

Cost-effective additional functions

IP telephony in an Open Source environment

The structure of modern glass fiber networks is the base to efficiently use VoIP solutions. Additional functions, e.g. voice mailboxes for every employee, are offered by the suppliers at considerable extra costs. Implementing external Unified Communications solutions may reduce the costs by up to a six-figure amount depending on the number users. Besides an efficient mailbox such solutions provide even additional services as fax and SMS.

In cooperation with the Berlin scientific network BRAIN (Berlin Research Area Information Network) an own 65 kilometers long optical fiber network was built in the last years to connect the sites of the FHTW, Berlin's largest University of Applied Sciences with almost 10,000 students. The technology for the secure network infrastructure in the backbone, distribution and access area was delivered by Enterasys Networks with several high-quality switching, routing and management solutions.

Great potential for cost reduction at planned moves

Because of the new network and the structured wiring of the sites the FHTW decided to build up a VoIP net. At the five university sites different telephony systems existed and each had their own telephone connection. So phone calls between the employees over the public net generated extra costs.

Furthermore several support contracts existed for the different systems. Since four of the five university sites shall be established at the new site Wilhelminenhof within the next years, the IP technology makes further cost savings possible here. The overhead at the planned moves is solely reduced to taking along the telephones since the phone numbers and qualifiers remain unchanged in the net.

Efficient Cisco solution

Since the range of extension numbers at the central site was large enough, a central dialing number could be established for all branch offices during the migration to VoIP. Almost 1000 devices are in use university-wide at the moment. After the testing period the responsible persons ordered the Cisco telephones 7970 and 7912 as well as the series 7920 phones for the WLAN area.

Two redundant Cisco Callmanagers at different sites take care for the access to the public telephone network. At the main location two S_{2M} interfaces exist with 60 channels, at the second point of presence 30 channels are at the disposal in addition.

Cost-effective additional services

In a second step the solution was extended by voice mail functionality. With Unity Cisco offers here a high-priced solution of its own.

When they looked for a cost-effective alternative the responsible persons discovered the Unified Communications solution OfficeMaster of Ferrari electronic AG which has an efficient voice mail solution and is suitable for professional usage in large information and telecommunication environments. Although OfficeMaster includes additional features as fax and SMS, the costs were lower by about one third compared to other offers of voice mail systems.

The solution has convinced the responsible persons in particular because it can be used in Open source environments via IMAP and SMTP independent of the used mail system.

Easy to use

Setting up the mailboxes is done automatically by the setup of the user in Callmanager. Every user logs in into the telephone system with his FHTW-wide user name and pass code. This data is stored in the Cisco Callmanager and is queried by OfficeMaster which then automatically provides to employees other Unified Messaging functionalities besides the mailbox.

At the decision for OfficeMaster security reasons also had great importance. Since the access is carried out via IMAP, the voice news can be saved as wav files on the mail server. OfficeMaster allows retrieving messages by a separate IMAP server process which gets access only to a given part of the mailbox due to the weak authorizing method by name/pass code. So unauthorized access to the full mailbox can be prevented.

Ferrari electronic has developed a "voice tree editor" together with the experts of FHTW. It allows the employees to offer additional information in which the callers can navigate by dial tones. This function is very popular in particular with the employees of the course guidance service. "The handling of the solution is so simple that the employees create and update their own info offers smoothly even by telephone." Stefan Zech says who is responsible for mail and UMS. Thus even more complex Interactive Voice Response systems (IVR) can be realized easily.

services	send	receive
Voice Mailbox	different kinds of announcement can be recorded by phone	from everywhere by telephone or mail program (delivery in the special IMAP folder UMS)
Fax	by mail to phonenummer@fax	by e-mail system, delivery of incoming faxes as PDF or of the dispatch receipt directly into the INBOX
SMS	by mail to mobilenummer@sms	by e-mail system, delivery of incoming SMS or the dispatch receipt directly into the INBOX