



Digital society is pervasive in all aspects of our lives. If a digital society is mostly shaped by the interaction between the tech/digital industry and citizens/consumers, cities can be formidable enablers of a just and informed digital society. In urban contexts, promoting digital society means making it accessible and reducing the digital gap: digital society is made with, for and by citizens.

Day in, day out, local administrations support communities to become more cohesive and inclusive, using open and accessible digital

platforms and solutions and ensuring fair access to digital public services. Through use and awareness of key technologies they can provide the context for society's physical and mental wellbeing and foster equality and inclusion, especially for the most vulnerable groups.

Here are some examples of uses of digital technology in urban environments to provide support and services to the residents.

USE CASE:

Samnanger and Aurora I Municipality chatbots – the cases of Kari and Access Aurora

Country	Norway and Colorado (USA)
Population	2.485 (Samnanger)– 398.000 (Aurora)
Use case on	Chatbot
Technology used	AI

Chatbots can be used in small and large cities and an increasing number of these use AI to provide and receive basic information from citizens.

The chatbot Kari is an AI-based virtual agent developed for local government bodies to answer citizen's questions on municipality services. It is currently available to the citizens of 80 Norwegian local municipalities – covering about 30% of the Norwegian population and, it is in the process of being implemented in other European countries, including Sweden, Finland and Denmark. The chatbot's knowledge-base contains over 6000 intents (answers to municipality questions), making it one of the largest in the world.

Aurora(Colorado,US)decidedtoimproveitscommunication touchpoints to listen to, and serve, residents better. To this end, in March 2021 the city government integrated in its official website an AI-powered chatbot, as a way for people to easily search the website, find information and report issues. This automated chat system allows citizens to gather information about upcoming events, learn more about services available in the city, ask questions, or find contact information.



When the Access Aurora web chat feature was implemented on the City's website, residents took to the chatbot instantly and engagement increased. The ease of this communication tool and its user-friendly features makes people feel more comfortable in asking questions and reporting problems to the city's government, leading to a deeper understanding of what residents are interested in and what is important to them.

Since the chatbot has been integrated into City of Aurora's website:

- Access Aurora has received an average of 1,600 monthly communications;
- 46% of those are resident questions the bot can automatically answer using information readily available on the City's website.

Source: <https://www.etapasproject.eu/usecases/post-3/>

More on chatbots: <https://northsearegion.eu/media/10487/gepubliceerd-report-chatbots.pdf>



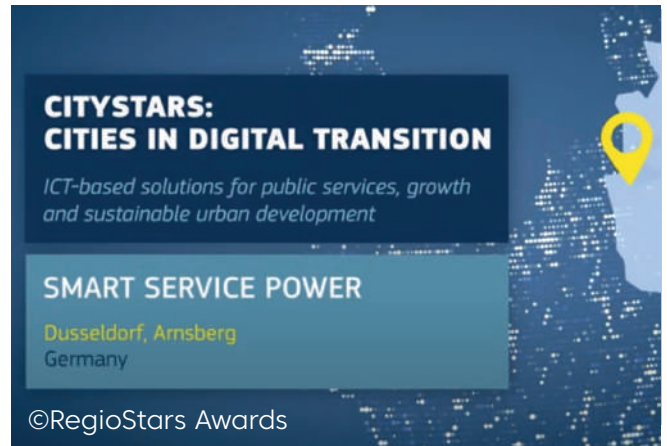
USE CASE:

Dortmund, Duisburg, Arnsberg | Smart technology tested in Germany allows older people to live independently

Country	Germany
Population	Respectively 590.000, 522.000, 74.000
Use case on	Remote assisted-living technologies
Technology used	IoT

The German cities of Dortmund, Duisburg and Arnsberg are test beds for new remote assisted-living technologies that enable the elderly to live independently at home for as long as possible, secure in the knowledge that medical care and other assistance are never too far away.

In the framework of the EU-funded Smart Service Power project, an Internet of Things platform has been developed, which is internet-connected with sensor technologies tracking people's movements, body temperature, weight and hydration levels. This platform can remotely monitor a person's condition in real time, predict any deterioration in their health, detect a medical emergency, alert healthcare emergency services if help is needed, and predict when it might be better for a person to move into a senior care home.



The platforms' functionalities include:

- A dehydration alert system activated by special skin patch to monitor moisture levels through skin tension;
- A connected drug dispenser that allows the platform to measure out a person's medication each day;
- A 'time of flight' sensor in the ceiling which detects falls and monitors the need of assistance;
- Interactive games to train cognitive skills.

This solution can tackle the shortage of nursing staff, enable elderly people to stay at home longer, alleviate relatives' concerns about their parents' care, and cut costs for municipalities and healthcare services.

Source: https://ec.europa.eu/regional_policy/en/projects/Germany/smart-technology-tested-in-germany-allows-older-people-to-live-independently

USE CASE:

Several cities in Italy | Girls Code It Better

Country	Italy
Use case on	Reducing gender inequalities in STEM
Technology used	Robots, 3D printers, AR, VR, etc.

Girls Code It Better is a project delivered throughout Italy, aimed at breaking gender stereotypes and reducing inequalities in Science, Technology, Engineering and Maths (STEM). It targets female students of middle and high school, involving them in free workshops open to girls only, through specific teaching methods to design, programme and create digital products or services, such as websites, apps, video games, robots, 3D-printed artefacts, etc.

The workshops can be attended by girls of all ages, and are led and facilitated by coaches: a teacher particularly keen on technologies and a technician or "digital craftsman". For each school, a maximum of 20 participants can "join the club", randomly selected from all applicants.



Among the activities the girls can experience within the clubs there are:

- Programming circuits and electronic boards to produce prototypes capable of controlling lights, sounds, movement and much more;
- Digital fabrication, modelling and 3D printing;
- Web design and web development;
- App development and gaming;
- Augmented and virtual reality.

Since the first edition of Girls Code It Better in 2014, the project has created 390 clubs in 156 schools in 14 Italian regions, with the involvement of more than 7500 girls.

Source: <https://girlscodeitbetter.it/>

USE CASE:

Santander | Urbanage

Country	Spain
Population	172.000
Use case on	Digital twin
Technology used	AI

The city of Santander in Spain is using a digital twin to increase liveability for the elderly.

The URBANAGE Digital Twin is an extensive platform powered by Big Data analytics and Artificial Intelligence algorithms, which allows the city and its processes to be modelled through a virtual replica. Modelling alternative scenarios allows people to measure and compare relative benefits and impacts in advance, and to make choices accordingly, thus enhancing efficiency in the use of public resources, optimising work processes and reducing economic costs.

In Santander, one of the aims of the digital twin technology is to simulate an age-friendly route planner, to facilitate older people's mobility within the city, mainly on foot, thanks to a planning tool that will include the ability to:

- find routes between specific places in the city minimising mobility difficulties and taking into account the particular needs of citizens;



- integrate an input communication channel that relays incidents or breakdowns in urban infrastructures that hinder or impede paths/trajectories in the city;
- simulate incidents on certain infrastructures in order to evaluate their impact on citizens;
- produce reports with information about the demand and use of the different infrastructures based on the effective use of the system.

In addition, all the data collected through this tool will contribute to the creation of an age-friendliness index for neighbourhoods which can support city planning by assessing the readiness of an urban area to ensure an active and healthy living for an older population.

Source: <https://www.urbanage.eu/santander>

USE CASE:

Public libraries in France, UK and US | Technology & Libraries

Use case on	Public services digitalisation
Technology used	AI, IoT, AR, VR

In today's hyper-connected world, technology can play a crucial role in updating, empowering and communicating the value proposition of libraries. For example, AI-based solutions can foster the design and implementation of better user experiences: from chatbots to facilitating books' search, to geolocation-based services, to machine learning software that can improve operational efficiency by optimising the management and preservation of collections and reducing costs.

Hillsboro Public Library in Oregon (US) has introduced a self-service kiosk, called Book-O-Mat, located in Hillsboro's central plaza and stocked with new and popular books and movies. Located in a high pedestrian traffic area, the Book-o-Mat is monitored from the main library a few miles away to track usage, alert the library when restocking is needed, make recommendations to users and identify popular selections to inform the development of the collection.



In other cases, AR helps to make more and more people keen on reading books. Holton City council, near Liverpool, uses an AR-based application called librARi to make books come to life in the library.

In the same way, the «Biblioquete» project, which involves some French public libraries, uses AR to make children and teenagers experience the plot of a book. Users are provided with a kit (tablet, headphones) and are asked to actively participate in some investigations/quests, moving freely in the spaces of the library and interacting with scenography and characters through technology.

Source: <https://princh.com/blog-8-technologies-to-implement-at-the-library-of-the-future/#.Y1-cgnbMK3A>

À propos de – Biblioquete

USE CASE:

Zaragoza | E-social work - Spanish Red Cross in Zaragoza

Country	Spain
Population	675.300
Use case on	E-social work
Technology used	IoT

In Spain the non-governmental organisation, Zaragoza Red Cross Assembly, has been delivering a programme for vulnerable communities since 2007. This programme cares for older people using a home assistance system mediated by information and communication technologies (ICTs).

This plan includes: the use of webcams to improve video conferencing between the contact centre and users; the installation of fall detectors in the homes of vulnerable people; the installation of CO2 detectors to avoid poisoning; the localisation and monitoring of «habitual» routes for people with cognitive diseases (dementia, Alzheimer's, memory loss) through GPS.



This programme is part of a general effort to transform the Spanish Red Cross's internal processes using ICT: the goals are to reduce bureaucracy; to coordinate professionals and volunteers and to optimise interaction with users.

Source:

https://www.tandfonline.com/doi/abs/10.1080/13691457.2018.1423552?journalCode=cesw20#_i7

Aragon993.indd (cruzroja.es)

USE CASE:

Trelleborg | Robotic process automation in the public sector: Ernst - Trelleborg (Sweden)

Country	Sweden
Population	28.290
Use case on	Automated decision-making in public services
Technology used	AI, Robotics

The introduction of Robotic Process Automation (RPA) into the public sector has changed civil servants' daily life and practices. In 2016, the municipality of Trelleborg (Sweden) became the first municipality to introduce fully automated decision-making in its social services. They named their robot Ernst.

It was the first municipality to use RPA to handle various applications on financial aids related to social assistance, for example homecare, sickness benefits, unemployment benefits, etc.

Previously, employees had to manually assess more than 300 applications per month, which took a considerable amount of time and cost. Citizens had to wait an average of 8 days for a decision on their welfare-payments, sometimes up to 20 days. As a result, citizens would frequently contact the department, further increasing the workload of the staff.



Now, the system checks and cross-checks applicants' information across various municipal databases from seven agencies (for example, the tax agency and unit for housing support), considerably reducing civil servants' workload and applicants' waiting time. Moreover, due to this automated decision-making process the municipality has been able to downsize its social benefits department, reducing its number of caseworkers from 11 to 3.

Source:

<https://journals.sagepub.com/doi/full/10.1177/0894439320980434>

AI-X | Trelleborg - Automated social welfare decisions (ai-watch.github.io)

Central authorities slow to react as Sweden's cities embrace automation of welfare management - AlgorithmWatch

USE CASE:

Ioannina | Global Humanitarian Lab

Country	Greece
Population	85.800
Use case on	FabLab
Technology used	3D printer, Robots

Global Humanitarian Lab is a cross-sector partnership of leading humanitarian organisations working together, to tackle common challenges and provide efficient, innovative and sustainable humanitarian actions toward the people most in need.

As part of the GHL, the FabLab of Ioannina is implementing a pilot project for the refugee population in Greece, offering a collaborative open space for both refugees and the local community. The purpose of the FabLab is two-fold: on the one hand, it makes available advanced digital manufacturing technologies, such as 3D printers, laser and vinyl cutters, CNC milling machines, digital sewing machines, arduino boards, etc.; on the other hand, it represents an innovative non-formal education tool providing young refugees with practical digital skills, which are fundamental for their future employability.

Ioannina FabLab is part of a global FabLab network with more than 1000 spaces worldwide. This is particularly relevant when it comes to mobile populations, because



refugees can join this network in their destination country to continue their project and enhance their integration and resilience.

This successful pilot project will be replicated in the near future in other contexts: in Gaza, as a tool to prevent social exclusion for children and young people; in Burkina Faso, to give exploited children working in gold mines or as domestic servants a safe place where they can build their skills.

Source: 1707920_tdh_infopages_fablab_light.pdf

USE CASE:

Lousã | Classplash

Country	Portugal
Population	18.000
Use case on	Platform of music learning apps
Technology used	2D and 3D, VR and AR (Unity platform)

In Lousã, a Portuguese municipality in the district of Coimbra, which has also been involved in the URBACT Playful Paradigm II Transfer Network, a teacher has developed some interactive learning applications to teach children to play musical instruments. These gaming apps were later enhanced by other developers, creating a platform called Classplash, accessible to students and teachers from all around the world. The focus of the project is to convey music to kids in a fun and engaging way.

Classplash now owns its own private music Academia de Música, where new apps and educational products are



developed together with music professionals and real students, in order to support the learning environment both at school and at home.

Over 50% of Classplash music apps can be used in school for free; however, an agreement between the founder and the government of Lousã has allowed all the schools of the municipality to use all the Classplash services for free, thus integrating this game-based experience in general music education in the city.

Source: <https://www.classplash.de/en/>