

SMART AMPHUS

STRATEGY 2021

INTRODUCTION

With Smart Aarhus, Aarhus Municipality wishes to contribute to the management of the digital transformation. We do this through governing development, implementation, and scaling of digital, technological solutions across Aarhus Municipality – and across the public and private sectors. Our focus is on the biggest business-critical challenges in the municipality. We believe that the application of digital technology to everything from operations, welfare services, and citizen contact can be made more effective, *smart*, and help increase the quality. We believe that more and better data from the city and citizens can lead to better and far more democratic decision-making.

In the past decade, data has become an increasingly key concept; not only when we talk about digital transformation, but also in society as a whole: Whether it is data from an IoT sensor, a citizen, or an employee. Whether it is data needed for decision support or behavioural change, patient-reported data in the health sector, data on jobs and job seekers, data on status of case work, data on energy consumption in buildings etc. – data, data security and protection (e.g. GDPR), data quality, and data problems are key concepts: Smart Aarhus is working with data and data problems and with a wide range of dilemmas, challenges, and opportunities related to the movement towards a more data-based and digitised municipality.

Smart Aarhus supports the vision of the Aarhus Compass (Aarhus Kompasset) to define the challenges and framework of the good life in dialogue and co-creation with the citizens and businesses. In Smart Aarhus, we for instance achieve this through our Advisory Network and our Smart Aarhus Board.

Smart Aarhus is to support the core business and support the movement towards a more coherent municipality that places the citizen at the centre of public welfare. Simultaneously, Smart Aarhus collaborates with entrepreneurs and businesses, contribute to supporting a market for digital solutions in Denmark and internationally. International collaborations under the auspices of the Nordic Smart City Network as well as European projects are integrated parts of the effort.

WE DEFINE A SMART CITY AS

A city where citizens, authorities, businesses,
and institutions of knowledge collaborate on
managing and developing the city

A city where resources are used in a better
and more sustainable way

A city where digitisation is a means to
achieving the goal of creating a good
city for everyone

VISION FOR SMART AARHUS

Smart Aarhus is promoting that we as a city, together with citizens and businesses, create the good life in a rapidly growing city.

Technology is contributing to Aarhus Municipality developing sustainable solutions to environmental, economic, and social challenges for the benefit of citizens and businesses.

Smart Aarhus is contributing to creating the best available framework for the development of a market for digital solutions in Aarhus, Denmark, and the world.

SMART AARHUS CONNECTS TO

- **The Aarhus Compass** and its visions for an Aarhus for everyone, which are created for and with the citizens. Its point of departure is data-driven knowledge acquisition.
- **Aarhus Municipality's Business Development strategy *Partnerships for Sustainable Growth*** with its focus on Aarhus as a development, test, and demonstration partner.
- **Aarhus Municipality's climate strategy and climate plan *The Road to a Fossil Free Society***, whose ambitious goals are supported by Smart Aarhus' focus on the solution of business-related challenges in the climate area.
- **The municipalities' Digitisation Programme** which will integrate new technology into the performance of tasks that citizens will experience as a qualitative and modern development of welfare.
- **Aarhus Municipality's Channel Strategy**, which for example seeks to optimise working procedures and free up resources through the utilisation of new technology.
- **"New solutions in common"** that contains a range of different digitisation efforts in Aarhus Municipality with optimisation as the point of departure.
- **"Aarhus shared"** and the Innovation Motor (the city's internal innovation program),

BUSINESS-CRITICAL CHALLENGES IN AARHUS MUNICIPALITY

In the beginning of 2020, the group of directors in Aarhus Municipality agreed on a new Smart Aarhus strategy focusing on the most business-critical challenges in Aarhus Municipality. They were identified after an extensive round of interviews with managers, heads of administration, and key employees in Aarhus Municipality. Shortly thereafter, the COVID-19 pandemic struck and changed several prerequisites for the digital transition. The overriding challenges remain the same, but in the spring of 2021, they have been updated and adapted to a new reality.

The list of business-critical challenges is not exhaustive, but a selection focusing on the business of Aarhus Municipality. The challenges are to be adapted continuously to future needs.

The challenges are already being addressed in the municipality today, which is why coordination with existing action plans and strategies is vital. Working under the auspices of Smart Aarhus will create more focus on the role of technology and its ability to optimise and boost the quality of the projects/solutions.



BUSINESS-CRITICAL CHALLENGES IN AARHUS MUNICIPALITY



We must transition to a fossil free society



We must reap the benefits of implementing digital learning tools



We must strengthen our focus on value for and with citizens and businesses



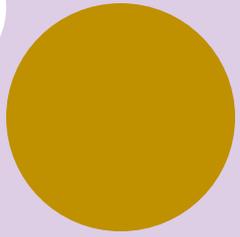
We must create more coherent solutions in the employment area



We must ensure that the citizens become more self-reliant in the social and health areas



We must strengthen our digital foundation



We must transition to a fossil free society

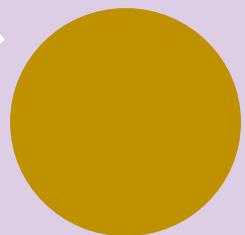
In Aarhus, we have agreed on a climate goal of carbon neutrality in 2030. We have managed to cut our carbon emissions in half during the past 10 years, but since we do not yet know all the solutions, it will be a challenge to take care of the remaining half. We need to create a world without fossil fuels, and that requires a massive societal transition which presupposes digitisation and integration of data on a hitherto unparalleled scale.

Digital integration of all sectors is a prerequisite for the development of an intelligent ecosystem for energy in which exchange and optimisation of energy from all sectors from transportation to buildings will be exploited. Large parts of society must be electrified, and in that regard, the electricity market will become a crucial platform on which individual units from washing machines, electric cars as well as lighting for buildings, industrial production, and windmills must be able to communicate with each other. That requires deep data integration as well as development and application of new technologies.

In a fossil free society, all resources must be reused, so we, to the best of our abilities, avoid the use of virgin materials. This means that all resources must be part of circular processes, and symbioses must be created across various areas. For example, this means that it must be possible to track resources. In this process, digital technologies such as sensors, tracking systems, and blockchain are of crucial significance.

Society must support climate-friendly behaviour exhibited by individual citizens and businesses, and here digital technologies also play an important part – both in the foreground as nudging, interactive platforms and in the background as intelligent, optimising systems.

Aarhus Municipality cannot handle the transition alone. It requires the involvement of citizens, businesses, and knowledge institutions in meaningful partnerships, for example in the shape of GovTech.



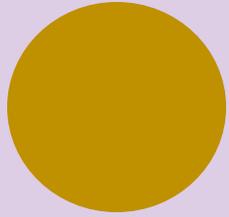
We must strengthen our focus on value for and with citizens and businesses

With the Aarhus Compass, we strengthen our focus on value for and with the citizens, also with the ambition of a strengthened democratic dialogue and increased accessibility. The technological development yields new opportunities to meet digitally, develop new and better services, and create new forms of data.

We need to be ahead of the curve when it comes to the influence that technology has on our city, citizens, and businesses in order to contribute with creating value – outside municipality borders as well.

We need modern, digital venues for businesses and citizens, and we need to ensure that our services and the new technologies are introduced in a user-friendly, trustworthy, and informative way.

It requires us to work with open development platforms and make facilities for testing and development available in the city, so that businesses can develop and test new solutions and services with the city and with the citizens.



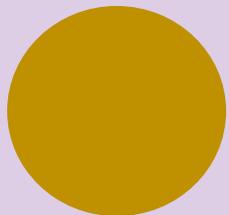
We must ensure that the citizens become more self-reliant in the social and health areas

We face a huge challenge in the coming years: There will be more treatment demanding citizens (elderly, handicapped, vulnerable social groups, children), and fewer people in the labour market to pay the taxes that finance the welfare.

Simultaneously, there will be fewer people available for completing the tasks since many employees are retiring, and it might prove difficult to recruit new ones from the smaller cohorts that are about to enter the labour market.

Thus we must rethink the way we produce and deliver welfare to the citizens. We must support as many citizens as possible in taking responsibility for themselves and increasingly mobilise their relatives. This requires the citizens to be prepared for increased self-monitoring, online counselling and guidance as well as far better application of data for both prevention and treatment of and service for the citizens.

In order to do this, we need to share data between regions and municipalities, so that the citizens can receive the best support possible. It is pivotal that regions, municipalities, and educational institutions have a joint focus on rehabilitation and self-reliance. We need to make it possible for those who are able and motivated to take good care of themselves.



We must create more coherent solutions in the employment area

The employment area is a vast business area that is in contact with many thousands of citizens. It is also an area that is characterised by being heavily legislation-based.

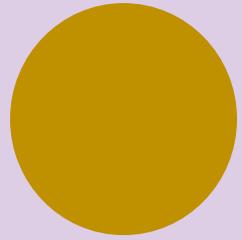
There are two big core tasks in the employment area: managing payments such as cash benefit and sickness benefit as well as matchmaking between available jobs and job seekers.

Within both areas, there is a huge optimisation potential via digitisation of case work and increased use of self-service and technologies such as chatbots and AI. The technology can also be applied for supporting citizens in handling employment barriers and strengthening participation in communities.

One of the major challenges in the employment area is the fact that there are many different systems and players who need to interact in order to create an effective joint employment effort.

Increasing digitisation of the employment area can both increase overall employment as well as free up resources for attentiveness and conversation with the citizens who need it most.

The employment area is an important part of the common welfare goal that cuts across the health, social, and school areas.



We must reap the benefits of implementing digital learning tools

The public schools and our institutions need to both digitally educate the children through technology comprehension and be able to utilise the many digital learning tools and environments.

A significant challenge is the fact that members of professional staff such as teachers in schools and kindergartens have very different qualifications for using digital tools as a natural part of their jobs. It is essential that the staff receives digital education, so that the members feel competent using digital tools.

There is a huge potential in targeting educational material to the individual pupil and his or her needs. Work needs to be done in relation to ensuring a broad selection of digital learning tools and materials that contribute to raising the quality of the teaching. Simultaneously, some pupils in public schools, who currently need a special programme, can be integrated more easily into the regular teaching via digital tools, for instance through tools for reading and writing support.

Building a joint and coherent IT infrastructure in the school area helps ensure that all schools have the same point of departure for adopting the digital learning tools and also helps ensure that the pupils have equal access to utilising digital solutions during the school day.



We must strengthen our digital foundation

In order for the Smart Aarhus effort to succeed, we must focus on strengthening the technological enablers ; i.e. the infrastructure, data structure as well as the digital competences which are to be the foundation for both the dissemination and scaling across the departments of the technological solutions, thus benefiting the entire municipality.

This prioritised area is assessed to be particularly important as a way of bolstering the foundation for enabling innovation and technology acquisition to happen ‘horizontally’, while being mindful of the broad scaling and value acquisition.

The effort to establish digital foundations will happen in close collaboration with digitisation departments across the municipality and will focus on three areas:

- **IT infrastructure and architecture:** We need to deliver strong and secure structures, on which the entire business can build innovative and robust solutions, and which can support a dissemination of mature technologies.
- **Data foundation, structure, and quality :** We need to ensure a structured and critical approach to data, a common understanding of the data concept and data structures, and a high-quality data foundation.
- **Digital culture and competences:** We need to continue strengthening the municipality’s digital culture, competences, and methods.

SMART AARHUS ACTION PLANS

Action plans (with a scope of 12 months) are continuously being worked out for select Smart Aarhus projects that are extensions of the strategy. The points of departure for the Smart Aarhus projects are Aarhus Municipality's overall business-critical challenges, and they are anchored to the individual municipal departments .

It is the group of directors in Aarhus Municipality that once every year select projects for the Smart Aarhus action plan, and follow-ups on the projects are also continuously conducted in collaboration with the departments involved.

Through communication with the project owners, an agreement is reached regarding how Smart Aarhus can concretely support or be a platform for experience sharing across or in another way strengthen and develop the projects.

The work with plans of action is evaluated after the first period in the middle of 2022.

ORGANISATION

Smart Aarhus has both an internal focus, which is concerned with exploiting strong professional skills across Aarhus Municipality, and an external focus, which revolves around collaborating with relevant parties in order to create the best solutions possible. Solutions that are developed in collaboration between Aarhus Municipality, other municipalities or regions, the urban community, the business sector, and/or knowledge institutions.

INTERNAL ORGANISATION

The group of directors is the overriding steering committee for the Smart Aarhus initiative and adjustments of the strategy and plans of action need approval from the manager group.

The effort is anchored in the Digitisation Steering Committee, but it is the group of directors that select projects for the concrete action plans in own departments and across departments. The Digitisation Steering Committee is supported by the Smart Aarhus secretariat. The secretariat is placed in the Mayors Department and consists of employees from Strategy and Control in IT and Digitisation, respectively, and Business and Sustainable Development. The secretariat is supplemented by representatives from all municipal departments, which are continuously communicating with the secretariat.

EXTERNAL ORGANISATION

Two external forums are established in the form of the Smart Aarhus network and an Executive Board with both internal and external participants.

INTERNAL COMPETENCE CENTRES

In Aarhus Municipality, an array of centres or departments exist which feature special competences in relation to e.g. innovation or certain technologies.

The Smart Aarhus secretariat is working on getting the competences in play and on creating additional fruitful connections across departments and projects.

- Center for Innovation i Aarhus CFIA
- GovTech Midtjylland
- Aarhus City Lab
- DokkX
- Center for velfærdsteknologi
- XR-LAB
- ITK LAB



PLATFORMS AND COLLABORATION

PLATFORMS THAT SMART AARHUS BUILDS ON

Aarhus is one of the leading smart cities in Denmark, and since 2012, Smart Aarhus has been working on developing the digital Aarhus in a partnership with Aarhus University, VIA University College, the Alexandra Institute, it-forum, Danish Technological Institute, as well as various private businesses.

Smart Aarhus is behind big flagship projects such as IWDK (Internet Week Denmark), which has celebrated and discussed the Internet and the digital development since 2014. In 2019, the festival managed to hold over 140 events and had 11,000 participants. In 2021, the festival was held virtually and had over 25,000 views on the festival platform.

Another important pioneering effort is working with Open Data. In 2013, Aarhus was the first city in Denmark to launch an open data portal. Since then, it has become a national collaboration in Open Data DK in cooperation with Local Government Denmark (KL) and the Danish Business Authority. The open data initiative has been and is the cause of several international collaborations in relation to the EU. Additionally, an array of both big and small pilot projects, such as TAPAS, has contributed to placing Aarhus on the map as a smart city. Thus, Smart Aarhus is by no means a new effort, and in working with the Smart Aarhus projects, we build on top of several established platforms:

- [IWDK](#)
- [OPEN DATA AARHUS & OPEN DATA DANMARK](#)
- [IOT-INFRASTRUKTUR & EFFORT](#)
- [AARHUS CITY LAB](#)
- [NORDIC SMART CITY NETWORK](#) (collaboration with 20 cities in the five Nordic countries, including every capital)
- [EU PROJECTS](#)
- [AUTHORITY COLLABORATIONS IN CHINA, GHANA, AND SOUTH AFRICA](#)

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