

Amsterdam Capital of Science

ICT in Business



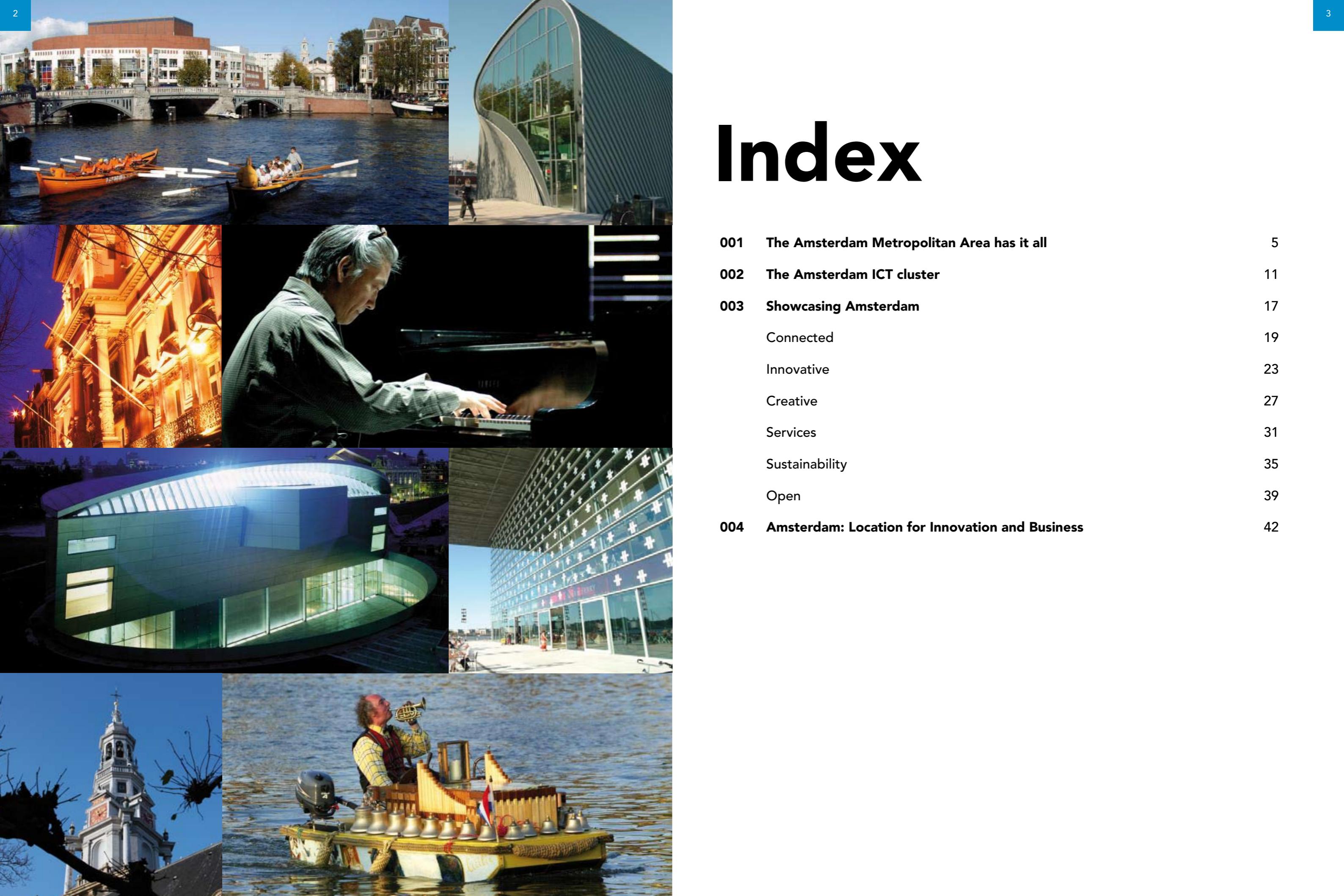
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By maintaining its traditional openness to the rest of the world, Amsterdam excels as a business location, offering professional services designed to assist international businesses.

The Amsterdam Metropolitan Area has it all

Good for business, good for living

The City of Amsterdam is known for its open and international character, which attracts people and organisations from around the world. By maintaining its traditional openness to the rest of the world, Amsterdam excels as a business location, offering a competitive cost-to-quality ratio, and an outstanding network of professional services designed to assist international businesses. Amsterdam is the main financial and business centre of the Netherlands and one of the leading centres in the world.

The city has always been a melting pot of cultures. Since the Golden Age of the Dutch East India Company (VOC) in the 17th century, Amsterdam has been a hub for world trade. Today, 174 different nationalities live and work together in harmony. The composition and style of the local working population reflects this: it is multilingual, multicultural, tolerant, consensus-oriented, and politically and culturally neutral. Amsterdam and its surroundings form a thriving environment in which business and industry can blossom. The entire historic city centre is itself one enormous attraction – packed with graceful and historic buildings, picturesque canals, elegant bridges, world-class museums, and a wealth of art galleries, shops, restaurants, English-language movie theatres and other entertainment venues. The city's international character makes it a place where foreign visitors and expatriates feel at home, while the manageable cost of living makes Amsterdam an attractive, affordable (and safe) place to live.

Strategic location

More than 1,400 international companies currently have an office in the Amsterdam Metropolitan Area, a number that increases annually. Such a large presence of international businesses brings other benefits. More international companies are choosing to base their European operations in the Amsterdam Metropolitan Area. In 2007, head offices comprised 14 percent of all new arrivals. Marketing and sales remained the most important activity among new arrivals (54 percent), followed by representative offices (20 percent). Amsterdam also ranks 5th in the list of European regions for business.

The Amsterdam Metropolitan Area has a strategic location in Europe and is centrally situated in Western Europe. This makes the region a central location for business and logistics. It boasts the world's greatest concentration of business and creative service providers and the region stands out from the crowd as a centre of international trade. The largest financial institutions in the Netherlands, plus an assortment of supporting service agencies, have grouped themselves in Amsterdam's Zuidas area. Of the 24 companies that determine the Dutch Stock Exchange (AEX), 15 are located here. For this reason, it is the prime place in the Netherlands for internationally oriented companies to base their headquarters. An ever-increasing number of international companies still choose to settle in the Amsterdam Metropolitan Area because they can coordinate their European marketing and distribution activities better from here. The region combines transport and logistics expertise with an in-depth knowledge of all the relevant European markets.

Capital of Science

The Amsterdam metropolitan area has 2.2 million inhabitants, three universities, six professional universities, two academic hospitals, 40 independent research institutes, and over 100,000 students in higher education.

The strength of the Amsterdam Knowledge Capital is based on its variety of research fields and multi-disciplined approach to current scientific challenges. Amsterdam is in the upper league of science. From complex grid technology to the first transatlantic Lambda connection and from computer-based HIV simulation to the most advanced GPS applications, they are all in Amsterdam. Amsterdam is characterised by its creativity, diversity and open environment. The result is an excellent climate for innovation with regard to business solutions. The Netherlands is number 10 in the INSEAD list of most innovative countries.

Gateway to Europe

The Amsterdam Metropolitan Area is a true Gateway to Europe. The close proximity to Amsterdam Airport Schiphol, the presence of good international rail links, and a major seaport make the region a major transit hub to

and from the 350 million potential customers of the European continent. Amsterdam Airport Schiphol offers access to no less than 270 destinations in 92 countries around the world, serviced by 104 different airlines. It is the third largest European airport in terms of cargo and the fourth largest in terms of passengers. Closely situated to the Ports of Amsterdam and Rotterdam, it is further supported by a wide rail and road network. The Amsterdam Port area is the sixth largest seaport in Europe, making it an important international logistics intersection. Few other ports are so well situated. Many international companies that operate their European logistics in the Amsterdam Metropolitan Area make use of both airport and seaport facilities. With the Amsterdam Internet Exchange (AMS-IX), the city also boasts the largest Internet hub in the world, both by number of members and by traffic. Science parks, knowledge institutes, financial centres and data centres all take advantage of this hypermodern network. Multilingual recruitment services that choose to settle in the Netherlands have access to a pool of highly skilled, hardworking, multilingual employees. A model of efficiency, dedication and flexibility, the Dutch workforce sets the pace for European

productivity. In addition to offering a local talent pool, the Amsterdam area also attracts many international specialists working across Europe, with over 20 percent of university researchers coming from outside the Netherlands. What's more, compared to other European capitals, Amsterdam has by far the largest percentage of employees with higher education: over 40 percent. It is an open, welcoming city with its sights firmly set on the future. Local residents come from all over the world. In fact, almost half of the local population has its roots in foreign countries. Success in Europe depends on employees who know their languages. The Dutch workforce is renowned for its multilingual skills. The vast majority of Dutch people are fluent in English, which is the primary business language in the Netherlands and throughout Europe. In addition, more than half speak German fluently and a quarter speaks French.

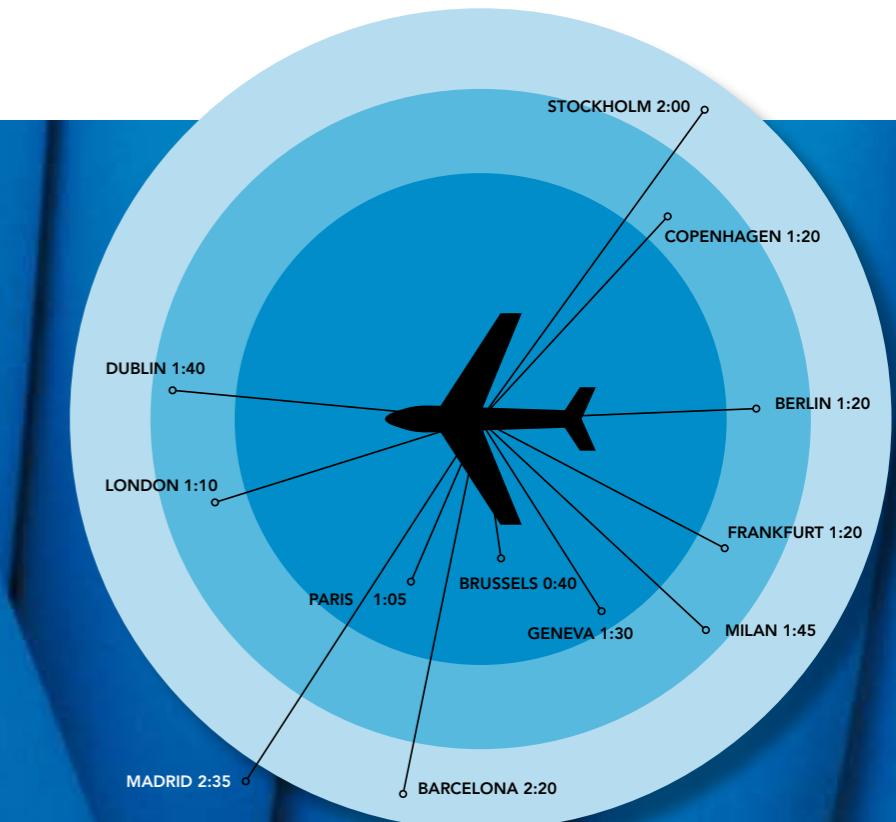
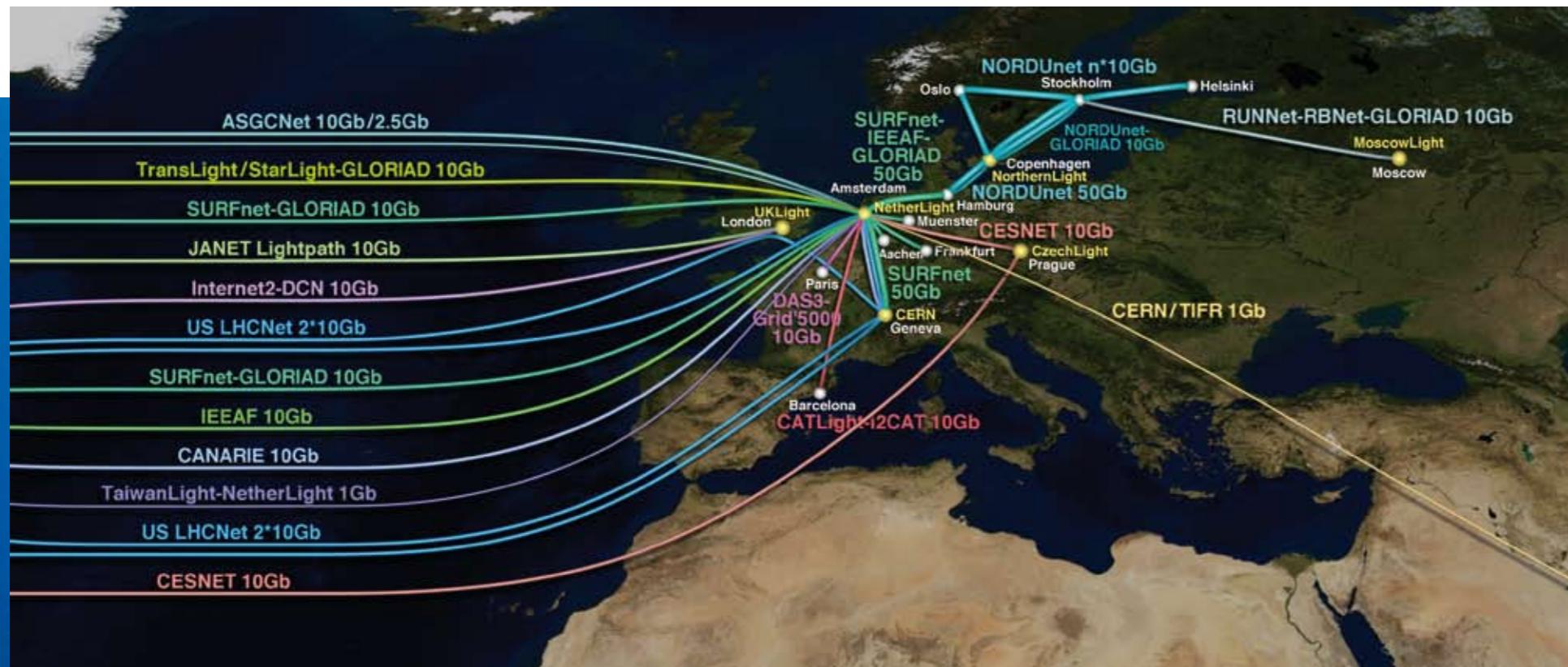
Service centre for expats

The recently established Expatcenter acts as a one-stop shop service for knowledge migrants and expats arriving in Amsterdam and Amstelveen. The combined effort

successfully increases the efficiency of services and simplifies procedures for international companies and their expatriate employees. An employer can start the registration procedure for an employee's residence permit prior to his or her arrival in the country. Expatriates can also visit the centre for help on issues such as parking, taxes, health care, education and many more. Amsterdam's workforce includes many native speakers from around the globe. Amsterdam invites and welcomes you as a visitor and a business partner.

www.iamsterdam.com

Connecting the world: Netherlight





...solved the issues of our times...

Walter Hoogland (70), former director of NIKHEF and CERN.

Excellent position

Walter Hoogland is a particle physicist. But since particle physics is a driving force behind many ICT developments, he was inevitably pushed into being strongly involved in ICT. As a director of NIKHEF, the Dutch national particle physics institute, he played a decisive role in the development of the Amsterdam Science Park and the Amsterdam Internet Exchange. As a research director of CERN, he signed the document that made the World Wide Web public. And as dean of the Faculty of Science, he introduced GRID as a key element into the e-science profile of the Amsterdam Science Park. 'Amsterdam has one of the best ICT infrastructures in the world,' says Hoogland.

These days, Hoogland chairs the supervisory boards of MultimediaN, a big public-private scientific programme and Matrix Innovation Center Science Park. As the chair of the EU project REDICT - a collaboration of six European capitals that want to understand what the key factors

driving the success of ICT/New Media are - he is trying to boost their profile in the educational system.

Strong international player

Hoogland was born and educated in Amsterdam. 'Living in the city centre, I enjoy the cultural diversity and stimulating atmosphere that this compact metropolis offers. Amsterdam has a thriving creative industry and, because of its intrinsically open, lively and scientifically/culturally stimulating atmosphere, it appeals strongly to young, highly educated, innovative professionals,' he says.

Energy, water, climate change, education, health and elimination of poverty are the major concerns of our world today. 'ICT is a fundamental ingredient in addressing all of these issues,' Hoogland emphasizes. 'The Amsterdam Metropolis has complementary strengths which make it a strong international player in all these domains'.



...conquer the world tomorrow...

Casper Albers, 12 year old ICT talent.

E-ready for anything

Amsterdam is full of ICT talent. According to the Economist Intelligence Unit and the IBM report on e-readiness, the Netherlands is the second leading country in the world in terms of ICT infrastructure and e-readiness. In other words, Dutch people are very familiar with ICT and use it on a day-to-day basis.

Casper Albers, only 12 years, already uses a computer on a daily base at his primary school, mainly for geography or for writing papers. 'Sometimes we can use the computers to play games as well,' Casper quickly adds. 'We also use PowerPoint to make presentations on various subjects, although my teacher mostly uses the smart board.' To find information for papers and presentations Casper usually uses Google or Wikipedia. Next year, when Casper starts secondary school, he will have special classes in computer science.

Texting with grandad

At home, Casper also likes to spend time at his computer. 'Mostly for chatting, email and participating in online communities. I like to play games as well - from chess to the massive multiplayer 'Dofus'. Too bad my parents will only allow me to play for a limited time.'

Once in a while Casper is allowed to play on his grandad's PSP or Wii, which is great fun. When he wants to contact his grandad, he usually sends a text. 'I could call him, but I prefer to text most of the time because it's quick and easy.'

Casper is a good example of how ICT is changing everyday life. With an internet penetration of 90 percent and computers available at practically every school, Dutch society is prepared for the future.

With talent like Casper, we needn't worry: the Dutch are going to conquer the world again. At least online.

Amsterdam ICT Cluster

ICT Sector: Jobs and Revenues

	Jobs	Revenues
Netherlands	441.582	31,2 billion
Amsterdam Metropolitan Area	106.342	7,8 billion
	And growing.. 2008	Growth 2009*
ICT/Communications	3%	1%
Hardware	4%	0%
Software	4%	0%
Services	7%	4%

* In 2009 Europe was struck by a recession. Expected growth in 2009 and 2010 is on the level of 2008 again, for Communications higher.

Amsterdam has the presence of vibrant ICT cluster with all large global companies, 1000 SME's and several world-class knowledge institutions.

The Amsterdam ICT cluster

The official Amsterdam ICT cluster was launched in 2008, the result of close cooperation between the top 15 companies, the government and the knowledge institutions. Today the cluster is open to all companies and activities deploying human capital, market making combined research and joint innovation projects. Why are companies based in Amsterdam so successful and why do they work so closely together, despite their differing backgrounds?

The keys to success are based on the combination of Business and Research. With good connections and owing to the creative, innovative, open and sustainable way of thinking and working, the Amsterdam Metropolitan Area is leading in many ways, especially regarding services.

Business

The bottomline: ICT companies can find everything they need for business success in Amsterdam. In addition to its solid digital infrastructure, the city offers an educated, multilingual workforce. Another factor in the city's favour is the sizeable Dutch home market. The Netherlands is the ninth largest economy in the world - and if you count Dutch-speaking Belgium, this rises to number seven. Thanks to its history of internationalism, Amsterdam is a logical choice for many foreign companies seeking to establish themselves in Europe.

This also applies to research. Dutch research institutes are generally found at the heart of international research fields, frequently forming a point of crystallisation for knowledge. Amsterdam's ICT sector comprises a wide range of companies. All the big international companies, for example, Microsoft, Google, IBM, Cisco, HP, TomTom, Accenture, TaTa, Wipro and Infosys are represented in the city.

Several reasons explain the success of these international companies in Amsterdam. An important factor is the location of the head offices of many other multinationals within a range of 50km, including Shell, ING, ABN, Philips, Akzo, Ahold and Heineken. Together these provide a large market for service providers.

But the wider network - from small innovative companies to a sizeable creative sector - is also a major reason why people choose Amsterdam. It is pre-eminent as a place where new services and technologies can easily emerge. Think, for example, of TomTom's navigation systems, Ede-ma's interactive TV and Ken's mobile applications.

ICT as a component of each sector

ICT is part of every industry - from retail to food, and from logistics to utilities, banking and life sciences. In virtually all big companies, the emphasis is on developments in ICT. Large Dutch insurers and banks like ING and the Rabobank are highly progressive in their ICT-based services, a recent example being mobile banking. Moreover, Dutch businesses have been some of the first to outsource their ICT activities. Companies like Heineken, Shell, Fortis, ING and ABN AMRO have largely outsourced their ICT departments to specialised companies.

Capital of Science

The Amsterdam region has three universities, two universities of applied science and several research institutes. Of these, the Universiteit van Amsterdam (University of Amsterdam, UvA), the Vrije Universiteit (VU University) and the Centrum voor Wiskunde en Informatica (Centre for Mathematics and Computer Science, CWI) are especially active in the field of ICT research and development.

University of Amsterdam (UvA)

The UvA is one of the largest universities in the Netherlands. It undertakes a broad range of research, varying from financial services to theoretical chemistry. Over 28,000 students currently study at the UvA. Research on computer science is concentrated in the Informatics Institute, which is located in the Amsterdam Science Park. The Science Park is right next to SARA, home to the Dutch super computer, Huygens. Research in the Informatics Institute is concentrated in three laboratories, each with its own field of research. More information is given on these laboratories, the HCS, CSP and ISLA, below.

Human Computer Studies

The Human Computer Studies Laboratory addresses the issues of content and user experience raised by the Internet, Web 2.0, and the explosive growth in media-enhanced cellular phones. The emergence of e-Science or cyber-infrastructure has a profound impact on the breadth and scale of scientific inquiry. The flexible combination of distributed networks, computers, storage, databases, services and instruments means that certain disciplines are starting to take a systems-oriented approach to understanding a broad range of phenomena. These disciplines include oceanography, geosciences, high-energy physics and biomedicine Technologies, such as grids, provide an underlying foundation for solving these large-scale, complex problems.

Computing, System Architecture and Programming Laboratory

The research on computational e-Science conducted in the CSP Laboratory (chair: Prof. Dr Peter Sloot) is organised around four core computer science research topics. These cover how to build complex distributed computer systems, how to program them, and how to process information on them. The laboratory consists of groups working on computational science, computer systems architecture, software engineering, and systems and networking.

Intelligent Systems Lab Amsterdam

The Intelligent Systems Lab Amsterdam (ISLA, chair: Prof. Dr Arnold Smeulders) performs fundamental, applied, spin-off research. This is done on systems that understand the content of the messages they process, and on systems that learn from their data.

VU University

The VU has a broad range of research areas. All have their own facilities and all are linked to the bachelor's, master's and PhD programmes. The VU is known for its cooperation with companies and research organisations. Almost 60 percent of the VU's research is funded by external parties.

There is a clear focus on two interdisciplinary fields regarding ICT. The VU has world-class researchers and ambitious research programmes in both of these fields: the Internet and Web Technology programme and the modelling of complex systems.

Internet and Web Technology

The Internet has a profound impact on our daily lives. It has drastically changed the way people communicate and find information, but it also affects how companies do business and how scientists collaborate. The World Wide Web is the predominant application of the Internet, but many others exist. These include virtual worlds, e-business, peer-to-peer file sharing of music and videos, electronic markets, Internet telephony, radio and TV, and virtual laboratories. The Internet and the Web are clearly here to stay. Many other innovative applications will appear, especially as mobile and location-aware devices like smart phones become connected to the Internet. Research on this theme covers a diversity of topics, ranging from social networks to computer networks, and covering applications from consumer markets to business and science.

The theme addresses fundamental research on communication, scalability, and security as well as more application-directed research.

Modelling of Complex Systems

Constructing models of observed phenomena is the key activity in science. Mathematics has traditionally been the language of choice for expressing such models. These models have proved to be well suited for analysis, composition, prediction generation etc. Since the advent of the computer, these declarative mathematical models have been supplemented with computer-based models, which provide the opportunity for computational analysis and simulation. A wide variety of modelling techniques has been developed in different branches of computer science. Some of these are numeric, but many modern modelling techniques use symbolic computation techniques instead. The research bundled in this theme concerns a wide variety of modelling methods, such as logic-based

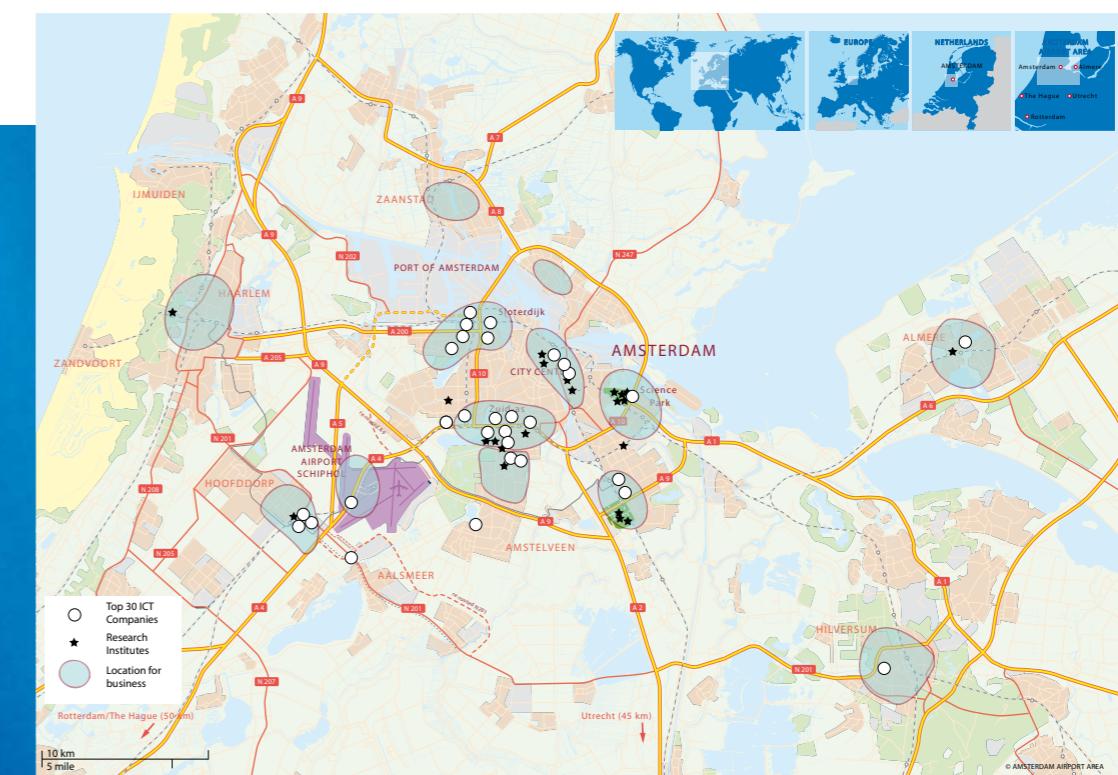
models, multi-agent models, self-organising and evolving populations as a form of modelling. It also includes the use of such modelling methods in a variety of other scientific areas, including cognitive science, economics, biology, social sciences, and the construction and behaviour of software itself.

Centre for Mathematics and Computer Science (CWI)

With its 160 researchers, CWI lies at the heart of European research in mathematics and computer science. With other top institutes, such as INRIA in France and Max Planck in Germany, it helps provide a firm foundation for national and European innovation. CWI cooperates closely with companies, universities and large technological institutes. It is a co-founder of ERCIM, the European Research Con-

sorium for Informatics and Mathematics. Eighteen national organisations participate in ERCIM. CWI manages the Benelux Office of the World Wide Web Consortium (W3C).

CWI concentrates on fundamental questions inspired by practical problems. Its strengths are the discovery and development of new ideas, and the transfer of knowledge within academia and to Dutch and European industry. A key focus is the strongly interrelated core of mathematics and computer science - a unique area of research in the Netherlands. CWI shows proven success in this area. The results of its work are of continued importance for the economy - from payment systems and cryptography to telecommunications and the stock market, and from public transport to water management.



Top 30 ICT companies

Accenture	Cogent	HP	Lost Boys	TaTa
Adobe	Cognizant	IDTV	Microsoft	TomTom
Atos Origin	Endemol	IBM	Oracle	UPC
Canon	Getronics	Infosys	Ricoh	Vodafone
Capgemini	Google	KPN	Sara	Wipro
Cisco	Guerilla	Logica	Satyam	Yahoo



'Using broadband applications in domains such as health care, education and culture offers enormous economic opportunities, as well as advantages for society. Maximising these opportunities however, is not something that happens overnight.'

...opportunities and advantages for society...

Lodewijk Asscher, Deputy Mayor and Alderman of Economic Affairs of the City of Amsterdam.

ICT is vital to Amsterdam

As Deputy Mayor and Alderman of Economic Affairs of the City of Amsterdam, the city's future development is one of Lodewijk Asscher's main concerns. Therefore, the city has formulated the ambition to strengthen its position in Europe's top five cities for businesses and has set up a programme called the Amsterdam Top City. Optimising the ICT infrastructure, content and applications is one of the eight key points in this programme.

'The importance of ICT for our city is obvious,' says Asscher. 'Just look at some facts. With about 44,000 jobs in the ICT sector, Amsterdam has about 10 percent of all ICT jobs in the Netherlands. The city houses over 7,000 ICT companies, about half of which are small content developers, mostly based in the city centre. The other half consists of bigger companies specialising in hardware, software and telecoms. From 2002, the Amsterdam area attracted more ICT and software investments than any other city in Europe and is now rapidly becoming the software and ICT capital of Europe. And, 60 percent of the 2000 companies active in ICT listed in Forbes have an office in the Amsterdam area.'

ICT to help solve problems

'However, the importance of the ICT sector cannot be judged from statistics alone,' says Asscher. 'Focusing only on numbers would be a serious underestimation of the importance of the sector, since ICT is an enabling technology that penetrates other economic sectors and is woven into society in general.' For this reason, the City of Amsterdam stimulates the development of the sector. To do so, it has set up an ICT Cluster of representatives from ICT companies, universities, knowledge institutes and the government to research how strengthening the ICT sector can contribute to strengthening Amsterdam's position in Europe. At the same time, the ICT Cluster aims to help solve problems the city faces in domains like education, sustainability, culture and care.

'Using ICT to develop smart solutions and making cities smarter is one of the most relevant challenges for the years to come,' says Asscher. 'That's why we're investing heavily in bringing fibre to homes and offices. Using the ICT Cluster to build public-private partnerships, which will develop new smart solutions, is what comes next.'



In a city with a cutting-edge ICT infrastructure, a dynamic creative community and an open and curious character, innovation is becoming a way of life.

Showcasing Amsterdam

Amsterdam is a vibrant city with a very diverse ICT-cluster. In this chapter we'll highlight several cases that illustrate that the Amsterdam Metropolitan Area has it all: creative entrepreneurs, an excellent infrastructure, innovative solutions for every-day problems, an open environment and a firm focus on sustainability.

Add to this a strong service-oriented business climate, and what you get is an environment with great opportunities for growth. World-renowned Dutch companies such as ABN-AMRO, AkzoNobel, Endemol, Heineken, ING, Philips, Reed Elsevier, TNT and TomTom are already based in the Amsterdam Metropolitan Area, taking full advantage of everything it has to offer.

And then there's Amsterdam's advanced logistics infrastructure, including Amsterdam Airport Schiphol and the Port of Amsterdam; the Netherlands' largest Life Sciences sector; and one of Europe's most dynamic creative clusters.

It's no surprise then that Amsterdam is ranked in the top 5 of all relevant lists on business climate in Europe. Neither is the fact that many of the world's most successful ICT companies have a strong presence in the Amsterdam Area.

User-centred innovation

ICT in the Amsterdam region isn't only about elementary research but - equally important - about its application as well. Putting users first is one of the keys to success in the development processes. Many initiatives have already made use of Amsterdam's cooperative inhabitants, turning Amsterdam into a true Living Lab for the development of products, applications and services.

In this chapter you'll find examples of the possibilities for innovation for both local and global companies looking to become thought leaders in fields such as Healthcare, Logistics, Energy, Mobility and New Media. To demonstrate Amsterdam's various strengths, we've highlighted a number of relevant themes:

Connected: how Amsterdam's ICT infrastructure is facilitating innovation and growth.

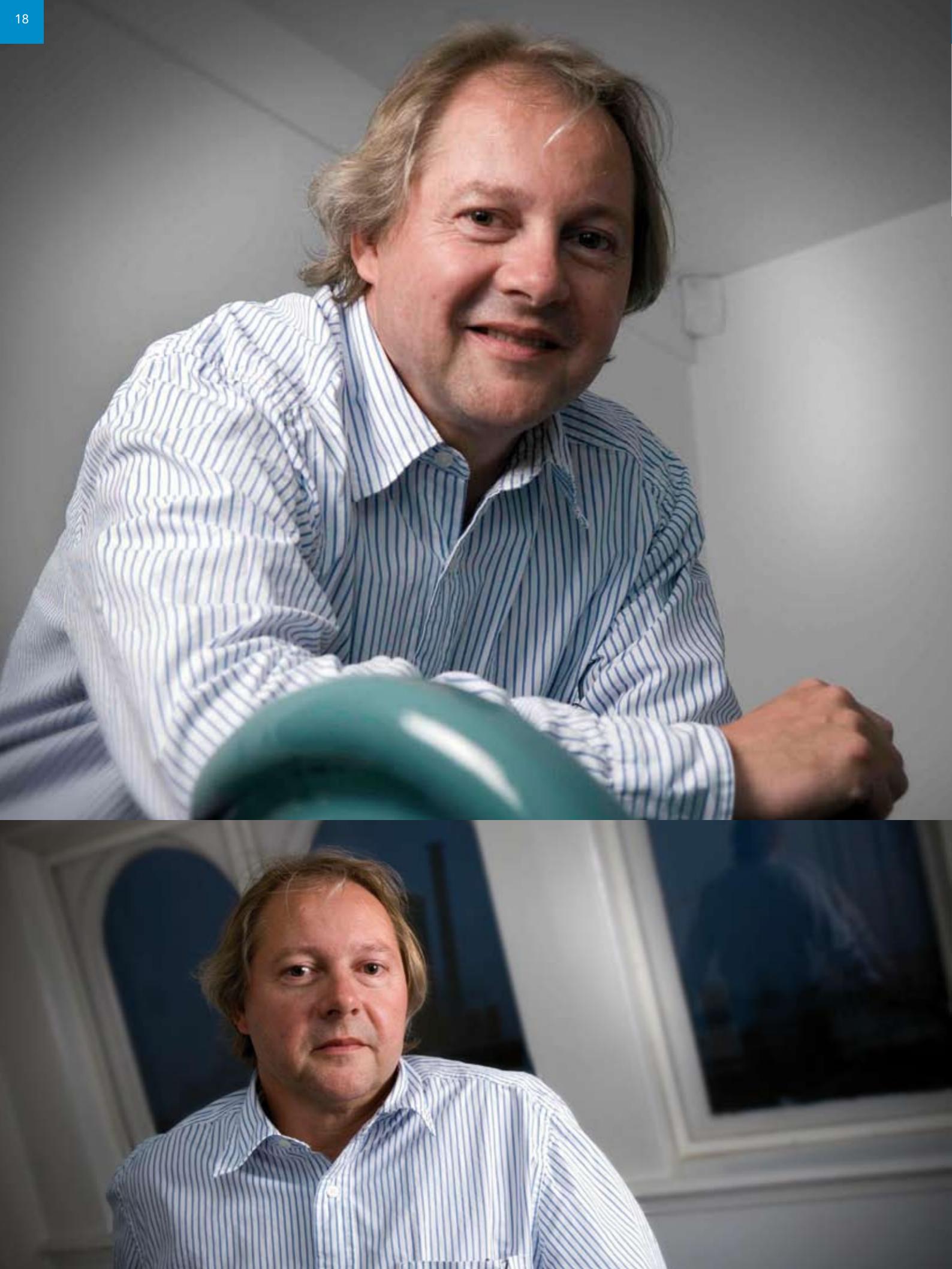
Innovative: how innovation is pushed forward by public-private collaborations.

Creative: how Amsterdam's booming creative industry is using Amsterdam as a hotbed for innovative products and services.

Services: how companies and residents are profiting from ICT-driven products and services.

Sustainability: how ICT is helping save energy and create a smarter world.

Open: how Amsterdam's open and flexible character is helping design the future.



Amsterdam is well known for its superb ICT infrastructure. SARA Computing and Networking Services, the national super computer Huygens, the academic network SURFnet, the virtual reality facility the CAVE™ and the Amsterdam Internet Exchange (AMS-IX) are all located within or close to the city's ring road. Besides that the area is working very successful on the 'Fiber to the Home' coverage: almost 150.000 houses will be connected to this network in 2010.

'The Amsterdam Internet Exchange (AMS-IX) is not only one of the largest hubs in the world, it's also unique in the way it's governed: by its members'.

...governed by its members...

Job Witteman, CEO Amsterdam Internet Exchange (AMS-IX).

Best-connected places in the world

Founded in 1997, the Amsterdam Internet Exchange (AMS-IX) is one of the largest internet exchanges in the world. As one of its founders and - since 2000 - its CEO, Job Witteman is responsible for AMS-IX's continuous expansion. Today, AMS-IX has more than 320 members and a daily peak of between 600 and 700 Gigabit per second in data transmission. 'But these numbers will probably be outdated by the time this brochure is published,' says Witteman. 'We're growing rapidly and the data exchanged at AMS-IX is growing annually by up to 50 percent, making Amsterdam one of the best-connected places in the world.'

The Amsterdam Internet Exchange is strongly linked to the Amsterdam Area. 'Our head office is based in the city centre and our six data centres are all located in the Amsterdam region,' Witteman explains. The AMS-IX is totally managed from the office. 'We use very advanced technology and with our state-of-the-art remote controls, we only leave the office when we need to install new hardware.'

Governed by members

The Amsterdam Internet Exchange is not only unique in the quality it offers, it's also unique in the way it's governed: by its members. Since AMS-IX is an association, every organisation connected automatically becomes a member. This allows AMS-IX to be very clear in its scope, and leaves no room for politics or profit targets. 'Our only aim is to provide our members with what they need: a state-of-the-art internet exchange. We have no limits on the amount of data transferred and we allow each member to use their connection fully. When necessary, we add more ports. All of our profits are reinvested to create an even higher performing exchange,' says Witteman.

The coming years will be dedicated to AMS-IX's growth. Having recently opened their sixth location, AMS-IX expects to collaborate with more data centres in the coming years. 'The growth in data transferred over the web is tremendous and will have impact on the internet exchanges. We are fully prepared to facilitate this growth and will make sure that AMS-IX can provide enough capacity for our current and future members.'

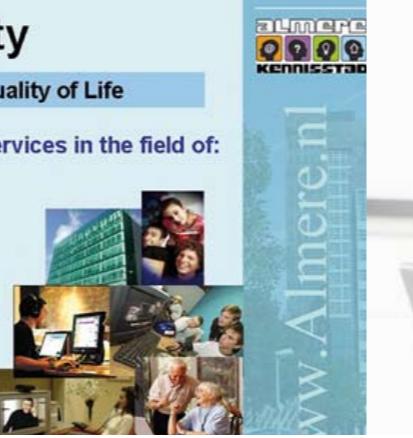


Almere Smart City

Mission: Apply ICT for a Better Quality of Life

Objective: development of new services in the field of:

- Living
Digital Life
- Working
Increase employment
- Learning
e-learning and Next generation networking and
- Welfare



Cisco: Smart Work Centers

Working away from the office

The Connected Urban Development (CUD) programme, which originated from Cisco's commitment to the Clinton Global Initiative to help reduce carbon emissions, aims to promote ways of cutting carbon emissions by using urban ICT infrastructure more efficiently.

One of CUD's first accomplishments was the realisation of a Smart Work Center (SWC) in Almere, close to Amsterdam, in September 2008. The SWC offers flexible workstations to participating public and private partners, with a wide range of high-end services, including lounge workstations, Cisco TelePresence and child day care. The aim is to reduce physical travel, traffic jams and carbon emissions, through virtual presence and e-work.

The SWC in Almere is the first of many to be opened in the Netherlands, and cities around the world have already expressed interest in the concept.

The expected results will not only lead to a reduction in traffic and CO2 emissions, but will also give a tremendous impulse to developing new ways of working. New technology will lead to more efficiency because people can avoid traffic jams and hold their meetings via video-conferencing facilities.

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www.connectedurbandevelopment.org

City of Almere: building a complete city

'Apply ICT for a better quality of life'

Almere is the fastest growing city in Europe. By 2030 it will have 400,000 inhabitants. Two programmes called Almere Smart City and Almere Fibre City started in 2001. Both programmes were the result of the city council's wish to become a city where it's great to live, work and learn with the help of ICT. 'Apply ICT for a better quality of life' is the slogan.

In 2009 all existing business parks in the city have their own open fibre network (FttB) and are connected to the fibre business backbone of the Amsterdam region. The Almere Fibre City programme for existing houses (75,000) ends in 2010 and by then all households (185,000 inhabitants) in Almere will be connected to an open fibre city network (FttH). As the city grows the open fibre network will be extended to every home and all new business parks.

The City of Almere is part of the Amsterdam Metropolitan Area. The cities collaborate on a policy to become Europe's main centre in the Creative Industry and ICT & Media sector.

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www.almere.nl



CONSOLID: KPN's 'Werkplek Online' (online workspace)

Cost-effective and flexible

KPN's Werkplek Online safety enables the Amsterdam employees of CONSOLID to be online 24/7. There is a workplace for them at any location too. Their online job means that they have continuous access to the latest versions of the software they use.

CONSOLID is not only safe with Werkplek Online, it's also a cost-effective and flexible solution. KPN hosts the software in optimal secure CyberCenters. The result: no files, no lost business. CONSOLID pays a fixed amount per month per workstation and doesn't have to invest in the purchase of licences, maintenance and software updates. It's also easy to add new users or those working closely with CONSOLID.

Flexibility is a major reason why CONSOLID chose online workspaces. KPN manages the workplace in its entirety. CONSOLID can concentrate fully on its core business, without ICT concerns. The migration from the traditional system to Workspace Online only took two months. Thanks to Werkplek Online all 100 employees at the Amsterdam headquarters and eight regional offices are now assured of a safe, modern and flexible workplace.

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TaTa: Directly donate to small projects

Mygoodworks is an initiative from ABN Amro incubator, operated as separate stichting, that offers an online platform through which individuals can provide funds directly either anonymously or as registered users, either as donations or as loans, to local projects. Microcredit, Sustainability, Revolving donations, Crowd funding, Social networking are key trends capitalized on by this initiative.

TCS has developed this IT platform on an "at cost" basis as a CSR initiative. The initiative was started, among others, to promote private sector contribution to the UN's Millennium Development Goals. Though the platform provides for more commercial possibilities, currently only sustainable projects in developing nations in the areas of Entrepreneurship, Energy and Environment, and Education/Training run by established NGOs are supported.

The initiative is run by a "Stichting", registered and operating in the Netherlands. The platform is currently only in Dutch language (refer www.mygoodworks.nl) and is targeted on the Dutch fund providers market. Tata Consultancy Services is an IT services, business solutions and outsourcing organization that delivers real results to global businesses, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled services delivered through its unique Global Network Delivery Model, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has over 148,000 of the world's best trained IT consultants in 47 countries. The company generated consolidated revenues of US \$6 billion for fiscal year ended 31 March 2009 and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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Innovative

The Amsterdam Metropolitan Area is a vibrant region where innovations are not only made but also implemented. This is not surprising, as the Amsterdam Metropolitan Area has a broad range of innovative companies and internationally focused knowledge institutions. Owing to strong cooperation between companies and knowledge institutions the Amsterdam Metropolitan Area is a front-runner in public-private cooperation in fields such as Smart Energy and Smart Mobility.

'Employees are encouraged to develop new, groundbreaking ideas and are rewarded for them. Additionally, our technologies have always been developed in-house, from the ground up, in a continuous process that is core to our business'.

...new, ground-breaking ideas...

Harold Goddijn, CO-founder and CEO of TomTom.

Innovative thinking

TomTom is the world's leading provider of navigation solutions and digital maps. It is our mission to improve people's lives by using the Group's combined knowledge and expertise in the field of routing, digital mapping, and guidance services. We tailor our activities towards multiple audiences and aim to play a leading role on all platforms where our products and services can be of use. TomTom was founded by Harold Goddijn, Peter-Frans Pauwels and Pieter Geelen in 1991 and the company went public in May 2005.

The depth of TomTom's expertise in navigation technology, gained over 18 years, has given TomTom a competitive edge, consistently positioning their products as the 'best in the market'. All core technologies were and are developed in-house, from the ground up. Ownership and control of electronics, firmware, mapping and navigation algorithms, user interface, connectivity and real-time services allow TomTom to deliver a seamless and integrated user experience.

'Innovative thinking is at the heart of our company,' says CEO Harold Goddijn. 'The work of every employee is built around three core competencies, one of which is: Innovative Thinking. Employees are encouraged to develop new, groundbreaking ideas and are rewarded for them.'

Additionally, our technologies have always been developed in-house, from the ground up, in a continuous process that is core to our business.'

Creating innovative software

'This year, the complete TomTom PND range was renewed, adding more smart technologies to deliver an enhanced navigation experience. We also launched the first of our LIVE Services bundles which would not have been realised without the solid partnerships with several suppliers,' Goddijn says. Additionally, in 2008 TomTom's business unit AUTO announced a partnership with Renault to bring affordable, fully integrated navigation solutions to Renault customers from 2009 onwards.

'The character of our company, based in Amsterdam, creates an enormous number of job opportunities in the ICT sector,' says Goddijn. 'In our Amsterdam head office we now employ 1300 people from 59 countries. A major part of that workforce concentrates on developing software and ICT solutions for our products. Together, this group ensures that we offer the best and most innovative software available in our industry. Moreover, they also make sure we can offer the TomTom community real-time traffic information 24 hours, 7 days a week.'



Amsterdam: a Living Lab

User-driven innovation

The Amsterdam area is a Living Lab: an innovation playground where consumers, knowledge institutions and companies work in close cooperation to develop new products and services. A unique mix of inhabitants, excellent infrastructure and knowledge institutions creates a wonderful opportunity to use the city as a testing ground for innovation.

That's why the University of Amsterdam, the Waag Society, Novay and the Amsterdam Innovation Motor took the initiative for the Amsterdam Living Lab project. Amsterdam Living Lab is a joint effort to gather and share knowledge about user experience needed to develop products and services.

Amsterdam Living Lab (ALL) offers facilities for open and user-driven innovation and to test market response. The knowledge gathered in the various projects, including fab lab and experience lab, can be accessed through the knowledge centre hosted by Novay.

ALL is active in an international context and is a member of the European Association of Living Labs (ENOLL). In this network, Amsterdam Living Lab cooperates with all the major Living Labs around Europe.

ALL invites everyone to join, launch projects or use the knowledge in our center of expertise for user driven innovation and testing.

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Waag Society: hosting the FabLab

The FabLab is a workspace that contains four modern prototyping machines and has developed into a global network of standardized open hardware setups. People from all over the world are using it to create and develop their own ideas and solutions.

The Waag Society offers several workshop formats for technical education, innovation and fun, but also uses the FabLab as a rapid prototyping facility for their own and their partner's use. Furthermore, the lab is open Tuesday & Thursday weekly for the general public to come in and work on their own ideas.

The best 'Fab Moments' are saved and shared in the widely spread international FabLab network. Besides that there is a real-time videolink with other FabLabs, which you can always ask for help.

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Hogeschool van Amsterdam: ICT education

Improving health care for the elderly

The Hogeschool van Amsterdam, University of Applied Science, (HvA) is developing innovation labs in which students and researchers carry out applied research projects in close collaboration with companies and public institutes. The Digital Life Centre is such an innovation lab, focusing on ICT in our daily lives, a field developing with tremendous speed.

The project, Context Awareness in Residences for Elderly (CARE), is a collaboration between the HvA, the University of Amsterdam (UvA), TNO, a SME (Innoviting) and a nursing home (Naarderheem) on activity monitoring with a sensor network.

The nursing home is our testbed in which students collaborate with the SME to determine the requirements of both elderly and caregivers, implement the system and evaluate it. In the psychogeriatric department of the nursing home, several rooms are equipped with simple sensors to register the activities, and notify the caregivers in the event of long or short-term changes.

By using living labs the SMEs have a unique opportunity to test their methods in real-life situations, with real, elderly people. Simultaneously, the university obtains realistic data to test their models.

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Home Automation Europe: saving both energy and money

PowerPlayer, an in-home energy display

Most households have no way of judging their energy costs other than their annual bill from the utility provider. Home energy monitoring and control systems are usually reserved for businesses or multimillion mansions. But rising energy costs and the threat of climate change demand the development of tools to help ordinary consumers trim their energy bills.

The PowerPlayer introduces a new energy management concept, making conservation an affordable, fun game. The PowerPlayer provides real-time feedback. This allows users to experiment and see the impact of their behaviour, like turning off appliances, changing daily routines.

Energy feedback is most useful when accompanied by a specific goal, such as reducing energy consumption by 10 percent. The PowerPlayer therefore has a special goal-setting feature. And it can be integrated with other home management services, like heating management and security.

As the novelty of such devices can soon wear off, the PowerPlayer helps people to stay motivated by discovering the benefits of controlling energy usage. The PowerPlayer is currently being tested in cooperation with partners in Amsterdam.

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Creative

In the field of New Media, Amsterdam has developed into an international testing ground for new interactive formats and cross-media production techniques. The content industry is currently more active than ever, offering all sorts of possibilities for creative and business talent. Formats developed for television become successful as mobile games. Traditional broadcasters publish high-quality live content. Besides that the Amsterdam Metropolitan Area has a thriving gaming industry that grows over 10 percent every year.



'Images say More' aims to improve communication between people, to provide a different range of products and services, and to challenge people to participate in solving social problems.'

...to improve communication...

Maria Zaal, project manager of 'Images say More'.

Challenging people to communicate

Maria Zaal is the project manager of 'Images say More', a venture by Almere Kennisstad (Almere Knowledge City, AKS) comprising three projects - Healthcare.TV, Community.TV and School/Business.TV. 'The aim of 'Images say More' is to improve communication between people, to provide a different range of products and services, and to challenge people to participate in solving social problems,' says Maria Zaal. 'It's my job to make a success of these three projects, but also to make sure that they converge in the near future to realise the overarching aim of 'Images say More'.' All three projects work with 'open' technology that makes use of technological standards, and suppliers who are open and willing to connect their technology with that of others.

'Unique in the world, 'Images say More' offers different kinds of video communication services to specific groups of residents in Almere. In the coming years, the use of video will rise exponentially in both the communication between residents and the provision of services. And in the spring of 2010, Almere will be the first large city in the Netherlands to have a citywide glass fibre to the home, network,' says Zaal.

Almere is part of the Metropolitan Area of Amsterdam and since its founding has had a strong relationship with Amsterdam. The general video communications platform

is used in the community and also in Amsterdam. This will be the central platform in connecting the technology and services of the three projects, making it easy to link the two together.

Living Lab

Almere has made a name for itself in the Netherlands as an innovative city, with a reputation as a 'Living Lab'. This is mostly due to the combination of being a 'new town' with a good infrastructure and part of the Randstad, the fourth biggest economic region in the EU in 2008.

'Every day it amazes me to see the creative ideas people come up with when you let them experiment with existing technology. That is also part of the goal of Community.TV - to challenge people to be creative, to communicate with each other and to solve problems on their own or with some help from the community. The technology that exists today provides endless opportunities, we just have to have an open mind and discover it,' says Zaal.

'The next step will be to adapt the three projects in 'Images say More' to real 'Living Lab' conditions and to further the connection between the projects. Then we will be closer to realising the aim of 'Images say More.'



Guerilla: creating games in a canal house

An inspired location

Founded in 2000, Guerrilla is a rapidly expanding game development studio with an established reputation in Europe. The studio has acquired considerable expertise via expat recruitment, employing 130 developers with more than 20 nationalities.

Guerrilla's most recent release, the action game Killzone 2 for PlayStation 3, benefits tremendously from this cultural synergy. The game was critically acclaimed for its deferred rendering techniques, realistic 'hard sci-fi' designs and gritty urban decors. It has amassed a huge online following, with over 13 million players and 126 thousand clans all competing for victory.

Part of Guerrilla's success can undoubtedly be attributed to its inspired location: a classic 17th-century canal mansion in walking distance of Amsterdam's largest cultural venues. For Guerrilla's employees, the city is a major source of relaxation as well as inspiration. Some of its sights and sounds have even made it into Killzone 2.

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GNR8: Student Generated Media

Situated learning in the creative industry

GNR8 is a company run by students of INHolland University in the historical heart of the city of Haarlem. Students develop New Media products and services for businesses and organisations in the creative industry. They are not just employees of GNR8 - they are GNR8, holding responsibility for both the projects and the organisation.

Developing knowledge, skills and behaviour in the context of industry-based tasks and projects is not new in higher education. But sometimes it's hard for students to step into the magic circle of this serious game. It's simply too expensive and too complicated to start producing and distributing. This is where Web2.0, Open Source and the Long Tail play a role in the realisation of GNR8.

GNR8 offers students the opportunity to become active producers and distributors of New Media and entertainment products. It provides a relevant context to make their learning process meaningful. They become active participants in the Long Tail of the creative industry and the communities of practice that are relevant to them.

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Dutch Media Hub: Digital Gateway to Europe

Dutch Media

Print, television, radio, Internet, film and gaming are the traditional elements of the media industry in the Netherlands. Most of these are concentrated in the Amsterdam Metropolitan Area. These sectors are rapidly converging into one digital cross media industry. The Dutch media industry is well developed, efficient and innovative.

Media Hub

The Dutch Media Hub aims to bundle the rich variety of Dutch creative, media and facility companies and become the Digital Gateway to Europe. We strive to achieve this by stimulating the 'coopetition' between partners and by organising promotional activities.

Infrastructure

The Netherlands is centrally situated in Europe and has an excellent infrastructure. Amsterdam is the heart of the Dutch creative industry and Hilversum, near Amsterdam, is the centre for national broadcasting and the supply industry. Both places have excellent international fibre connections and Amsterdam hosts the largest Internet exchange of the world: the AMS-IX (Amsterdam Internet Exchange).

Project organisation

The Dutch Media Hub is a project initiated by the iMMovator Cross Media Network.

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Hogeschool van Amsterdam: ICT Education

A living lab for ICT education in real-world situations

The Hogeschool van Amsterdam (Amsterdam University of Applied Science, HvA) is developing innovation labs in which students and researchers carry out applied research projects in close collaboration with companies and public institutes. The Digital Life Centre is such a lab, focusing on ICT in our daily lives. This field develops at a tremendous speed – think of new multimedia communication and entertainment, home intelligence, digital care and mobile information systems.

Our project, Networked Intelligent Cameras for Care and Safety (NICCAS) is a collaboration between the Universiteit van Amsterdam (University of Amsterdam, UvA), two SMEs (Eagle Vision and QuoVadis) and public institutes (Science Center NEMO and the Library of Almere) on various computer vision applications.

The projects include the complete line from high science (UvA) to SME. By making demos, students from the HvA facilitate knowledge transfer between academia and companies. The living labs give the SMEs a unique opportunity to test their methods in real situations, with real kids.

Multidisciplinary teams are a prerequisite for running such complex projects. These projects are, therefore, generally carried out by teams of media science, computer science and information systems students.

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In the Netherlands, and in Amsterdam in particular, practically 100 percent of the population has access to the Internet. This means that every Dutch person is aware of the online possibilities of the modern world. Telebanking, mobile e-mail and navigation systems have become commonplace. Several research studies have shown that the Netherlands score extremely high on so-called e-readiness. The city is also working hard on its fibre-optic network - the 'Fibre to the Home' project - and Amsterdam boasts the first seamless WiMax network in Europe.

'I believe that providing excellent services is a great incentive for innovation in every region of the world. The Amsterdam area has a very strong position in the services sector. AMSI is located in the middle of one of the major service innovation eco-systems in Europe!'

...great incentive for innovation...

Professor Mark de Jong, Amsterdam Academic Centre for Service Innovation (AMSI).

Creating better services

Founded in 2008, the Amsterdam Centre for Service Innovation (AMSI) focuses on research and education in the management of innovation in service firms and organisations. Jointly founded by Air France KLM, IBM Benelux, Rabobank and the city of Amsterdam, the initiative works closely together with the Amsterdam Business School/ University of Amsterdam, VU University and Novay, supplying an academic environment and network that supports service innovation research.

Through research and executive education, AMSI supports executives and managers in service organisations in their ambitions to become more effective in their innovation processes and create new valuable services for their stakeholders. AMSI also develops new opportunities for students to enhance their competencies in the process of analysing, understanding and implementing service innovations in private and public organisations.

Currently the competitive challenges for service firms demand a deeper understanding of various aspects of service innovation. More knowledge of service innovation is crucial for current and future challenges. The projects underlying premise is that excellent and appropriate

services can help create a smarter world. In order to do so, innovation processes should include regional collaboration between companies, universities, governments and users. 'The renowned critical character of people in the Amsterdam area could play a vital role in creating high-quality services,' says Mark de Jong, one of AMSI's initiators.

Diversity of professions and cultures

'The project is a great example of a collaboration between many partners within a region. The key to success is every stakeholder's dedication to Amsterdam and to the project. Amsterdam has a strong services-oriented economy and is well known for its spirit to make things happen!'

'The main reason for this is the incredible diversity of professions and cultures located in the Amsterdam area,' De Jong continues. 'Amsterdam is historically characterised by its creativity and endless possibilities, offering an attractive environment for both entrepreneurs and large companies. Its attractiveness is now greatly enhanced by the city's ICT activities and developments. The Amsterdam Internet Exchange (AMS-IX) and the activities of SARA Computer and Networking Services are two examples that have contributed significantly.'





Accenture and KLM: Improved transfer passenger flow

When operational problems such as poor weather, flight delays or other difficulties occurred, KLM faced the possibility of passengers missing their connecting flights. Missed flights led to delayed departures and higher costs in connection with rebooking and hotel costs.

KLM and Accenture decided to develop a pilot project that would enable passengers who had missed their connecting flight (and were in Schiphol Airport's transfer area) to:

- Check in for their next flight, enter frequent flyer information or change their seats.
- Obtain a new boarding pass for their new connecting flight.
- Obtain service recovery packages offered by KLM such as vouchers for meals, drinks or telephone service.

Within six months, KLM and Accenture deployed 69 kiosks at 12 locations strategically positioned throughout Schiphol. Based on the success of this pilot project, the transfer kiosks were later installed at Charles de Gaulle Airport in Paris, for KLM's partner airline, Air France.

Today, Air France-KLM is the first airline group in the world to deliver a comprehensive self-service transfer kiosk product to their customers.

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IBM and SARA: Supercomputing in Amsterdam

SARA/Vancis is the national supercomputing and networking centre in the Netherlands. Since 1985, SARA has provided the Dutch national supercomputing service - hosting, managing and supporting the use of the national supercomputer. More than 200 users from 15 different universities, scientific institutes, government and industry in the Netherlands depend on the national supercomputer service for cutting-edge and competitive research and innovation, including research in areas of extreme social importance for the Netherlands, such as climate modelling and water management.

The current national system named Huygens is an IBM 575 hydro-cluster supercomputer with 3328 Power6 cores and more than 15 TB memory. Installed in June 2008, it is the largest supercomputer in the Netherlands. The system is integrated into the Partnership for Advanced Computing in Europe (PRACE).

SARA/Vancis is the national supercomputing centre at the Science Park Amsterdam and one of the European supernodes. SARA/Vancis is one of the locations of the Amsterdam Internet Exchange (AMS-IX), one of the largest internet exchanges in the world. Vancis is a SARA company that has been set up to manage the commercial customers; SARA will continue working on subsidised projects such as Huygens.

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Vodafone: Rethinking the way we work

Using technology for a flexible lifestyle

The days that 'going to work' automatically meant 'going to the office' are officially over. Today, people are looking for greater flexibility in their working and professional lives and a lifestyle that's more mobile and independent of time and location. As new technologies improve our means of communication, the need for fixed workplaces diminishes.

To facilitate such flexible lifestyles, Vodafone has launched the 'Mobile Working' programme, which aims to rethink the way colleagues interact and to redesign their offices. The programme allows employees to spend part (or all) of their working hours outside the office, close to their customers where business happens, but fully operational and connected to their colleagues back in the office. When they do finally return, they should feel they're returning to the Vodafone community and be able to work, share ideas, and interact with others face-to-face in an easy, relaxed manner.

All Vodafone offices will be redesigned to create a Mobile Working environment. In June 2009 the Contact Centre in Maastricht was fully redesigned and on 1 September 2009, the Amsterdam QPort temporary office, housing 300 staff, will open its doors.

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Exser: From technology to service innovation

A service consists of different elements: the service itself, the organisation(s) offering it, and the underlying technology. In recent years, innovators have realised that by involving the targeted users in the development, we can fully understand how the service concept is valued. An example of such a project is 'Images say More', a project initiated by Almere Kennisstad (Almere Knowledge City, see page 20).

The first results of 'Images say More' are now becoming visible. The service concept and the interaction with the users are being carefully investigated, and the first signs are positive. The challenge is how to continue? How and by whom can these services be offered in the long term? As with many ICT-driven pilots, problems like insufficient financing, legal and standardisation issues, and changes in the organisation and processes may prevent successful rollouts.

ExSer will, therefore, follow an inverse valorisation approach and start innovation programmes by identifying the needs of specific service providers, like care providers, housing corporations and financial service providers. Then ExSer will develop programmes with the relevant stakeholders of those service providers to facilitate successful service innovations.

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Making ICT greener is one of the main issues the Amsterdam Metropolitan Area is focusing on today. Not only the city is seeking best practices and responding to challenges, many local initiatives are pursuing the same objective in their own area of expertise. In this brochure, you can read all about their efforts.

'What the future will look like is hard to say. But I predict that our whole view on energy will change drastically. One thing is certain: real innovation will need partnerships.'

...our view on energy will change drastically...

Rob Maathuis, Director 'Infostroom' of Liander.

Collaborating for sustainability

Rob Maathuis is the director of Infostroom, a business unit of Liander, the largest energy-grid company in the Netherlands. Infostroom is responsible for developing and implementing the smart energy metre system, and manages approximately 5.5 million traditional metres. The unit is also involved in many sustainability and energy saving initiatives, such as electrical transport, distributed generation and home-energy management applications. 'In designing and realising projects, we work closely with many government agencies, research institutes, energy companies and other profit and non-profit organisations,' says Maathuis.

Liander is one of the founding partners of Smart City, a collaborative project that aims to make the entire infrastructure in Amsterdam energy efficient. Within two years from now, the first fifteen public-private partnerships in the categories Sustainable Works, Housing, Mobility and Public Space subprojects will be launched.

Europe's leading smart city

'I am very satisfied with the business and ICT climate in Amsterdam,' says Maathuis. 'The Amsterdam Smart City Initiative is an excellent example of this. The project

creates a good business environment in which various stakeholders can share knowledge and launch new initiatives. Amsterdam has positioned itself as a metropolis that wants to achieve sustainability and energy conservation through innovative, often ICT-based applications.' In fact, the city is aiming to become Europe's leading smart city within one year. 'The importance of ICT in relation to sustainability and energy will greatly increase,' says Maathuis. 'For example, if we place increasingly intelligent sensors and measuring and communication technologies in our electricity and gas networks, failures can be quickly detected and resolved. In addition, I see many other developments in home energy management systems, which enable consumers to save energy effectively.'

'There's a lot going on,' Maathuis continues. 'Decentralised power generation is increasing; electric transport is on the rise; energy-saving tools and services are being launched; the mix of energy produced is changing... And Amsterdam is well-positioned to play a leading role in all of these developments.'

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HP: The new way of working

Not only good to do...

it's good for Business and People too!

HP has more than three decades of experience in working away from the office. Employees in Sales and Support have been working in a mobile way for more than 15 years. The supporting systems are already based on 'anywhere, any place, any time'.

HP uses and delivers technology, like the HALO telepresence solution developed with DreamWorks, to change the way employees meet. Today, more than 220 HALO studios are operating worldwide, two of them in Amstelveen. Traveling within HP to meetings has reduced by more than 75 percent!

All HP NL's 2,400 people can decide to work from home, even top managers and secretaries!

In its Global Citizen Report in 2006, HP stated that it would reduce the company's CO₂ production by 15 percent by 2010, in comparison to 2005. By now, we're actually heading for a 25 percent reduction in 2010. We're not only aiming at reduction, we also make use of 'Green Electricity'. The HP office changed from being a workplace to a place to meet customers, business partners and colleagues. This is the so-called 'New Way of Working'.

In January 2008, HP NL consolidated all its office-based facilities in the Amstelveen office. The new 'Place to Meet' not only looks better, the cost of office facilities has also dropped dramatically!

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Smart Dutch: Creating a smarter grid

Meshed RF technology

As a result of the EU Energy and Climate Package, the Netherlands needs to optimise its infrastructure significantly. The current 'dumb' energy infrastructure needs to be transformed into a far more energy-efficient grid, or 'smart grid'. One of the most efficient methods to create smart-grid functionality is the large-scale installation of new-generation smart metres.

Smart Dutch is an Amsterdam-based producer of new-generation smart metres based on meshed Radio Frequency (meshed RF), a technology used to route data between metres using RF signals. Together, a number of smart metres can create a micro smart grid through which they can exchange data and jointly make decisions about the most efficient time of use.

The metre also offers a standardised port to connect an in-home display offering comfort and awareness for the consumer. In addition, decentralised energy resources (solar, co-generation, wind, etc) can easily be connected and monitored, helping consumers to generate their own energy efficiently.

The Smart Dutch infrastructure is cost efficient and reliable, has low response times and offers functions that make demand-response and real time dynamic pricing possible.

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Digikring: Innovation meets sustainability

Creating awareness and solutions

Digikring Groot Amsterdam (the Amsterdam Digital Industry Network) is the regional platform for entrepreneurs and other professionals in ICT and New Media. Monthly meetings, workshops and special events address specific hot topics. This creates an interactive platform, with an open environment of co-creation and knowledge sharing.

The annual Innovation Award is the highlight of the agenda. Local and governmental initiatives share in the organisation of the award and representatives from the Amsterdam ICT and New Media community also collaborate.

Sustainability in its widest sense is one of the guiding principles behind the choice of topics for the Innovation Award. Topics range from open source and green buildings to social networks and the way ICT and New Media can provide innovative solutions. Each topic is viewed in terms of the value added to society at large and the city of Amsterdam in particular.

The 2008 Innovation Award, for example, focused on whether and how ICT can reduce CO₂ emission levels. The award proved to be a valuable resource in creating not only awareness, but most importantly, providing practical solutions. The award's success illustrates the way ICT and New Media can contribute to a responsible and sustainable society.

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Amsterdam and Cisco: Connected Urban Development

Reducing urban carbon emissions

The City of Amsterdam has set itself two challenging targets: to reduce CO₂ emissions by 40 percent in 2025, compared to the 1990 baseline; and to be fully climate neutral by 2015. To achieve these targets, Amsterdam is actively cooperating with both private and public partners. Called Amsterdam Connected Urban Development (CUD), the initiative is part of the Amsterdam Climate Programme. Together with San Francisco and Seoul, Amsterdam is one of the founding cities of the CUD programme, which originated from Cisco's commitment to the Clinton Global Initiative to help reduce carbon emissions. The programme promotes methods to cut carbon emissions by using urban ICT infrastructure more efficiently.

Today, a number of CUD projects have been realised. For instance, the first Smart Work Center (SWC), offering flexible workstations and high-end services, was opened in September 2008 in Almere, close to Amsterdam.

The Personal Travel Assistant, a unique personal navigation system for public transport, will be tested in 2010. Projects such as Green IT, sustainable buildings and the Ecomap are also part of the CUD programme.

In 2008, the cities of Birmingham, Hamburg, Lisbon and Madrid joined the CUD programme. Hopefully this will open up new avenues for collaboration in promoting smart urban environments.

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The City of Amsterdam intensively stimulates open innovation initiatives. Several open platforms have been created to support the SMEs in the Metropolitan area. The Amsterdam Living Lab and the Service Centre for Open Innovation are two recent examples that increase possibilities significantly. Sharing infrastructure and knowledge encourages innovation and co-creation. With 'Open Amsterdam' the City Council shows its active and participative approach to open source developments. The transformation to a more open, IT-based innovation environment is well underway.

'Amsterdam is a village disguised as a metropolis and vice versa, one of those cities that is prepared to combine creativity, technology and user-driven innovation to find sustainable solutions'.

...village disguised as a metropolis...

Marleen Stikker, founder and director of the Waag Society.

Innovative thinking, innovative action

Marleen Stikker is the founder and director of the Waag Society, an independent lab for creative technologies and social innovation. Its activities include creative research, a public and an incubator programme. She is also co-founder and chair of PICNIC, an international cross-discipline platform for creative conversation and collaboration in media and technology. This unique event brings together innovators from science, the arts and business. As co-founder and board member of the ICT Innovation Platform Creative Industries (IIPCREATE), Marleen Stikker is also involved in establishing a competitive ecosystem for the creative industries in the Netherlands.

The Waag Society collaborates with knowledge institutes, public organisations and private corporations - large and small - that want to innovate the way they work with people. It brings a dedicated user perspective, looking at daily practices and true needs, and uses rapid prototyping and 'users as designers' to the benefit of the city and its inhabitants. Its methods are universal and have proven to be instrumental in achieving innovations that last.

Breeding ground for creative talent

'I live in the centre of Amsterdam with my family,' says Stikker. 'I work in De Waag, a former city gate and home

to the Theatrum Anatomicum where Rembrandt painted his famous 'Anatomy Lessons of Dr Tulp'. Every day, my office reminds me of the city's great past.'

'Amsterdam is a breeding ground and a hub for creative and innovative talent,' she continues. 'It's a village disguised as a metropolis and vice versa. It combines a progressive lifestyle, high-tech infrastructure, trend-setting creative industry and liberal entrepreneurial spirit. A place where artists, designers, technologists, hackers and entrepreneurs work closely together. That open culture also formed the basis for the first Digital City in the world, which I initiated in 1993 (De Digitale Stad /DDS).'

Designing the future

Since then, Stikker has been creating tools for people to participate in designing the future. 'The Internet has democratised the access to networks because of its open nature and open standards,' Stikker explains. 'It has a tremendous impact on societies in need of open innovation and technologies. The Internet enables people to work together, to share and to build on each other's ideas in a fashion and speed formerly unheard of.'



SCOI: SME portal for open innovation

Faster, cheaper and more effectively

The Service Center Open Innovation (SCOI), an initiative of Amsterdam City Council and Dutch, a consultancy, is a public-private cooperation. Its mission is to stimulate small and medium enterprises (SMEs) in the Amsterdam region to use open innovation instruments.

Developments in Internet technology (Web 2.0) have enabled organisations to involve outsiders in innovating and improving their businesses. There are several established service providers with proven solutions to involve the general public (crowdsourcing), the relevant experts (expertsourcing) or providers of existing solutions. Open innovation can accelerate growth for SMEs - it allows them to introduce innovations and improvements faster, cheaper and more effectively.

Most SMEs aren't aware of this opportunity. SCOI will provide several services to encourage SMEs to adopt open-innovation instruments. A unique development is the first physical crowdsourcing location in the world. This open innovation shop will be located in the departure lounge of Amsterdam Schiphol Airport and on the Internet.

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Open.Amsterdam: open standards and open source in the workplace

An alternative to the Microsoft-oriented workstation

Open.Amsterdam is a project that aims to develop an 'open' workstation environment for the City of Amsterdam, as an alternative to the Microsoft-oriented workstation. The City Council believes that an active and participative approach to open source developments is appropriate to Amsterdam as 'ICT capital of the Netherlands'. Amsterdam is not only in the front line nationally, but also internationally, alongside only a few major cities.

By being a front-runner in the use of open standards and open source solutions, the City of Amsterdam serves as an example of how a large organisation can make use of innovative, open solutions.

The City of Amsterdam has around 14,000 local government officers who make sure taxes are paid, streets are cleaned, schools are run properly and much more. Interactions between the City, its people and companies are countless and increasingly electronic, through the Internet, e-mail or collaboration platforms. Through its choice of ICT standards the City of Amsterdam wants to prevent forcing propriety standards on its clients and partners. Hence the choice for 'open'.

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www.amsterdam.nl/gemeente/open_amsterdam

Novay: Cogknow's Living Lab

The European project Cogknow is developing an aid for people with mild dementia still living in their own environment. It helps them to avoid memory-related problems, to maintain social contacts, to undertake meaningful activities and to enhance their feeling of safety. The system consists of a touch-screen, a mobile device and a set of sensors in the home. It can be personalised to a patient's individual needs, taking into account the progressive nature of dementia.

Cogknow is an open innovation project in which organisations from different sectors and countries cooperate. The system is validated by focusing on usefulness, user friendliness and efficacy. Field trials are carried out in patients' homes in Amsterdam, Belfast (UK) and Luleå (Sweden). The research has been designed as living-lab experiments. Knowledge and methods developed in the Amsterdam Living Lab project were used in the last validation experiment.

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www.novay.nl/okb/projecten/cogknow/2328

SIG: The benefits of being open

Creating openness in the software industry

Virtually all products people buy are certified by a certification institute, ensuring the products meet certain quality standards. This, however, wasn't common practice in the software industry until recently. But as of 2009, Dutch institution SIG provides product certificates to the software industry, in close cooperation with Germany's TÜV. Organisations use these certificates in legal contracts to obtain quality assurance of software products. Pioneering customers include companies like KLM, Rabobank, ProRail and the KAS BANK NV. Several other organisations followed soon after the launch of the certificate.

Software companies are not always comfortable about being open about their performance. Transparency, though, does have benefits. Firstly, it helps software buyers to communicate their expectations to potential vendors. Secondly, it allows vendors to prove their product quality to potential clients. Thirdly, publishing certificates on a website, contributes to vendor rating and creates market transparency.

SIG is based in Amsterdam and began as a spin-off from the Dutch National Research Institute for Mathematics and Computer Science, more often known as the CWI. SIG serves companies all over the world from the laboratory at the main office in Amsterdam.

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www.sig.nl

Amsterdam: for Innovation and Business



AIM - the Amsterdam Innovation Motor

The Amsterdam Innovation Motor (AIM) was established in 2006 to maintain and consolidate the trendsetting position of the Amsterdam region in the knowledge economy. AIM seeks to promote innovation, collaboration and new business in the Amsterdam region by actively encouraging cooperation between knowledge institutes, commerce, industry, government and social organisations in the Amsterdam region. Improving the conditions for knowledge-intensive businesses is, therefore, high on AIM's agenda. AIM focuses on the development of five sectors that have high potential for strengthening the region's position:

- Creative Industries
- ICT
- Life Sciences
- Sustainability
- Trade & Logistics

Since ICT and New Media play an important economic role in the Amsterdam region, from the beginning AIM has had a strong focus on ICT. The region is the ICT centre of the Netherlands and is known for its unique mix of creativity, commerce, easy accessibility and international orientation. AIM collaborated with the city's Economic Department to set up the ICT Cluster in 2008. This cluster forms the core of the ICT activities in AIM and is responsible for generating new projects.

Amsterdam ICT Cluster

The ICT Cluster in the Amsterdam Area is facilitated by the City of Amsterdam and the Amsterdam Innovation Motor. The initiative's main aim is to set up collaborative projects in order to share knowledge or develop new markets.

The core of the ICT Cluster is made up of the largest ICT companies in the region, including Accenture, Atos Origin, Cap Gemini, Cisco, HP, IBM, KPN, Logica, Microsoft, Software Improvement Group, TaTa Consulting, TNO, TomTom, UPC and Vodafone. In addition, many knowledge institutions and SMEs are represented in the cluster.

The ICT Cluster has several meetings each year, covering a variety of themes including mobility, health and energy. The initiative has spawned several projects such as Amsterdam Living Lab, Amsterdam Smart City and a number of health related projects.

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Amsterdam inbusiness: the official foreign investment agency of the AMA

During every step from exploration to start-up and growth, international companies can turn to amsterdam inbusiness for two crucial requirements to help them establish a successful operation: know-how - to solve the problem of businesses entering an unfamiliar environment - and know-who - to provide introductions to the individuals and agencies necessary for effective operation. The relationship between a company and amsterdam inbusiness will continue over the long term. amsterdam inbusiness directs the lion's share of its economic development staff and resources toward the support and nurturing firms already established in the Amsterdam Metropolitan Area.

Amsterdam inbusiness:

- single contact point to help international companies establish and maintain operations in the Amsterdam Metropolitan Area
 - wide-ranging relations in the private and public sectors
 - support network of civic partners in the region and around the world
 - full programmes for initial visits to evaluate and select locations, services and professional advisors
 - advice for company staff and their families
 - services are free, confidential and without obligation.
- Amsterdam inbusiness is the official foreign investment agency of the AMA (Amsterdam, Amstelveen, Almere and Haarlemmermeer).

www.amsterdaminbusiness.com

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Expatcenter Amsterdam

The Expatcenter is a joint initiative of the cities of Amsterdam and Amstelveen, along with the Dutch Immigration and Naturalisation Service (IND). Located in the WTC on Amsterdam's Zuidas, the Expatcenter provides a one-stop service for highly skilled migrants living in Amsterdam or Amstelveen. With newly simplified processes and applications, the Expatcenter aims to meet the needs of international companies and their expatriate employees better. The Expatcenter's website (www.iamsterdam.com/expatcenter) contains a wealth of useful information for expats. Expatriates can visit the site for information on topics such as parking, taxes, healthcare, education and much more.

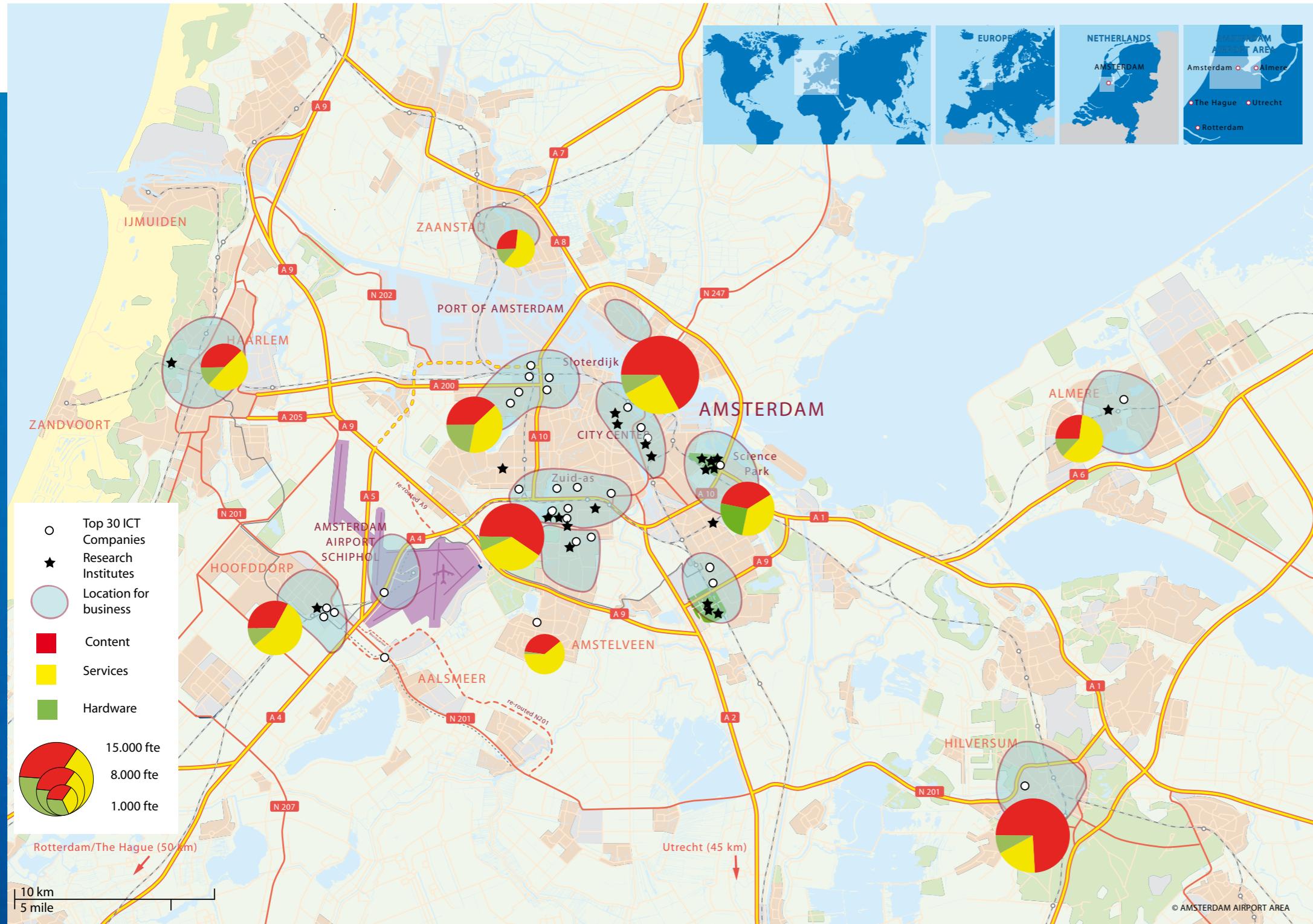
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Amsterdam: Location for Business

Business Districts, Science Parks and Creative Hotspots



The Amsterdam Metropolitan Area offers a wide range of locations highly suitable for companies to set up business. The map shows some of the most popular locations - all within 40 km of Amsterdam and Amsterdam Airport Schiphol. On the next page you'll find information on the locations that are perfectly suited for ICT-related companies. These locations offer all kinds of possibilities - from renting accommodation at reasonable prices, to having space to build a brand new corporate HQ.

Amsterdam Zuidas: ICT and Business

Amsterdam is developing a new, well-connected urban centre called Zuidas, with abundant space for living, working and leisure. Zuidas is a unique hub on Amsterdam's southern axis, with high-tech offices, modern housing and high-quality facilities, near to both the historic city centre and Schiphol Airport. Thanks to its mixed character, the area is very lively. Quality and liveability are major considerations in the development of the Zuidas. Its excellent accessibility - Schiphol is only six minutes away by train - ensures that Zuidas is a 'most wanted' location for many businesses seeking a base in the city. Zuidas offers excellent possibilities for companies, whether large, small, international or Dutch, to base themselves in dynamic, international surroundings.

www.zuidas.nl

Science Park Amsterdam: ICT, Research and Education

Science Park Amsterdam is an internationally renowned centre for scientific research, education and knowledge-related business activities. Owing to its strategic city location, the Science Park Amsterdam is a key area for developing knowledge-intensive activities. Around 80 national and international companies have located here, mainly in the sciences, especially the life sciences, and ICT related areas, and mutually benefit from each other's knowledge and presence. The park and its institutions (NIKHEF, AMOLF and CWI, and SARA) are already world leaders in the field of grid technology. The combination of the Dutch super computer Huygens, continental Europe's largest internet exchange, the AMS-IX, and the world's biggest fibre-optic hub Netherlight, ensures

unique facilities in networking and computing services. Science Park Amsterdam really is at the centre of Dutch ICT and computer science.

www.scienceparkamsterdam.nl

Amsterdam Airport Schiphol: ICT and Mobility

The Business Park located at Amsterdam Airport Schiphol is extremely popular with ICT companies, especially those focusing on international operations. The park is strategically located within a perfect infrastructure that makes it the most easily accessible business location by train, road and air in the Netherlands - and probably in the world. Companies such as AT&T, BMC Software, Cisco Systems, Hewlett Packard, Juniper Networks, Microsoft Benelux, Nortel Networks and UPC Europe have chosen the Schiphol area as their base.

www.aaarea.nl

Amsterdam Sloterdijk

Located in the west of the city, the Amsterdam Sloterdijk business park is a popular choice for businesses needing plenty of affordable space. With its own train station and located on the Amsterdam ring road, Sloterdijk has attracted a number of ICT companies, including KPN, Oracle, Yahoo!, Atos Origin, and Deloitte and Touche.

www.amsterdam.nl

Almere

With increasing numbers of both inhabitants and businesses, Almere is the fastest growing city in the Netherlands. For ICT companies, Almere is an attractive business location with many competitive advantages, including affordable office space and easy access by car. In addition, Almere offers excellent facilities in terms of fibre-optic connections, hosting facilities and data storage. All of its business areas have been connected to the city's fibre-optic network since 2006.

www.almere.nl

Amstelveen

Bordering the south of Amsterdam, next to Zuidas, Amstelveen makes an excellent operating base for ICT companies. Expats find Amstelveen a pleasant place to

live, and many Japanese and Indians in particular live here. Companies like Canon, Ricoh, Fortis, and LogicaCMG are based in Amstelveen.

www.amstelveen.nl

Haarlem

To the west of Amsterdam and close to Amsterdam Airport Schiphol, Haarlem is very popular with companies working in graphics, design and ICT services. With picturesque facades and many listed buildings in the city centre, and spacious areas with industry and offices on the eastern edge of the city in the Waarderpolder, Haarlem offers a wide range of office locations.

www.haarlem.nl

Hilversum

Hilversum is the centre of the Dutch television industry and is home to most major Dutch broadcasting companies, large studios and TV-related companies. Hilversum is easily accessible by train and car, and is only 30 minutes from Amsterdam.

www.hilversum.nl

Hoofddorp

With its spacious business park, Hoofddorp offers excellent value for money. It's extremely accessible, thanks to its location near Amsterdam Airport Schiphol and the business park's own train station. Hoofddorp is a logical operating base for many companies, including TNT, LogicaCMG, Thomas Cook and INHOLLAND College.

www.hoofddorp.nl

Zaanstad

ICT Zaanstreek is an independent cluster of ICT companies that aims to spread and strengthen the area's knowledge and other capacities. With over 300 ICT companies, Zaanstreek significantly contributes to the Amsterdam ICT Cluster of the Metropolitan Area. Good connections between companies, the local community and educational institutions stimulate cooperation and valorise knowledge.

www.ictzaanstreek.nl

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