

The hype over Skype...VOIP – an industry update

VOIP has hit the headlines recently with Ebay's \$2.25 billion acquisition of the VOIP operator Skype, which has over 54m registered users. At the same time in the UK, Dixons has just launched a new VOIP service, Freetalk, which offers subscribers unlimited calls to UK landlines for just £6.99 per month and Wanadoo now claims that it has over 40,000 active users of its VOIP service.

Despite these developments and the publicity surrounding them, many people are still in the dark as to what VOIP is and the impact it may have upon future methods of communication.

What is VOIP?

VOIP stands for voice over Internet Protocol, which describes the delivery of voice information in digital form over the Internet rather than via the traditional public switched telephone network. The really exciting consequence of this new technology is that it allows users to circumvent traditional phone networks when making calls and, as a result, attendant call charges. In addition, the nature of VOIP will mean that a VOIP user can use entirely new features and services. They can, for example, access their VOIP services, and receive calls, whether connected in their homes, anywhere in the UK or abroad, provided that a broadband connection is available. This may mean that, and especially if VOIP over mobile phones takes off, people will be able to use their home phone number abroad and so avoid sometimes expensive roaming charges.

The History of VOIP

The initial VOIP operators required users to download and use the same software to enable them to contact each other. This method of VOIP, similar to the initial Skype model, requires a user to be in proximity to a PC and to have it switched on and connected to the Internet.

However, as VOIP developed, users were soon able to call any telephone number in the world at a reduced cost. Now services such as Freetalk have removed the need for a computer altogether. Provided users have access to a broadband connection, they can connect their standard fixed-line telephone using an adaptor.

Are there any downsides to VOIP?

- **Network security** – There are some companies, often (perhaps unsurprisingly) developers of anti virus software and other internet security systems, who believe that VOIP will

become increasingly susceptible to hacking. Symantec, for example, believes that the very basis upon which VOIP saves costs for the users (i.e. routing phone calls via the Internet) makes VOIP vulnerable to a whole series of security problems. It has highlighted the dangers of 'Spit' (spam over IP telephony), whereby audio spam may clog up voicemail boxes with adverts, and other more worrying techniques such as caller ID spoofing, which may allow fraudsters to seem to be calling users from legitimate numbers.

As and when VOIP becomes more popular, no doubt instances of attack will become more prevalent although at the same time one would expect VOIP operators, together with internet security firms, to work to offer greater protection for users.

- **Emergency services** – Some VOIP operators have been unable to offer full and uninterrupted access to emergency services. For example, in the US the lack of availability to emergency services has hit the headlines in a number of unfortunate incidents which has led the Federal Communications Commission to oblige all VOIP operators to procure written consent from each of their users highlighting that they are aware that their operator offers only a limited emergency service access.

The issues for VOIP operators in guaranteeing access to emergency services stems from both the routing of calls to emergency services and from the caller ID information which is used by the emergency organisations, as further explained below.

Routing – one of the benefits of VOIP services as mentioned above is that users can access and use their VOIP telephone number from anywhere, provided they have access to a broadband connection. However, this means that where, for example, a UK user accesses his VOIP service outside of the UK to make an emergency call, it may be routed to an emergency operator in the UK. This could clearly cause problems.

Caller location – equally, emergency organisations use caller ID information where an address is not forthcoming or not given. This can be easily achieved with fixed line calls, but where nomadic services such as VOIP are used, it will clearly be more difficult to match a phone number to an address.

Ofcom has indicated that it would expect the VOIP operators and telecommunications networks to develop solutions for these problems.

- **Number portability** – The portability of telephone numbers allows a user to change network operator whilst retaining the same telephone number.

There may be problems for VOIP operators with regard to number portability arising from the EC legislation on telecommunications and other electronic communications networks and services, and in particular the Universal Service Directive¹. Ofcom (the UK regulator for telecommunications) has interpreted the Universal Service Directive so that number portability is an obligation only applicable to providers of ‘publicly available telephone services’ (PATS) (as defined in the Directive).

Therefore, in order for the new VOIP operators to enjoy the benefits of portability, which may be crucial for user take up, they will have to qualify as PATS providers. In order to qualify, the service must:

- be available to the public;
- allow the originating and receiving of national and international calls;
- give access to emergency services; and
- use telephone numbers in a national or international telephone numbering plan.

It is difficult, though, for VOIP operators to offer full access to emergency services for the reasons set out above (‘Emergency Services’). However, if a VOIP operator does not offer full access emergency services then it will not be considered to be offering PATS and so cannot enjoy the benefits of number portability.²

- **Regulatory muddle** – PATS operators are subject to additional regulations which have so far discouraged most VOIP operators from seeking to qualify, most commonly by failing to offer any access to emergency services. The lack of access to emergency services has concerned Ofcom, although at the same time it has

also recognised the need to encourage new technologies to enter the telecoms sector.

In an attempt to encourage VOIP operators to offer access to emergency services whilst realising that they may not want their services to be considered as PATS, Ofcom has allowed VOIP operators to offer limited emergency service access whilst giving such operators the option to choose whether to be considered subscribers to PATS.

- **Quality** – some commentators have also highlighted the quality differential between traditional fixed line telephony and VOIP. Users may be able to note some reduction in quality although, they may be happy to accept this in return for cheaper call prices.
- **Reliability** – there can be general issues with Internet downtime (or lack of sufficient bandwidth) owing to crashes, security attacks and other problems, which can affect any internet provider and which would of course interrupt the use of VOIP. It would seem currently as though there are more problems with Internet downtime than with the current fixed line telephone network which may be a consideration for some users.

Conclusions

As with any new technology VOIP may suffer some teething problems, but the potential benefits seem likely to outweigh any difficulties faced. Whether the dangling carrot of number portability is a sufficient incentive for VOIP operators to comply with the PATS requirements will ultimately be decided by consumer demand but the current half way house offered by Ofcom cannot be considered the answer in the long run and access to emergency services must be seen as a priority.

Provided the VOIP operators work with the regulators, such as Ofcom, to find solutions for problems such as this and learn from the approaches to security taken by existing consumer technologies, such as internet banking, VOIP adoption should be strong. Fixed and mobile phone operators are not yet into the territory of sleepless nights – but this time is rapidly approaching.

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¹ Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users’ rights relating to electronic communications networks and services.

² Ofcom has confirmed this view in its interim findings in its publication ‘New voice services – A consultation and interim guidance’ issued 6 September 2004 (Page 36)