

VOICE OVER IP



Worcester College of Technology is gradually replacing its old telephone system with Voice over IP (VoIP) – the technology used to transmit voice conversations over the Internet using Internet Protocol (IP). The new system has brought noticeable benefits with it.

Worcester College of Technology has a connection to JANET, the UK's education and research network.¹ One of the many possible uses of JANET is the ability to transmit voice conversations using a technology called Voice over IP (VoIP).² Through the JANET connection, VoIP can also reach other VoIP addresses across the rest of the Internet.

The College started small with just 50 VoIP handsets, but the number is now up to about 250 – a 50/50 split between VoIP phones and phones that run off the old, conventional PBX (private branch exchange) system.

The system has brought two major obvious benefits and numerous smaller ones, according to Dave Kings, Deputy Communications and Systems Manager at the College.

Talk is cheap

Savings since VoIP was installed have been in the region of £30,000, according to Dave. VoIP to another VoIP address doesn't go over conventional phone lines or generate the same call charges as a conventional phone call. The College has been able to get rid of the leased lines that it had in place, which were solely for talking to other buildings. The amount of support required for the system is very low – Dave says they have halved the time the engineer spends on the system, hence halved his bills. And running the system takes a quarter of the previous staff effort.

It is not all cost free – even a basic handset can cost £100. However, Dave stresses that the backend of the call manager which the College uses to manage its VoIP is much cheaper than the old PBX. Cost savings must be offset against the cost of the upgrade, but VoIP is still ahead of the old system, especially when you consider the other main benefit ...

Ease of use

With VoIP, a new phone can simply be slotted into the system anywhere there is a network port. The College campus consists of four buildings quite near to each other in the centre of town, plus a fifth – the Art & Design School – a couple of miles away. All the buildings are connected by fibre or a laser link, with multiple gigabit links between buildings and 100 Mbit/s to the desktop. To add a new phone anywhere in this layout, says Dave, 'you just change a couple of lines of config on the switch' and plug the new phone in. There is no need for any extra cabling or fiddling with the PBX. And while integrating the new VoIP system with the old PBX in the first place was a challenge, once it was up and running there were no further problems. Says Dave, 'the IP solution itself is dead easy.'

Though more complex systems are available to manage VoIP, the College's 'switchboard' is simply a standard PC, which works just as well for the College's level of use. The call attendant system is a Java console that runs under Windows, though the system can equally well be run over the Web.

In short, Dave says, if your IT department can run VLANs on your local area network then it can handle VoIP. Compared to the conventional phone system, he adds, 'Support headaches will go away'.

What can you do apart from talk?

The VoIP system has had excellent penetration into all the departments of the College, if only because most users just see it as another phone with a different handset. Changing to the VoIP system was completely transparent, and not one negative comment was made about the changeover.

An unexpected bonus was that the new handsets prove challenging to thieves. Dave admits that a handset was stolen, but because the socket is designed for an Internet connection, 'they found they couldn't do anything with it and brought it back.'

Come 2005, the College is looking at extending its services – for example, getting an automated answer system. This is already common to anyone with a digital exchange, but new to the College. Another possibility is extending voicemail to a unified messaging system. This would convert voicemails to WAV files which could then be sent or picked up by e-mail. There is also the possibility of implementing a voice-to-text system.

The College trialled a wireless VoIP handset, but found it was not quite suited to their uses. For a big, open campus, Dave can see that wireless VoIP could be very handy – 'It's like a cheap mobile phone.'

Vendors are now testing using video on VoIP handsets, but Dave says the College has no plans to use this. It would increase network traffic over their JANET link, and anyway, do you really want the person at the other end to see you? However, it does show the possibilities that VoIP offers.

Benefits

- Low cost phone calls and massive billing savings on cabling and support
- Add-on services and unified messaging on services
- Merging of data/voice infrastructures
- JANET community already has voice – College is brought into line with other users

The huge savings and the sheer ease of use are all the reasons the College needs for using VoIP. There are many other uses to which it could be put – for instance, Dave is aware of a software product that lets teachers fill in their school registers online with VoIP. But as a minimum, the College has what it wants – a simple, cost effective phone system.

Note

1. JANET is a high-speed, highly reliable network dedicated to the needs of education and research, providing access to the Internet and a range of dedicated information services. It aims at 99% reliability to its client institutions. It is managed and developed by UKERNA under a Service Level Agreement from the Joint Information Systems Committee (JISC) of the UK Further and Higher Education Funding Councils.
2. UKERNA is currently trialling voice communication technology over IP, and considering possible applications for the forthcoming SuperJANET5 backbone. IP phones have been distributed to a number of JANET organisations taking part in the trial. Some testing has already been done within UKERNA and more testing will take place over the next few months.