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JOURNAL

PROJECT

DARE - Digital Environment for collaborative Alliances to Regenerate urban Ecosystems in middle-sized cities

Ravenna, Italy

TOPIC

Digital transition

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Building an inclusive digital environment: data collection, management and literacy in Ravenna's Darsena area

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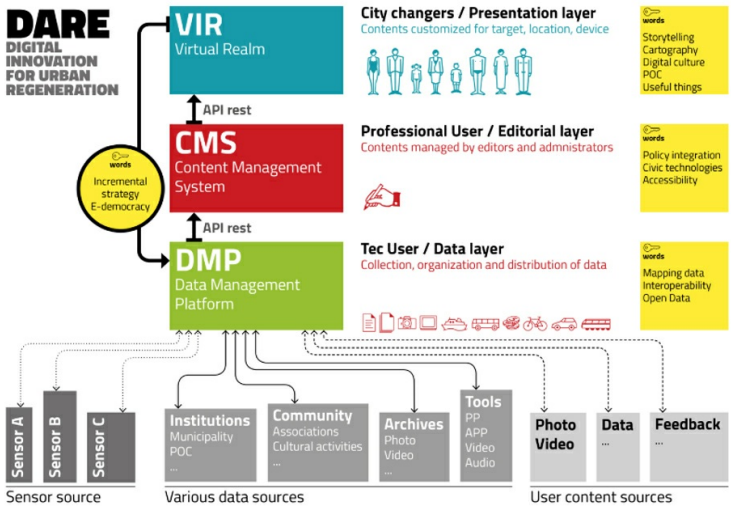


Digital platforms and tools have been increasingly central elements of urban planning and design. With the proliferation of digital instruments using and producing various types of data and the digitalisation of urban infrastructure and services, data-driven urbanism has helped decision-makers rely on evidence rather than myths or politicised opinions about urban transformation. However, operating systems for such a data-centred approach have been primarily developed by large IT or mobility companies, biased by their own economic interests or supporting paternalizing, top-down policies of surveillance and control. Is data-driven urbanism possible from the bottom up? Can citizens turn from unintentional producers into conscious users and interpreters of data? The Urban Innovative Actions-funded project DARE has been looking for an answer to these questions. DARE explores the potentials of Ravenna's Darsena area, by co-creating long-term visions for the former port and co-designing initiatives for the industrial properties and public spaces in the area. In order to better understand the digital component of the project, UIA expert Levente Polyák revisited the various digital threads that DARE developed throughout the past years.

It is a beloved common place to describe data as the oil of the 21st century. With digital platforms collecting, processing and selling data practically about every moment of our daily lives, we are all contributors to a digitalised environment organised and controlled by tech companies and their public clients. To protest these tendencies, in the past decade, there has been a growing number of initiatives to promote privacy, data sovereignty and a more transparent control of the collection and use of data.

In order to democratise the aggregation and interpretation over data, the UIA project DARE has been engaged in building a **bottom-up digital environment** that not only collects all data and information available about the Darsena and its history but also opens knowledge production about the area to a broader community. Such democratisation of knowledge and use of data is conceived to lead to the creation of a digital culture among citizens that helps them acquire new skills and enables them to participate in the urban regeneration process. In the case of DARE, **digital-based urban regeneration** means introducing a set of enabling technologies to activate

urban actors; developing an inclusive and accessible digital culture to help citizens become city changers; and combining (digital and non-digital) data, collaborative and e-democracy tools to support decision-making.

In order to provide the maximum of available information about the area and involve the broadest possible community in the regeneration of the Darsena, the DARE approach proposed a **three-layer digital environment**, which is composed of a data layer, an editorial layer and a presentation layer.

The **data layer** builds on the collection of data and knowledge of various types, in order to create awareness of the Darsena's transformation and support collective action as well as public decision-making: "*We have to create a flexible ecosystem that is capable of handling a variety of data arriving from different sources into the data management platform*," explains Antonella Guidazzoli from Cineca, the consortium partner responsible for the project's data management system.

Cineca is Italy's most important computing centre that provides the backbone to the digital platform of the DARE project. Cineca works on organising data and making it available both for researchers and citizens. "*We have an information technology lab in Cineca*," elaborates Cinzia Zannoni, *"with the objective of displaying data with the help of graphic tools, making data and trends that are usually hidden in statistics and excel files, broadly available and accessible*."

In DARE, Cineca has worked on the digital platform serving as the project's data layer. Conceived as the backbone of the platform project's digital infrastructure, the **Data Management Platform** (DMP) designed by Cineca is responsible for the collection and preservation of data. The platform functions as a living catalogue that all partners can enrich with different kinds of data, including historical, GIS, social data but also audio-visual elements: a sort of a flexible data ecosystem capable of accommodating data coming from very different sources. "*The platform makes data that has been hidden in city databases more accessible," explains Cinzia Zannoni, "and regularly updated without having to conduct new surveys and analyses every time*."

While most of the data used by DARE had been available, perhaps in a less accessible or legible form, new data was generated by new equipment installed during the project. Despite delays caused by the Covid-19 pandemic and the resulting supply chain crisis, a variety of **sensors and smart cameras** have been installed in the Darsena area, in order to supply DARE's data management platform with data on a diversity of phenomena, including meteorological status and pollution. A number of smart objects, including benches with Wi-Fi connection and electric chargers have been installed in strategic points of the Darsena. To facilitate hybrid (offline and online) interaction with the project, a number of "totems" or digital screens have been placed in the Darsena area that give users access to the Approdo Comune platform and all its content.

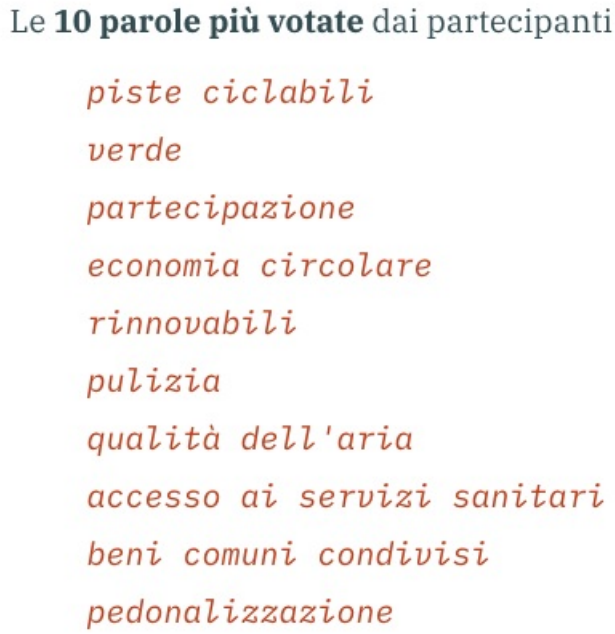
Despite its richness, DARE's **data infrastructure** is not a goal in itself: the assembled data enhances the different stakeholders' knowledge about the area and supports their imagination and ideas. With citizen involvement and participation at the core of the project, all this digital framework serves to help the Darsena's population better understand their area, develop new skills, improve their quality of life and become protagonists of their neighbourhood.

The Data Management Platform, serving as the basis of the entire structure, capable of receiving and retrieving data from the most disparate sources, is therefore connected to other layers: an editorial and a presentation layer. The **Content Management System** (CMS) is conceived to collect data from the data platform, aggregate and process them, in order to make them usable through different kinds of outputs. The **Virtual Realm** (ViR) is the graphic interface of the project, translating data to users in a comprehensible way. Darsena Ravenna Approdo

Comune is the virtual interface where people can interact, share information, and collaborate to transform reality. The website was designed to inform the Ravennati about events and actions, share stories about the neighbourhood and collect materials from partners and the broader DARE community. The role of the platform, DARE's principal tool of storytelling, is to support the development of a shared narrative for the Darsena. and to provide a participatory space where residents and users of the area can create a common perspective for the area.

In order to feed this digital environment with data, consortium partners needed to**identify the most relevant data** for developing the pilot actions and for describing the cause-effect connections as part of evaluating the project's impact. A data census has been created, with all the data available within the municipality. This census has served as a basis for selecting the data that is useful and relevant for the data management system of DARE. This selection was supported by a juridical-technological analysis, focusing on the delicate juridical issues of the selected datasets like privacy as well as data treatment issues. Based on this analysis, a designated working group was created inside the municipality, searching for the needed data and looking for opportunities to cross datasets without the violation of privacy laws.

Much of the selected data is connected to measuring the quality of life in the Darsena area.**"Quality of life" indicators**, i.e. data related to the wellbeing of citizens plays a central role in the DARE project. *"The perspective of quality of life," explained Angela Corbari, Chief Operating Officer of Studiomapp, a company specialised in geospatial data, "allows zooming in from broader statistical data and focusing on a neighbourhood, thus making data more tangible by connecting them to concrete phenomena in the area."*



Certainly, wellbeing is a highly subjective matter: people's quality of life depends on an individual set of factors, making it impossible to design a universally valid database of quality of life indicators. In order to create a consensual dataset that corresponds to Darsena residents' personal experiences, DARE partners conducted a **participatory process** that led to the identification of 195 indicators in the fields of wellbeing, environment, health, services or security. This list was later composed into a set of 78 indicators available on DARE's open data platform.

While allowing citizens to imagine different development scenarios based on data trends and projections, quality of life indicators also **support policy makers** with a quantitative approach, offering data-based facts to enhance decision-making. DARE's data-driven approach has indeed changed the way the Ravenna Municipality uses and manages its data. While the perspective of creating open data in itself is not motivating enough for different public sectors, concrete actions might change the way data is collected and managed within different offices. With more data-conscious work in the different departments, the municipality's data is to be merged in a communal platform to make data more accessible, readable and useful for everyone.

A key element of DARE's approach to data is**legibility**. "We want to go beyond open data," explained project coordinator Emanuela Medeghini. "*In DARE, we would like to have selected data tell something also to non-experts, by making them legible from a graphical viewpoint. It was originally not conceived as part of the project but it has become clear that besides digital education, we also need to work on collaboration and data literacy.*"

Data literacy, in turn, cannot be taken for granted. While participation and collaboration are at the core of DARE, an informed participation of the broadest possible circle of stakeholders requires support to more marginal

groups and individuals. A key challenge to effective and inclusive participation is the digital divide. In order to overcome this divide, a series of **digitalisation trainings**, conceived by the DARE partnership, have been designed to prepare both local citizens and companies for collaboration. While the lockdown accelerated the use of digital tools and prompted various social groups to acquire new digital skills and awareness, the DARE project designed a series of methods and incentives for more effective digital learning and exchange, including rewards and badges to certify the achievements of those completing the courses.

In order to reach the most important target groups of the area (non-working age residents, young adults, local entrepreneurs and public officers), the consortium created a **Digital Facilitation Team** (DFT) with facilitators to match the four specific target groups, and two specialised in civic journalism and crowdfunding. Digital facilitators, while promoting the use of digital technologies among citizens, institutions, companies and professionals, also followed a learning path themselves, becoming a bridge between constantly evolving technologies and those who needed support to develop their digital skills. To fine-tune the curriculum co-designed by the DARE consortium, facilitators explored the needs and knowledge gaps of their target groups through storylabs, informal meetings and in-depth interviews with citizens from the various groups.

The digital facilitators went through a training process that, besides a more structured first part, also involved "*participation in various activities foreseen within the project, which brought into play other skills of these facilitators,*" recalled Anna Uttaro, supervisor of DARE's Digital Facilitation Team. These skills also helped the transition from digital facilitation into digital process facilitation: besides helping participants acquire digital skills, the role of digital facilitators also included process facilitation: involving participants in broader urban transformation processes by helping them position themselves in these processes.

While some of the urban regeneration initiatives conceived and elaborated during DARE have been sustained and further developed after the official end of the project, the digital environment created by DARE partners is another long-term outcome of the project. Besides developing and installing hardware in the form of sensors and smart objects supporting data collection, DARE has put a strong emphasis on data collection, representation and interpretation, accessible also to "*non-digital people*," as suggested by Emanuela Medeghini. Smart cities conceived in a top-down logic usually underestimate or conceal the importance of the digital divide; one of the most important aspects of DARE's legacy is its approach to digital literacy designed with the exigence to not leave anyone behind in the digital transition.

Digital transition

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