

[REFERENCE CASE: MIGROS AARE]

Product:	Migros Aare, IP-DECT
Customer:	Migros Aare
Solution:	Communicates via IP-DECT



THE BEST OF TWO WORLDS OF COMMUNICATION MIGROS AARE COMMUNICATES VIA IP-DECT

“Voice over WLAN is in and Dect is increasingly out.” This is the widely held opinion among ICT specialists. However, this is not the case in practice. Where reliable voice communication is critical for operations, the communications needs of companies with complex structures can in many cases not be securely met in the desired quality with a conventional voice over IP solution. This is proven by Ascom and the retail giant Migros Aare, as well as by a large number of other companies who have since recently been using a brand new IP-DECT system from Ascom to their full satisfaction.

For a retail trading company, the smooth processing of the product flow and of the related communications processes (data exchange and telephone) is of strategic importance. This is especially the case when this has such gigantic dimensions as the Migros Aare cooperative, with its 257 “operations” at 140 locations distributed over three cantons.

Complex structures mean high hurdles

In the “good old days”, not all that long ago, data was exchanged between the branches and the central office by modem through dedicated telephone lines. Rapid technological development after 1994/95 resulted in the continuing expansion of strategically first-class IT networking. With increasing networking and the available larger bandwidths, the wish was of course natural to also process the second centrally important communications foundation of audible communication via this data network. The foundational strategy of this intention from the IT department involved the following:

- Centralisation of IT and telecommunications
- The offering of services for internal customers (outlets, operations)
- The reduction of costs at the retail outlets
- Optimisation of resources

It was thereby clear to Stephan Fink, head of IT Systems Technology and Telecommunications at Migros Aare, and his team that such an ambitious project could of course only be tackled on the basis of a VoIP-capable network that also guarantees quality of service.



The Migros Aare extends through the cantons of Aargau, Solothurn and Berne.

While the data network and the centralisation of the IT were continuously advanced and adapted to needs, truly organic “uncontrolled growth” prevailed in the case of telephone communications. This means that each outlet had its own telephone system (PBX). Depending upon the size of the branch and its needs, a considerable number of landline devices, fax machines and base stations with cellular phones were attached to it. In many cases there were also personal paging systems.

First pilot experiment led to success

Even in 1999 one was taking a more precise look at IP telephone communications. However, the impression gained was less than satisfactory. Among other reasons, this was because at that time many of the functions necessary for carrying out business were still not available.

However, by the end of 2003, the VoIP technology and the expansion of the network had progressed to an extent that a decision was made to risk an initial pilot test with the integration of data and speech. The MM outlet Köniz Blauäcker was equipped with the new VoIP technology in 2004. The new solution had the following features:

- Cisco Call Manager as the new telephone system (PBX)
- VoIP for landline telephone communications
- WLAN solution for the integration of the scales
- VoWLAN for mobile telephone communications
- Integration of the personal paging system into the Cisco Call Manager



The 129 supermarkets, 65 specialty markets and 49 restaurants are frequented by around 100 million customers.

Following six months of relatively complaint-free operation, it was clear that one could and should continue along this path. With the successful conclusion of the pilot test, the IT department offered IP telephone communications to the outlets as a service. The successful pilot experiment in MM Köniz led to an increased pull effect in other outlets and to a constantly increasing demand for the new system. By the end of March 2007, more than sixty outlets, club schools and specialty markets with more than 3,300 terminals were already connected to the new system. Thirty to forty more branches are added annually. Shops are principally only ported to the new system when this becomes necessary. For instance, in the event of shop renovations, expansions, restorations or when the existing system has reached the end of its useful life.

The pioneer role of Migros Aare in the integration of data and speech has thereby also attracted a lot of attention outside of the cooperative. For instance, from the Migros cooperative in Neuchâtel/Fribourg, which has already connected 17 outlets to the system. The IT department of Migros Aare thereby functions as a service provider. It was clear from the very beginning that the conversion to the new system could in no way be merely an end in itself. If it had not been possible to achieve synergies with the in any case necessary expansion of the data network, the step-by-step move to IP telephone communications would never have taken place, according to Stephan Fink.

Problem child: wireless telephone communications

However, wireless telephone communications created problems. Wireless telephone communication is used quite variously, depending upon the type of operation. Thus the needs in an Obi specialty market, where customer enquiries often need to be passed on to a specialist located somewhere in the large market, are greater than, for example, in a grocery store, where customer enquiries with respect to products are significantly rarer.



The Ascom IP-DECT system enables simple, efficient network with a high degree of speech quality.

Wireless telephone communication was already included in the context of the mentioned pilot experiment carried out in 2004 in the Migros market in Köniz. VoWLAN terminals were used at that time. However, the results achieved were disappointing, although this experiment was in no way started naively. It was quite clear that problems with respect to coverage, handover, overlapping of channels and conversation quality could occur with an application that runs exclusively via the IP infrastructure. And this was also the case. The consequence was that the brakes were quickly applied during the continued expansion of wireless IP telephone communications.

IP-DECT system solves the problem

However, it took about two years to find a solution for these problems. The answer was found with the market launch of the IP-DECT system from Ascom in 2006. This novel system offers the seamless merging of IP technology with the proven and very reliable DECT standard. In contrast to WLAN technology, the IP-DECT system uses the DECT standard for the radio link. As a wireless SIP extension, the system can also be directly connected to IP-based exchanges. The system is also equipped with highly reliable messaging and alarm applications, and it is possible to use the traditional cabling. With respect to security, external disturbances, for instance from hackers, are also less likely.

The IT team of Migros Aare also saw this as a promising possibility for solving the problems related to wireless telephone communications. At least on paper. The system had not yet been tested in a complex shop environment.



More than clear test results – IP-DECT prevails

The new system was then thoroughly tested in the hard reality of routine and compared with other solutions. This took place in the OBI outlet in Moosbühl with an impressive sales floor area of 40,000 m². Both a “traditional” IP telephone communications system and the IP-DECT system from Ascom were tested. The results were more than clear.

An initial experiment carried out with the “traditional” VoWLAN technology with 17 access points showed clear deficiencies with respect to coverage and speech quality. The handover also didn’t function optimally. It was apparent that the tested system could not handle the complex environment and the other obstacles like reflections from metal structures and strongly reinforced concrete. The theoretical increase of the number of access points to 32 resulted in an improvement. However, satisfying results could also not be guaranteed with this configuration.

In contrast, the IP-DECT system could ensure perfect coverage throughout the entire area with only 8 IP-DECT base stations. The integration into the IP network took place seamlessly, quickly and without problems, and the full handover and roaming functioned without problems. The good speech quality is comparable with landline telephone communications. Thanks to the two integrated antennas in the base station and in the terminal (antenna diversity), the reflections from metal structures and the strongly reinforced concrete were no longer a big problem. Thus it was shown that the IP-DECT system could be a valuable solution for wireless telephone communications in the IP environment of Migros Aare. The emphasis is on “could”. This is because a decisive technical hurdle had to be mastered.



No problems with the communications protocols

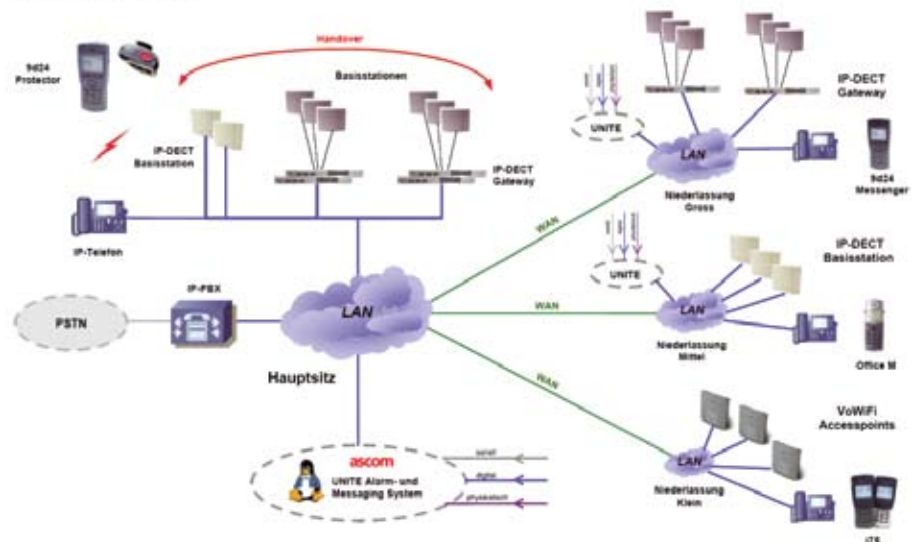
The nut that still needed to be cracked involved the separation of the signalling and the voice stream during conversations carried out by participants in the same outlet. This problem could not be solved with the conventional H323 protocol. If, for instance, Mr. Smith calls his colleague Mr. Miller in the same outlet, not only the signalling for this conversation, but also the voice stream takes place via the exchange in Schönbühl. Such a process creates intolerable capacity problems. The seamless compatibility between the standardised SIP interface used by the Ascom system and the Cisco owned SKINNY protocol had to be ensured under all circumstances.

The question of the potential separation of the signalling and the voice stream during such conversations became decisive for the go or no go of the IP-DECT system. The Migros IT team spent a lot of time thoroughly testing the system under lab conditions. Here too, the performance completely met all expectations. The separation of signalling, which takes place via the exchange, and the voice stream, which takes place within the outlet involved, functioned without problems. It was thus shown that the Ascom IP-DECT system can be fully integrated into a Cisco VoIP environment. This clinched the decision. The system has been operating to everyone's full satisfaction with Migros Aare since 2007 and is used for all new installations when there is a need for wireless telephone communications.

Stephan Fink rejects the occasionally heard argument that the DECT standard is "old" technology. He asks one to bear in mind that DECT was specially developed for audible communication, while data networks were developed and optimised with a view to data transfer: "Here exists a gap that can not be satisfactorily bridged with current VoWLAN technology". This is why the seamless merging of the two technologies is currently the best possible solution, even for the end user.

IP-DECT Lösung von Ascom

Prinzipschema

**Ascom IP-DECT – on the advance**

Although only officially on the market since the summer of this year, the Ascom IP-DECT system has started on a real triumphal procession. Decisive for this march through all “communications institutions” may be the fact that this technology unites the best of traditional thinking with the expectations of the future in a fashion that is to-date truly unique. This means proven technology in an innovative package. Ascom IP-DECT solutions are known for their high quality, deep investment costs, affordable maintenance and especially for their modularity and scalability. In addition to Migros Aare, companies like Lonza, Roche, Beiersdorf and many others have also decided in past months to use this robust and proven technology.

www.ascom.com/ip_dect.htm

Economic efficiency

The question of economic efficiency remains. Stephan Fink is cautious with respect to costs savings from the new system. Asked about potential costs savings, he stated that the new system will certainly not be more expensive than the previous solution, which has been shown by several comparisons on location between VoIP and conventional telephone communications. Outsourcing would also certainly involve much higher costs. A very positive point is the fact that the new installation represents an extremely transparent telephone communications that can be administered centrally and is very flexible. Although this is not a model for realising gigantic savings, the centralisation and the scalability contain considerable savings potential. Especially because one now only sets up services once for the entire environment and not repeatedly for each outlet.



Discreet giant

An annual turnover of more than 3 billion CHF, around 12,000 employees, 257 "operations" at 140 locations, including 129 supermarkets, 65 specialty markets and 49 restaurants, 250,000 m² of sales area and around 100 million customers. Faced with such figures, it would be easy to reach the conclusion that this can only be the description of a globally active company.

Far from it. This impressive brief profile is of the Migros Aare cooperative, the largest of the ten cooperatives that are part of the Migros union of cooperatives. It originated from a fusion that took place in 1998, extends through the cantons of Aargau, Solothurn and Berne and has its headquarters in Schönbühl/Berne.

As complex as the corporate structures of this giant with the discreet appearance are, so complex are also its communications needs. The IP-DECT system from Ascom plays an increasingly important role in this environment. www.migros.ch/DE/Regionen/Aare/Seiten/Aare.aspx