INVEST IN

DENMARK'S NO. 1

ICT CITY

INVEST IN

AALBORG

The North Danish ICT (Information and Communication Technology) cluster is a driving force for cutting-edge technological and industrial developments of international relevance. Many of the groundbreaking research activities and first mover companies that are central to this powerful position are located in and around Aalborg.

A Source of Indispensable Inventions
This dynamic and innovative cluster has grown from a historical regional foothold in the ICT industry, which stems from a unique ICT research community based around Aalborg University and a series of large, international IT and ICT corporations with R&D departments in Aalborg.

Historically, many of these companies operated within the fields of mobile and wireless technologies, earning the area the nickname 'Mobile Valley'. In fact, the integrated antenna for mobile phones was invented at Aalborg University some 25 years ago.

Start-Ups Accelerate Growth
Since 2008, when the worldwide economic crisis meant downsizing for a number of the telecom companies based in Aalborg, a multitude of start-ups have sprouted, quickly gaining momentum and leaving the area even richer in innovative companies, highly skilled and experienced experts and renowned researchers.

Today, Aalborg is an even more central player in the international ICT community than it was 10 or 20 years ago. Aalborg has the highest growth rate in Denmark for ICT companies, and they employ almost 10 % of the work force in the area.

IT Sector on the Rise
There is generally growth and optimism in the ICT sector. In a recent survey, 55 % of IT companies in North Denmark state that their bottom line figures were better in 2016 than in 2015, and only 13 % saw a decline in earnings. Expectations for the future are even better. 89 % of the companies are expecting financial improvements in 2017 compared to 2016, while none say they are expecting a decline.

B2B is a larger business area for North Danish IT companies that B2C, and this trend is expected to continue, as future growth is deemed most likely to come from business clients in Denmark (77 %) and internationally (58 %). These client groups largely dominate the picture with international business on the increase. Indeed, 47 % of the companies are expecting their growth to come from international markets.

47%
OF THE ICT COMPANIES EXPECT FUTURE GROWTH TO COME FROM ABROAD

INVEST IN WORLD-LEADING TECHNOLOGIES

The North Danish ICT cluster is characterised by:

› Unique synergies between industry and research
› World-leading technologies
› Focus on networking and collaborations to spark innovation
› Entrepreneurship

Leading in Research

Over a period of more than 30 years, Aalborg University (AAU) has specialised in ICT and is one of the world's leading universities in the field. AAU has a unique approach to ICT, connecting sciences with social studies and the liberal arts across faculties and departments, and - measured by investments - AAU conducts the most ICT research among Danish research institutions.

International studies place Aalborg University among the world leaders in areas such as wireless communication, embedded software and health technologies.

Just to mention a few of the departments, which carry out research and provide education of the highest international standard, one is the Department of Electronic Systems, specialised in areas such as wireless technologies, drones, wind turbines, 5G and antennas.

The Department of Communication and Psychology is known worldwide for its robot research connected to the field of human-computer interaction, and the Department of Computer Science carries out research in the fields of software and data use and performance.

New Experts Hatch Every Year

Aalborg University has some of the best ICT programs in the world, and the IT and ICT experts that graduate from the university are in high demand. In a recent regional survey, 77 % of North Danish ICT companies said they expect to hire more employees in the next five years. This puts the ICT sector at the top of all industries included in the survey (a total of 16) in terms of expectations for further growth.

Job Growth

Job growth in Aalborg's ICT sector is remarkable: with an outstanding job growth in Aalborg of 14.4 % from Q4 2014 to Q4 2016, Aalborg shows a relatively strong momentum next to Denmark's comparable cities, Aarhus and Copenhagen (11.8 % and 12.3 % ICT job growth respectively).

Cooperation is the Key to Innovation

A strong networking tradition between the university, the industry and the local authorities exists in the North Danish ICT cluster. This tradition is carried on and developed by BrainsBusiness, a twice-gold certified cluster organisation that facilitates this cooperation and nurtures joint innovations between different members of the ICT community.

BrainsBusiness also serves to promote North Danish ICT interests, products and services internationally by cooperating with clusters in other parts of the world.
Get to know BrainsBusiness: www.brainsbusiness.dk

The recipe for success
› **World-class research and education**
› **Political support and public investments**
› **Innovative, local companies**

The ICT cluster in Aalborg is home to some of the world's leading academic experts, specialists and private companies.

Our most important core areas include:

› Internet of Things
› Cyber-physical systems
› Drones
› Space technology
› Cross media and digital experiences
› Data-intensive systems
› Health care
› Human-computer interaction
› Telecommunication
› Transport and logistics

ICT RELATED CENTRES
AT AALBORG UNIVERSITY

Aalborg University is one of the most innovative universities in Europe and has more than 23,000 students. The university cooperates with universities worldwide and is home to both international researchers and students. Get to know some of its highly recognised ICT centres.

Center for Embedded Software Systems (CISS)

A world-leading research centre within the field of embedded software. 80 % of all current software is embedded (that is, hidden) within different kinds of products, and an increasing number of daily activities take place online in a kind of distributed system, where several computers collaborate to provide a service.

CISS interacts closely and interdisciplinary with a large number of researchers and companies from all over the world. With 11 defined focal areas, the centre conducts research into problem-solving methods and processes to the benefit of business and society.

Center for Data-Intensive Cyber-Physical Systems (DiCyPS)

A unique collaboration between internationally leading research communities, international companies and public authorities in the creation of a solid foundation for the IT structures of tomorrow's smart society.

DiCyPS focuses on using software and data from complex physical systems to create smarter and more user-friendly solutions to the benefit of society as well as the individual. Examples of fields of application include transport and energy systems, which are becoming gradually more complex. To an increasing extent, the management of these systems rely on sensors, computers and the correct use of accumulated data.

Center for Data-Intensive Systems (DAISY)

Develops technologies that meet data management needs posed by software systems in general and by data-intensive applications, in particular. Due in part to the continued advances in hardware technologies, the diffusion of the internet and the increasing complexity of software systems, the area of data-intensive systems is faced with abundant research challenges as today's software systems manage large amounts of data.

Center for Acoustic Signal Processing Research (CASPR)

A newly founded centre at the Section for Signal and Information Processing, Department of Electronic Systems. The centre aims to conduct research and education at Bachelor, Masters, Ph.D. and post-doctoral level in scientific disciplines supporting future statistical signal processing concepts for hearing assistive devices and to disseminate research results and their applications to the sound processing industry and research community.

Aalborg University Space Centre

With activities mainly centred on satellite technologies. There is a longstanding tradition at Aalborg University for space related education, research and development, and some of the core areas are wireless communication, tracking of ships and aircrafts, antennae design and the development of hardware and software built to withstand impacts from the space environment.

Another project focuses on the removal of space debris, meaning disused satellites. Spinoff companies from AAU specialised in space related products are GOMspace (nano-satellites for radio based surveillance and communications), Satlab (software defined radio solutions) and Space Inventor (satellite engineering).

Aalborg U Robotics

An interdisciplinary research program, which combines education, research, development and design of robot technologies. Aalborg U Robotics works in close collaboration with national and international companies, and it is the research program behind Aalborg University's interdisciplinary Bachelor education program in Robotics.

Aalborg U Robotics has a strong multidisciplinary research environment working with robot technologies in relation to the healthcare sector, the manufacturing sector and the services sector.

Drones Research Lab (DRL)

With increasingly better technology available at lower costs, drones are the answer to a growing number of practical, industrial challenges. Aalborg University has close to 40 employees, whose work includes drone research, focusing on nine areas: autonomy, communication, safety and risk, industrial use, human-drone interaction, civil engineering, programming and verification, sociotechnical and cultural innovation and mapping.

The Drones Research Lab is involved in a number of research projects and working on different challenges such as navigating drones inside factories or building sites, landing drones on moving ships or using drones in precision agriculture.

1,800 ICT COMPANIES

IN NORTH DENMARK

There are approximately 1,800 ICT companies in North Denmark of which 1,100 are located in Aalborg. Get to know some of the companies that drive the region's powerful position in the ICT sector.

MapsPeople
With more than 115 years of experience, MapsPeople specialises in indoor mapping and navigation of offices, institutions and venues, which help visitors, customers, travellers or patients navigate indoors. The company's flagship indoor navigation solution, MapsIndoors, is seamlessly integrated into Google Maps, while it is also compatible with other mobile and desktop applications.

GateHouse Group
Gatehouse specialises in intelligent software solutions that guarantees effective and secure communication between systems. The group has three subsidiaries – GateHouse Logistics providing tracking solutions to the transportation industry. GateHouse Telecom that specialises in satellite communications, consulting and services. And finally, GateHouse Maritime, which provides tracking solutions to maritime authorities, coastguards, ports and related businesses.

Rohde & Schwarz
Rohde & Schwarz specialises in all fields of wireless communication and is among the world's leading suppliers of wireless solutions and components to the wireless communications industry and mobile network testing market segments. The group's Danish research and technology centre is based in Aalborg, where they specialise in equipment for testing, measuring and communicating for both civil and military use. Rohde & Schwarz's largest customer segment is the world's leading manufacturers of mobile phones.

Xtel
Xtel is an independent development company with experts in hardware and software development. The company specialises in wireless technology and Internet of Things (IoT), which enable companies to make everyday electronic appliances intelligent by harvesting data. These data are converted into valuable knowledge that, when used intelligently, can help companies improve their product and the customer experience.

RTX
Since 1993, RTX has been one of the pioneers in developing advanced wireless communication solutions across a wide range of applications. Over the years, the company has accumulated extensive know-how in designing advanced wireless solutions and products primarily for large enterprises along with both business and consumer-oriented original equipment manufacturers (OEMs).

Today, the company has more than 900 successful wireless projects for leading international brands.

Intel
Intel is a multinational company that specialises in cloud computing, data centre, Internet of Things (IoT), PC solutions and computer processors. Based in the innovative NOVI Science Park in Aalborg, Intel Mobile Communications Danmark works with research and development that supports Intel Mobile Communications globally with high-end products and solutions for wireless communication.

The Samsung Denmark Research Center
Samsung Denmark Research Center (SDRC) is a research and development office that is responsible for delivering full SW solutions for Samsung's own product range of short-range wireless technologies such as Bluetooth, ANT, Wi-Fi and others. Located in the NOVI Science Park in Aalborg, the Samsung employees are developing the latest technologies for personal mobile wireless communication going into millions of products - mobile phones, wearables and Internet of Things (IoT) being the primary target markets.

GomSpace
GomSpace is a global leading designer, integrator and manufacturer of high-end nanosatellites for customers in the academic, government and commercial markets. The company also specialises in systems integration, nano-satellite subsystems and advanced miniaturised radio technology. Today, GomSpace service customers in more than 50 countries, including NASA and ESA (European Space Agency).

Nokia
Nokia remains one of the largest manufacturers of mobile telecommunications equipment. Based in the NOVI Science Park in Aalborg, Nokia focuses on concept development along with research and development for both current and future wireless communications network. The research and development efforts mainly concern radio link principles and performance, radio resource management algorithms and large-scale simulation of network performance.

Telenor
Telenor Group is an international provider of tele, data and media communication services. The group is one of the world's major mobile operators with 214 million mobile subscriptions worldwide and with business activities in 13 markets across Scandinavia, Central Eastern Europe and Asia. More accurately, it is the leading telecommunications company in Norway and the largest in Scandinavia.

www.investinaalborg.dk

About Invest in Aalborg

Invest in Aalborg is a partnership between the Port of Aalborg, NOVI Science Park, Aalborg University and the City of Aalborg. It is the partnership in an increasingly globalised city that will ensure you a single point of contact and easy access to prime locations, world-class research, local business know-how and the local authorities.

Let us help you build your business case. Our services are driven entirely by your needs and are independent and free of charge.

Contact us

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