

MEMEX

MEMories and EXperiences
for inclusive digital storytelling



Editorial Coordination:

Karolina Badzmierowska / Noho

Corinne Szteinszneider, Maud Ntonga / Michael Culture Association

Contributors:

Istituto Italiano di Tecnologia (IIT) - MEMEX Coordinator

Interactive Technologies Institute - LARSyS (ITI)

NOHO Limited (NOHO)

EY Advisory SpA

Centre National de la Recherche Scientifique (CNRS)

Istituto Superior Técnico

Michael Culture Association (MCA)

ECCOM - European Centre for Cultural Organisation and Management

Fundacio Interarts per a la Cooperacio Cultural Internacional (IA)

Mapa das Ideias (MDI)

University Ca'Foscari di Venezia (UNIVE)

Dédale (DED)

Graphics and Design:

Karolina Badzmierowska / Noho

Table of content

Introduction	5
MEMEX Project	6
Project Coordinator	7
Consortium Partners	9
Pilots	11
Lisbon Pilot	13
Lisbon Pilot in Numbers	15
Paris Pilot	17
Paris Pilot in Numbers	19
Barcelona Pilots	21
Barcelona Pilot in Numbers	23
Technology and Innovation	24
Geolocalised Digital Storytelling	26
Augmented Reality	26
Connecting Stories	26
Digital Storytelling	29
Selected Publications	30
Policy Briefs	30



Memex project (2019-2022)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870743.

The views and opinions expressed in this publication are the sole responsibility of the authors and do not necessarily reflect the views of the European Commission.

MEMories and EXperiences for inclusive digital storytelling.

Introduction

MEMEX promotes social cohesion through collaborative, heritage-related storytelling tools that provide access to tangible and intangible Cultural Heritage (CH) for communities at risk of exclusion. Thanks to its multi-sectorial partnership, the project has implemented new actions for social science to: understand the NEEDS of such communities and co-design interfaces to suit their needs; DEVELOP the audience through participation strategies; while increasing the INCLUSION of communities. The fruition of this is achieved through groundbreaking ICT tools that provide a new paradigm for interaction with CH for all end users. MEMEX has created new assisted Augmented Reality (AR) experiences in the form of stories that intertwine the memories (expressed as videos, images or text) of the participating communities with the physical places/objects that surround them. To reach these objectives, MEMEX developed techniques to (semi-)automatically link images to their LOCATION and connect to a Knowledge Graph (KG). The KG facilitates assisted storytelling using Natural Language Processing (NLP) and clustering that consistently link user data and CH assets in the KG. Finally, stories are visualised onto smartphones by AR on top of the real world allowing to TELL an engaging narrative. MEMEX is deployed and demonstrated on

three pilots with unique communities. First, Barcelona's Migrant Women, which raises the gender question around their inclusion in CH, giving them a voice to valorise their memories. Secondly, MEMEX gives access to the inhabitants of Paris's XIX district, one of the largest immigrant settlements of Paris, to digital heritage repositories to develop co-authored new history and memories connected to the history of the district. Finally, first, second and third-generation Portuguese migrants living in Lisbon will provide insights on how technology tools can enrich the lives of the participants and inhabitants.



MEMEX Project

MEMEX is an EU-funded project (Horizon2020) promoting social cohesion through collaborative, heritage-related tools providing inclusive access to tangible and intangible cultural heritage. Over a period of 3 years it has facilitated encounters, discussions and interactions between communities at risk of social exclusion. These tools use Artificial Intelligence to empower local communities by sharing their stories, fragmented experiences and memories into compelling and geolocalised storylines linked to European Cultural Heritage.

The tools of MEMEX allowed the communities to tell their stories and to claim their rights and equal participation in our European society by giving voice to individuals and promoting cultural diversity. MEMEX project deployed three distinct pilots to let the stories be heard: Barcelona's migrant women and the gender perspective (Spain), District XIX: Digital storytelling with inhabitants in priority neighbourhood of Paris (France) and Enhanced readings of shared Portuguese heritage through emancipated eyes (Portugal).

The MEMEX consortium consists of 9 partners from 6 countries in the geographical European area, including Italy, Spain, Portugal, Sweden, Ireland and Belgium as EU Member States. The consortium partners have been carefully chosen to have a specific, independent and complementary skills essential to fulfil MEMEX's objectives.

The project has a highly interdisciplinary component crossing the social sciences, (digital) humanities, computer vision, augmented reality and machine learning to name only a few.

Project Coordinator



Istituto Italiano di Tecnologia (IIT)

Italy

<https://www.iit.it/>



Consortium Partners



Interactive Technologies Institute - LARSyS (ITI)
Portugal
<https://iti.larsys.pt/>



Noho
Ireland
<https://noho.ie/>



EY Advisory SpA
Italy
https://www.ey.com/it_it



Centre National de la Recherche Scientifique (CNRS)
France
<https://www.cote-azur.cnrs.fr/fr>



Michael Culture Association (MCA)
Belgium
<http://michael-culture.eu/>



ECCOM - European Centre for Cultural Organisation and Management
Italy
<https://www.eccom.it/>



Fundacio Interarts per a la Cooperacio Cultural Internacional (IA)
Spain
<https://www.interarts.net/>



Mapa das Ideias (MDI)
Portugal
<https://mapadasideias.pt/>



University Ca'Foscari di Venezia (UNIVE)
Italy
<https://www.unive.it/>



Dédale (DED)
France
<https://www.dedale.info/>



Pilots

MEMEX deployed three pilots, one in Lisbon, one in Paris and one in Barcelona. The pilot projects engaged communities at risk of marginalization or socio-cultural exclusion in these three cities in a structured process that, with the support of digital storytelling, facilitated new interpretations of cultural heritage through personal creativity and expression and produced new narratives that foster individual and community empowerment and, thus, social and cultural participation as well as the expression and recognition of diversity.

Through community-based activities and with the support of local stakeholders MEMEX reached out to migrant women in Barcelona; the inhabitants of a priority area in Paris XIXe, and first, second and third-generation Portuguese migrants living in Lisbon. Participants engaged in mediated digital storytelling workshops and guided visits, reinterpreting local cultural heritage sites through their personal memories to create their unique story. In total, 70 audiovisual stories were produced.

The pilot projects were a key component of the MEMEX prototype app co-creation process. Participants but also local stakeholders were invited to contribute in the testing sessions that provided systematic feedback for the design and functionalities of the app.

To reach out to a wider group of local socio-cultural stakeholders, MEMEX organised a series of capacity building activities in Paris, Barcelona and Lisbon.





Local partners



Academia de Produtores Culturais
<http://academiadeprodutoresculturais.blogspot.com/>
<https://www.festivaltodos.com/>



Instituto Marquês de Valle Flôr
<https://www.imvf.org/>



International Council of Museums, Portugal
<https://icom-portugal.org/>



Lusophone Culture and Citizenship Association
<https://www.lusoculturas.org/>



Museu da Farmácia
<https://www.museudafarmacia.pt/>



BLX - Bibliotecas de Lisboa
<https://blx.cm-lisboa.pt/>



Sirigaita
<https://www.facebook.com/sirigaitalisboa/>



EAPN - Rede Europeia Anti-Pobreza
<https://www.eapn.pt/>

Lisbon Pilot

Enhanced readings of shared Portuguese heritage through emancipated eyes.

The Lisbon pilot aimed at strengthening cooperation between social and cultural sector organizations, as well as fostering social networks that can increase the resilience of migrants in the territory. It engaged more than 30 participants in storytelling activities, and more than 80 migrants in testing the methodology and technology of MEMEX. They explored diverse paths and storylines around the Lisbon city centre and at the Pharmacy Museum.

The pilot execution was coordinated by Mapa das Ideias and had the support of several associations and cultural institutions that supported the activities, including: Associação Lusofonia Cultura e Cidadania, Sirigaita association, the European Anti-Poverty Network - Portugal, Instituto Marquês de Valle Flôr, Academia de Produtores Culturais, ICOM-Portugal, Lisbon libraries, Museu da Farmácia.

Migrants experienced a completely new vision of Lisbon, the city they live and work in, nurturing the creation of new bonds and expanding their experiences of the city as an open-air museum. Invited by Mapa das Ideias, with the support of local organizations providing them with social and cultural services, the pilot participants explored the city centre and engaged with the cultural and historical heritage, sharing their personal views and experiences with each other. These encounters were a meeting place for them

and a channel through which they had the opportunity to make their personal stories and voices heard.

The community

The Lisbon pilot served as leverage to create social networks to improve the resilience of migrants living in the Metropolitan Area of Lisbon. Some of them live in the city, but many of them live in peripheral territories. Their lives are, for the most part, fragmented in small clusters or independent from migrant communities. The city often becomes just a passage between places for them.

The challenges

Although the Lisbon pilot had the support from many cultural and social associations, it was challenging to generate a steady group of migrants throughout the project. Precarious housing and jobs lead them to change their routine and habits quite often, and they are constantly changing places. Bonds are also very fragile and so is trust in the process. After these initial setbacks, the Lisbon migrant pilot group had to learn how to gain self-confidence and to understand that their cultural and social background also play a very important role in storytelling.

// Sharing my stories allowed me to better understand my relationship with the place, as in Rossio for example. Writing, speaking, drawing, recording your voice allows you to become aware. //

Portuguese workshop participant from France

Lisbon Pilot in Numbers

12 online workshops

8 physical workshops

21 stories created

6 audience development activities

33 pilot participants

10 journeys explored

37 interviews with participants and stakeholders



Paris pilot

District XIX: digital storytelling with inhabitants in Rosa Parks, priority area of Paris.

The pilot focuses on the inhabitants of the Rosa Parks area in the north of Paris which is a “priority territory”. The district is characterized by its rich recent urban development, the diversity of its inhabitants, a non-academic heritage and an active socio-cultural network.

The relation of the inhabitants to the area and its history have been the driver for these activities.

Under the belief that storytelling helps overcome barriers to cultural participation, and enhances social cohesion, a series of digital storytelling workshops have been organized with a group of inhabitants and local partners as well as capacity-building activities gathering inhabitants and socio-cultural and local authorities.

The pilot project was implemented by Michael Culture Association and Dédale in collaboration with three local partners namely the Rosa Parks cultural and social centre, the “Régie de Quartier” and the association “Capacités”.

Rosa Parks area

This is a “priority territory” with a specific urban public policy. The Rosa Parks pilot focuses on a population in a situation of risk of socio/cultural exclusion (young people, seniors) due to poverty, urban environment access to culture and academic heritage. MEMEX developed narratives based on digital heritage archives, inhabitants shared memories and a storytelling approach in order to improve the area identity and to give access to knowledge.

For better audience engagement and outreach, this pilot has been implemented with the active support of the local social partners.

The community

The territory is characterised by a young population with 19% under 15, and 43% under 30. This is much higher than the rates observed in Paris and the 18th and 19th arrondissements (districts). Over 40% of the Rosa Parks’ inhabitants live alone. This proportion is lower than in Paris as a whole, but unlike Paris, it is mainly men who are alone. A high proportion of family are single-parent families, 27% of households is much higher than the averages observed in Paris. A high unemployment rate at almost twice as high as in the capital as a whole.

The challenges

Rosa Parks is a district that crystallises contemporary issues of the first order.

The inhabitants of the Rosa Parks area are often prone to social exclusion, facing situations such as unemployment, security problems, and lack of public facilities. Compared to other areas of Paris, there is no academically acknowledged cultural heritage in the neighbourhood.

The objective and challenge of the Paris pilot activities were to position the MEMEX project as a vector for the valorisation of the district’s vernacular heritage and the voices of the inhabitants, relying on a strong partnership with the Rosa Parks cultural centre.

Local partners



Centre social et culturel de Rosa Parks
<https://www.centrosaparks.paris/>



CapaCités
<http://capacites.net/>



Régie de quartier du 19ème
<https://www.rqparis19.org/>

// The project enabled the inhabitants to take greater ownership of their neighbourhood, to understand the complex realities and discover the hidden treasures, and to share the history of the area and build a popular and shared identity. //

Paris pilot participant

Paris Pilot in Numbers

18 participants

8 workshops

100 hours of interviews recorded

600 people reached

20 stories shared

Barcelona pilot

Migrant women and the gender perspective.

Migrant women participated in the planning and co-creation of activities addressing Barcelona's cultural heritage and to relate it to their personal history. The pilot project focused on the gender perspective to increase the visibility of women as well as to foster mutual understanding among different communities. The activities of the pilot were: digital storytelling workshops which allowed several migrant women to speak their minds, and policy advocacy.

A group of some 30 migrant women participated in workshops and co-creation activities guided by experts and artists to delve into their personal histories of migration, and their emotional connection with the cultural heritage of the city of Barcelona. The pilot project adopted a gender perspective, with the aim of increasing the visibility of women and of making their voices heard.

The pilot project was implemented in collaboration with Centre de Cultura de Dones, Francesca Bonnemaison - laBonne, a cultural centre dedicated to women, located in Ciutat Vella. The activities were carried out considering culture as a driver for human and social development.

The community

Migrant women resident in Barcelona constitutes an invisible community and are not considered by local cultural policies.

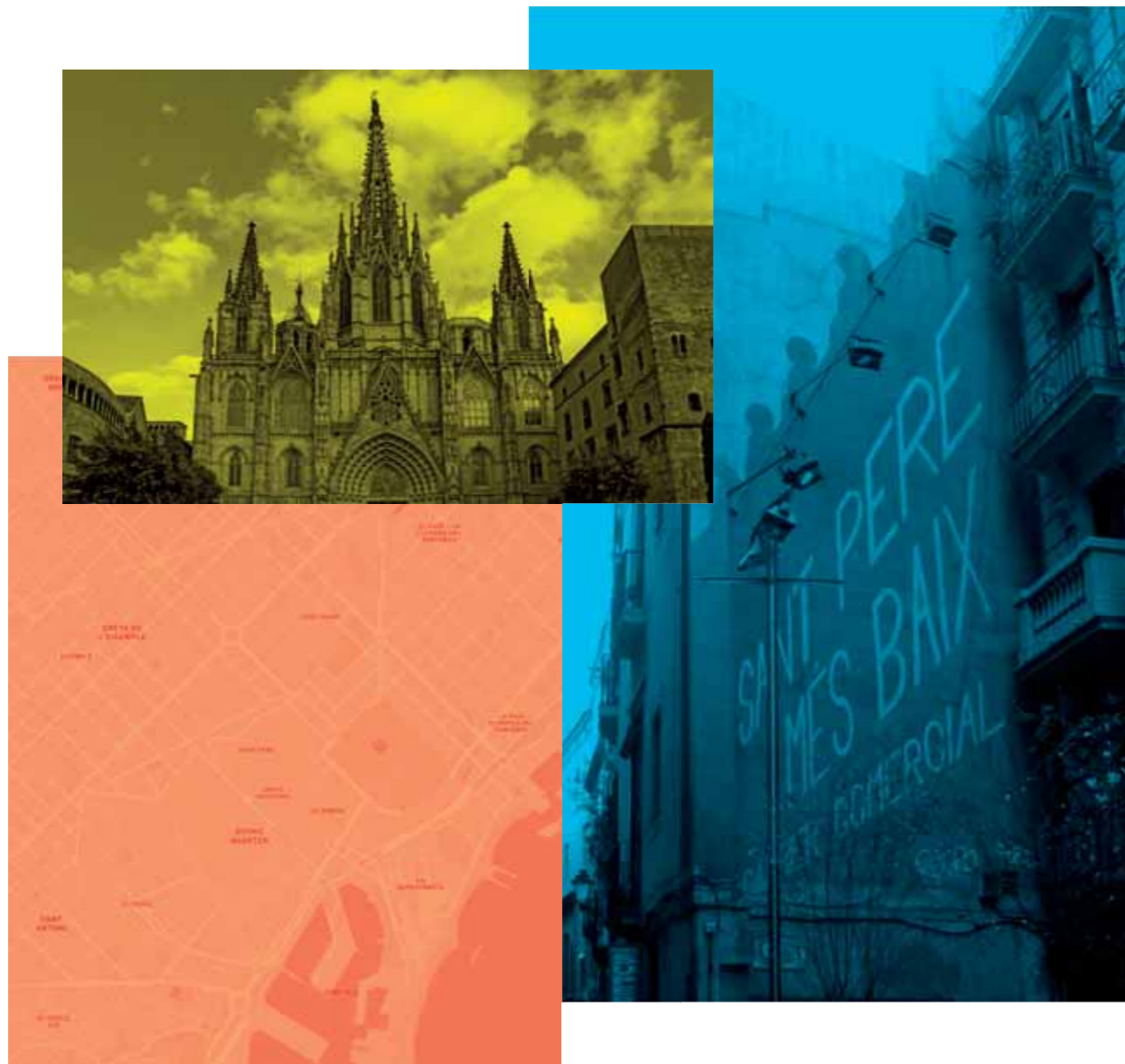
According to official statistics, 48.26% of the total population of Ciutat Vella are of foreign origin; half of them are women.

The challenges

Migrant and refugee women are more exposed to risks, exploitation and violence because they are largely young, single, poor and sometimes isolated and vulnerable.

Often, migrant and refugee women are also victims of structural violence, occupying the lowest socio-economic positions due to the negative effect of the intersection between gender, origin, social class and administrative situation. Very often they suffer discriminations relating to religion, cultural practices, beliefs and sexist attitudes.

Since their level of engagement in local cultural life is still quite low, the MEMEX project wanted to address this issue.



Local partners



laBonne
<https://labonne.org/>



Sindillar/Sindihogar
<https://sindillar.org/>

// I do believe that participating in this kind of projects, impulses an interaction with colleagues, increases trust... it generates a bond in which you can get a bit closer. //

Pilot participant from Colombia

Barcelona Pilot in Numbers

16 workshops

7 podcasts created

29 stories shared

29 landmarks/heritage site sconnected

35 participants

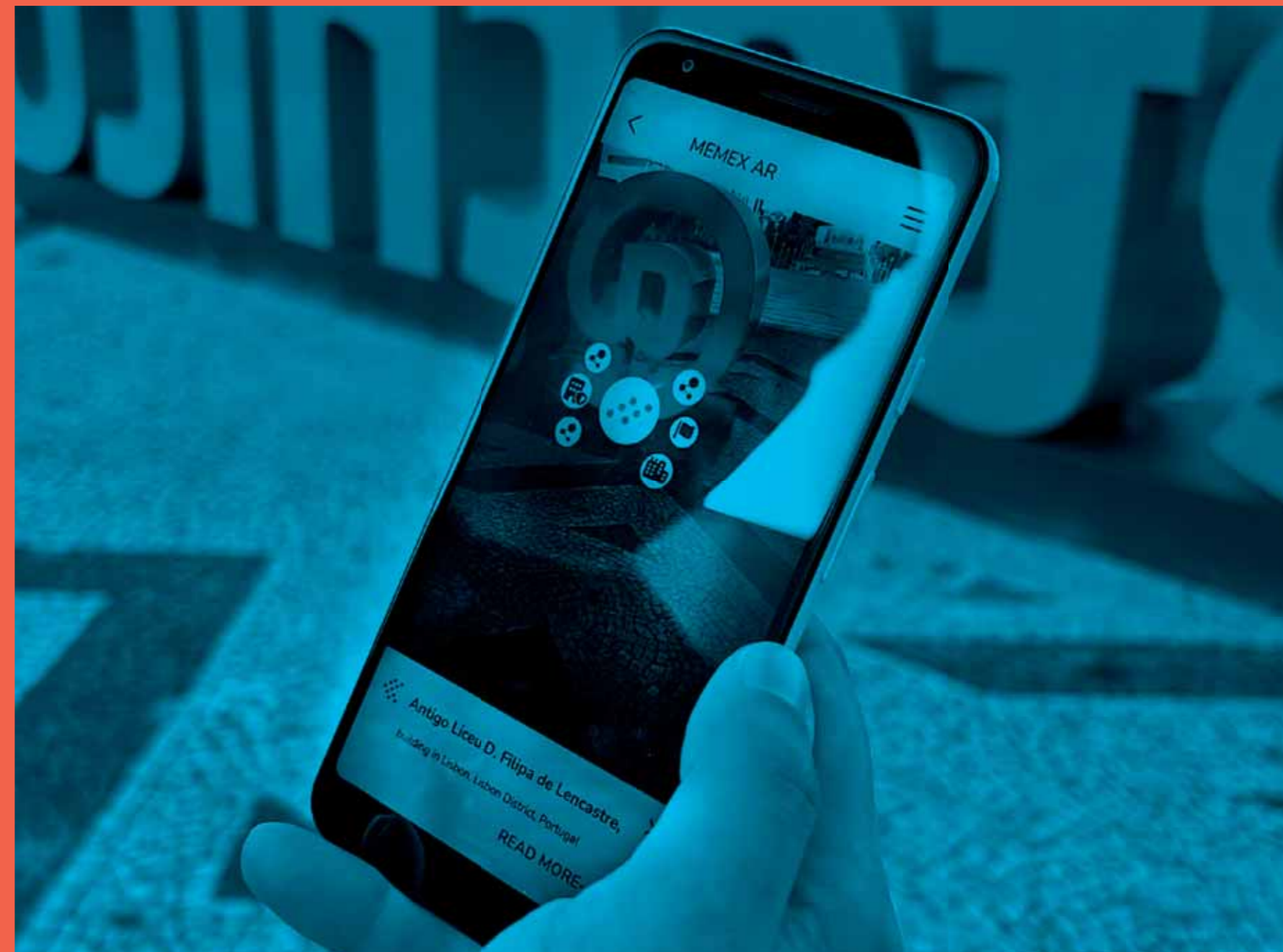
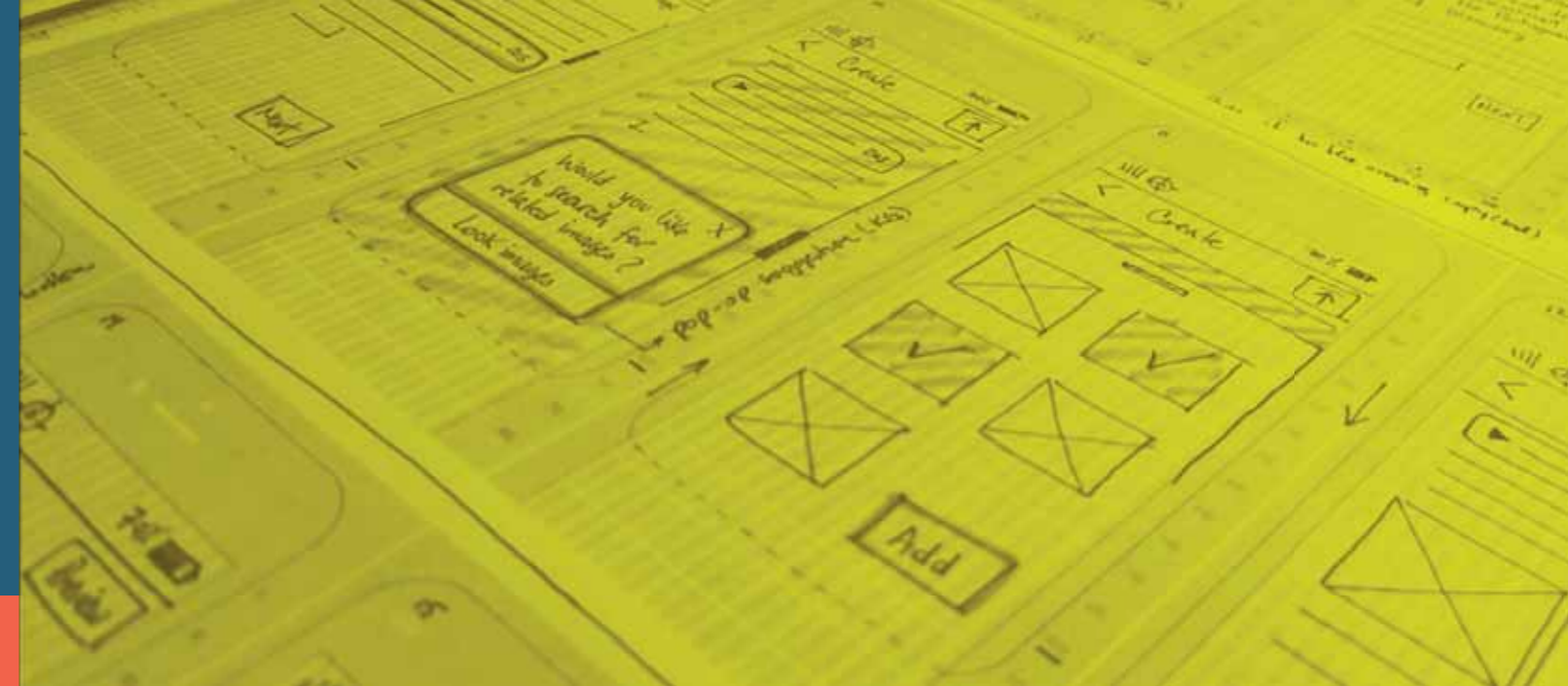
20 hours of interviews recorded

Technology and Innovation

The MEMEX project developed a mobile App prototype allowing non-expert users to create and visualise stories related to their personal memories and experiences. The stories are digitally linked to the geographical locations of either intangible (e.g., an event) or tangible cultural places/objects.

The MEMEX tools use Artificial Intelligence technology and they are designed for the needs of the community, they will allow users to annotate using Augmented Reality (AR) any physical object or location with their memories in the form of digital images, videos, audio recordings or textual input using a smartphone. Then, the targeted communities will be able to connect their experiences and memories with a new Knowledge Graph (KG), linking Cultural Heritage items and places with stories that are bound and entangled within the European history.

Effectively, the users of MEMEX will be active actors shaping contemporary and historical content, including new material from their experiences and memories, and personalising cultural heritage and creative media content in a meaningful and socially inclusive manner.



Geolocalised Digital Storytelling

The MEMEX App prototype displays participants' stories that meld together different multimedia content (text, images, audio recordings and videos). Stories can also be grouped together in a journey, creating a personalised path connecting different

locations. The App prototype also allows us to upload stories to the MEMEX server and to connect each story to relevant Cultural Heritage either manually or automatically through the use of Machine Learning technology.

Augmented Reality

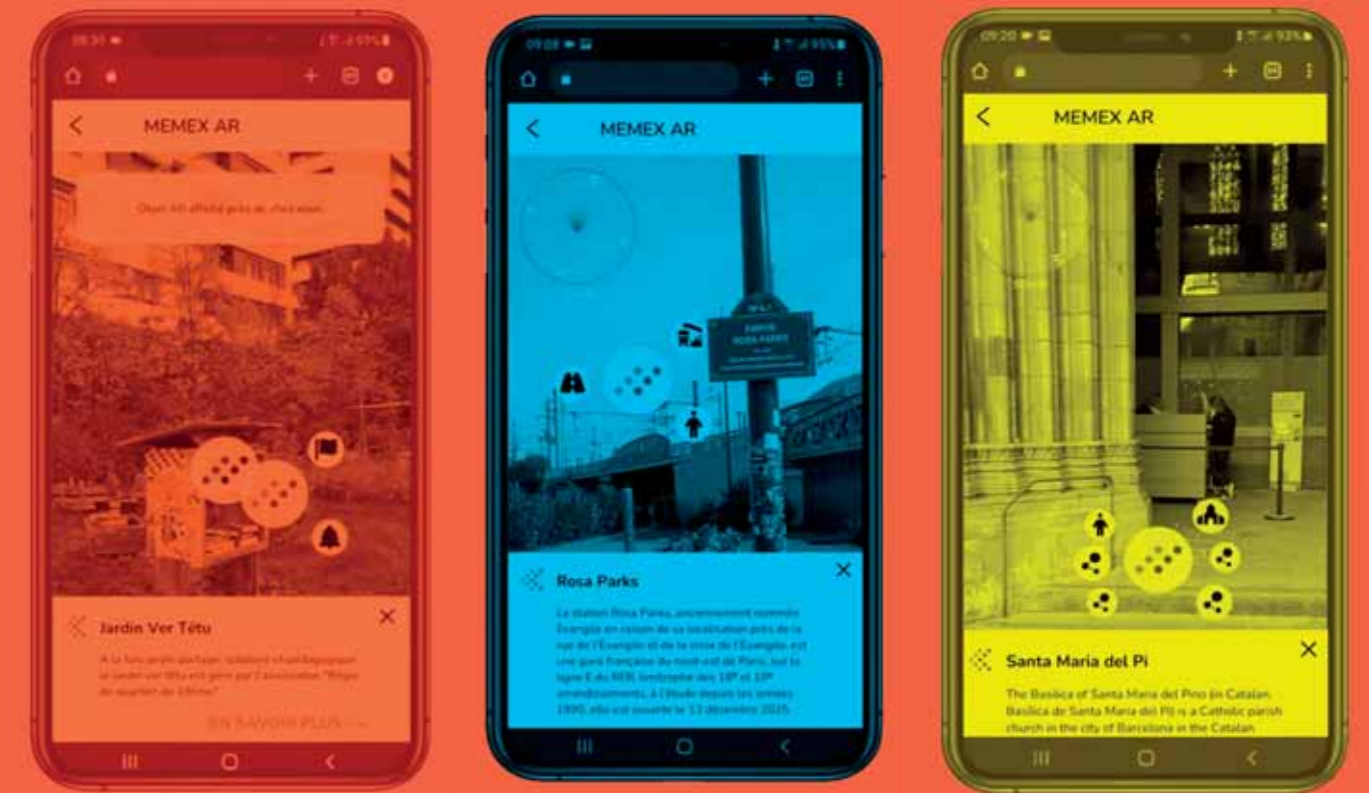
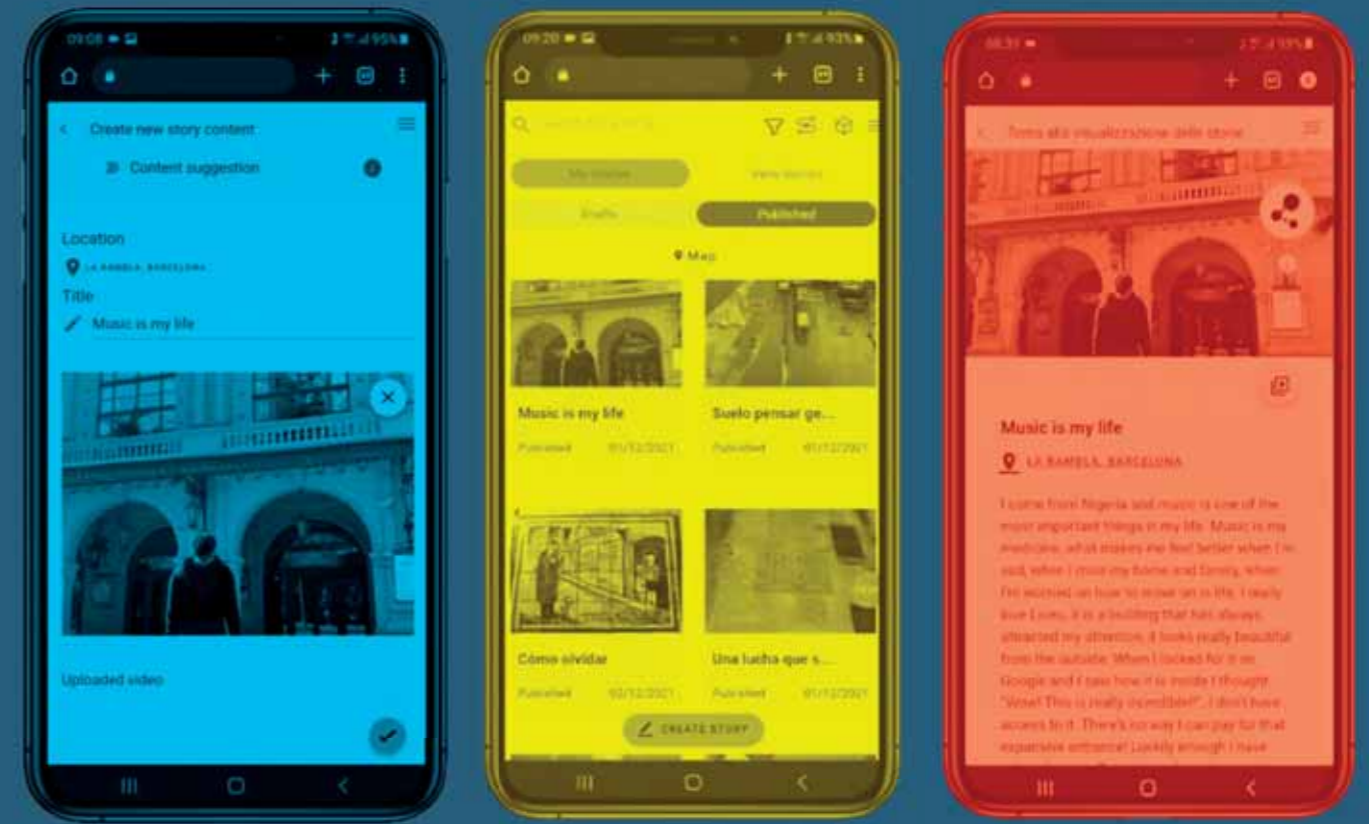
The MEMEX App prototype allows stories to be visualised using Augmented Reality (AR). AR required the development of new Computer Vision methodologies for the digital mapping of the 3D environments where the stories are located and to link this information to the

digital data of the stories and the Cultural Heritage assets nearby. MEMEX's main goal was to facilitate the creation of such AR experiences by local stakeholders and for them to be easily deployed by a user.

Connecting Stories

The MEMEX App prototype connects stories to relevant Cultural Heritage or other stories based on Artificial Intelligence (AI) techniques. This assists the story writing and the users' exploration of local heritage. Each story is analysed by the AI to identify keywords or

phrases that could be related to places or general knowledge sourced from Wikidata, a structured version of Wikipedia. In addition, participants can manually connect to specific content.





Digital Storytelling

The MEMEX project starts from the idea that the use of Digital storytelling and technology can generate positive changes in audiences, promoting cultural access and participation among socially fragile and culturally excluded communities. Digital Storytelling is a creative process combining the art of telling stories and technology, with the aim of developing a short personal story in a digital format. Employing text, images, videos and sound effects, it combines the power of traditional narrative with the creative resources offered by digital tools. MEMEX employs Digital Storytelling as a main strategy, as a manageable and effective tool to give voice to subjects at risk of marginalisation or exclusion, promoting creativity and personal expression, social and cultural empowerment, multiple skills and competences and the valorisation of cultural heritage.

In MEMEX, the implementation of Digital Storytelling has been conceived as a tool and an opportunity to give voice to the participants, to promote personal

expression and creativity, cultural and social empowerment, promotion of skills and competences. CH is the field within which their creativity, memories, emotions, beliefs, metaphors, social representations emerge and develops. The vision and methodology of Digital Storytelling is effective in providing a safe space for the participants to share concerns, build relationships, generate dynamic debates and exchanges and promoting active and creative expression, participation and engagement, when mediated by qualified teams. Digital Storytelling is strongly based on co-creation processes, giving MEMEX participants an active role not only in the enjoyment but also in the reinterpretation and resignification of Cultural Heritage. Through the process of creating their stories, participants have explored their memories, experiences, narrative skills and voices and expressed their diverse understanding of culture, re-interpreting the Cultural Heritage of each city through a personal lens.



Selected Publications

Giuliari, Francesco, Geri Skenderi, Marco Cristani, Yiming Wang, and Alessio Del Bue. "Spatial Commonsense Graph for Object Localisation in Partial Scenes." In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 19518-19527. 2022.

https://openaccess.thecvf.com/content/CVPR2022/papers/Giuliari_Spatial_Commonsense_Graph_for_Object_Localisation_in_Partial_Scenes_CVPR_2022_paper.pdf

Taiana, Matteo, Matteo Toso, Stuart James, and Alessio Del Bue. "PoserNet: Refining Relative Camera Poses Exploiting Object Detections." In European Conference on Computer Vision, pp. 247-263. Springer, Cham, 2022.

<https://arxiv.org/pdf/2207.09445.pdf>

A Co-Design Method for Museums to Engage Migrant Communities with Cultural Heritage – ITI

https://memexproject.eu/images/Papers/A_co-design_method_for_museums_to_engage_migrant_communities_with.pdf

Digital Storytelling and lifelong learning education in informal contexts: the MEMEX project - ECCOM

<http://end-educationconference.org/wp-content/uploads/2021/07/2021end065.pdf>

Policy Briefs

Policy Brief 1

Capacity building actions targeting cultural and social professionals involved in community engagement as key tool for inclusion

Policy Brief 2

Assessing social impact in MEMEX

Policy Brief 3

Technology as a support for inclusion

Find out more:

memexproject.eu



@memexproject



@memexproject



www.youtube.com/channel/UC0PHqCypZ_DStsKeX0owVqQ

For a full list of MEMEX project's resources visit:

<https://memexproject.eu/en/resources/all-resources>