



# Research Report:

Voice over Internet Protocol (VoIP)

Statement

Publication date:

26 July 2007



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## Section 1

# Executive Summary

- 1.1 This research report draws on the findings of three pieces of Ofcom research on VoIP use. In Ofcom's consultation *Regulation of VoIP Services*, 22 February 2006<sup>1</sup>, and our *Statement on the Regulation of VoIP Services*, 29 March 2007<sup>2</sup>, we undertook to monitor developments in VoIP use to inform our policy on VoIP regulation, especially regarding access to emergency services over VoIP. The findings of this report were taken into account when formulating the proposals in our consultation, *Regulation of VoIP services: Access to the emergency services*, 26 July 2007.
- 1.2 This report draws on three pieces of quantitative research among UK consumers commissioned by Ofcom:
- Ofcom's communications tracking survey of c.2,200 UK adults per quarter;
  - A face-to-face survey of UK adults conducted in May 2006 to explore VoIP take-up (the May 2006 research); and
  - An online survey of 500 VoIP users designed to gain a better understanding of consumer usage. This survey was carried out in October 2006 (the October 2006 research).

Together, these pieces of research show the growth of VoIP use in the UK and the types of products being used. Further, the research shows that, in general, users are not fully aware of the extra functions or limits of the products they are using.

## Usage of VoIP increasing

- 1.3 An estimated 2.4m UK households have used a VoIP service
- 1.4 VoIP usage is more common among younger adults (15-44s) than older adults
- 1.5 People in the ABC1 socio-economic group are more likely to use VoIP than those in the C2DE group

## More users say they are with Skype than with any other provider

- 1.6 In the October 2006 research, over two thirds of VoIP users said they were Skype customers (67%). MSN followed with 18% of users, then BT and/or Yahoo!<sup>3</sup> with 16%, Tesco with 6%, and Orange (Wanadoo) and Google both with 4%. These customer proportions were broadly similar to those reported in the May 2006 research, with the exception of Tesco, which had no reported users in May, largely because it was launched in early 2006 and wasn't widely marketed until summer 2006.
- 1.7 Around one quarter of VoIP users (23%) claimed to be with more than one service provider

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<sup>1</sup> <http://www.ofcom.org.uk/consult/condocs/voipregulation/>

<sup>2</sup> <http://www.ofcom.org.uk/consult/condocs/voipregulation/voipstatement/voipstatement.pdf>

<sup>3</sup> BT and Yahoo! jointly promoted a VoIP service that was withdrawn in December 2006.

## **Usage is frequent**

- 1.8 Seven out of ten VoIP users surveyed in the October 2006 research claimed to use VoIP at least once a week and 14% said they used it daily

## **Most VoIP calls are made to people with the same brand of software**

- 1.9 The most common VoIP feature used by those surveyed in the October 2006 research was PC-to-PC calls between customers of the same provider, with 86% of users doing this. The remaining 14% only used VoIP products for PSTN (public switched telephone network) calls.
- 1.10 A large proportion of users said they did not know all the different types of services they had access to. There seems to be a substantial lack of knowledge among VoIP users about the services they have or can access.

## **Majority of users can use their VoIP software to access the PSTN**

- 1.11 Over two thirds of the VoIP users surveyed (68%) said they could use their VoIP product to either make calls to, or receive calls from, people using ordinary telephone numbers
- 1.12 More specifically, around two thirds of VoIP users (65%) said they could make calls to the PSTN, but as may be expected, fewer said that they could receive calls from the PSTN (43%)

## **There is no evidence that people are swapping their existing voice services for a VoIP service**

- 1.13 The VoIP users surveyed were more likely to have the use of a mobile phone and a fixed line voice service than UK adults as a whole. All VoIP users surveyed had use of a mobile phone. 3% did not have access to a fixed line, and 7% of those with a fixed line said that they did not use it.

## **Confusion over calls to emergency services**

- 1.14 Over half of VoIP users surveyed did not know whether they could make calls to emergency services (53%). One quarter said they could; 22% said they could not.
- 1.15 Of those who said they could make calls to emergency services, most were not actually with a provider that would allow them to do so.
- 1.16 Less than one quarter of the VoIP users who were not with a provider that allowed calls to emergency services were explicitly aware of that.

## Section 2

# Background and research objectives

## Background

- 2.1 Voice over Internet Protocol (VoIP) products use a broadband connection<sup>4</sup> to provide voice call services using VoIP software from a computer with a dedicated handset/headset or a traditional telephone handset using an adaptor or VoIP router
- 2.2 VoIP services have the potential to deliver significant consumer benefits by reducing the cost of delivering existing services, enabling new and innovative services to emerge and increasing competition. However, VoIP services are still relatively new compared to PSTN services. To date, no single combination of business model, functions or equipment has emerged to lead the market. Ofcom expects this diversity to remain for some time, although recent UK and international trends indicate that providers that seek to serve the mass market in the future are likely to offer phone-based PSTN replacement services<sup>5</sup>.

## Research objectives and methodology

- 2.3 This report draws on three Ofcom surveys; Ofcom's communications tracking survey, a face-to-face survey of VoIP users in May 2006 (the May 2006 research), and an online survey of VoIP users in October 2006 (the October 2006 research).
- 2.4 Ofcom's residential communications tracking survey is conducted monthly among a representative sample of around 2200 UK adults aged 15+. The sample reflects the UK profile of sex, age, social grade, region and employment status and is representative of cabled/non cabled areas, rural/urban areas<sup>6</sup> and varying levels of deprivation. Data is weighted to ensure the sample is representative of the UK adult population. Data is collected among residential consumers in order to monitor usage levels and consumer interest in VoIP services. The data is reported on a quarterly basis.
- 2.5 In May 2006, supplementary research was conducted to help inform Ofcom's review of the obligations for VoIP providers in relation to access to emergency services. This research sought to quantify the extent to which UK adults rely on different methods of telephony to access emergency services and to help assess the impact if emergency services access is not provided by some VoIP services.
- 2.6 The May 2006 research was carried out by BMRB. The survey was conducted using CAPI (computer assisted personal interview) among a representative sample of 2101 UK adults aged 15+ reflecting the UK profile of sex, age, social grade, region and employment status. Data was weighted to ensure the sample was representative of the UK adult population.
- 2.7 The communications tracking survey and the May 2006 research produced too small a sample to perform reliable data analysis on the types of VoIP products in use.

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<sup>4</sup> Theoretically, any internet connection could be used including dial-up, but dial-up is not believed to be widely used to provide VoIP services.

<sup>5</sup> For example, see *US Broadband Telephony Forecast, 2007 to 2012: Cable MSOs assert their dominance in the VoIP market, 2007*, JupiterResearch.

<sup>6</sup> Based on UK Geographics urban indicator.

Further research was therefore commissioned in October 2006 using a larger sample of VoIP users to provide data on the types of products they were using.

- 2.8 This report mainly presents data from the October 2006 research. Fieldwork for this research was conducted in October 2006 and managed by Synovate. An online panel was used. Respondents were screened into the survey if they were aware of VoIP and they or someone in their household currently used the service; 3157 adults were screened to achieve a sample size of 500 respondents. Given it is a recent and growing market little is known about the profile of the UK VoIP population. Therefore, there was little data available to weight the survey respondents against. As a result, data reported from this research is not weighted to represent the general UK population or the online population.

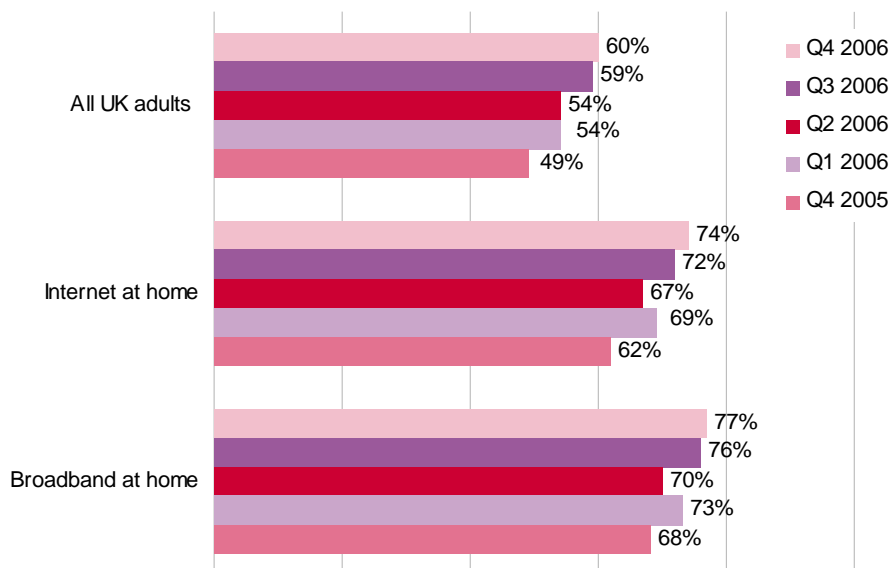
### Section 3

## Awareness of VoIP

- 3.1 Data from Ofcom’s communications tracking survey indicates that, from Q4 2005 to Q4 2006, there was an increase in awareness of being able to make voice calls over the internet. In Q4 2006, 60% of UK adults were aware of the service, up from 49% in the same period of the previous year; see Figure 3.1.
- 3.2 Looking at figures from Q4 2006, as would be expected, awareness of VoIP was significantly higher among those who had an internet connection at home (74%), and among those with broadband (77%).

**Figure 3.1 Awareness of VoIP**

Q. In addition to landlines and mobile phones it is now possible to make phone calls using the internet [description of VoIP]. Before now, were you aware that you could make voice calls using the internet?



Source: Ofcom Communications Tracking Survey  
 Base: UK adults aged 15+, Q4 2005 (2143), Q1 2006 (2214), Q2 2006 (2439), Q3 2006 (2166), Q4 2006 (2315)

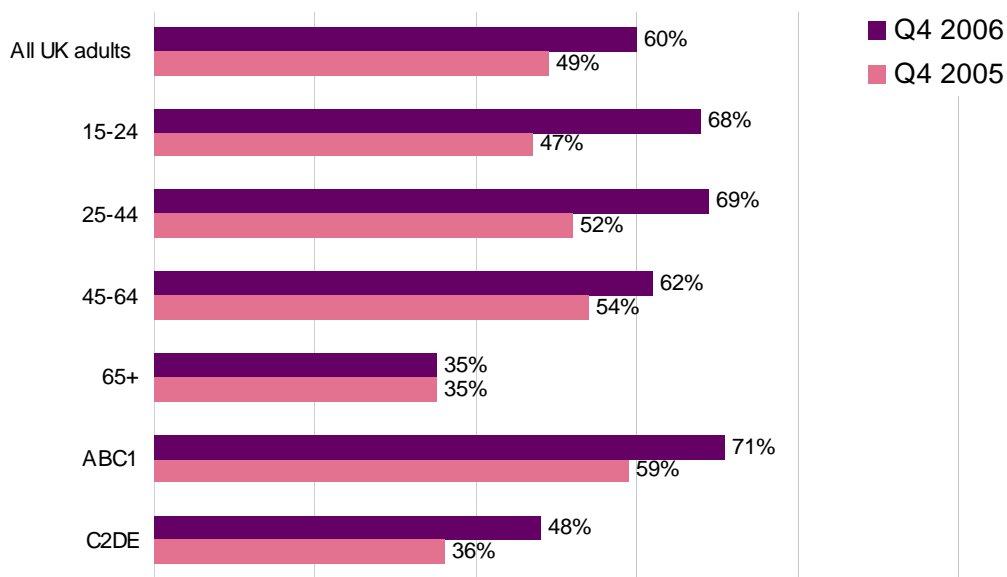
### Awareness of VoIP by demographics

- 3.3 Almost seven out of ten young adults (68% of 15-24s) were aware of VoIP services, and they were more likely to be aware than any other age group (see Figure 3.2). Awareness within all age groups, except the oldest, increased from Q4 2005 to Q4 2006. Most notably, among those aged 15-24, it rose from 47% in Q4 2005 to 68% in the same period the next year. Those least likely to be aware of VoIP services were older consumers aged 65+ (35%); over the year this was the only age group that did not experience an increase in awareness.
- 3.4 There were also differences in awareness between socio-economic groups, with those in ABC1 more likely to be aware than those in C2DE (71% compared to 48% in Q4 2006).



### Figure 3.2 Awareness of VoIP by demographics

Q. In addition to landlines and mobile phones it is now possible to make phone calls using the internet [given description of VoIP]. Before now, were you aware that you could make voice calls using the internet?



Source: Ofcom Communications Tracking Survey  
Base: UK adults aged 15+, Q4 2005 (2143), Q4 2006 (2315)

## Section 4

# Usage of VoIP

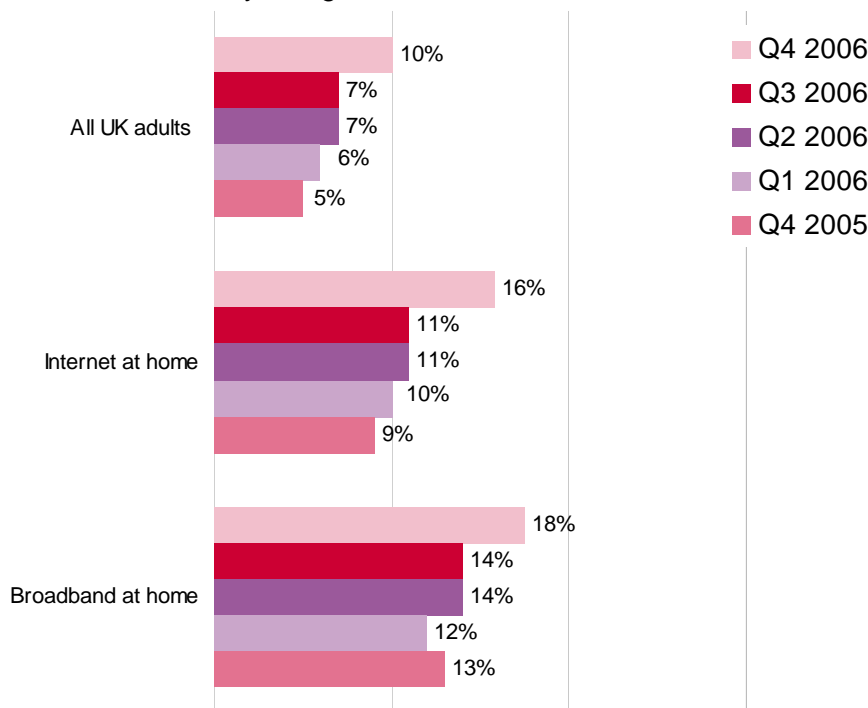
### Usage estimates

- 4.1 In Q4 2006 an estimated 2.4m UK households used VoIP products.
- 4.2 Accompanying the increase in awareness of VoIP services, there was an increase in usage of VoIP services. Data from Ofcom’s communications tracking survey shows that, within the UK adult population, there was a significant increase in the proportion of people using VoIP from 5% in Q4 2005 to 10% in Q4 2006 (approx. 2.4m households); see Figure 4.1. There was also, as would be expected, an increase in the proportion of adults with internet access who were using VoIP.

**Figure 4.1 Usage of VoIP**

Q. In addition to landlines and mobile phones it is now possible to make phone calls using the internet. You can use either a set of headphones and speakers which plug into your computer or a traditional phone which plugs into your computer. Most services require a high-speed broadband internet connection. Calls may be cheaper than calling from a landline or mobile phone, but calls cannot be made during a power cut or internet connection failure. Have you or anyone in your household ever used one of these services to make voice calls using the internet at home?

% Yes and currently using



Source: Ofcom Communications Tracking Survey  
 Base: UK adults aged 15+, Q4 2005 (2143), Q1 2006 (2214), Q2 2006 (2439), Q3 2006 (2166), Q4 2006 (2315)

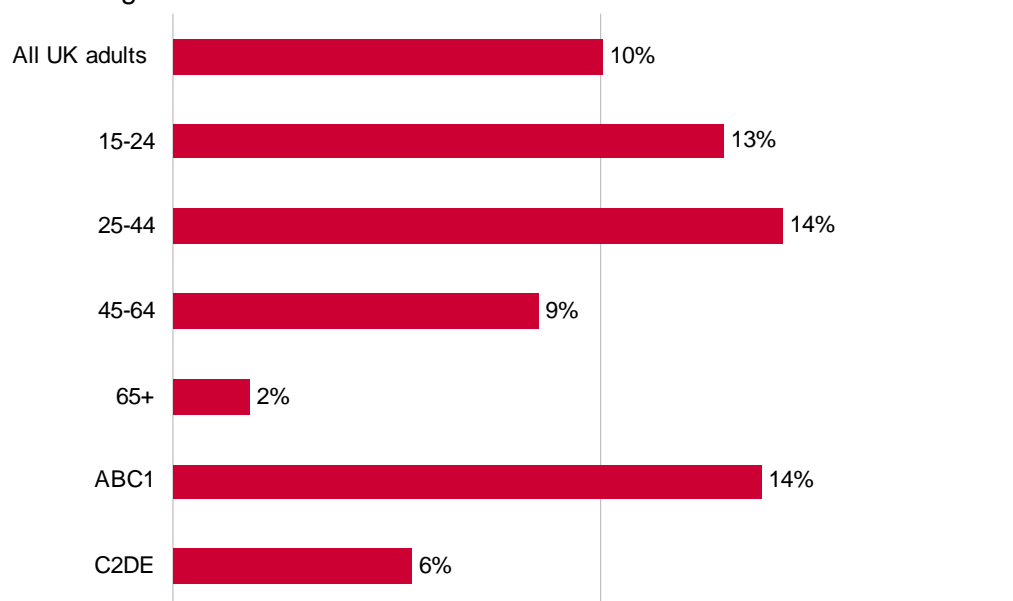
- 4.3 The May 2006 research estimated that 11% of internet users used VoIP. This equated to an estimated 1.65 million VoIP users in the UK at that time.

## Usage estimates by demographics

4.4 Concentrating on Q4 2006, there was a difference in usage by age and socio-economic group, see Figure 4.2. Younger respondents were more likely to use VoIP services than older respondents (13% of 15-24s and 14% of 25-44s compared to 9% of 45-64s and 2% of 65+), and ABC1s were more likely to use VoIP than C2DEs (14% compared to 6%).

**Figure 4.2 Usage of VoIP by demographics – Q4 2006**

Q. Have you or anyone in your household ever used one of these services to make voice calls using the internet at home?



Source: Ofcom Communications Tracking Survey  
Base: UK adults aged 15+, Q4 2006 (2315)

## Proportion of respondents using main VoIP providers

4.5 The VoIP users surveyed in the October 2006 research were asked which providers they were with, as shown in Table 4.3. As with Ofcom's May 2006 research, Skype was the most commonly used provider with over two thirds of respondents claiming to be customers (67%). MSN followed with 18% of users, then BT/Yahoo! with 16%, Tesco with 6%, and Orange (Wanadoo) and Google both with 4%. Tesco showed the greatest growth; no respondents in the May 2006 research said they used the provider, largely because Tesco launched their service in early 2006 and marketed it in summer 2006.

**Table 4.3 VoIP providers used, October 2006**

<b>Service provider</b>	<b>% of respondents using provider*</b>
Skype	67
MSN	18
BT/Yahoo!	16
Tesco	6
Orange/Wanadoo	4
Google Talk	4
VoIPCheap	3
AOL	3
Vonage	2
Other	9
<i>Base</i>	<i>500</i>

\* Column does not equal 100 per cent because some respondents used multiple providers

Source: Ofcom research of VoIP users, October 2006

Base: 500 VoIP users

- 4.6 Almost a quarter of respondents (23%) reported being with more than one provider. This may suggest that users were increasingly savvy and used different suppliers for PC-to-PC calls, for receiving calls from ordinary numbers or for making calls to ordinary numbers. It may also reflect the fact that a number of the basic services were available for free, therefore switching providers or using multiple providers came at no extra cost. Respondents who were with more than one provider were most commonly with Skype or MSN.

### **Access to fixed and mobile telecom services**

- 4.7 In the October 2006 research, all respondents (who were all VoIP users) had access to either a landline or a mobile phone; 95% had access to both. 2% had access to a landline only (compared to 12% of all adults)<sup>7</sup>, and 3% had access to a mobile only (compared to 9% of all adults). This suggests there is no evidence yet that VoIP users are wholly replacing existing voice services with VoIP, but using VoIP as an additional service. Whether users make calls using VoIP instead of or in addition to calls on their traditional services, needs to be researched.
- 4.8 However 7% of people who did have a landline said they did not use it. This is of note, given that for example, in the event of a power cut VoIP services are unavailable.

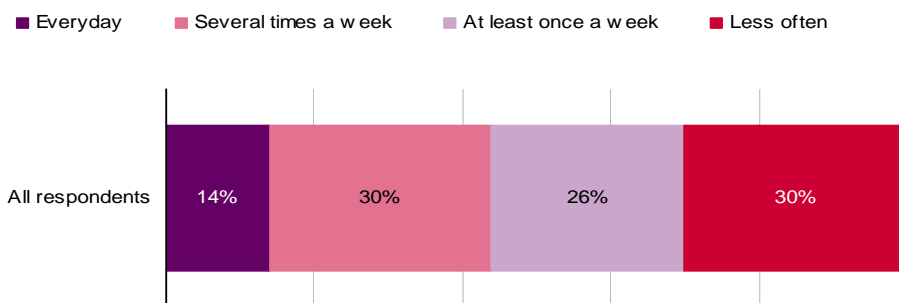
### **Frequency of use**

- 4.9 When asked how often they or someone in their household made voice calls using VoIP, 14% of respondents said that they used VoIP everyday (Figure 4.3). Over half said they used it several times a week or at least once a week (56%), and the remaining 30% said they used it less often.

<sup>7</sup> Source: Ofcom's communications tracking survey.

### Figure 4.3 Frequency of VoIP usage

Q. How frequently do you or someone in your household make voice calls using the internet?



Source: Ofcom research of VoIP users, October 2006  
Base: 500 VoIP users

4.10 When asked the last time they or someone in their household had made a VoIP voice call, 85% of VoIP users surveyed said that it was within the last month.

## Section 5

# Types of VoIP services used

5.1 VoIP providers offer different levels of service. Some products only enable calls to other VoIP users (often only other people using the same brand of VoIP software), meaning only PC-to-PC communication is possible. Other services enable calls out to the PSTN, or in from the PSTN. Some allow calls out to and in from the PSTN. This section looks in detail at the types of services users reported having.

### Types of services used

5.2 The majority of respondents (86%) said that they could call other VoIP users with the same provider, which is the most basic service that providers offer. The remaining 14% only used VoIP to make or receive calls from the PSTN. Just over a third of users (36%) said they were able to make calls to users of different brands of VoIP software.

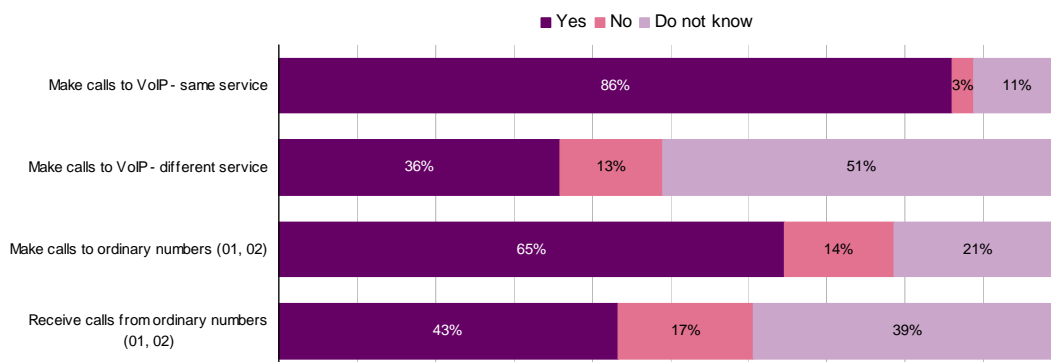
5.3 Around two thirds of VoIP users (65%) said they could make calls to landlines or mobile phones but, as may be expected, fewer said that they could receive calls from these numbers (43%).

5.4 Figure 5.1 illustrates the types of VoIP services respondents said they had access to. The large proportions of 'don't know' answers highlights a substantial lack of knowledge among VoIP users about the services they are able to access, suggesting that they only use limited functionalities of their VoIP services, or are unaware of all of them.

**Figure 5.1 Types of VoIP services**

Q. For each of the following statements, please state whether they apply to your internet telephony service:

- I can make calls to people using exactly the same brand of internet telephony (VoIP) service e.g. Skype-to-Skype
- I can make calls to people using another brand of internet telephony (VoIP) service e.g. Skype-to-Vonage
- I can make calls to landline or mobile telephone numbers (for example beginning with 01, 02, 07)
- I can receive calls from landline telephone numbers (for example beginning with 01, 02)

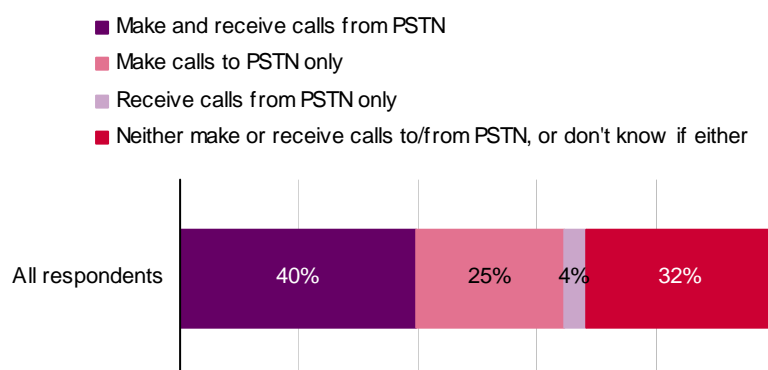


Source: Ofcom research of VoIP users, October 2006  
 Base: 500 VoIP users

## VoIP services that enable PSTN calls

5.5 Over two thirds of VoIP users surveyed (68%) in the October 2006 research said that they could either make calls to, or receive calls from, 'ordinary numbers'; meaning the majority of users said they had access to the PSTN using VoIP. Some 40% of respondents said they could both make and receive calls; 25% said that they could make calls but not receive calls; and 4% said that they could receive but not make calls<sup>8</sup>. Almost one third (32%) said that they could not, or did not know if they could, both make and receive calls to the PSTN.

**Figure 5.2 Access to the PSTN**



Source: Ofcom research of VoIP users, October 2006  
 Base: 500 VoIP users

- 5.6 For the 65% of VoIP users who said their service allowed them to make calls to the PSTN, the following proportions said they were with each of the main providers – 69% with Skype, 17% with BT/Yahoo and 15% with MSN. This is similar to the proportion of respondents who said they used each supplier overall.
- 5.7 Of the third of VoIP users who said they could not access the PSTN, and therefore can be assumed to only use VoIP services for PC-to-PC communications, only 12% said they called VoIP users on different services (e.g. Skype to Vonage). For this group of 'non-PSTN' users, the following proportions said they were with each of the main providers: 65% with Skype, 25% with MSN, 16% with BT and/or Yahoo! and 2% with Tesco.

<sup>8</sup> All respondents were VoIP users, and all VoIP suppliers allow PC-to-PC calls. However, only 89 per cent of all respondents reported that they could make PC-to-PC phone calls, either to people using the same VoIP supplier as them, or another supplier.

## Section 6

# Accessing emergency services

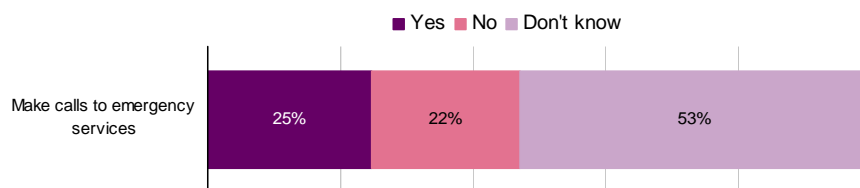
### Confusion over access to emergency service numbers

6.1 One quarter of all respondents claimed that they were able to make emergency calls using their VoIP service (see Figure 6.1). Around one fifth said that they could not (22%), but the majority did not know (53%).

**Figure 6.1 Claimed access to emergency services**

Q. For each of the following statements, please state whether they apply to your internet telephony service?

- I can make calls to emergency services (999/ 112)



Source: Ofcom research of VoIP users, October 2006  
Base: 500 VoIP users

6.2 At the time of the survey, VoIP suppliers known to provide access to emergency services were BT/Yahoo!, Orange/Wanadoo, MSN, AOL and Vonage/Dixons/Freetalk. The proportion of respondents who were with any of these suppliers was 36%, and 64% did not mention any of them.

6.3 A significant number of VoIP users appeared to be confused and at risk of not being able to access emergency services: almost one in six (15%) of the sample said they could make calls to emergency services but were not with a supplier who was known to allow this at the time of the survey. Additionally, 35% did not know if they could make calls to emergency services and were not with a supplier that would allow them to do this. Combining these two groups, 50% of all respondents were at risk of attempting to make emergency service calls where they would not be able to. Of those not with a VoIP supplier allowing access to emergency services, 78% either thought they had access, or did not know if they had access.

**Figure 6.2 Claimed vs. actual access to emergency services**

% of all users (all figures are of total)

	With a VoIP supplier that allows access to emergency numbers	Not with a VoIP supplier that allows access to emergency numbers
<b>Total</b>	36%	64%
<b>Claims can call emergency services</b>	10%	15%
<b>Don't know if can call emergency services</b>	18%	35%
<b>Claims cannot call emergency services</b>	8%	14%

Source: Ofcom research of VoIP users, October 2006  
Base: 500 VoIP users