call centres are a big issue. We provide UK support. A person answers the phone. We apologise for mistakes when we make them. Even at midnight we can provide rapid response to customers.”*

### Level of discount available

65% of niche ISPs said they are open to price negotiation.

**Figure 4.19** Level of discount available

*Q. Do you offer any discounts for your services?*



Base: All respondents, n = 313

## Section 5

# Industry membership and support

## 5.1 Industry membership

In order to understand better how niche ISPs are represented by and engage with industry organisations the research sought to understand the extent to which niche ISPs are members of internet industry bodies. 45% of niche ISPs claimed to be members of an internet industry body.

Are you a member of any Internet Industry body?	
Yes, a member of an Internet Industry body	45%
No, not a member of an Internet Industry body	55%

Base: All respondents, n = 313

Several organisations, which were considered by the respondent to be internet industry bodies, were mentioned as shown in the table below:

If so, which ones?	No of respondents that say they are members of ...
Nominet	59
ISPA UK	38
RIPE	13
Linx	12
UK Web Design Association	9
Otelo	6
UKIF	3
Lipex	3
ICSTIS	2
LoNAP	2
Network for online commerce	1
Other (eNom, Microsoft channel partners, International Webmasters Association ...)	27
Can't remember the name	17

Base: All respondents who claimed to be members of an internet industry body, n = 142

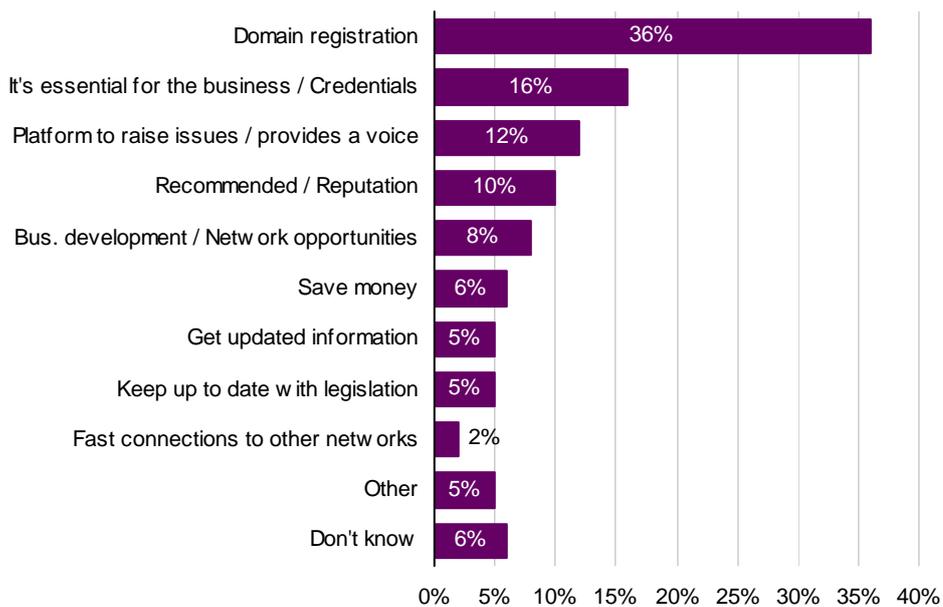
## Benefits gained from Internet industry body membership

Members of internet industry bodies found the membership essential in terms of offering credibility, and it was considered to be a useful platform to voice their views and keep up to date with the industry.

For those who were members of domain registry organisations, the benefits were mainly the cost saving on registrations.

**Figure 5.1 Reasons for membership**

Q. *Why did your organisation become a member of this Internet industry body?*



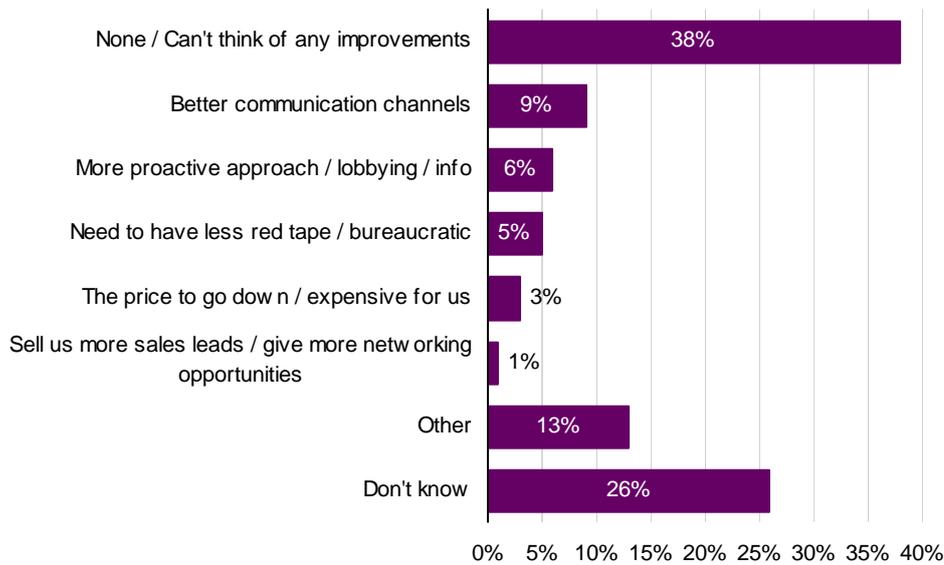
Base: All respondents who claimed to be members of an internet industry body, n = 142

### Areas for improvement for Internet industry bodies and other associations

The majority of niche ISPs that are members of an internet industry body did not suggest any areas for improvement.

**Figure 5.2 Areas for improvement for Internet industry bodies**

Q. How can it improve?



Base: All respondents who claimed to be members of an internet industry body, n = 142

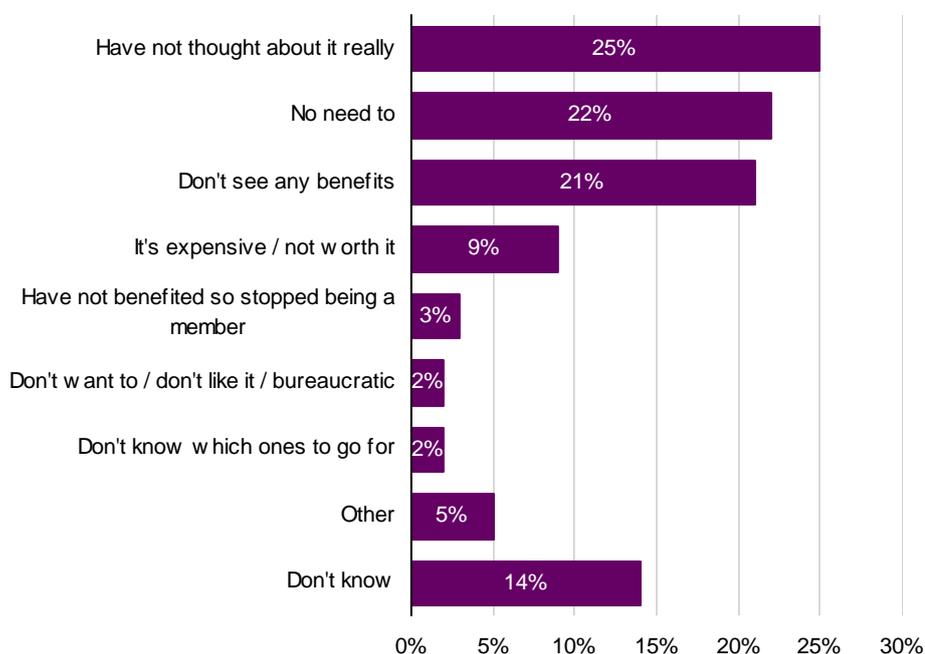
### Reasons for not being members of industry bodies

The majority of the niche ISPs are not members of any internet industry body. The reasons given were:

- there are no benefits perceived, and it is not worth the cost as it does not appear relevant to their activities (52%)
- they have not had a chance to get around to it (25%)

**Figure 5.3 Reason for not becoming a member of an Internet industry body**

Q. Why aren't you a member of an internet industry body?



Base: All respondents who claimed to be members of an internet industry body, n = 142

## 5.2 Public sector support

### Low awareness of support / funding available

- Only 21% of the respondents interviewed were aware of non-private support / funding schemes. Some of the schemes cited were:
  - Business Link
  - DTI
  - European funding
  - Local funding to SMEs
- Only 6% have received non-private support / funding, which has been used for business development and training.

### Support required

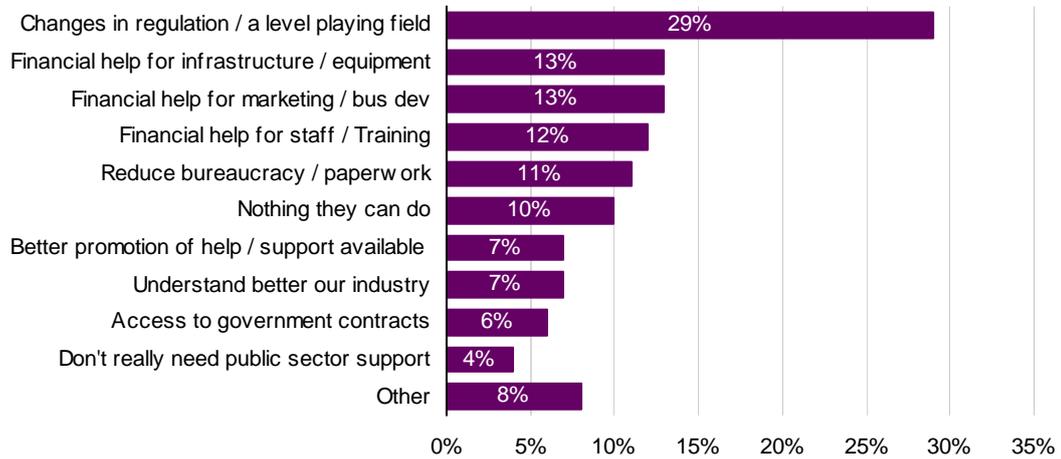
- When asking the respondents 'how the public sector can support them in growing their business', the main requirements were:
  - Changes in regulation to support them better and create 'a level playing field' to compete in
  - Financial support that would be used for equipment, business development and staff

*"It is by creating an environment where small providers can compete. Co-existence needs to be able to continue in a healthy, productive way. Website hosting ok but broadband arena difficult for small (suppliers) to compete."*

Please see chart 5.4 below for ISPs' support requirements

**Figure 5.4 How niche ISPs say they can be supported by the public sector**

*Q. How can the public sector (i.e. Government and Ofcom) support you in growing your business?*



Base: All respondents, n = 313

## Annex A

# Methodology used to obtain the universe of niche ISPs

1. Step 1; carried out extensive desk research

Main websites searched were as follows:

Name	Website url
ADSL guide	<a href="http://www.adslguide.org.uk/isps/summarylist.asp">http://www.adslguide.org.uk/isps/summarylist.asp</a>
ISP Review	<a href="http://www.ispreview.co.uk/broadband/xdsl.shtml">http://www.ispreview.co.uk/broadband/xdsl.shtml</a> <a href="http://www.ispreview.co.uk/broadband/sat.shtml">http://www.ispreview.co.uk/broadband/sat.shtml</a> <a href="http://www.ispreview.co.uk/broadband/wire.shtml">http://www.ispreview.co.uk/broadband/wire.shtml</a>
Net4Now	<a href="http://www.net4now.com/listings/isp_packages_directory.asp?Package_Selected=Broadband">http://www.net4now.com/listings/isp_packages_directory.asp?Package_Selected=Broadband</a>
RIPE	<a href="ftp://ftp.ripe.net/pub/stats/ripencc/membership/alloclist.txt">ftp://ftp.ripe.net/pub/stats/ripencc/membership/alloclist.txt</a>
ISPA UK	<a href="http://www.ispa.org.uk/">http://www.ispa.org.uk/</a>
Nominet	<a href="http://www.nic.uk/">http://www.nic.uk/</a>

2. Step 2; purchased lists from list providers
3. Step 3; confirming the sample 'universe':
  - o Called **all** contacts of companies gathered in steps 1 and 2 to ensure they are niche ISPs: i.e.
    - a) that bill their customers in the UK directly
    - b) that had less than 250 employees
    - c) that provided broadband, leased lines, dial-up and / or hosting services

In total we gathered 1, 243 records, and after telephoning them all, 686 were classified as niche ISPs.

Please see the table below, which shows the breakdown of niche ISPs according to the types of services they provide.

Services provided	Total Universe <sup>9</sup>	Total achieved
Hosting + other services	224	68
Connections + other services	72	33
Hosting + Connections + other services	390	212
<b>Total</b>	<b>686</b>	<b>313</b>

Please note: companies with an ISP subsidiary (who may have less than 150 employees) were not considered as a niche ISP, e.g. NTL & NTL Group, Pipex Communications Hosting Ltd & Pipex Internet Ltd & Pipex, Thus PLC & Thus PLC Demon Internet, Tiscali & Tiscali Ind. Bus Ass & Tiscali Ind. Distr, XKO & XKO Group Plc. etc.

<sup>9</sup> Best estimates through desk and telephone research

## Annex B

# Statistical analysis procedure

## Weighting the data

313 interviews were achieved, structured as follows:

Services provided	Achieved Interviews	Universe
Hosting only + other services	68	224
Connections only + other services	33	72
Hosting + Connections + other services	212	390
	313	686

For the purpose of estimating total customers, seats and revenue generated the results above were grossed to their respective universes. Weights were as follows:

Services provided	Weight
Hosting only + other services	3.29
Connections only + other services	2.18
Hosting + Connections + other services	1.84

## Estimate of total universe of customers

Respondents were asked firstly to give an exact number of customers they served and (if they were unable to do that) to indicate within a series of ranges how many customers they served. This method of questioning had the advantage of enabling us to apply the mean number of customers within the appropriate range for those respondents who were unable to give a specific answer to the exact number of customers.

Within each of the 36 ranges, the mean average number of customers was multiplied by the universe estimate for the range and summed. In practice a universe estimate of 644 weighted ISPs were estimated to generate 1,811,228 customers.

For the 6% of ISPs who were unable to provide any information, we assumed they were a random sample of the universe. Hence a grossing factor of 686 / 644 was applied to generate the final universe estimate of 1,929,770 or 1.9 million customers.

## Estimate of total revenue generated

Revenue data was generated again firstly by asking specific details and if not possible, within a series of ranges. As per the customer estimates, those ISPs that were able to declare a range but not specific details of turnover were given the mean score for the range. The mean score for each range was multiplied by the estimated universe size of the range. A total of 539 weighted ISPs were estimated to generate £946,050,693.

However, some 20% of ISPs were unable or unwilling to provide any information about revenue. We firstly made the assumption that they were a random sample of all ISPs. Simply by applying a multiplier of 686 / 539, our crude estimate of revenue was £1,204,064,519 or £1.2 billion.

However, since the great majority of ISPs were able to indicate how many customers they had, we attempted to model the missing revenue information from the number of customers. A regression equation was produced as follows:

$$\text{Turnover} = 133 \times \text{Total customers} + 1,156,059$$

The model itself had only limited prediction power ( $r^2 = 0.07$ ), so the relationship between total customers and total revenue is tenuous, if statistically significant. Using this model, the mean predictive value, for those respondents who had provided customer data but not revenue data, was £1,386,567. Applying this mean revenue to the 147 weighted ISPs and adding this to the total known revenue, we generated a revised estimate of £1.15 billion, a slightly lower estimate than given by random assumptions, indicating that in general non respondents to revenue questions may have had fewer customers the ISPs able to give the required information. We preferred to err on the side of caution so have used the modelled estimate of £1.15 billion in the report.

## Estimate of total universe of 'seats'

The universe of ISPs serving terminals (or 'seats') was estimated to be 462. 65% of were able to provide information, relating to seats, either in terms of ranges or specific numbers or both. Using a similar method of calculation as used to estimate customers and revenue, the 300 weighted ISPs who were able to give numbers of seats were estimated to generate 6,220,330 seats.

When this was projected to the universe of ISPs, assuming randomness, the crude estimate generates 9,579,309 or 9.6 million seats.

However, there is a clear relationship between the number of customers and the number of seats. This is given by the equation:

$$\text{Number of seats} = 5.25 \times \text{number of customers} + 1329$$

The efficiency of the model is given by  $r^2 = 0.36$ .

Applying this to ISPs that were unable to provide information relating to seats, we estimated that the average such company has is 13,672 seats. Applying this modelled estimate to the data for which we have estimates, we generated a revised estimate of the universe of 8,434,834 or 8.4 million, which is our preferred estimate. As with revenue estimates, non respondents may have, on average, fewer customers than respondents, and thus randomness cannot be assumed.