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Meet Smart Aarhus at Dokk1 in Aarhus.
www.smartaarhus.dk
“We live in a time where the pace of change is faster than ever before, and users are increasingly setting the agenda. This requires a new logic for how we operate and make decisions. Smart Aarhus proposes an alternative collaboration between the public and the private sector, citizens, the business community, and knowledge institutions, where we work together to make use of digital opportunities and to address challenges across existing sectors and hierarchies.

This means that we collaborate on a national and international level across cities and regions to ensure national and international coordination, and we work actively to strengthen the essential role of digitalization in city development.”

Niels Højberg
City Manager of the City of Aarhus and President of Smart Aarhus
Smart Aarhus is a partnership between the City of Aarhus, the Central Denmark Region, Aarhus University, the Alexandra Institute, VIA University College, IT-Forum, the Danish Technological Institute, Creuna, and Systematic.

Today, a wide range of public institutions, companies, and citizens are involved in specific projects.
SMART CITY
DEVELOPMENT BASED ON PARTNERSHIPS

Smart Aarhus proposes a new way of organizing efforts to find effective and sustainable solutions to the challenges faced by many cities today. Through collaboration between the public and the private sector, citizens, the business community, and knowledge institutions, Smart Aarhus offers a platform for everyone who wants to make use of the opportunities of digitalization across sectors and hierarchies.

Smart Aarhus involves citizens in the development of projects like in the project Digital Neighbourhood, where the traditional communication model is flipped upside-down, and issues raised by citizens form the basis of new city initiatives. Smart Aarhus favours sustainable solutions as seen in the project RADICAL, where a digital chip for bicycles makes traffic lights turn green and help cyclists to an easy passage through the city. Furthermore, Smart Aarhus uses participatory models for funding as when companies, educational institutions, networks, and individuals make Internet Week Denmark possible by crowdsourcing events.

Smart Aarhus promotes national and international collaboration across cities and regions to ensure that efforts are coordinated broadly. The Smart Aarhus Secretariat takes on a leading role in coordinating activities in the Danish Smart City Network and in the Connected Smart Cities Network, which provides an international forum for smart city solutions.

Internationally, Smart Aarhus is considered a Scandinavian third way that offers a model for city development based on the practice of stakeholder and citizen involvement, and which differs from both the more commercial American and the more centrally controlled Asian traditions. In addition, social, economic, and environmental sustainability play a central role in Scandinavia – and to Smart Aarhus.
SMART AARHUS WANTS TO BE AN INTERNATIONALLY LEADING, SCANDINAVIAN MODEL FOR URBAN DEVELOPMENT BASED ON PARTNERSHIPS

The digital technology is both a challenge and an opportunity to develop the city of the future.

Smart Aarhus is a new mindset developed in order to create sustainable urban innovation and growth.

Smart Aarhus is a model based on involving stakeholders through partnerships.

Smart Aarhus is a digital marketplace established in order to generate value and help solve societal, environmental and economic challenges.
THE OBJECTIVE OF SMART AARHUS IS TO:

• Solve or address societal challenges
  There are plenty of challenges – challenges that are basically related to a lack of resources and that cannot be handled in traditional ways. These challenges demand that we dare to act and think in alternative ways to mobilise resources that create sustainable solutions.

• Strengthen the digital economy and create jobs
  The projects of Smart Aarhus aim to create better conditions for the digital economy. Smart Aarhus projects have clear business potentials and help create growth. An example is the week-long event Internet Week Denmark that celebrates and highlights the Internet economy in Denmark.

SMART AARHUS ACTIVITIES ARE CHARACTERISED BY:

• Challenging the traditional roles of citizens, the public sector and private enterprises
  We need to create a new way of collaborating and creating public service that involves the public sector, citizens, and the business community. Citizens and companies must accept a higher level of responsibility. The public sector needs to create the best possible framework for this collaboration for instance by making data available to the public.

• Being open and involving stakeholders
  Smart Aarhus projects include stakeholders, such as citizens, in the ongoing development processes. This creates a democratic process that produces a more qualified outcome.

• Being experimental by using pilot projects
  Smart Aarhus wants to act fast, experiment, take risks, make adjustments, and grow smarter. Pilot projects are a key as long as they are sustainable and scalable.
The Smart Aarhus partnership consists of The City of Aarhus, The Central Denmark Region, The Alexandra Institute, Aarhus University, VIA University College, IT-Forum, Creuna, and Systematic. In addition, a wide range of public and private companies and citizens have been and are still involved in concrete projects.

Smart Aarhus consists of the Smart Aarhus Board with directors from the member organizations and also of the Smart Aarhus secretariat, which is constituted by members of the participating organizations.

A main task of Smart Aarhus is to promote Smart Aarhus and Smart City interests both on a local, national, and international level. Locally, Smart Aarhus facilitates a wide range of concrete projects. We coordinate efforts nationally via the Danish Smart City network, and we work internationally through bodies like the IoT Forum, the Connected Smart Cities Network, and the Open and Agile Smart Cities collaboration.

Furthermore, Smart Aarhus creates platforms for Smart City development. The platforms such as the open data platform set out important framework conditions for creating Smart City solutions.
INTERNET WEEK DENMARK
A FESTIVAL CELEBRATING THE INTERNET

Internet Week Denmark is a festival taking place in and around Aarhus. The festival celebrates the success and the impact of the internet on innovation, businesses, and our everyday lives.

The backbone of Internet Week Denmark is a week-long festival based on crowdsourced events. This means that companies, educational institutions, networks, and individuals contribute by hosting events during the festival. It is a great week of knowledge-sharing, learning, social meetings, and networking.

The festival is first and foremost for professionals. It brings attention to the impact of the internet economy on growth and job creation as well as to the attraction and retention of talent and entrepreneurship. It is a week of talks, debates, workshops, and hackathons.

However, Internet Week Denmark is also a public festival for citizens and students. The festival is open for all, just like the internet is an open platform for all.

The festival was originally initiated by Smart Aarhus and was part of the Smart Aarhus development process in 2012. The first festival took place in 2014 with more than 3,000 guests attending 123 different events.
Providing open access to the large amount of data from public institutions, educational institutions, and companies is a cornerstone of creating a Smart City. Open Data Aarhus (ODAA) is an online platform that promotes democracy, transparency, and economic growth through open data. The platform gives all interested stakeholders access to data that they can use to create services and initiatives that meet the needs of the citizens, and from which companies and entrepreneurs can find inspiration and even a base for new businesses.

In many cases the data can be used as raw material for developing digital services on many topics including traffic, recreational areas, recycling, health, sports, and much more. ODAA is based on the involvement of stakeholders: citizens, students, researchers as well as companies, e.g. via the Working Group with members from Aarhus Municipality, The Central Denmark Region, Aarhus University, as well as private companies such as The Alexandra Institute, IBM, and Creuna.

The launch of the platform took place in 2013 as the first Open Data portal in Denmark, and today ODAA is a core project in the Smart Aarhus initiative. In addition to collecting more relevant data sets, ODAA is currently working on creating standards as well as making it as easy and as safe as possible to use the data.

Open Data Denmark
In collaboration with The Central Denmark Region, ODAA is initiating the Open Data Denmark network, which strives to offer aligned open data initiatives and services to the stakeholders. As a community-based collaboration between the largest cities in the country and Central Denmark Region, Open Data Denmark promotes open data initiatives on the national agenda and works for a common platform for the use of open data that can spread across the country. The intention is to make it easier for smaller municipalities to get started on working with open data.

ODAA has recently joined the international collaboration Open & Agile Smart Cities that focuses on creating common open standards for releasing data. This was initiated by Smart Aarhus.
Aarhus Challenges aims at solving societal challenges by collaborating across sectors, institutions and hierarchies. The idea is that companies, organizations, and educational institutions share their knowledge and the labour of their staff or students for a whole day in order to come up with a specific solution to a major challenge.

The Social Day presents a valuable platform for Aarhus Challenges to learn from the participatory approach in action. The participatory approach of involving citizens shows how the traditional roles of citizens, the public sector and private companies can be rethought, and it puts Aarhus Challenges at the core of the Smart Aarhus mindset.

The Social Day is an initiative that invites organizations working with the socially disadvantaged, culture, environmental issues, or citizens to define a task that they need help carrying out. The project wants to show how much can be achieved in a city as a whole, when citizens join forces to solve a specific task. The tasks are diverse and vary from painting a building, gardening, or performing to entertain the elderly. The common trait is that these are tasks, which the organization normally do not have the funds nor time to perform.

All tasks are registered on an online platform (www.densocialedag.dk), and volunteers from all over Aarhus sign up for a specific task that they will help solve. On a specific date - The Social Day - all tasks are carried out making the city buzz with volunteer energy. It was held for the first time in the summer of 2015 and is the result of a collaborative effort between a local organization called Fundamentet, Aarhus Volunteer Centre, and the City of Aarhus.
The foundation of Smart Aarhus is based on a strong and innovative IT environment. This includes a large concentration of advanced IT companies, a number of world class IT research groups, IT educators at a high international level, and a number of institutions focusing on supporting innovation of new IT-based products and services. IT innovation in Business Region Aarhus is characterized by innovative R&D projects involving businesses and research institutions. It is Denmark’s biggest concentration of IT workplaces when compared to the total number of employees in the private sector with 20,000 IT workplaces within a radius of 10 kilometres.

IT City Katrinebjerg
A major part of the IT environment is located in IT City Katrinebjerg, which is the leading growth centre in Denmark with respect to collaboration between research, businesses and education. It is a strong entrepreneurial environment – a top scorer in relation to establishing and generating growth in new IT businesses in Denmark. The city is an international frontrunner in relation to establishing and generating growth in new IT businesses in Denmark. It is an international frontrunner within IT research and particularly within pervasive computing.

Organizations within the IT City:
• Aarhus University
• Business Development Centre Central Denmark
• CAVI
• CAPIROVA
• FEAS
• HECUBA Science Park
• IT-Vert.
• IT-Forum
• The Alexandra Institute Ltd.

DIGITAL NEIGHBOURHOOD
Digital Neighbourhood explores how the public sector can interact with citizens in new ways through the use of digital technology in the urban landscape. The initiatives in Digital Neighbourhood are based on dialogue with citizens, and they aim at developing digital installations, competitions and visualisation of specific data that address relevant issues in different neighbourhoods.

In recent years a large part of communication between public sector and the citizen has been digitalized. Information about the transition to the digital age has often taken shape as marketing initiatives aimed at particular target groups. Digital Neighbourhood flips the communication model upside-down. Departing from actual issues raised by the citizens in their neighbourhoods, the project wants to develop alternative forms of dialogue to use digital media to promote citizenship on a local level.

Digital Neighbourhood is a collaboration between Citizens’ Services in the City of Aarhus and the Alexandra Institute, who is also a member of Smart Aarhus. The project was initiated in 2014, and today more partners have joined. The project is funded by the City of Aarhus and will run until January 2016.

SMART AARHUS WIFI NETWORK
The Smart Aarhus WiFi Network provides free Internet access in all public buildings in Aarhus. It is facilitated by the City of Aarhus and is one of the largest connected wireless networks in Denmark. The current version of the WiFi Network was established in 2014, and besides providing easily accessible and free Internet, it also provides the City of Aarhus with new ways of creating smart solutions in the city and for collecting and using data.
More Creative is Central Denmark Region and Aarhus 2017 European Capital of Culture’s strategy to stimulate growth and create jobs by supporting the region’s creative industries. The core purpose of More Creative is to develop creative clusters and to form new regional partnerships across the creative industries and the economy at large. This leads to new business models and a region with a stronger competitive edge. More Creative is developed in close collaboration with regional stakeholders, including private companies, public authorities and knowledge institutions. Today, More Creative is actively supporting business development and networks in the industries of fashion, design, gastronomy, events, film/tv, architecture, public communication, and cross media/gaming.

Since its launch in 2013 More Creative has resulted in a wide range of initiatives, services and networks that provide real value to both larger enterprises, SMEs, and the creative start-up scene in the region. A number of lasting partnerships have been established - several of which have a proven potential to turn into actual cluster organisations. Read more at www.morecreative.dk.

The Architecture Project combines leading actors in the Danish architecture industry, research institutes, educational institutions, private companies, and municipalities in a partnership that explores the role of architecture in addressing societal challenges that cities face today and in the future. The Danish Architecture industry has the potential to develop specific solutions, especially within urbanization, welfare, transformation, and mobility. The Architecture Project aims at creating business models that promote export of the solutions to the global market.

The Architecture Project is formed by a number of leading Danish architecture companies, Aarhus School of Architecture, Smart Aarhus, Aarhus University, and cities in Central Denmark Region. It was originally facilitated as a partnership by More Creative, which is a collaborative effort between Aarhus 2017 European Capital of Culture and Central Denmark Region. In 2015, The Architecture Project was established as a self-governing institution.
Interaction between media and the built environment constitute an increasingly important digital layer in the future urban environment. The Media Architecture Biennale is a recurring event that brings together architects, academic, and industry professionals from around the world to discuss media architecture and how it might affect cities, buildings, and people in the future.

Media Architecture Biennale covers a conference, an exhibition, an award show, and several workshops with experts exchanging ideas and outlining how media architecture can shape a smarter future with focus on both the cultural and economic potential.

The first Media Architecture Biennale took place in Aarhus in 2012, and since then events have taken place in cities all over the world.
An increasing number of smart cities have introduced technology that collects real-time data about the city with the objective of creating sustainable and effective services and applications. However, as big data is multi-modal and often varies in quality and format, a number of challenges arise when combining data from different sources.

CityPulse is an EU project that provides large-scale solutions to interlink data from the Internet of Things and social networks: This way, it is possible to extract real-time information for smart city services and applications. In order to bridge technologies and domains the project aims at developing a flexible and robust platform that is able to visualise data from different sources, analyse large amounts of data, create real-time applications for smart cities, and to develop semantic tools for computers to interpret data.

CityPulse was initiated in 2013 and is a partnership between the Alexandra Institute, the University of Surrey, Ericsson, National University of Ireland, University of Applied Sciences Osnabrück, Siemens, Wright State University, the City of Brasov, and the City of Aarhus.

CityPulse is an EU project, which delivers a wide range of technological solutions that combine competitiveness and sustainable urban development. RADICAL pilots different services for 18 months across five European smart cities in Spain, France, Greece, Italy, and Denmark where Aarhus is participating.

In Aarhus, the first outcome of RADICAL focuses on improving conditions for cyclists. 200 volunteers have been equipped with a chip on their bike, that communicates with a receiver on selected traffic lights. A signal is transmitted to the traffic light, when the cyclist is approaching, and consequently, a green light is ensured when the cyclist arrives. The project is a straightforward way of prioritizing biking as a sustainable means of transportation in city traffic.

In addition, the RADICAL project favours a participatory approach and offers up to 90,000 Euro allocated through an open call for innovative applications and services that use the RADICAL Platform.

RADICAL runs on a three-year basis ending in 2016 and is funded by the EU Commission and the EU Competitiveness and Innovation Framework Programme.
THE CITY OF AARHUS’ CLIMATE INITIATIVE

The climate initiative in the City of Aarhus aims at combining sustainable urban developments with economic growth. The initiative covers projects that develop solutions within energy optimisation and climate adaptation, that reduce CO2 emissions, and that make the city an attractive place to live and work.

Partnerships and collaboration between private and public actors constitute a cornerstone in achieving the goals of the climate effort, and the City of Aarhus particularly focuses on engaging companies and citizens as they account for 75 percent of the total CO2 emission in Aarhus.

In addition, since 2012 the City of Aarhus has entered into more than 40 strategic climate partnerships with private companies. These partnerships specifically want to combine the goals of the climate effort with economic growth. The City of Aarhus has actively worked with a climate action plan since 2007. At www.gogreenwithaarhus.com you can find a wide range of projects that support the climate initiative.

Towards 2018 the City of Aarhus will replace the mercury fixtures in 29,000 street lights with more environment-friendly LED technology. The LED Street Lights project is expected to reduce the street light electricity consumption with 30%, and it is an important step towards realizing the city’s climate ambition of becoming carbon neutral in 2030. For daily traffic, the stronger lights will make it safer for citizens to be in traffic as existing unlighted sections of roads will be provided with new and better lights.

The LED Street Lights project is partly financed by EU’s ELENA foundation. The project is cost-neutral for the City of Aarhus as the expenses will be covered by savings in energy consumption.

LED STREET LIGHTS

SMART MOBILITY

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Smart Mobility is an Aarhus-based project that addresses the problem of increasing urban traffic in the city brought on by the city’s growth. The goal is to get insight on how citizens behave in traffic and to explore alternative ways of making urban traffic more effective and sustainable.

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The Smart Aarhus principle of user involvement is deeply integrated in Smart Mobility’s approach. Using a caravan as a mobile laboratory, the project moves around Aarhus to observe traffic behavior, and citizens are invited to contribute with their own experiences and ideas. Smart Mobility focuses not on long-term infrastructure projects, but on low-cost solutions that can be put into practice quickly. The user-oriented model makes it possible to realize ideas based on everyday experiences of citizens, and it potentially creates greater awareness about how to behave in traffic in an effective way.

Smart Mobility runs from 2014 to 2017 and is funded by the City of Aarhus and the Danish Transport Authority.
Aarhus Bicycle City promotes the bicycle as a means of transportation in the city. The aim is to encourage a change in behaviour among citizens at the benefit of their health, safety, the environment, and urban traffic. The project exhibits the Smart Aarhus principles through its holistic scope and especially its participatory approach: The citizens of Aarhus have been involved since the beginning by carrying out campaigns that raise awareness about the advantages of biking, by disseminating information, and by working as ‘Biking Ambassadors’. Aarhus Bicycle City was originally established in 2009 as part of a larger effort by the City of Aarhus to reinforce the city’s bicycle culture that also included large-scale initiatives such as investments in infrastructure for bicycles. The project forms an important contribution to the City of Aarhus’ ambition of becoming carbon neutral in 2030.
Aarhus Light Rail is under construction and will constitute the backbone of public transport in Aarhus and in the East Jutland Region. An existing railway near Aarhus will be transformed into light rail tracks and combined with 12 kilometres of new light rail tracks across the city. In total, 110 kilometres of light rail will facilitate frequent and climate-friendly mobility in the city and the neighbouring areas.

Aarhus Light Rail will be driven by electricity, and it has the capacity to reduce energy consumption, noise, and air pollution. In fact, if the electricity will be generated from a sustainable source – such as wind power – the light rail will be carbon neutral, and thus be an important part of Aarhus’ overall ambition to reach carbon neutrality in 2030.

Aarhus Light Rail has a total budget of DKK 3.5 billion and is primarily funded by the City of Aarhus, The Danish State, and the Central Denmark Region. The light rail will be ready for use in 2017, when Aarhus is European Capital of Culture.

The Open Data on Polluted Soil project provides citizens with information about polluted soil in the Central Denmark Region. The project aims at keeping groundwater clean and at ensuring that pollution does not affect the health of citizens in the area.

A set of web services makes it possible for all interested parties and citizens to gain access to detailed information about the level of pollution in specific localities in the entire Central Denmark Region. Based on the same information an app has been developed to provide users with instant access to the registered pollution levels near their specific location.

Open Data on Polluted Soil is initiated and managed by the Central Denmark Region.
Dokk1 is the name of a newly constructed urban media centre on the waterfront of Aarhus. The centre itself is an innovative, intelligent and interactive building that serves as an environment for learning and exploring. It presents a dynamic space for everyone – a place for knowledge, inspiration and a sense of community.

Dokk1 accommodates Aarhus Main Library and Aarhus Citizen Services along with a great variety of facilities for cultural and social activities and networking. This includes a new centre for innovation, which – among other things – serves as a meeting point for Smart Aarhus.

The purpose of Dokk1 is to address the increasing public demand for lifelong learning and to give access to new technology and media. For this reason, the centre has been constructed with in-built flexibility to new developments in technology, media, and consumption of culture.

Citizens of Aarhus, users of Dokk1, and other key stakeholders are continuously involved in the project, which makes it possible to stay up-to-date on the latest trends.

Dokk1 opened in June 2015 and was built as part of the reconstruction of the waterfront of Aarhus.

Aarhus opened a new innovation centre at Dokk1 in 2015. The centre for innovation supports and strengthens innovative projects that will create specific everyday improvements for citizens in Aarhus. In particular, the centre works with projects that deal with promoting equality, increasing participation, prevention and early action, the city’s development and growth, and increasing quality of life for the disabled.

The work of the centre relies on combining strong partnerships with innovative ideas. The centre is a physical space – a neutral zone for inspiring creativity, innovation and collaboration. The City of Aarhus runs the centre with the purpose of facilitating innovation processes that bring together different public institutions, citizens, and other private actors. Employees at the centre will take on the role as partners and facilitators in the different projects bringing in their practical experience to assist at any point in the innovation process.

The centre for innovation will be located at Aarhus’ new urban media centre, Dokk1, which ensures visibility and close interaction with citizens, companies, universities, cultural institutions, and the many other people, who use Dokk1. The new innovation centre also accommodates Smart Aarhus’ office and is a physical entry point for people, who are interested in learning more about Smart Aarhus.
The aim of the Gellerup Masterplan is to transform Gellerupparken and Tovejeb from being a disadvantaged urban area into an attractive urban district. Many of the residents in the area enjoy living there, rent levels match the housing standard, and there is a high level of social commitment. Over time, however, it has become a disadvantaged area, and the majority of residents are unemployed.

Gellerup Masterplan employs an innovative approach that combines major changes in the physical surroundings with initiatives to support job creation, businesses, culture, social efforts, and a safer district. In line with the Smart Aarhus mindset, the Gellerup Masterplan is carried out in collaboration between key stakeholders, namely the housing association Brabrand Boligforening and the City of Aarhus. In addition, the participatory aspect is integral to the project. A large part of the specific initiatives are based on existing suggestions from local actors and residents, who will be involved throughout the implementation of the project.

Gellerup Masterplan is expected to be implemented over a 20-year period until 2030. So far, the project is funded by Brabrand Boligforening, the City of Aarhus, and the Danish Ministry of Social Affairs. In addition, the foundation Landsbyggefonden has set aside DKK 911 million in the form of direct funding and subsidised loans.
CareWare is a platform for innovation and collaboration that promotes technological solutions within welfare and healthcare. CareWare organizes a wide range of activities that bring together manufacturers, suppliers, entrepreneurs, researchers, policymakers, healthcare workers, and many others interested. It explores technological developments that support healthier and more self-dependent citizens, better working environments, pertinent business development, and more efficiency within the health and social care sector.

CareWare is committed to strengthen the collaboration between companies, research institutions, education programs, and public institutions all over Denmark. Among the activities is the annual two-day conference, part of which is an innovation competition for entrepreneurs that ties into the StartUp Weekend Health event. Further activities allow participants to share their experiences across sectors and also encourage new networks and business relationships to be formed.

CareWare was initiated by the City of Aarhus in 2010 and is today organized by a consortium of public institutions, private companies, and organizations.

Centre for Telemedicine and Telehealthcare works with innovative digital solutions that improve access to healthcare by eliminating distance barriers between citizens and medical institutions and by enabling patients to take an active part in their own treatment. In practice, healthcare employees diagnose, treat, and advise citizens in their homes by using pictures, video, and questionnaires and by having access to digital databases with test results and patient journals. Furthermore, citizens are provided with tools to follow-up on their own health without going to the hospital, and they are put in digital contact with self-help groups.

Centre for Telemedicine and Telehealthcare is a prime example of how citizens can participate in developing the healthcare system. The project streamlines collaboration between home care nurses and experts at hospitals, and it facilitates that information can be shared between municipalities, hospitals, and general practitioners. The centre was established in 2012 and is run by Central Denmark Region – a member of Smart Aarhus.

CrowdsWhoCare.com is an online crowdfunding and crowdsourcing portal. It connects people with early-stage healthcare projects with people who can support and help realize the project through funding and knowledge. The portal offers a new way for healthcare entrepreneurs and clinicians to search for specific skills and funding among companies, municipalities, hospitals, organizations, and individuals. It is a platform for matchmaking and funding, which are two critical components in early-stage innovation projects.

The methods of crowdfunding and crowdsourcing make it possible to anchor projects broadly with both private and public stakeholders, and the methods present an innovative alternative for carrying out healthcare projects.

CrowdsWhoCare was initiated in 2015 by MedTech Innovation Consortium and INNO-X Health care with support of the Central Denmark Region.
The Danish Smart City Network is a network for organizations and institutions across Denmark for exchanging knowledge, experience, and ideas on smart city initiatives. The aim is to establish a forum that explores the potential for smart city solutions and that supports the development of smart city initiatives throughout the country. Specifically, the Smart City Network contributes to the strategic effort of digital urban development by investigating how ICT solutions can support existing projects, how city actors can be brought together with decision makers, and how citizens express and participate in developing a smart city.

Smart City Network is a national collaboration initiated in 2013 by the Danish Ministry of Housing, Urban and Rural Affairs and Aarhus University. Aarhus University, who is a member of Smart Aarhus, has a leading role in coordinating the network’s activities.

The Basic Data Initiative is a national programme that aims at making effective use of public data by improving quality as well as ensuring free access and a common distribution of data. Public authorities in Denmark register core information about individuals (aggregated), businesses, real properties, and more. This information, called basic data, is re-used throughout the public sector and is essential for public authorities to perform their tasks properly and efficiently. Especially, since an ever greater number of tasks are performed digitally and across units, administrations, and sectors.

Basic data also has great value for the private sector, partly because businesses use this data in their internal processes and, partly, because the information contained in public-sector data can be applied for entirely new products and solutions, in particular digital ones.

The Basic Data Initiative is a part of a national digitalization strategy and was established by the Danish government.

A wide range of national and international initiatives constitute a framework that supports smart city development - Smart Aarhus is involved in several of the initiatives.
NemID is a common secure login on the Internet that can be applied for a wide range of services across sectors in Denmark. NemID applies to your online banking, accessing information from the Danish public authorities, or engaging with one of the many businesses that use NemID.

NemID is the same login everywhere. Whether you're doing your online banking or you need to view your tax file, the way you log in is exactly the same. It is a solution that makes administration smarter by giving citizens secure access to their personal information and communication with public institutions, banks, and other companies.

NemID gives priority to security. It consists of a user ID, a password and a code card containing codes (one-time passwords), and these elements are an important part of the security surrounding this solution: something you know (your user ID and password) and something you have (your code card). This way, NemID is well protected against burglars and hackers.

Open Government Partnership

Open Government Partnership is an international collaboration between almost 70 countries that aims at promoting good governance, strengthening democracy, and utilizing digital technology to develop societies.

The Danish Government has joined the partnership, and - along with the other participating countries - it has committed to implement initiatives for increasing transparency in public decision processes, for citizen participation and dialogue with civil society for anti-corruption and accountability, and for technology and innovation.

Denmark’s participation involves taking new steps to develop a digital government, digital welfare system, and digital democracy by making new technology and media a main driver in the process. The goal is to enable citizens and businesses to access public information and to increase collaboration between the public sector and civil society.

Smart Aarhus plays a key role in the initiative’s open data activities, which is one of the four main pillars in Denmark’s national action plan for the Open Government Partnership.

Virk Data

Virk Data is an online platform promoting the use of open data from the Danish Government in the business community. It is a part of the national strategy for digitalization, which advances transparency in the public sector. The platform contains a data catalogue with open government data from various public institutions. It arranges hackathons about the uses of data with partners from the business community, universities, and start-ups, and in addition, it works as an App Market with IT solutions allowing the uses of open data can create new business models. For example, the app ‘Solenergi’ (Sun Energy) can help businesses calculate how to best place solar panels. All in all, Virk Data provides a platform for businesses not only to use open data but to take part in the development of smart cities.

Virk Data is a subpage to the online government portal www.virk.dk, which facilitates easy access to information about starting and running a business in Denmark, and which allows companies effectively to report relevant data such as company taxes and yearly financial accounts to the Danish authorities. The Alexandra Institute has helped virk.dk create the Virk Data platform.
The Internet of Things International Forum (IoT Forum) aims at developing an Internet of Things ecosystem that addresses technology barriers along with business and societal challenges to establish conditions for a worldwide market for the Internet of Things. It does this through promoting international dialogue and cooperation between diverse actors from industry, research institutions, and government as well as across sectors.

IoT Forum shares Smart Aarhus' cross-sectoral and multi-stakeholder model as well as the same holistic approach in using technology to address a combination of societal, economic, and environmental needs. IoT Forum pays particular attention to the respect of privacy and protecting personal data of citizens.

IoT Forum was founded in 2013 by an international group of organizations including the Alexandra Institute, who is a member of the Smart Aarhus and currently chairing IoT Forum.

The Connected Smart Cities Network is an international network that provides a forum for sharing experiences on how user-driven innovation and digital technology can help tackle major societal challenges faced by European cities, such as sustainable mobility, climate change, energy security, or the ageing population. Co-production – on both micro and macro level – is a key concept of the network’s approach to smart cities. The primary focus is on empowering citizens to transform the dynamics of data flows, management, and service development. Co-production is a new way for citizens to take part in designing and delivering services. Citizens contribute with their own knowledge and experience in ways that can broaden and strengthen services and make them more effective.

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The Connected Smart Cities Network works closely with EUROCITIES and the European Network of Living Labs exchanging best practices on boosting open innovation, co-production, and sustainability in cities across Europe. As of 2015 Aarhus University chairs the Connected Smart Cities Network.

Open and Agile Smart Cities is an international initiative, where cities from Europe and Latin America release data through a set of shared open standards and principles. By establishing shared standards for smart city development across the globe, the project aims at making applications and solutions interoperable, which allows them to make an impact in many cities at once.

In addition, Open and Agile Smart Cities want to encourage innovative solutions that are essential to the digital transition to sustainable cities. Releasing data on a large scale not only invites new actors to take part in the development but also contributes to making the market more attractive for private investors.

Aarhus is one of the 31 cities from 7 countries worldwide that have been part of Open and Agile Smart Cities. The collaboration is initially formed by cities from Denmark, Finland, Spain, Italy, Belgium, Portugal, and Brazil, and the plan is that cities from other countries will be involved in the future.

The inclusion of new cities will be carried out thoroughly to ensure a dedicated core of participating cities. Smart Aarhus plays a central role in executing the project as it took part in starting it in 2015.
The International Organization for Standardization (ISO) is an independent, non-governmental membership organization that sets out requirements from everything from food packaging to medical equipment – and also for smart cities. ISO makes sure that products are efficient, safe, and considerate of the environment. ISO standards can be used to tackle many urban challenges by supporting sustainable development and a better, healthier and safer city living. In particular, ISO standards contribute to building smart cities by improving energy efficiency, increasing safety, planning sustainable development, developing reliable road networks and effective means of transportation, reducing pollution, and dealing with waste.

ISO is made up of 163 member countries, and their global standards help level the playing field by harmonizing standards for products and services for countries across the world. Smart Aarhus is an active part of developing new ISO standards for Smart cities.

The European Network of Living Labs (ENoLL) is a community of more than 300 members in more than 30 countries, which work to stimulate European and worldwide innovation capabilities by empowering citizens to be active partners in innovation projects.

ENoLL puts citizens at the core of city development and supports user-driven innovation within the framework of Living Labs. Activity in a Living Lab is defined by co-creation between users and producers that explore emerging usages, behaviours and market opportunities. The Living Labs facilitate live experimental scenarios within local communities and assess the projects in the context of larger societal criteria. The City of Aarhus and the Central Denmark Region – who are members of Smart Aarhus - coordinate several Living Lab activities in different locations and targeting different sectors - for instance through the Radical and LLMidt projects.