DECODE Pilots Impact Fact Sheet

November 2019

Pilot 1 - Digital Democracy and the Data Commons (DDDC) - Barcelona

Description:
The DDDC pilot had two core purposes: to use the Barcelona context to test technology developed under the DECODE project and to create a space for discussions around the future of city data commons. The test case focused around the Decidim online platform, used by the Barcelona City Council to engage citizens in municipal discussions and decision-making.

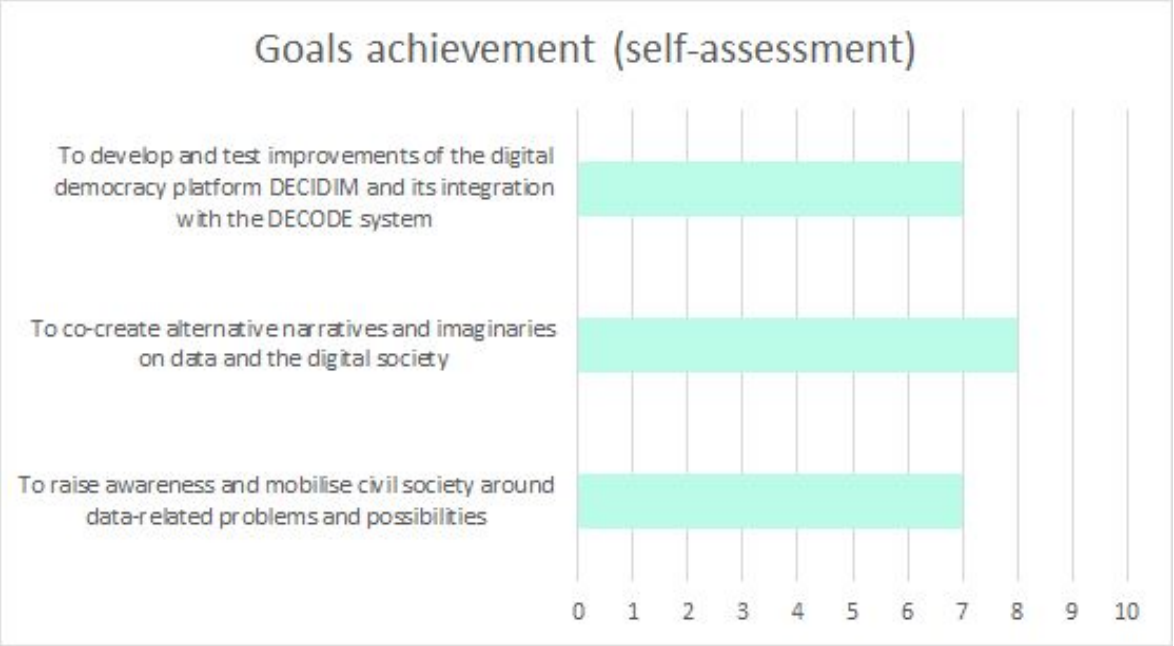
Impact

- Reached more than 200 people across the city, through online and face to face participation, articulated around a pilot website based on decidim software.
- The pilot succeeded in its technical objective to enable users of Decidim to sign petitions without having to reveal their identity to the platform. This was done through integration of DECODE signing functionality into the Decidim platform.
- This functionality is now available to any of the 100+ digital democracy platforms built on the same open source foundations as Decidim, and technically can be implemented by any city government, public institution, or social organization around the world that uses the petitions function.
- Additionally, the first version of the DECODE app was first tested, and development started on the DECODE distributed ledger
- Raised awareness of data commons and the related technical, legal and policy tools to build them, providing space for engagement in the debate around such issues.
- The pilot has been an agenda-setting project in in terms of integration of privacy-enhancing technologies into digital democracy tools, representing one of the first of its kind in this field. This has promoted discussion and visioning about the 'art of the possible' for city governments interested in data commons and the integration of digital tools and democratic process
- First anonymous petitions platform running on a distributed ledger. This can provide an alternative to centralized petitions systems where one central actor or government department has access to all political data.
- The pilot collectively developed the Data Commons Manifesto, which contributed to the context in which the Barcelona City Council Digital Strategy has led to the creation of a new Ethical and Responsible Data Management Policy.
- Resulted in the creation of the Barcelona Data Commons network, consisting of a range of organisations working locally in the field of data justice and commons.

- This pilot's strength lies in its blending of the practical and the theoretical on multiple levels, providing a strong basis for the development of a city data commons.

Self-Assessment Goals Achievement

Each of the pilot leads completed a questionnaire including self-assessment of how well the project had reached the three main goals. The graph below shows the perception of success of the Digital Democracy and the Data Commons pilot.



Pilot 2 - Citizen Science Data Governance - Barcelona

Description:
The pilot provided the community with citizen sensor kits to enable them to gather data on noise and air pollution (amongst others) which would be encrypted and they could then choose to share with each other anonymously[1] in the form of a community data commons, with visualisation and comparison possible through the BCNow platform. Additionally, this pilot explored people's willingness and ability to share data for public benefit.

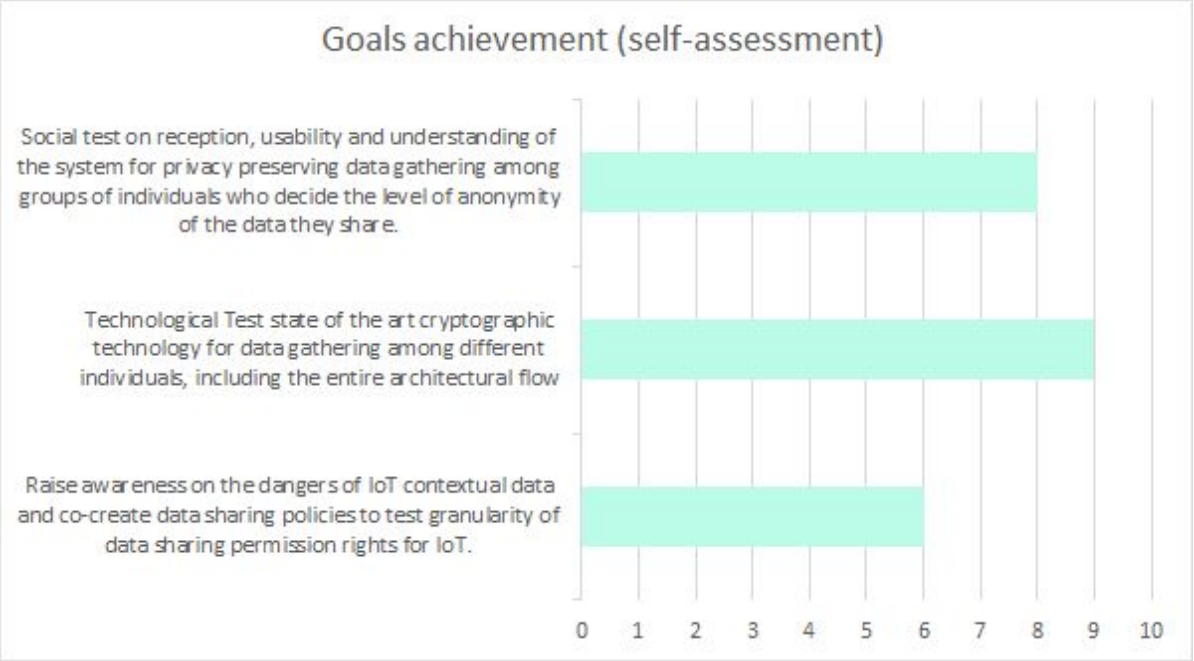
Impact

- This pilot was one of the first community-level data commons created in Europe for noise and air pollution data.
- The project met its technical objective to enable citizens to share noise and air pollution data to other citizens and their municipality anonymously, securely and without risk of re-identification. This was achieved using DECODE technology integrated with citizen science kits.
- The pilot explored the conditions under which participants would be willing to share certain types of data,[2] which offers insights into data sharing within and beyond communities. It suggests a shift from individual to a sense of collective data ownership, greater comfort levels in sharing data when a sensor is placed outside, rather than inside, a participant's house, and an interest in using the data generated for collective environmental action.
- The data is currently integrated into the BCNow dashboard, with the community given the option of whether they want their data to be publicly viewable. This contributes to the city data commons (linking with DDDC pilot)
- Generally, the pilot found that there is a lack of clear understanding of data privacy concepts, and the lines between the benefits and downsides of choosing to share data are not clear cut, and this pilot helped understand where some of the tensions lie.[3] For example, participants found that the sensor raised questions about the implications of sharing data (for example it may show if no-one is at home) and whether neighbour consent should be gained if the type of data is seen as collective rather than individual.

Self-Assessment Goals Achievement

Each of the pilot leads completed a questionnaire including self-assessment of how well the project had reached the three main goals. The graph below shows the perception of success of the Citizen Science Data Governance pilot.

[1] https://www.decodeproject.eu/blog/decode-pilots-amsterdam-experiment-attribute-based-credentials
[2] https://docs.google.com/document/d/1Y0l-IEFs9jFUxgt2lzJw2OWGVVZi_aw_XDfr5a9yG5o/edit#
[3] https://docs.google.com/document/d/1Y0l-IEFs9jFUxgt2lzJw2OWGVVZi_aw_XDfr5a9yG5o/edit#


Goals achievement (self-assessment)
Social test on reception, usability and understanding of the system for privacy preserving data gathering among groups of individuals who decide the level of anonymity of the data they share.
Technological Test state of the art cryptographic technology for data gathering among different individuals, including the entire architectural flow
Raise awareness on the dangers of IoT contextual data and co-create data sharing policies to test granularity of data sharing permission rights for IoT.
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Pilot 3 - Claim verification 18+ - Amsterdam

Description

This pilot aimed to create a system where citizens would be empowered to verify certain details about themselves, without having to give away more detail than was strictly necessary, but holding the same level of trust in the verification of the data. A prototype Passport Box was built, which citizens place their passport in. This checks the data on the RFID-chip against that on the municipal census data, and enables them to download the verified information to their phone using a mobile app by scanning a QR code.

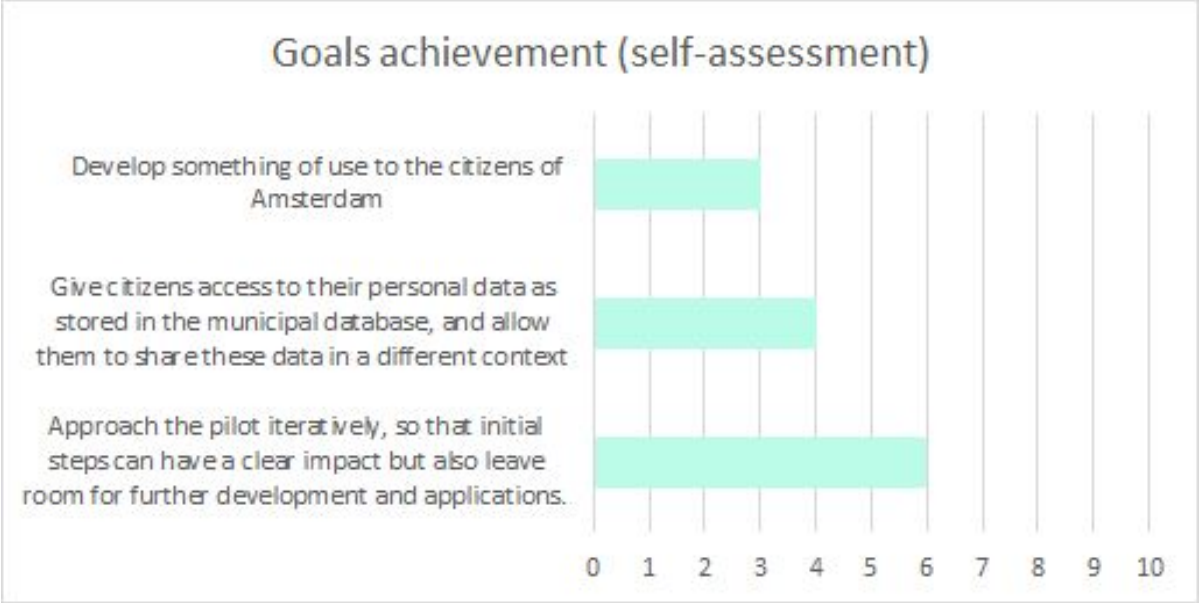
Impact

- This prototype of the Passport Box and associated technologies enabled a testing of the concept of giving citizens Attribute Based Credentials from their identity documents, and empowering them to use these in everyday situations requiring validification of one or more aspects of their identity, without revealing more than is necessary.
- The project succeeded in its technical objective to allow participants in the pilot to prove their age in participating bars and clubs without needing their passport or driver's license
- The Passport Box could be further developed to verify other attributes, and/or be applied to different contexts. Currently, two distinct stages are supported in this pilot: onboarding and attribute based disclosure.[4] However, the City of Amsterdam are looking into the ways in which this could be implemented in a real use case, such as integration into the AmsterdamPass for local democracy, CityPass for mobility, GebiedOnline, FairBNB and the AmsterdamPass as a central tool for credential verification, and could additionally look at credentials for undocumented citizens.
- The box was specifically chosen to be a physical illustration of what digital identity might mean. People may engage and understand more easily when faced with a physical object and process.

Self-Assessment Goals Achievement

Each of the pilot leads completed a questionnaire including self-assessment of how well the project had reached the three main goals. The graph below shows the perception of success of the Claim Verification 18+ pilot.

[4] https://www.decodeproject.eu/blog/claim-verification-18-summary-decode-pilot-amsterdam


Goals achievement (self-assessment)
Develop something of use to the citizens of Amsterdam
Give citizens access to their personal data as stored in the municipal database, and allow them to share these data in a different context
Approach the pilot iteratively, so that initial steps can have a clear impact but also leave room for further development and applications.
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Pilot 4 - GebiedOnline (GO) - Amsterdam

Description

This pilot proposes new technological applications which be implemented by communities to enhance the security of their online platform, with a manageable and affordable set-up. Working with GebiedOnline (GO), a community-owned, member-based cooperative platform, DECODE adapted and developed technology to create a security-enhancing Attribute Based Credential (ABC) sign-in feature to test with one neighbourhood which uses the platform.

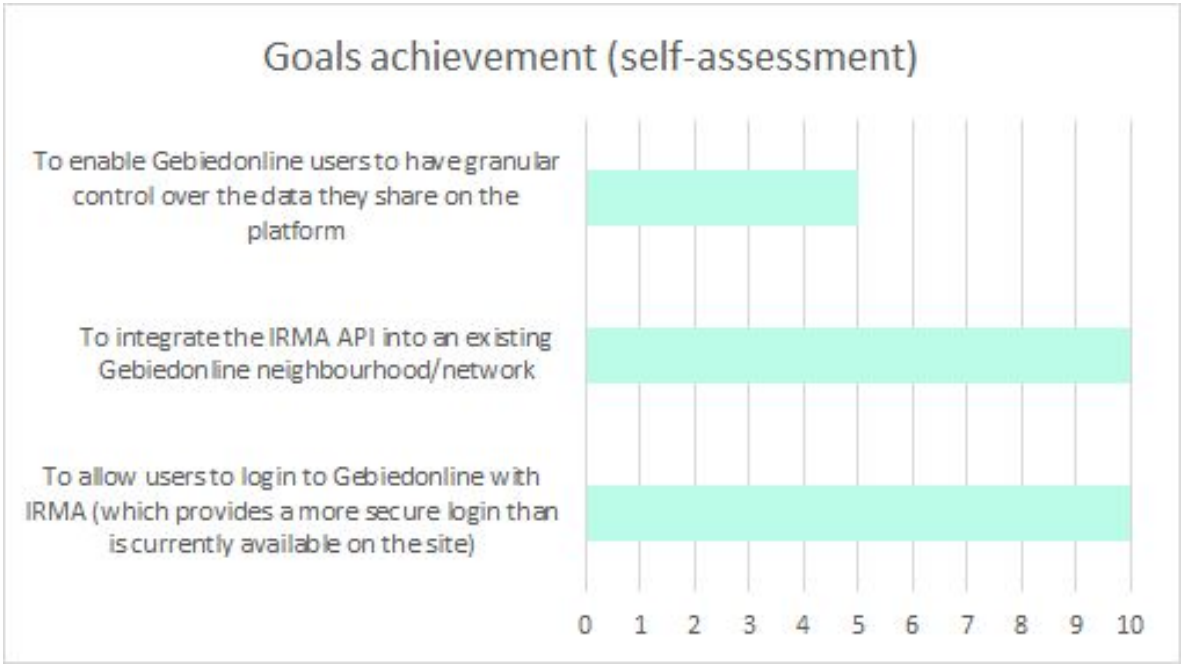
Impact

- The project succeeded in its technical objective to enable users of the GebiedOnline social network to have higher levels of control over the data they shared in order to authenticate themselves as a user of the platform, by allowing sign in through IRMA-verified credentials rather than email and password.
- Embedded DECODE technology in the GebiedOnline neighbourhood online network could enhance privacy for users and therefore increase the value as a secure neighbourhood online space to the community.
- The DECODE team combined and built upon technologies that would enable their users to have granular control over the data they share.[5]
- The pilot focused on building in security and verification, by building and piloting a set of features in a multi-step approach to use and access the platform using Attribute Based Credentials:[6]
- In parallel, the pilot team ran a series of educational activities supported by resources created to inform people about ethical and technical issues and risks regarding attributes, identification data ownership and management, as well as to provide opportunities to address these issues through the uptake of technology.[7] The educational outreach activities were done through the Digital Identity Lab[8] which brings together resources into one access point.
- The sign-in technology is in the early days of being tested by a GebiedOnline community, introducing local residents to the IRMA log in in the context of the education around privacy online, data sharing and sovereignty
- As a result of this application of the technology, IRMA has developed and added new features such as including photo as an attribute, enabling transfer of credentials from a passport/id-card/driving license into IRMA attributes, and the potential use of peer-to-peer verification in Coconut protocol research.[9]
- In terms of policy, other cities are starting to pilot or implement open source Attribute Based Credentials in Haarlem, Leiden and Almere.[10]

[5] From “Deployments of pilots in Amsterdam”
[6] From “Deployments of pilots in Amsterdam”
[7] From “Deployments of pilots in Amsterdam”
[8] From “Deployments of pilots in Amsterdam” https://digitaleidentiteit.waag.org/
[9] From “Deployments of pilots in Amsterdam”
[10] From “Deployments of pilots in Amsterdam”

Self-Assessment Goals Achievement

Each of the pilot leads completed a questionnaire including self-assessment of how well the project had reached the three main goals. The graph below shows the perception of success of the GebiedOnline pilot.



DECODE's Technology

- DECODE OS is a private and anonymous peer-to-peer operating system for DECODE tools.
- Zenroom is the smart contracts engine powering DECODE. It is based on the selective disclosure credential scheme 'Coconut' providing full blockchain integration
- DECODE app provides anonymous authentication for digital democracy applications and can be easily customised.
- BarcelonaNow empowers citizens with interactive dashboards to explore, interpret and share urban datar on their terms.

DECODE Partners

DECODE is delivered by a consortium of multidisciplinary partners - including, the Municipal Institute of Technology of the city of Barcelona (IMI), Dribia Data Research, Eurecat and the Universitat Oberta de Catalunta from Spain, Amsterdam City Council, Dyne, Stichting Katholieke Universiteit and the Waag in the Netherlands, Politecnico di Torino from Italy, CNRS from France, Arduino from Sweden, and innovation foundation Nesta, Thingful, ThoughtWorks and UCL from the UK.