

## GoUnderstandVoIP

### What is VoIP?

VoIP means Voice over the Internet Protocol<sup>\*1</sup>.

It works by allowing people to use the internet to communicate rather than ordinary telephones.

VoIP is also referred to as IP Telephony (Internet Protocol Telephony).

Some manufacturers refer to VoIP technology as Convergence. Convergence is the way of describing the integration and development of VoIP together with ordinary telephone lines and therefore potentially getting the 'best of both worlds', i.e. when two different types of technology merge. Currently, the vast majority of VoIP installations use a mixture of the internet and analogue telephone lines. Over a period of time, this looks likely to change to VoIP only.

Undoubtedly, the most well known form of VoIP is Skype, which allows subscribers to call each other free of charge over the internet. The downside with Skype is that it cannot be used with other VoIP systems.

### The future of VoIP

Many companies use VoIP to reduce their phone and network costs whilst increasing efficiency, competitiveness and productivity. This is achieved through reduced call and maintenance costs, but also because when individuals are using their PC to make calls, other people can see whether they are available. This is unlike traditional phones where it is impossible to know if someone is available to speak or not.

As access to the internet becomes more widespread and prices are reduced for broadband access and internet call technology; VoIP will increasingly become a viable option. According to Ovum, a technology analysis organisation, some 20% of companies in the UK have already adopted VoIP.

Another area of growth is the onset of mobile VoIP. With mobile VoIP you can take your handset anywhere in the world and enjoy the same benefits as using VoIP from your office.

There are a number of mobile phone handsets and Personal Digital Assistants (PDA's) that allow you to use either your usual mobile operator or connect to a wireless network<sup>\*2</sup> and communicate via VoIP.

VoIP is without doubt, here to stay!

### Why VoIP?

The main reason for a business to change to VoIP technology is to save costs.

Naturally, calls using the internet are generally perceived to be free of charge. However, this is not always the case as calls at some point have to be transported across a Public Services Telephone Network (PSTN<sup>\*3</sup>).

In many instances savings can be made against phones and landlines, especially if an organisation is making many international calls or has multiple offices, where savings can be made from making internal calls from one office to another using VoIP rather than landlines.

## Benefits of VoIP

Organisations can gain a number of benefits by implementing VoIP but these will depend on the requirements, the situation and the type of organisation.

- If an organisation is moving to a new office without a telephone system already installed then it may make sense to implement VoIP immediately rather than investing in a traditional Private Automated Branch Exchange (PABX<sup>\*4</sup>). It is possible to then save money on cabling because both data and voice calls can use the same infrastructure, rather than having two sets of cables, one for voice calls and one for sending emails.
- If organisations have a small office without a PABX but with only one or two incoming lines, and already have an internet connection, it would be wise to approach your Internet Service Provider (ISP<sup>\*5</sup>) in order to see what they offer. At this stage you may find that there is very little price difference between using VoIP and a traditional phone system on the basis that the major telecommunications companies, or carriers as they are often known, are reducing their prices and becoming extremely competitive.
- Having multiple offices or working remotely is where the benefits of VoIP can be really achieved. Normally each office will need a PABX system, which will no longer be required as all calls can be routed or directed across one internet connection. This means that internal calls across the company can be free, helping you make considerable cost savings.
- VoIP can have an impact on improving work within an organisation and improve efficiency. This is because VoIP treats voice as if it were any other kind of data such as email, documents or presentations. This means that users can, for example, participate in online meetings via high-quality video whilst working on the same material, going through the same presentation or revising the same document, simultaneously. An example of this is people working in different parts of the world, collaborating on a particular project by using VoIP as a low cost method of communicating ideas regularly without worrying about the cost of calls.
- Using VoIP can potentially lower the costs of managing your overall network because you only have one system to support and manage.

## Potential pitfalls

- You need to be aware that with VoIP, your organisation will potentially be using the same network for transfer of all files, emails and voice communications.
- It is sometimes the case that because of the above, the quality of calls may not be as clear as traditional voice systems. However, recent technological advances make this less likely to happen.
- As a result, you need to ensure that the infrastructure, such as cabling, your server and internet access, is able to handle voice as well as a high

volume of data. VoIP doesn't require much bandwidth, but it is advisable to check that your system can cope. These days, getting more bandwidth is simple (and inexpensive). Just speak to your current supplier who can easily increase the capacity.

- Your voice and data are tied into one network and you'll require access to the internet, so if there is an issue with either one of these, then you will lose voice communications too. So, if you lose internet access then you will lose the ability to communicate using VoIP.
- Another point worth bearing in mind is that because VoIP utilises the internet, the system is susceptible to the same potential security threats as any other internet service.

## Alternatives

One alternative to VoIP is to use a hosted or managed telephony service. This means that a third party organisation rents their VoIP facilities and infrastructure to you, for example a server, software and handsets. A hosted alternative helps you reduce the internal overhead of support, implementation and potentially having to purchase new equipment.

There are a number of benefits to a hosted service:

- Monthly rental - easy to budget and you know exactly how much you will pay on a month by month basis. That way, there should be no surprises.
- Flexibility - allows you add further functions as and when your organisation requires them.
- 'Future proof' - you can upgrade or access new equipment and software as it becomes available, without the capital outlay of a new purchase.

## What can I expect to gain by implementing VoIP?

It is difficult to give a typical figure that you should expect as a Return on Investment (ROI) because there are a number of factors that influence this calculation. For example:

- It will depend on the size of your organisation and the type of calls that you make.
- It will depend on whether you have multiple offices - companies that have several offices will benefit more because they will save money on the costs of calls between offices by using VoIP.
- It will depend on your call patterns e.g. whether your organisation makes a great deal of outbound international calls, what your current service charges are, and the maintenance of any equipment that you may have.

You will need to analyse your current spending charges and patterns. Most companies who supply VoIP will be able to calculate this for you by investigating usage and type of calls against the cost of implementing a new system. We suggest that you ask a couple of suppliers to conduct an investigation as part of your purchasing process in order to find out what saving you could make by using VoIP.

There is absolutely no point in spending money on a VoIP system unless the costs can be entirely justified!

## 6 steps to successfully buying a VoIP system

### Step One

Identify the needs of your organisation and your users.

- What sort of calls do my employees make and who makes them? For example, a sales team might be making more calls than other departments.
- Are there any requirements that a particular group may need? Don't take anything for granted. Don't assume that because your current system has a particular functionality that your new VoIP system will have the same capability. While it is more than likely that it will be achievable, there may be a cost involved.
- Why do I need VoIP?

You need to be completely clear that VoIP is the right way forward for you and your organisation at this point in time. It might be better to invest at a later stage, for example, if you are thinking of moving offices.

- How much do I expect to save?

Where are you expecting to save money? Is it in call costs or through improved efficiencies made from people being better able to collaborate on projects and communicate more easily? Such scenarios include people across the world being able to communicate easily and cost effectively by using the VoIP system rather than having to arrange a traditional conference call, which can be expensive and time consuming to organise. Using VoIP means that you can arrange this at any time and at no additional cost. Defining the savings you will make through achieving greater efficiency is difficult, but reductions made from calls are easy to highlight.

- How much is your organisation currently spending on calls?

Have you analysed the cost of your annual calls and how will it compare to a VoIP system? Are there any other savings that could be made such as PABX rental and maintenance for that system?

### Step Two

Identify your needs for a new VoIP system.

- What equipment will I require? For example, you may still need to retain your fax.
- How much will it cost?
- How much will it cost to maintain and support?
- How much more (if at all) bandwidth will I need? And at what cost?
- Consider future options – you may be looking to open another office or expand your current operation. As a result you will

need to ensure that whatever you purchase now will be able to meet your future requirements.

### **Step Three**

Identify the right supplier.

- Look through magazine and online reviews.
- Talk to others who have recently installed VoIP in the same area as you.
- Use forums, networks and personal contacts to obtain recommendations.

Ask questions such as:

- Who has the experience of working with a company of the same size and profile as yours?
- Are any of those suppliers local to where you are located?
- How many similar installations have they made?
- Ask for references – ensure that the company is capable and reliable.
- Talk to a couple of their customers in order to see what benefits have been gained and what pains those customers went through when installing the system.
- Obtain a credit check through to ensure that they are financially stable.

### **Step Four**

Request a detailed proposal from three or four of your preferred suppliers.

- Set a deadline for when you need the proposal back.
- Give out details in advance as necessary to ensure that the suppliers you have selected can give you the best proposal.
- Go and meet them in person – get a good feel for whether you will be able to work with them.

### **Step Five**

Select a supplier.

- Who best demonstrates that they understand your business and your requirements?
- Is the solution flexible and scalable and therefore able to meet future demand? You don't want to find out later that by investing a little more money now you could have saved money in the long term.
- Is it cost effective? Have they shown how and where you will save money?
- Does it clearly demonstrate the functional benefits – rather than just listing particular features? Does the proposal clearly show what the benefits are? There is no point on spending money for a system full of features that are of no benefit or that you will never use!
- How will your potential supplier support and maintain your system afterwards?
- How much will support and maintenance cost?
- Have you spoken to a couple of your preferred suppliers' customers?

- Agree on financial terms – you may be required to pay a deposit but do not pay the whole amount in advance of delivery.

## Step Six

Implementation, testing and go live.

- Install the new system. Only when you are entirely satisfied should you pay any balance outstanding on the invoice. This way, if there are any problems, your supplier will sort them out as a matter of urgency.
- Don't forget to account for user training!

## Points to remember when installing a VoIP system

It is unlikely that you will install a VoIP system yourself but by knowing the following steps you will be aware of what the process is, and ensure you achieve a fully functioning system.

As a simplistic guide for a small business of, for example, 10 users in one office, the following would be necessary:

1. A dedicated server in order to split the responsibilities of data and voice. If the data server (used for email, spreadsheets and other applications) fails you will still be able to make calls.
2. VoIP software. This enables the system to function and will reside on your server, the same as your other applications.
3. Specialist handsets. VoIP systems need special handsets to function.
4. Retain some Public Service Telephone Network (PSTN) lines as back up so if at some point your internet access fails. For example, if you have a problem with your computer, you can revert to using your old phone.
5. Your system should ensure that conversations are encrypted and secure. Because VoIP is computer based, it is potentially open to people listening in to your conversations. By encrypting your discussions you can make your system safe and secure to use for all business communications and ensure that no-one else can listen in to private or confidential discussions. It is best to check that this is the case with your potential supplier.
6. Installation. It should take between one and two days to install a VoIP system and ensure that it works correctly.
7. User training – plan for one day. Make sure that every user knows how the new system works, how to make calls and that they understand all of the features of the handsets. This way you will ensure that there is no confusion and that your organisation gains all the benefits.

## Conclusion

There are many VoIP systems and options available and needless to say, what you and your organisation should purchase ultimately depends on your requirements and plans for growth.

Initially it may make sense to introduce VoIP as an addition to your existing phone system (assuming you have one) and then gradually increase your level of sophistication as and when you need more functionality.

For many small businesses, perhaps a managed or hosted option might be the preferred option, but for larger organisation, it is unlikely that this would be adequate.

The key issue here is whether VoIP is best for your company. Make sure you fully investigate traditional call services before taking the plunge.

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## **Glossary of Terms**

\*1 IP – Internet Protocol is the way in which information is passed across the internet.

\*2 Wireless Network - a network connected by radio waves to keep communication rather than using wires or cables. This allows users to travel and communicate either by phone or by their mobile computers rather than having to find a specific place in order to connect to the internet.

\*3 Public Services Telephone Network - PSTN is the way that we have always communicated by telephones that transfer the voice signals over copper cables.

\*4 Private Automated Branch Exchange - PABX allows a single telephone number to offer multiple lines to outside callers while providing a range of external lines to internal callers or staff. A company often has a general telephone number into a switchboard that can divert the call to users across departments and locations.

\*5 ISP - Internet Service Provider. This is a company that lets you or your organisation access the internet for a monthly or annual fee.

\*6 Analogue - Generally seen as the 'old fashioned way' of sending information or making telephone calls. The internet and computer systems are in a digital format which changes your voice and email into a series of ones and zeros rather than travel via cables.

## **VoIP - FAQ's**

### **What is VoIP?**

VoIP means 'Voice over the Internet Protocol'.

### **How does it work in practice?**

VoIP allows you to communicate via the internet. So, rather than using a phone or mobile, you can speak to someone using VoIP. Calls over the internet are usually free-of-charge.

VoIP is also referred to as IP Telephony (Internet Protocol Telephony).

### **Can I speak to someone who doesn't have VoIP**

Yes, you can call either fellow VoIP users or people who have a standard telephone and telephone number. You will have to buy credits so at this stage the phone call is no longer free but it is still usually far cheaper.

### **What do I need?**

At its simplest level you can download some software (the most well known is Skype, but there are many others available), set up your details and you're able to communicate with anyone with the same system. Skype, for example, is free

and all you need to purchase is a headset and microphone. You can even get a phone that accepts both VoIP and normal calls.

### **Is it something that I can install myself?**

Again, at a basic level it is easy to set up. That said, for a company wide system it can be more complex.

### **Why do I need it?**

Quite simply because it's cheaper to use than standard phone calls and in many cases, such as VoIP user to VoIP user, it's free. Once you've found your contacts, friends and family you can make free calls at any time.

### **What other free VoIP packages are available?**

For home users and small organisations there are Skype, Google Talk, Jabbin, Mind Spring, AOL and Yahoo to name a few.

### **What if I want a VoIP system but the freeware solutions are not appropriate?**

For larger organisations where there are more complex issues to resolve, you will need to discuss your requirements with a specialist provider.

### **Can I communicate with other VoIP users if they are using another freeware package?**

Unfortunately not. This is the main reason that they are free. In order to do this you need a more complex system and would as a result need to pay.

## **Hosted VoIP**

### **What is hosted VoIP?**

As a potential user of VoIP, you have two choices. You can either purchase a system and have it installed in your office; or you can rent the service and facilities from an organisation that has the ability to support, implement and maintain the system on your behalf.

Hosted VoIP is particularly useful for smaller companies who do not have technical expertise to support a VoIP system.

Larger scale enterprises tend to have the necessary technical facilities on site as they have the capability to support and maintain their systems, plus they often prefer to retain the element of control that a hosted system does not provide.

### **Benefits of hosted VoIP**

- Hosted VoIP allows business users to focus on business issues rather than technical issues. This is especially important if you don't have adequate technical resources in house.
- There is no need to worry about growth in terms of requiring further hardware, because as you take on further users your supplier can make

the necessary changes. This can be part and parcel of the agreement with your supplier, enabling you to have the right capacity at any given time.

- Many technical errors are caused by non technical people. In a hosted VoIP environment, this is much less likely to happen as any changes, additions and administration is carried out by your supplier's specialists.
- Generally, most technical issues can be resolved quickly because all the necessary equipment is kept centrally and there is no need to send an engineer to a remote site.
- Can be more cost effective as hosted solutions tend to be priced per user.
- Future proof. Your organisation can benefit from new technologies as they are developed rather than having to invest in further equipment.
- Faster to implement than installing a system on site.
- No, or very little, impact on the company's IT infrastructure.
- Easy to support.
- Reduced capital outlay. Hosted VoIP services tend to be paid on a monthly or quarterly basis so it makes it easier to budget. This negates the need to invest a potentially large amount of money upfront.