



CISCO NETWORK INFRASTRUCTURE LAYS FOUNDATIONS FOR 'ARTS CENTRE OF THE FUTURE'

«A VISION EMERGED FROM DIFFERENT WORKSHOPS WITH REGARD TO THE DIGITAL INFRASTRUCTURE NEEDED TO ACHIEVE OUR POLICY PLAN FOR THE FUTURE. BELGACOM TELINDUS THEN ASSISTED US IN BUILDING THIS INFRASTRUCTURE USING CISCO TECHNOLOGY. THE RESULT WAS A NETWORK THAT ALLOWED 80 FIXED AND 20 WIRELESS IP TELEPHONES TO BE USED WITH THEIR ACCOMPANYING IP TELEPHONE EXCHANGE OR CALLMANAGER FROM CISCO.»

Wouter Vermeyleen, building and infrastructure management, Vooruit

In its policy plan for 2005–2009, Ghent's Vooruit Arts centre set itself the explicit goal of responding better to the changing needs of its employees and performing artists but also the visiting public.

If the eighty Vooruit employees want to achieve this common policy objective they need to be able to concentrate on their jobs 100%. «To achieve this goal, we have to create an entirely automated back-office, combined with watertight integration between our applications for ticketing and accounting. Integration with our website's content management system, in which we combine streaming media, audio and video content, is also part of this overall objective. The integration of all back-office systems is scheduled for completion by September 2007. We also hope to give our employees greater freedom of mobility through Voice over IP applications, which will also mean, as an added bonus, that the international telephone bills of employees on foreign assignments will drop considerably,» says Wouter Vermeyleen, who manages the Arts centre's building and infrastructure.

However, it is not only the Vooruit employees who need access to more technologically advanced working methods. Performing artists these days also need an increasing degree of technological support. Live uplinks to the internet are required with greater regularity in many contemporary cross-media art forms. Performances are also often simultaneously presented on stage and on the internet.

Visitors and members of the audience also demand more interaction and tailor-made services. More personal communication, the potential for previews, weblogs but also an efficient signpost system within the Vooruit building are just a few items on the public's wish list.

EXECUTIVE SUMMARY

BACKGROUND

Since its opening in 1982, Vooruit has grown to become one of the largest Arts centres in Belgium. The organisation employs 80 people, organises more than 600 activities per year and manages an artistic budget 10 times the size of that in its seminal year. Vooruit has opted for an open and international policy with the emphasis on (co)production and cooperative links with international partners. The Ghent Arts centre is active in a wide selection of contemporary dance, theatre, literature, pop/rock, jazz, avant-garde music, new media and performance. As a result, Vooruit has evolved to become a unique kernel for research and development in contemporary stage arts and new media, both nationally and internationally.

CHALLENGE

In this context Vooruit wanted to jump on the digital technology bandwagon which is tightening its unyielding grip on present-day society. This trend has spelled social change and new needs for both the public, the performing artists and Vooruit's employees. Vooruit's ambition is to be a pioneer, both nationally and internationally, with respect to the challenges brought about by this digital revolution. It wants to do so in the field of infrastructure, the development of a fully automated backoffice, the integration with existing and future environments and the development of new applications for visitors and employees.

SOLUTION

With this total project Vooruit has created the basic conditions for an 'Arts Centre of the Future', and not only by the way it communicates with the public or the outside world. All existing networks, from telephony to heating, light and safety are connected through one IP system. To achieve this the Arts centre decided to install a powerful 10 gigabit network, an intelligent, integrated building management system and full wireless coverage of the building. For the implementation of the wireless network and IP telephony system Vooruit commissioned ICT service provider Belgacom Telindus which installed Cisco's advanced equipment. Vooruit now uses a wireless network, 80 fixed and 20 wireless IP telephones as well as an IP telephone exchange or CallManager from Cisco.

RESULTS

Thanks to the wireless network, a variety of functions can be activated from every laptop, PDA or desktop PC. From the user's trusted computer environment or via the telephone Vooruit has thus created the conditions for the 'Arts Centre of the Future'. Full integration with the backoffice ensures that all the information is available always and everywhere. By using softphones -an application to call over the Internet- and Voice over IP (VoIP), Vooruit is hoping for a considerable drop in the telephone bills of employees on foreign assignments.





'ARTS CENTRE OF THE FUTURE': ANSWERING PRESENT AND FUTURE NEEDS

The changing needs of the three 'target groups' of Vooruit's IT department are being answered with the 'Arts Centre of the Future' project. This is a total project put forward by Wouter Vermeylen to the arts centre's management for the 2005-2009 policy period. In doing so Vooruit wants to profile itself in the short term as the 'Arts Centre of the Future' toward the outside world. Wouter Vermeylen: «We can say with certainty that this implies an organisation-wide change. To support this project, we organised workshops with people from the different departments with very diverse professional skills.»

The Arts centre organised eight workshops with employees from all five departments: artistic & business operations, marketing, realisation & planning and infrastructure. The body of knowledge thus previously spread throughout the centre's staff was collated and a platform created on which Vooruit could introduce the new applications to its employees.

Wouter Vermeylen: «A vision emerged from these workshops with regard to the digital infrastructure needed to achieve our policy plan for the future. Belgacom Telindus then assisted us in expanding this infrastructure using Cisco technology. The result was a network that allowed 80 fixed and 20 wireless IP telephones to be used with their accompanying IP telephone exchange or CallManager from Cisco.

SUPER-FAST INTERNET VIA WIRELESS CISCO NETWORK

In a complex, listed building such as Vooruit, installing a wireless network was already quite a task. The Arts centre consists of some 367 rooms and halls, often separated by thick layers of concrete. There are also five stages in the building with a joint seating capacity of 2500. The 20,000 m² of floor space within the building is currently covered by 80 aerials or access points. «Every single square metre in Vooruit is covered by the wireless network. With the current popularity of digital performances and an increasingly demanding audience, we just can't afford to leave any gaps in our wireless network,» says Wouter Vermeylen.

Network integrator Belgacom Telindus helped Vooruit with the installation of the wireless network based on Cisco equipment. It was also responsible for the integration with the other systems, such as the building management system and the security facilities.

Vooruit also signed an accord with the government institute Belnet, which provides very high bandwidth internet access to Belgian educational institutions, research centres and government departments. Vooruit will thus have access to Internet2 for super fast internet connections. «That allows us to exchange data at lightening pace. It is theoretically possible to achieve speeds of 622 million bits per second. In other words, it would be possible to send the contents of a cd-rom in just eight seconds.» Although Internet2 is intended primarily for scientific bodies, today the art world also has access to the same benefits. In the meantime, Vooruit has also made the switch to a Microsoft SQL Server in order to manage its data more effectively.





INTEGRATED BUILDING MANAGEMENT SYSTEM

The basic infrastructure that came about as a result has become the foundation of the building management system which has thus far functioned exactly to expectations. Vooruit can therefore guarantee the safe use of five halls in this listed monument and it is able to keep down the costs for the operation of these halls and the seven rehearsal studios.

The system allows for all doors to be opened in the event of an emergency, for instance, simply by entering a code into one of the wireless IP telephone sets. A single code can in fact initiate a whole host of possible actions in a particular situation.

In a research project known as 'Wireless Building Automation', conducted in co-operation with the Interdisciplinary institute for BroadBand Technology (IBBT), the Arts centre is investigating how wireless applications can be useful in terms of building management. Vooruit is acting as test organisation and demonstrator for other companies.

In this research project the focus is not only on the wireless control of the currently 10,000 connected sensors but also how these sensors interact with each other wirelessly. It could make eight subnetworks of the building management system surplus to requirements. To drive these actions, battery friendly wireless Zigbee technology is being used.

WIRELESS OPERATION OF INFORMATION PANELS

«A wireless IP system lowers the investment costs associated with the installation and maintenance of eight parallel cabled networks. In addition, it is simply not possible to run cables throughout a listed monument,» remarks Wouter Vermeylen. The alternative has been to install some 10,000 sensors and actuators driven by one central server.

Thanks to the new infrastructure, some forty employees are able to work from home on the Arts centre's intranet over a secure Citrix connection. Electronic information displays will soon also be visible throughout the Vooruit building. They will provide visitors access to information about upcoming performances, serve as temporary signs or display the evening programme. The information displays will also be wirelessly driven from the central media server. From September 2007 this server will retrieve its information directly from the SQL-database.

VIRTUAL ARTS CENTRE

The funding of our total project, which runs from 2005 to 2009, was only made possible thanks to a far-reaching collaboration with the research institutes and the industrial sector. Not only does this provide the necessary financial leeway, this form of collaboration also results in an added value for all stakeholders. More concretely this concerns Cisco and Belgacom Telindus who are responsible for the implementation of the renewed network, Microsoft, which has provided the necessary software and know-how, and Icorda, the IT partner that has assisted us in the internal automation», declares Wouter Vermeylen.

Within the 'Wireless Building Automation' research project IBBT has taken on half the costs by making research assistants available who are connected to the different universities of Flanders. The other half is paid by the participating companies, also in the form of working hours.

In a second project, which is also supported by the IBBT and referred to as the 'Virtual Arts Centre of the Future', Vooruit is exploring the possibilities of a Virtual Arts Centre. But with the 'Arts Centre of the Future' total project Vooruit has gone much further already than just talking about the future. The Arts centre is working on an active policy, entirely in line with the current and future expectations of its target group.