

Voice Over IP (VOIP) Introductory Guide for the Voluntary Sector

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1. Audience

This brief document aims to assist managers working in Voluntary and Community Sector (VCS) organisations when considering a Voice-Over-IP (VOIP) solution.

2. Introduction

Telephony has evolved. Traditional telephony providers use their own network for their customers only. On the internet we are all using the same network. A VOIP call is just another form of data being transmitted over the internet.

It's now possible to integrate your telephony into your existing IT network infrastructure and cabling. This is why it is often felt that the 'convergence' of IT and telecommunications systems is inevitable.

Growing organisations will especially appreciate the flexibility that a robust VOIP solution will provide. By managing your own telephone system and using Free and Open Source Software (FOSS) you will not only gain from substantial savings and flexibility, but also add to the sustainability of your organisation and reduce the Total Cost of Ownership (TCO) of your communications systems.

3. Why Consider A VOIP Solution?

Traditional PBX systems are expensive and usually proprietary, meaning any moves and changes (e.g. adding extensions, adding ring groups etc.) usually have to be carried out by the supplier. In addition, the traditional PBX manufacturers have embraced VOIP in a proprietary manner; they may offer you a VOIP card for your PBX but the licensing culture remains the same. Typically you will be offered an additional 5 or 10 user licence and your need for more lines will require yet more licences.

3.1 Cost Savings on Long Distance Calls

The cost savings of using VOIP, even with a service provider, can be tremendous. For example, www.voipcheap.com and www.voipbuster.com let you sign up for a free account and give you 90 days of discounted calls (providing you deposit €10). Calls to landlines in the UK and most of Europe and North America are free and calls to UK mobiles are 8p a minute.

3.2 Multi-Site Business

With VOIP you can link your extensions to all your sites across the Internet. Calls made to those extensions will be, in effect, free - all you will pay for is the internet connection.

3.3 Voicemail-to-Email

Many VOIP solutions provide a voicemail-to-email service. This can be really useful, making the difference between missing an opportunity or not. When on the road all it takes is a quick visit to a wifi hotspot and you can collect your voicemails and respond.

3.4 SIP URI dialling

SIP URI dialling is one of the most future proof concepts of VOIP. Just as we use Domain Name Servers (DNS) instead of having to remember IP addresses for websites, URI dialling means you don't have to remember telephone numbers. For example, which do you find easier to remember?

+441173250067 or sip:info@bristolwireless.net

If you try this real-world example a group of four phones in the Bristol Wireless main office all ring. If nobody picks up, then the system transfers to voicemail. Voicemail messages are forwarded as wav files to an email address.

Another good example would be web based click-through dialling. This is much like clicking on an email address to open your mail client, but this time clicking a sip address will open your phone and commence dialling. Some VOIP phones have this built in as a standard feature.

3.5 Working Away

Working away from the office is becoming more and more popular and necessary. Using either a hardware or software telephone, staff can have their extensions set to ring from 9-5 weekdays and transferred automatically to another number or voicemail when 'out of hours'.

3.6 Conference Calling

With the trend to reduce travel and carbon footprints, it's becoming popular business practice to host conference calls. Depending on the frequency and number of users, this can run into thousands of pounds over a year using conventional telecoms providers. It is therefore unlikely that a smaller organisation will be able to routinely benefit from this communication method.

A VOIP PBX normally provides such a conferencing feature internally, so one workaround would be...you decide how many users you want, ring them and transfer them to the conference or provide an external number for them to dial into directly. In this way you/ your guests will just pay for the normal call charges and still get the facility.

3.7 Geographically Independent (Virtual) Office

Does your organisation need to have a central office but also have remote offices or remote workers as well? With a VOIP PBX co-located (online) in the office or at home you can present your organisation as being geographically located anywhere.

For instance, providers such as gradwell.net and voiptalk.org will provide you with incoming geographical telephone numbers for as little as £3 a month. If you want to look like a London-based organisation you can answer your 0207 number from the comfort of your home in Cornwall or your Dumfries number from Paris...indeed from anywhere in the world you can get internet access.

3.8 Satellite Offices with Limited Telephone Access

Providing telephone access to remote sites is costly, with prices starting at around £80 a month for a BT Business line. Triple that to 3 lines and you can see costs escalating quickly. With just one line enabled with ADSL you can have multiple VOIP extensions, e.g. when you share an office with colleagues and you would all like to have your own usual work extensions.

4. General Benefits of Using FOSS and Open Standards

The best Free and Open Source Software (FOSS) is constantly improved and new features quickly added in response to user requirements. Similarly, software bugs and security vulnerabilities are quickly identified and rectified.

Often people used to proprietary software are astonished at the speed of FOSS

development and improvement.

For more information about history, philosophy, licensing of FOSS see www.openitup.org

Using systems that support Open Standards maximises your present and future flexibility to change suppliers/ ICT applications that you use in your system. Proprietary standards may lock you into one way of doing your ICT.

4.1 Costing FOSS

Whilst FOSS costs nothing to download and use, it will cost money to hire a consultant to configure the system for your organisation. The amount that this will cost depends on how much in-house expertise is available and the level of service that you will require from the consultant.

There are many FOSS suppliers and several that work specifically with the VCS – see the Supplier Directory at www.ichub.org.uk

4.2 Why Choose a PBX based on Open Standards?

Manufacturers are embracing VOIP, however many of them use proprietary VOIP standards and simply provide conventional PBX's with a VOIP card added.

The importance of an open standard such as SIP is that just as SMTP, POP and IMAP are standards for relaying and delivering email over the internet so SIP is the standard for VOIP. In other words, you probably wouldn't want to buy an email system that wasn't based upon open standards, i.e. one that couldn't send and receive email from everyone else, so SIP integration should therefore be a key purchasing factor.

Some products/ tools to consider:

- Bandwidth to Lines Calculator - Use the calculator to see many lines you can get. www.erlang.com/calculator/lipb/
- Asterisk
- SIPX
- OpenPBX
- SER (SIP Express Router)
- Hardware Phones and Software Phones - There are many different handsets, headsets and software packages that work as telephones. Prices vary dramatically as does software performance, configurability and interoperability. Consider:
 - Hardware VOIP Telephones
 - ATA's or Analogue Telephone Adaptors – see Linksys, Zyxel, Grandstream, Digium
 - SIP Hardware Phones – see Snom, Cisco, Aastra, Linksys
 - SIP and IAX Softphones - A softphone will run on your laptop or desktop computer and provide telephony via a microphone and speakers or even better via a headset or bluetooth earpiece.
 - See Counterpath, Siphone, KiAx, MozIAX, Twinkle

5. Further Technical Information

A good source of information regarding VOIP is <http://voip-info.org> - dedicated to

everything related to VOIP, software, hardware, service providers, reviews, configurations, standards, tips & tricks and anything else related to voice over IP networks, IP telephony and Internet Telephony. The content is generated by the people who actually implement and support VOIP systems.