



Installing VoIP for 120 Seat Building

International organizations put high demands on their communication systems. The people in the various offices in different countries need to be in frequent contact with each other so it is essential that the communication system works as efficiently as possible. Clear communication is essential. The sign of a successful telecommunications system is that it is so smooth and trouble free that the people using it don't notice it.

Alert Life Science Computing S.A., the parent company of an international corporation, is exactly this sort of organization. From its headquarters in Oporto, Portugal, the Alert Group of Companies stretches across the world, with significant subsidiary operations in Spain and the United States of America, providing advanced software solutions for those involved in healthcare.

When it was decided that the organization would move into a new, 9-floor, head office building the board of directors knew they would need a state-of-the-art telecommunication system. In order to make the most of the new technology available, the board of directors chose to install a Voice over IP (VoIP) system. They turned to Voxsys Communications, one of Portugal's leading telecommunications equipment providers. Nuno Laranjo, Managing Director of Voxsys RSCE, takes up the story: "It was very important for Alert to have a telecommunications system

that would enable the organization to work as efficiently as possible. The company has grown rapidly over the last eight years, and the communication links between the different sections of the organization are vital for the effective and successful running of the business."

With an operation of this size, communications is a significant cost, so the new system needed to give value for money and really enhance the business' activities, both important factors when deciding to move up to a VoIP telephony system.

The office facilities team at Alert's headquarters considered proposals from Siemens and Cisco. However, neither quite fulfilled the needs of Alert and the decision was taken to use a solution based on Quadro IP PBXs and gateways from Epygi Technologies.

Alert's requirements

"In their main building, they have a 30-channel PRI link to the standard telephone network (PSTN) and up to 200 users," says Sr Aldo, Alert's Communications Specialist. "They have one receptionist, 5 departmental secretaries, and about 12 fax machines. Some people asked for mobile DECT phones, and they also wanted combined WiFi/GSM for some users."

"Alert wanted a system that would give a



"The Quadro can do so much that at first it seems too good to be true."

professional image of the company to the world and that would help them be more productive. It had to be flexible so that it will be easy to add new staff as the business grows without having problems with the capacity or having to spend significant amounts of money on purchasing further hardware."

The solution installed

The following equipment was deployed:

- 1 x Quadro E1 Gateway, to connect to the PSTN network
- 7 x Quadro16xi IP PBXs, 1 per floor
- 8 x Quadro ISDN gateways each with 2 GSM channels to the ISDN trunks, connected to the Quadro 16xi's to LCR outbound GSM calls
- 1 x Aastra 57i plus additional key extension pad, for the receptionist
- 5 x Grandstream GXP2010 IP phones, for each secretary
- 5 x Cisco 7960 series phones, for the board members
- 43 x Siemens DECT phones
- 40 x Grandstreams GXP1200 IP phones
- 5 x Grandstream GXP2020 IP phones
- 20 x Polycom SP 330 IP phones

And several softphones

The whole system was installed and configured in a period of 4 days in March 2008 by two technicians working with Alert's facilities staff. A valuable benefit of the Quadros is that they are compatible with all major makes of IP and analog telephones. This made the installation relatively straight forward as the system and phones could auto-configure themselves to a large extent.

How it works

All inbound calls from PSTN (more than 500 per day) are directed to the Alert receptionist, except for calls for departments that have direct numbers. These calls are automatically transferred to the corresponding secretary.

The Quadros were programmed for the most efficient, 'least-cost' call routing and so they automatically handle all the outgoing calls according to rules established by Alert. This means that all outbound national land calls (around 500 per day) are forwarded to the Quadro E1 which puts them directly into the PSTN. International outbound calls (over 100 per day) go out over IP, through the Quadro16xi's, to an international Internet telephony service provider (ITSP).

Calls to national mobile networks (at least 200 per day)

are directed via the gateways dedicated to mobile GSM. An important benefit of having a dedicated GSM gateway linked to each Quadro16xi is that the system can automatically balance call loads by spreading the outbound mobile calls between the various gateways. In addition, staff who are out of the office and on the road can use the GSM gateways to make national land and international calls from their mobiles, giving huge call savings.

Internal, extension-to-extension calls are forwarded according to Alert's standardized, 3-digit extension numbering plan. Every floor has an extension number plan so, for example, all the extensions on the 3rd floor follow the form '3-x-x'. All the Quadro16xi IP PBXs can route calls between internal extensions to the other Quadro16xi's with all services available.

Key benefits for Alert

The Board Directors were given the Cisco 7960 series phones, which are WiFi capable. They have their extension configured to these mobiles, thus they can use them when on- and off-site via a UMTS service. This means their extension is always available, an essential facility in the current business climate.

All the Quadro16xi IP PBXs work together, behaving as one telephone system. This gives several advantages. Call loads can be shared ensuring the highest quality of service. In addition, this combined structure creates a very reliable fail-over system by using DNS names on the proxy registration parameter on the phones.

"Even though this new system has only been in use for a few months so far, they are already seeing a big improvement in the company's work flow and call costs," says Sr Aldo. "The Directors have found their new WiFi capable mobile phones a valuable new business tool and the ability for their staff who are out of the office to make mobile phone calls via the office system has been welcomed."

"Finally, the automatic call routing is working perfectly. The software on the Quadros enables Alert to track all the calls, and so they are able to analyze in detail the costs and compare them with what they would have spent using the old system. At this rate, I expect that they will pay for the investment to upgrade their communications system in less than three years because of the savings on international and mobile call costs."