



# Enabling the workplace of the future with IP communication technologies

*Anyone wanting to cut overheads and operating costs whilst boosting employee efficiency should take a closer look at the background of IBM Switzerland's move to its newly built head office. This can all be achieved through clever financial planning, investment in the latest information and communication technology and the work culture.*

Construction work for the new IBM building, designed by Swiss architect Max Dudler and located in the Vulkanstrasse in Zurich Altstetten, lasted 34 months. As soon as visitors enter the building they become aware that investment in the building went far beyond mere investment in glass and granite. The electronic building, security and infrastructure technology used is discrete but functional.

## Decision taken to install IP telephony

The futuristic telephones on the consoles are evidence that telephone calls here are made using Internet Protocol (IP) and that infopoints are used to find people and reserve meeting rooms. With 1,800 IP telephones for employees and meeting rooms in a single building, this is the largest IP communication facility in Switzerland. The hardware contract was therefore awarded to the strategic alliance partner Cisco Systems. The project to migrate the telephone system, previously run in parallel to the IT infrastructure, to a system using IP technology was completed successfully in only a few weeks.

## Mobile culture of cooperation

By May 2005, the introduction day arrived – the 1,450 workstations awaited the arrival of the first employees. But hang on a moment – doesn't IBM employ 2,400 people in Zurich? Yes it does, but this is not a problem as far as the IBM workstation concept is concerned. Since the early 1990s, the company has believed in the principle that work is an activity rather than a place. The concept of desk-sharing allowed IBM Switzerland to gain experience early on and strategically optimise its processes over time. The new Vulkanstrasse head office is not an office building in the traditional sense, but rather a building that serves as a representative location where IBM employees can meet together or with external partners to work temporarily in project teams. The main advantage of this concept is that it optimises team communication whilst halving costs per workstation. This is the 'Vulkanstrasse' business case.

## Strategic requirements

### Reliability

The new IT infrastructure has to be designed so that, on the one hand, all employees can be contacted anytime anywhere and, on the other hand, to allow employees access to the data and specialist resources that they need. The reliability of the system is a priority in this regard.

### Building, security and infrastructure technology

All buildings, infrastructure and security components are managed via an IP network.

### IP telephony installation

The data and telephone infrastructures for all IBM offices in Switzerland will be merged into a single communication network based on IP standard.

### Decision for IP telephony

In addition to the 1,800 fixed Cisco IP telephones supplied with electricity by Power Over Ethernet technology, software-based telephones (soft-phones) will also be used for mobile employees.

### **An intelligent information network....**

All communication in the building runs through two different network circuits separated by firewalls and requiring a total of 600 km of cables. The same type of cable was used for all three types of communication, cutting cable infrastructure costs by 30%. Images from security cameras, commands to close blinds and doors, security and entrance checks on employee ID cards and telephone conversations all use IP standard.

### **....for data, voice and video communication**

Voice, images and videos are integrated more than ever before – the electronic mailbox can now hold not only messages in text form but also faxes and voicemails – options available as part of the unified messaging functionality. Future applications will allow employees to work even more productively with their colleagues, clients and partners by offering, for example, simple voicemail configuration and the option of setting up telephone conferences or web meetings.

### **Pure IP as an efficient solution**

Anyone who is currently thinking about installing a communication infrastructure can choose from several telephony options: a hybrid IP telephony system where the existing telephony infrastructure is operated in parallel or – the option IBM went for – a 'pure IP' or 'end-to-end' solution. The new head office, which brings together the Hohlstrasse, Altstetterstrasse, Bändliweg and Affolternstrasse offices in Zurich, was disconnected from the existing traditional telephone exchange and transferred to the new IP network. The offices in Bern, Basle, Geneva, Winterthur and Lugano are due to gradually follow suit in the near future. An advantageous operational side effect is that by integrating voice and video communication into IT services, infrastructure maintenance and management costs can be cut and services run more efficiently by a single team. This cuts management and administration costs by 25%.



*“ At IBM, work is not a place, but an activity.”*

Werner Hoppler, Director IBM  
Global Services Switzerland



## Gentle migration strategy

When it came to the technical transfer, IBM and Cisco opted for a 'gentle' migration whereby initially only the infrastructure in Zurich was transferred to IP telephony. The offices in Geneva, Bern, Basle, Winterthur and Lugano continue to use the existing telephone system. All data on telephone users in IBM Switzerland have, however, already been saved on the IP telephone system which acts as the heart of the system. In addition to users in the different offices, call centre staff and employees who are working from home or travelling are all connected to the same local area network (LAN) and wide area network (WAN). As a result, all employees – despite being in different locations – are all connected to a single network.

## Lower telephony costs for mobile employees

Employees who are travelling or at home can have secure access to all the data and tools they require via a virtual private network (VPN) and an ADSL router provided by IBM for every employee. Much to the delight of the head of the finance department, IP telephony has cut external communication costs by 25% because voice calls between both national and international IBM offices are now made via the existing WAN. Costs have also been cut for calls to mobile phones, primarily for employees working from home. This has been made possible through the use of softphones, software that is operated using a laptop and headset (microphone and headphones) instead of the company mobile phone and that allows the employees to be contacted on their own landline.

## Security, performance and voice quality

Performance, security and network quality are decisive factors for a company. A client-focused company, such as IBM, simply cannot afford to be unavailable for clients or to stand out because of poor voice quality or connections that are not secure. The facts are impressive – all IBM employees could call each other internally at the same time and the system would still not be overloaded! Due to open industry standards and the modular system, IBM is in a position to quickly react to new requirements requested by users and new opportunities offered by technology.

## Further voice integration

Possible further developments of this system could include complete integration of voice communication into the Lotus and Websphere environment (i.e. mail, click to dial, instant messaging, web conferencing), access via wireless LAN-enabled mobile phone or video conferences. The concept of the workplace in the Vulkanstrasse building may sound exotic to some and many are not (yet) able to imagine giving up a fixed workplace. But IBM and Cisco realise that this is only the first step towards the workplace of the future.



*“By the end of 2005, over 80,000 Cisco IP telephones will have been installed at IBM worldwide. That is more than we have ourselves and underpins our seminal alliance.”*

Niels Christian Furu,  
General Manager Cisco Systems  
(Switzerland) GmbH

## Solution and result

### Cabling infrastructure costs cut by 30%

By simplifying cabling and using a single standard, cable routing was optimised in the new building and construction costs were reduced.

### Management and administration costs cut by 25%

The single location and consistent use of IP standard meant there was no longer any need for local telephone systems and small-scale facilities. With telephony integrated into the IT services, the information infrastructure is operated centrally, thereby considerably reducing management costs.

### External communication costs cut by 25%

By combining the IT and telephony infrastructure, IBM can use its own wide area network (WAN) for internal calls. There is no longer any need for dedicated telephone connections between offices and even international calls can be made via the WAN.

## IBM and Cisco Systems: IP communication on demand

Cisco Systems' application-oriented networking strategy and IBM's on-demand business model form the prerequisites for successful optimisation of business models and processes based on seminal IP technologies.

### An alliance that benefits clients

Benefit from our strengths and choose us as reliable partners to help plan, implement and operate your company's new communication solution:

- IBM has extensive sector expertise in optimising business processes, is at the cutting edge of technology and has considerable specialist knowledge when it comes to implementing and operating systems.
- Cisco is a market leader for network hardware and software.
- IBM and Cisco have developed solutions together for IP communication, security, data center, mobility and storage.
- Both IBM and Cisco have made significant investments in research.

### Move towards the workplace of the future with IBM and Cisco Systems

Contact us today to find out how your company can benefit from modern IP communication and workplace concepts.



*"The most enduring advantages of networked patterns of work are achieved by optimising business processes."*

Niels Christian Furu,  
General Manager Cisco Systems  
(Switzerland) GmbH



*"Our partnership combines Cisco's skills in the field of IP communication solutions with our sector expertise and experience in designing, constructing and operating IT infrastructures."*

Werner Hoppler, Director IBM  
Global Services Switzerland



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