



Picture Gallery City of Amsterdam

European City Connects Citizens and Businesses for Economic Growth

Amsterdam builds broadband platform for service delivery to achieve social, economic, and environmental sustainability

EXECUTIVE SUMMARY

CHALLENGE

- Meet aggressive sustainability goals for reducing energy usage and CO₂ emissions
- Create environment attractive to residents and businesses for economic sustainability
- Reduce city costs

SOLUTION

- Wide range of Cisco products

RESULTS

- Reduced office space by 40 percent, saving 10 million euros in leasing costs alone
- Eliminated equivalent of 3428 tonnes of CO₂
- Launched pilot projects spanning smart work centers, healthcare, smart living, mobility, and sustainability services

Challenge

Amsterdam is the financial and cultural capital of The Netherlands. The city strives to become one of the “greenest,” most sustainable cities in Europe while continuing to attract businesses and maintain economic growth. Over the past decade, the city developed a vision for collaborating, envisioning, developing, and testing numerous connected solutions that could pave the way to a smarter, greener urban environment.

A number of projects were launched, beginning in 2006, as Amsterdam identified a number of possibilities to improve sustainable living, sustainable working, public spaces, and mobility. As part of its plan, the City of Amsterdam formally endorsed a Climate Vision with specific goals. By 2025, the city’s CO₂ emission will be 40 percent lower than in the reference year of 1990 and its

energy usage will be 20 percent less. In 2015 the municipal organization will be climate neutral, and 10,000 electric, rather than gas-powered, vehicles will be on the streets. Within a shorter time period, the city also seeks to reduce costs. To achieve this goal, it aimed to reduce the amount of physical office space it required by 40 percent. Transportation challenges, such as congested roads and high parking costs also led to evaluating new ways of working for city employees.

However, the city cannot take on these challenges alone. Instead, it teamed in numerous public-private partnerships to create the platforms and services needed to help achieve its goals. SmartCities Amsterdam is the public-private organization that oversees projects with more than 70 partners, including the City of Amsterdam, Cisco, IBM, Accenture, Honeywell, and many other organizations.

“The power of public-private partnerships cannot be overstated. With the vast range of companies and nonprofit organizations whose expertise lies in connectivity, intelligence, and technology, we have a rich pool of resources for identifying and deploying the best solutions. We are successfully working together to deliver superior services with far greater efficiency.”

—Ger Baron, Program and Cluster Manager, Amsterdam Innovation Motor

Cisco teamed with the city and the SmartCities team to collaborate on vertical solutions that are built on the network as an open integrated platform. By working together from idea to execution, the group aims to change how communities are designed, built, managed, and renewed.

“Broadband is the essential infrastructure for SmartCities projects,” says Maaïke Osieck, Communications Lead for SmartCities Amsterdam. “From connected buildings, to fiber to the home for residential service delivery, Cisco routing and switching solutions power the core network and aggregation capabilities that underlie projects designed to improve sustainable living and working, public spaces, and mobility.”

Amsterdam’s vision evolved into a Cisco® Smart+Connected Communities initiative designed to begin transforming from a purely physical community to a connected community. Its vision is all-encompassing, aiming to provide services for connected real estate, government services, utilities, transportation, and healthcare. Teaming with a large ecosystem of private and commercial partners, Amsterdam deployed a citywide network that forms a strong foundation for the delivery of smart services and a wide-open marketplace supporting economic growth.

Solution

A citywide broadband network creates the foundation for widespread connectivity. Initiated in 2008, the network originally connected 40,000 households and small businesses through fiber to the home. In 2009 a national telecom company connected another 40,000 businesses and households to the network. Today approximately 140,000 homes and businesses are connected and the city continues to deploy fiber across all areas of the city.

“This robust broadband foundation enables our city to compete with other European cities,” says Frans-Anton Vermast, Advisor, Public and International Affairs, Physical Planning Department, City of Amsterdam. “In this way, we help ensure a wide-open marketplace for innovative services and economic growth, as well as a fast track for the smarter and cheaper delivery of healthcare, education, and other public services.”

With widespread connectivity in place, the city and Cisco created the Double U Smart Work Foundation to develop Smart Work Centers. The Double U SmartWork Foundation includes the City of Amsterdam, Cisco, ABN/AMRO, RABO Bank, and multiple individual smart work center owners. Smart Work Centers are urban, connected, and sustainable work environments designed to deliver information to users, no matter where they choose to work. Located near residential communities, they help reduce or eliminate commuting while enabling workers to access their full corporate resources. Space can be rented by anyone from sole proprietors to multinational corporations, and in exchange, workers have access to office space, meeting rooms, broadband connectivity, and Cisco TelePresence™ collaboration systems. Cisco TelePresence 3000 and 100 Series systems provide high-quality, lifelike video for collaboration between workers at the Smart Work Center and colleagues in other locations.

The city has begun a project to improve the sustainability of its 42 data centers. Virtualization and server consolidation projects are underway to help reduce power consumption and cooling requirements. The city is also collaborating with private and commercial data centers to share best practices and find solutions for reducing power requirements.

Results

“The power of public-private partnerships cannot be overstated,” says Ger Baron, Program and Cluster Manager, Amsterdam Innovation Motor. “With the vast range of companies and nonprofit organizations whose expertise lies in connectivity, intelligence, and technology, we have a rich pool of resources for identifying and deploying the best solutions. We are successfully working together to deliver superior services with far greater efficiency.”

Amsterdam has already achieved a significant goal by reducing the amount of its office space by 40 percent. At the same time, the city is converting existing buildings to connected and sustainable buildings by reducing office equipment from 3.5 to 2.8 devices per worker; reducing the number of printers and copiers by 70 percent; relying more on the network and less on standalone devices; creating more flexible workspaces; and integrating smart facility management features, including fire alarms, access, security, heating, elevators, and lighting systems. So far the city has saved 10 million euros in leasing costs and eliminated the equivalent of 3428 tonnes of CO₂. It expects to benefit further as all buildings incorporate these additional smart features.



Kenneth Verburg

Smart Work Centers

By helping Amsterdam forge a network of Smart Work Centers, many different stakeholders are able to meet in a common space. Workers from city government, startup companies, universities, and other organizations rely on the Smart Work Centers to gain a work environment without the disturbances of home and with high-quality collaboration amenities. The ability to reduce commuting traffic and provide an alternative meeting place is expected to help companies reduce their overall real estate costs without compromising accessibility. Employees also enjoy more work/life balance and work flexibility.

The Smart Work Centers also offer the first public telepresence service in the Netherlands. Public Cisco TelePresence allows people to collaborate and work face to face so that they can reduce travel, save time, and accelerate decision making without having to purchase or support high-end video conferencing equipment. Cisco also oversaw development of smart work services, such as TelePresence booking tools, a workplace finder, and other services that lay the foundation for providing Work Spaces as a Service.

Healthcare Services

With fiber to the home, a foundation now exists for changing the way in which services are delivered to aging residents. In Almere, a city near Amsterdam, people over the age of 60 are the fastest-growing age group. A pilot project, called De Verzilvering, is aimed at increasing the participation of older citizens by making it easier for them to share interests, such as music or keeping fit. It is part of the Cisco global Ageing Well program, which addresses the fact that people are living longer, healthier, and more-active lives and the ways in which communication technologies can enhance quality of life.

Several different video-enabled approaches are being piloted. In one pilot, a fitness instructor is able to lead two groups of participants in different locations at the same time. Another will allow music lovers in different parts of the city to share their enthusiasm over Cisco TelePresence when cross-city travel is not practical. Video recordings are enabling choir members to feel included when they cannot attend a practice session. Future plans include enabling physicians, patients, and families to work together to monitor medical symptoms, share support and advice, and increase treatment efficiency and efficacy.

Amsterdam is also identifying desirable and scalable new services that add value for the increasing ranks of older citizens, bring new opportunities for community providers, and promote self-sufficient communities. A new senior housing center is taking advantage of the fiber infrastructure to help its residents live independently for as long as possible through video monitoring to identify abnormal movements or activities that might indicate a fall or health problem.



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Increasing Awareness of Environmental Sustainability

Cisco and the city of Amsterdam launched Urban EcoMap, an Internet-based tool that enables cities around the world to provide smart climate change information to their citizens. The EcoMap provides information about carbon emissions from transportation, energy and waste among neighborhoods, organized by district, and delivers tips on ways to reduce residents' carbon footprints.

SmartGrid/Smart Living

Cisco participates in the SmartGrid/Smart Living consortium with companies including Accenture, IBM, Alliander, NUON, and Amsterdamse Innovatie Motor (AIM). The goal is to help the city reduce carbon emissions and reduce costs of delivering utilities. In several separate pilot projects, sustainable energy meters have been installed in 2000 households and small businesses, and Smart Plugs provide insight into shop owners' and residents' energy usage. Energy scans provide visual representations of lighting, cooling, heating, and other systems to help identify areas where energy could be saved. The project also incorporates communication programs designed to engage business employees in conserving energy and a group of entrepreneurs that is testing technologies and reaching out to their neighbors.

PRODUCT LIST

- Cisco Routing and Switching solutions
- Cisco TelePresence
- Cisco TelePresence Manager
- Cisco Content Manager

A variety of smart energy pilots in public spaces have been launched. The Climate Street program has deployed sustainable technologies for trash bins, using solar power to compress waste. “Sun Spots” are solar-powered WiFi hotspots in public places that will enable people to work outside in the sun using solar energy and WiFi. Ten public swimming pools are working with a company to implement use of a fluid that is added to pool water that helps it stay warm, thus conserving energy. And a public utility company has launched a SmartSchools Contest, in which 10 schools compete to save energy.

Mobility

In partnership with the Port of Amsterdam, the city is deploying electricity at docks so that large vessels can plug into a power source rather than run on generators 24 hours a day while in port.

One hundred electric car chargers are already deployed on public streets, with 300 expected to be available by the end of 2011. Charging stations are smart, knowing which car is being charged and monitoring the electricity grid to make sure that it is not being overwhelmed with cars charging at the same time. Approximately 700 electric cars are already on Amsterdam streets. As the number of charging stations increases, more can be supported easily.

Next Steps

Amsterdam’s objective is to connect everyone by 2018. Once connected, residents and businesses will be able to access rich information and media resources, friends and colleagues, and a wealth of innovative services that improve life across the city.

For More Information

For more information about Cisco Smart+Connected Communities, visit www.cisco.com/web/strategy/smart_connected_communities.html.

For more information about Amsterdam, visit www.iamsterdam.com/en.

This customer story is based on information provided by the City of Amsterdam and its ecosystem partners and describes how that particular organization benefits from the deployment of Cisco products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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