

Concept Paper

Intelligent Collaborative Authoring of Place-Based, Cross-Cultural and Media-Rich Experiences

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Abstract: In this paper, we present a framework that aims to support the active participation and collaboration of knowledge workers and engineers in the co-authoring of place-based, cross-cultural and media-rich memories, experiences, stories and narration. To achieve this, the framework proposes a novel approach for facilitating such a participation and collaboration through the semantic integration of data/information and integrated tools that will be both accessible via an open, user-friendly, mobile and knowledge-based platform, emphasizing a low-effort participative and guided co-authoring approach. The presented collaborative and participative approach is expected to foster social cohesion in heterogeneous communities of interest and practice. For the realization of the framework, we propose the implementation of a proof-of-concept system and its evaluation in the socio-cultural group of immigrants and refugees within the context of creating and sharing knowledge related to the physical and digital artifacts of a modern art museum. Our vision for the proposed framework is to introduce new technology for the collaborative authoring of cultural experiences with low effort using an intelligent assistant. Additionally, we envision a Shared Experiences Ecosystem (SEE) that aims to provide media-rich content and tools that will eventually foster the inclusive access of heterogeneous socio-cultural groups to shared experiences, increasing social cohesion in resilient local environments.

Keywords: co-authoring; place-based memory; cultural experience; knowledge-based platform; intelligent assistance; semantic data integration; social cohesion; shared experiences ecosystem

1. Introduction

In this concept paper, a novel research framework is introduced, integrating methods and tools for enhanced collaborative approaches to the participatory co-authoring of experiences, to foster social cohesion and to shape a Shared Experiences Ecosystem (SEE). The proposed ecosystem, initially presented in our related work within the context of designing a semantic mixed-reality framework for shared cultural experiences [1], will provide a virtual collaborative workspace for the contribution of both tangible and intangible cultural content and its enrichment via automated integration of external knowledge resources, in a crowdsourcing participative manner, utilizing semantically integrated tools. As a result, this research approach will attempt to foster the inclusive access of heterogeneous socio-cultural groups to shared experiences, increasing social cohesion in resilient local environments. Specifically, this research aims towards designing novel methods and developing tools for the active participation and collaboration of communities in the authoring of social, location-based, as well as context-aware, cross-cultural and media-rich memories and experiences, in the form of stories and

narration. The delivered tools will be accessible via an open, user-friendly, mobile and knowledge-based platform, emphasizing a low-effort participative and guided co-authoring approach.

The proposed framework (namely, intelligent Collaborative Authoring of place-based, cross-cultural, media-Rich Experiences—iCARE) aims to deliver new methods and tools for the active participation and collaboration of heterogeneous socio-cultural groups in the authoring of social and place-based cross-cultural media-rich memories/stories that integrate physical and digital artifacts related to cultural heritage. The delivered integrated prototype tools will be provided to end-users within an open, user-friendly, mobile and knowledge-based platform, emphasizing a low-effort (code-free), participative, guided (chatbot-assisted) and knowledge-supported (best-practices consultation) co-authoring approach of semantically annotated content.

As the means to achieve the aforementioned goals, iCARE will deliver a specialized crowd-sourcing mobile platform, accompanied by a set of useful Information and Communication (ICT) tools, which will enable, facilitate and encourage the active participation and collaboration of members of heterogeneous sociocultural groups in different types of experiences (e.g., cultural). As such, a core function of the proposed platform will be the content collection, import and curation, as well as the co-authoring and dissemination of their personal stories/memories. Through the platform, the intended users can be informed about stories/memories, browse through them and possibly enrich/discuss/comment on their content, but also contribute their own. Inclusive access to the contributed memories/stories hosted and promoted via the online platform will give the opportunity to all users to experience for themselves the benefits of collaboratively creating and exchanging knowledge and, above all, experience different cultures, attitudes and habits, thus establishing and promoting a mutual cultural understanding.

The rest of the paper is outlined as follows: Section 2 presents the main objectives and challenges of the proposed framework. Section 3 discusses the state-of-the-art and the advances of the proposed technologies. Section 4 presents the scientific and social impact of the research idea, and Section 5 proposes a methodology towards an architectural design and an implementation. Section 6 presents validation and evaluation issues, and finally, Section 7 concludes the paper.

2. Objectives and Challenges

The main objectives and challenges of the proposed framework are:

2.1. Facilitate Co-Authoring of Cross-Cultural Media-Rich Experiences

iCARE will design and implement suitable methods, tools and applications that will enable the interested stakeholders to collaboratively author and enrich media-rich content. Moreover, iCARE will expose multimodal, multimedia and multilingual interfaces adaptable to the needs of the targeted end-user groups. It will deliver integrated tools that will enable, among others, the collaborative co-authoring of cross-cultural media-rich content, such as place-based memories.

2.2. Support Low-Effort Co-Authoring of Experiences

Template-driven, code-free and drag-n-drop interfaces will be developed to facilitate low-effort use of tools and applications, while the iCARE platform will also offer functionality, enabling the adaptation/personalization of the applications provided based on the end-user's features, context and special needs and requirements. The emphasis is on the non-functional requirements of the co-authoring tools with regards to the user-perceived experience, user-friendly tools (engaging and supportive in use, providing immediate, obvious and appropriate feedback over user interactions) that are easy-to-learn and easy-to-use, requiring minimal effort to be installed, configured and eventually utilized.

2.3. Support for Participative Contribution, Annotation/Classification, Enrichment and Co-Curation of Content

In addition to the collaborative aspect, iCARE emphasizes the participative contribution over content. The user participation includes the semantic annotation of content with appropriate metadata, its enrichment with additional related information/knowledge made available by external and

heterogeneous resources, as well to the process of crowdsourced curation of content towards a sustainable shared experiences ecosystem.

2.4. Support Guided/Assisted Participation and Collaboration

iCARE aims to develop support tools and virtual/digital assistants to guide end-users, motivate their engagement and optimize their experiences, offering them support tailored to their needs and objectives. To facilitate this, a shared knowledgebase of best practices on the co-authoring of cross-cultural media-rich societal and placed-based memories will be created. Furthermore, Artificial Intelligence (AI) technology will be exploited to deliver human-centric intelligent personal assistants/chatbots and to facilitate natural interaction with the available technology and content [2,3].

2.5. Facilitate Extended Connectivity Among Groups

iCARE aims to provide the necessary means to support the extended interaction and communication among the various user groups, enabling them to share their experiences and exchange respective content, thus strengthening their social cohesion and reducing the risk of their social exclusion. To accomplish this, popular existing communication channels such as social media will be exploited, while dedicated content sharing tools will be employed. These mechanisms will be fully integrated in the iCARE platform and tools.

2.6. Deliver Reusable and Sharable Content, Experiences and Tools Towards a Shared Media-Rich Experiences Ecosystem

To enable the enrichment and exchange of content sharing in an ad-hoc manner, suitable domain- and application-specific models for representing place-based memories/stories need to be developed, building on related standards, technologies and dominant models that already exist [4]. iCARE aims to deliver these and to develop a scalable, semantically annotated repository of content, enriched with various metadata that will be sharable and reusable, open not only to iCARE, but to external platforms/entities as well.

2.7. Validate the iCARE Technology Capacity-Building Potential and Adaptability

The iCARE approach, including methodologies, models and tools developed, will be validated regarding their efficiency, comprehensiveness, usability and performance through the implementation of pilot iCARE applications in a diverse domain. Expert opinion will be sought regarding all the aforementioned aspects as well as visionary goals in the iCARE applications and future interactions domains. The respective validation and evaluation of iCARE will be delivered via an early prototype pilot version in a community at risk of exclusion, i.e., immigrants and refugees in local communities of practice and interest.

3. Beyond State-of-the-Art

3.1. Social Cohesion

In the context of the presented framework, social cohesion is “the ongoing process of developing well-being, sense of belonging, and voluntary social participation of the members of society, while developing communities that tolerate and promote a multiplicity of values and cultures and granting at the same time equal rights and opportunities in society” [5]. The presented work is based on the recent Open Framework for Social Cohesion research [5] that distinguishes three levels that should be taken into account for designing and exploring the impact of interventions on social cohesion: The Individual, the Community, and the Institutions. The research approach focuses primarily on individual and collective experience, increasing the feeling of belonging. Connecting, interacting, sharing and participating provides a fruitful basis for meaningful social interaction. Community emergence and activity are the means with which these new relationships in both physical and virtual

environments are created, maintained and extended [6,7]. Social cohesion is the intended goal [8]. Existing institutions (such as museums, non-governmental organizations (NGOs) and municipalities) provide the context within which perceptions, values, stories and histories are shared for meaningful interaction in a safe environment [9]. In educational research and practice, a number of successful paradigms exist of building communities of practice/interest and enhanced participation within social groups, such as low-income students, by engaging them in the design of technology-based content that involves the generation of content that incorporates their youth culture [10]. The above example demonstrates that, with the support of the appropriate authoring/design technological environment, young participants can create media-rich multimedia content with high interactivity. There also exist recent examples of works that support user-generated content in many languages.

3.2. Co-Authoring of Place-Based Memories

The current state-of-the-art (SotA) does not facilitate an easy, guided, knowledge-based and sustainable authoring of digital stories, independently from the technology for delivery and allowing a truly collaborative process. As described in Reference [11], most of the available tools identify the channel of delivery at the authoring phase. In addition, as discussed in Reference [12], the “educational benefits” of digital storytelling are enhanced with collaborative authoring.

Going beyond the SotA, iCARE will develop and advance a collaborative authoring environment and generation/delivery technology for digital memories/stories, in the following specific ways:

- An author-centered environment will allow the creation of digital stories, combining various media (text, images, video, graphics, audio, slides, etc.), independently from the channels of delivery.
- The “generated” stories will be automatically delivered on a variety of “technologies and channels”: (i) traditional Web, Instagram, YouTube, etc., (ii) learning delivery platforms (e.g., Coursera and similar), (iii) more advanced interactive apps for smartphones and (iv) very advanced “chatting” interfaces (e.g., ECHO by Amazon or chatting apps for smartphones).
- An advanced easy-to-use interface will allow to place digital stories on the map (concerning memories, traditions and local way of life), connecting them to places and geographic references. This will be used both to properly locate European heritage and “external heritage”, originated by foreign cultures. This “geographic reference” will allow European youngsters and immigrants to cooperate in order to properly understand the origin of local culture, both in Europe and foreign countries.

3.3. Collaborative Knowledge Engineering

In related work [13], a human-centered and collaborative ontology engineering methodology was introduced, supported by an ontology engineering environment. In the recent work of Dyachenko and Zagorulko [14], a model of collective development of knowledge bases (KB), based on ontologies, and a knowledge base editor that implements this model, are discussed. In addition, the related work discusses the requirements for knowledge base editors that support collaborative KB building. The model proposes the use of asynchronous editing mode as default and a KB versioning control system. It also proposes the integration of notifications and discussions into the development process, as well as the presence of management mechanism for roles and permissions towards supporting developers and experts with different levels of expertise. Building KB in a collaborative manner is supported by version control and consistency check mechanisms, as well as by a notification mechanism, towards making KB development transparent for users and integrating discussions seamlessly into the development process. Finally, most recent works in ontology engineering extend the capabilities of collaborative development environments with modern technological paradigms, such as crowdsourcing enabled ontology engineering [15]. What is missing is the development of a knowledge engineering environment using the most suitable, seamlessly integrated set of methods and tools that support human-centered and collaborative knowledge engineering, ensuring that an engineered ‘live’ knowledge base is

commonly agreed, shared and continuously curated/maintained by all stakeholders (domain experts, knowledge engineers/workers). To bridge the gap of a missing human-centered and collaborative knowledge engineering (KE) approach for managing 'live' knowledge (graphs), iCARE will integrate a new KE methodology for the human-centered collaborative engineering of knowledge, to reflect new methodological requirements for managing knowledge graphs in the frame of new technological advancements in UX, Semantic Web technologies and Linked Data. The new approach will include all necessary knowledge engineering phases and related tasks. Furthermore, iCARE will seamlessly integrate and extend the existing functionality of open source tools in order to devise an integrated, human-centered, collaborative KE environment to support the new KE methodology. Finally, it will integrate Resource Description Framework (RDF) graph technology and advanced knowledge-driven graphical user interaction interfaces.

Going beyond the SotA, iCARE will integrate (i) a modern web interface for visualizing and editing knowledge graphs using Natural Language Processing (NLP), and (ii) a speech-enabled navigation and editing approach to enhance the user experience of authors of complex knowledge graphs, extending related work [16]. The new KE environment will support the 'live' management of a cultural heritage knowledge graph in a way that it is commonly agreed, shared and continuously curated/maintained by all involved stakeholders, i.e., domain experts, knowledge engineers and knowledge workers.

3.4. Intelligent Chatbots

The current SotA (see for example, Reference [17]) acknowledges the potential value of using Artificial Intelligence (AI) to create engaging and interactive conversations. On the other end, several works (see for example, Reference [18]) argue for the validity of conversations in education. As argued in Reference [19], data-driven technologies developed for chatbots is a novelty in general, and especially in the field of education. Going beyond the SotA, iCARE will provide delivery of digital stories via chatbots and home-devices, a novelty in the field of Digital Story Telling. More specifically, it will provide the delivery of digital stories via chatbots, and the evolution of "stories" into conversations. The stories transformed into conversations and delivered via home-devices will be more exciting for users, and therefore will provide additional motivations for authoring them.

On top of that, most successful forms of co-creation and sharing of rich experiences are organized as interactive social processes. Multimodal dialogue (combinations of written and spoken language, pictures, videos, tracked movements, etc.) is not only the social and natural form of interaction which is increasingly becoming the most attractive human-machine interface, but it is proven to have positive effects in many human activities, such as human learning and medical treatment. Currently, there is huge commercial interest in conversational systems. Conversational smart assistants such as Apple's Siri, Microsoft's Cortana, Google Now and Amazon Alexa have gained a good market position already.

A chatbot, in order to be effective and useful/supportive for users engaged in a specific socio-cultural experience (e.g., visiting a museum), must combine recent AI technological advances (Semantic Web, Linked Open Data, Knowledge Graphs, Natural Language Processing, Machine Learning) with the needs and purposes of the experiences. A chatbot must fulfil a large percentage (if not all) of the experiences' requirements and characteristics. It must be simple, informative, accurate and precise, as well as supportive to users that need guidance for completing their experience. It must have strong conversational skills and provide meaningful content. It may be entertaining and should be able to engage the audience for the whole experience/tour duration. It may be positive if there is a capability by the bot to provoke users to find and learn more, but at the same time, sensitive and understanding of human emotions. In that aspect, engineers must be able to configure the bot for 'talking' in a human-like manner, and at the same time, 'taking' in triples, i.e., to retrieve and present structured knowledge from the available Resource Description Framework (RDF) triple stores and the Linked Open Data (LOD) cloud. Furthermore, it must be available anytime, have an attractive interface and to be easy to use/interact.

Going beyond the SotA, iCARE will address the following challenges related to the validation/evaluation scenario of a museum visit experience:

1. How can museum visitors ‘talk’ to museum exhibits in the most natural way, to learn about them [20]?
2. How can human–exhibit dialogues be used to retrieve exhibits’ knowledge about themselves and about other related/connected exhibits, utilizing linked and open datasets [21]?
3. What is the most appropriate technological trend to use for the most efficient conversation between visitors and ‘smart’ exhibits [22]?

iCARE will build upon a preliminary architecture recently proposed [23], relying on three main components:

1. A Knowledge Base that utilizes Semantic Web technology (RDF, SPARQL query language, and Ontology Web Language (OWL) ontologies) for data extraction, representation, linking, reasoning and querying [24].
2. Natural Language Processing (NLP) for interpreting users’ input from natural language to RDF/SPARQL [25].
3. Natural Language Generation (NLG) for creating the proper well-defined human-like answers [26].

The aim is to develop a chatbot able to conduct dialogues/conversations such as the following:

- *User:* Where was the Snake Goddess figurine found?
- *Chatbot:* The Snake Goddess was found at Knossos Palace.
- *User:* And where is Knossos Palace located?
- *Chatbot:* Knossos Palace is located in Crete.

4. Scientific and Social Impact

iCARE aims at fostering cultural diversity and social cohesion [27], as well as the recognition of multiple identities and voices, by supporting the active involvement, engagement and collaboration of different/heterogeneous socio-cultural groups such as immigrants, refugees, young people in challenged neighborhoods and people/children with disabilities/special needs, in a number of creative Cultural Heritage (CH) experiences. iCARE integrates novel research methods and tools to facilitate the collaborative authoring of cross-cultural media-rich memories/stories that integrate physical and digital artifacts related to cultural heritage. Such tools will be provided within an open, user-friendly, mobile and knowledge-based platform, emphasizing a low-effort participative and guided co-authoring approach.

iCARE is expected to support innovation in the field of artificial intelligence-based solutions, providing knowledge-based and guided interactive environments as a service for participative and collaborative authoring of experiences, validated in the Cultural Heritage domain.

The proposed framework targets the global collaborative content authoring market and the learning market, offering unique products that will enable collaborative content design and creation, suitable as an educational and learning tool as well as a standalone collaborative authoring solution.

The framework builds on existing and new methods/tools of AI and ensures their further extension based on their application in the field of social and cultural cohesion. It will thus facilitate the further development of SMEs that provide AI-related technologies and the potential increase in their competitiveness and growth, as it will create new market opportunities.

A significant challenge is to capture the broader societal value of culture and heritage. The cultural value can be measured in human capita, especially in migrant and other possibly marginalized communities. This can be achieved by developing effective approaches that may also lead to respective policies that offer inclusive solutions to the current societal and cultural transformations.

iCARE, by providing novel methods and tools for the active participation and collaboration of heterogeneous socio-cultural groups in the authoring of social and place-based multi-cultural media-rich memories/stories, will facilitate social cohesion. The delivered tools will be provided to end-users within an open, user-friendly, mobile and knowledge-based platform, emphasizing a low-effort (code-free), participative, guided (chatbot-assisted) and knowledge-supported (best-practices consultation) co-authoring approach of content; thus, it will ensure that the envisioned impact in cultural heritage will be maximized [28].

5. Methodology and Implementation

Towards promoting inclusive access and giving an integrative character to the cultural heritage experience by exploiting novel technologies and tools, a crowd-sourcing online platform is proposed (Figure 1 depicts the proposed architecture). In its core, the platform will constitute a crowd-sourced repository facilitating the collection of user-generated shared experiences and content, both contemporary and historical. The collected content, tangible or intangible, will involve a wide range of elements, from traditional literature, dances and folk songs, to contemporary music and art, and from stories and narrations. The stored content can take various media formats, from plain text, illustrations, and still pictures to motion films, videos and audio recordings (focused on sound preservation). In order to maximize accessibility, the platform aims to have a ubiquitous presence and utilize open source accessible technology [29]. As such, crowd input will be conducted through suitable Web user interfaces as well as mobile apps.

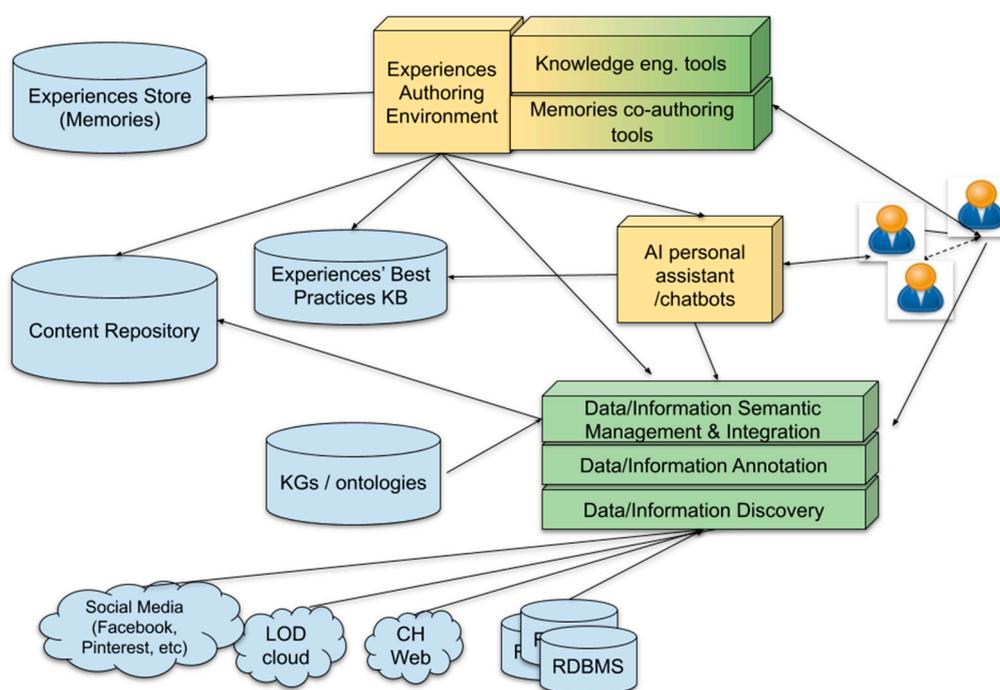


Figure 1. Proposed platform architecture, integrating Knowledge Graphs (KGs), Linked Open Data (LOD), data in the Cultural Heritage (CH) Web, and data available in Relational Database Management systems (RDBMS), supported by knowledge (best practices) provided in a knowledge base (KB)

A parallel, vital feature of the proposed platform will be the enrichment of the crowd-sourced content by utilizing “typical” knowledge/data repositories. The collected material will undergo an ongoing semantic integration, annotation and interrelation with cultural heritage knowledge/data harvested from relevant online repositories maintained by museums, art collections, universities, etc. Semantic integration of the collected content with external knowledge resources will be achieved by

employing Semantic Web technologies and documentation standards. Annotation and interrelation of the content will be user-generated, but also automatic by employing AI methods.

At a next stage, the enriched, crowd-sourced content will be properly curated, in other words, it will be organized, structured and grouped using expert domain knowledge, in order to become presentable to audiences. Presentations may take the form of a digital museum or online exhibitions, which can also facilitate the organization of physical exhibitions to actual museums and other cultural venues [30].

It has been argued that cultural action can play an important role in the creation of mutual trust, which is the basis for ensuring integration in the communities of immigrants. The proposed approach aims at supporting the creative engagement of participants by allowing them to contribute cultural content and memories in a shared platform [31]. The proposed platform will provide a set of tools that will enable the co-authoring of cultural experiences. This process will utilize the content and annotation about cultural artifacts. Finally, and vital in achieving a broader vision of cultural integration and inclusion, is the creation of a virtual, collaborative informational workspace. This workspace will serve as a meeting point for engaging and bringing together different relevant actors, such as NGO's and other regional stakeholders, with the purpose of disseminating the collected content/experiences.

6. Validation and Evaluation

For the validation and evaluation of the proposed framework, the physical and digital artifacts that will be used comprise:

- Multi-channel digital stories: available for “consumption” with several technologies. The content will be: (i) European cultural heritage (in a traditional sense), (ii) European way of life and traditions and (iii) immigrants and non-European way of life and traditions.
- Multilingual texts with personal narrations, references to literature and traditional stories, poetry, proverbs, fairytales, food recipes, etc.
- Images of places, sites, buildings, landscapes, archaeological sites, people, relatives and ancestors, costumes, artifacts such as traditional instruments, musical scores, house and ship designs, drawings, dances, etc.
- Video and audio content with music, sounds, narrations, existing documentaries, personal recordings of places and people, lectures and related seminars, etc.

In the context of the validation and evaluation of the developed proof-of-concept, these artifacts will be effectively enriched and annotated with appropriate metadata/semantics, such as identity, ownership, description, space/location, life timeline, and semantic relations among different pieces of content. The delivered technology (crowd-sourcing participative/collaborative platform and integrated tools) will facilitate the semi-automatic co-authoring processes for the composition of the above content that will generate: (a) Annotated maps, i.e., maps that are annotated by place-based memories such as personal narration or stories from the literature that are associated with specific places. For instance, an immigrant can assign a specific personal memory or a fairytale to a certain place on a map, and can navigate to an interactive map annotated with excerpts of a novel or other literary text, (b) media-rich timelines, which can also involve spatial information, (c) stories, (d) images/videos, (e) audio/video presentations and (f) interactive content such as quizzes, that will be automatically generated from the annotated, enriched content.

The framework and the implemented platform will be evaluated in use cases such as the one described in Table 1. A possible scenario is described here: Houmam is a 22-year-old asylum seeker from Syria in Greece. In collaboration with the UN Refugee Agency (UNCHR) (<https://www.unhcr.org/>) and NGOs he (and his local friends) is visiting the local Museum in Mytilene where he sees the painting *Olives-trees (1975)* by Orestis Kanellis, depicting olive trees in Greece. Houmam discusses the painting with friends and is guided by the chatbot on how to take a good photo of it. He posts the photo in Facebook adding a traditional story concerning olive trees at his home in Syria. Additionally, he has

some photos in his mobile phone of an oil orchard in Aleppo and he decides to upload/add those photos in his post as well. Houmam's Facebook account interoperates with iCARE platform, where the data concerning the artifacts in the local museum are already stored. The metadata that are contributed by Houmam are inserted into the repository of the platform. These metadata are semi-automatically annotated to provide enriched content for various types of applications. This annotation is compatible with various types of cultural heritage metadata adding (a) information about the kind of content (e.g., Dublin core for cultural heritage) (painting, landscape photo, ...), (b) information about the origin, country and place, cultural environment, etc. This information can be extracted from the profile of the contributor as well as by the text describing the media, and (c) information about the content of the image, e.g., an olive tree, a place. This information can be extracted automatically from the text that describes the image. The above (meta-)information about cultural artifacts is encoded by using an ontological model. This model will be based on existing well-known standard models for cultural heritage artifacts (e.g., European Data Model) but will be properly adapted/evolved for the needs of the project. Another friend of Houmam views his post of the olive trees and posts some other photos (related to olive trees) from another place in Syria. The same action is performed by his friends from Greece. An online discussion is now started between them and the chatbot, adding comments and other related material (e.g., videos, narration) suggested by the chatbot, "bringing" their memories and stories into the shared space. Their experiences have now become part of the SEE.

Table 1. Use case of creating interactive cross-cultural art stories at a Museum.

| |
|---|
| <p>Description: The goal is to co-create and share cultural and place-based media-rich content (memories/stories) that will be experienced, via the developed platform, by immigrants/refugees and other people that visit a Museum.</p> |
| <p>Participants:</p> <ul style="list-style-type: none"> • Local immigrants, especially young people, from families of recent immigration • Local students (senior high school) • Local cultural heritage guides |
| <p>Activities: Semantically enriched media-rich Cultural Heritage (CH) content and experiences related to the museum artefacts will be collaboratively created and added in the platform, that will be eventually shared during the following activities:</p> <ul style="list-style-type: none"> • Random and organized visits of immigrants to the museum • Combined organized visits of local students and immigrants to the museum, accompanied by cultural heritage guides • Immigrants, local students and other people will share digital content and create intercultural digital stories that will bring up memories and will show differences and similarities between different cultures. |
| <p>Impact/Value:</p> <ul style="list-style-type: none"> • Immigrants <ul style="list-style-type: none"> ◦ They will get in touch with local culture, and especially art ◦ They will reinforce their own past and memories (reinforcing past identity) ◦ They will share their own culture ◦ They will learn how to work with multimedia ◦ Overall, they will start being integrated in the local culture • Students <ul style="list-style-type: none"> ◦ They will get acquainted with local art and memories, that students often do not know (reinforcing current identity) ◦ They will get in touch with immigrants and their cultures (building a more open identity) ◦ They will learn how to work "almost professionally" with multimedia. ◦ Overall, they will start becoming cross-cultural • Local communities <ul style="list-style-type: none"> ◦ The immigrants will appreciate local art and culture ◦ Small island communities can better integrate students with immigrant communities |
| <p>Actors</p> <ul style="list-style-type: none"> • The museum will provide the content and the environment set-up • Academic institutes, service providers and public organizations will support with the infrastructure and coordinate the proposed activities • Local immigrants, cultural heritage guides and students from two schools will be engaged |

7. Conclusions

In this concept paper, we presented our vision for a novel framework that introduces new technology for the collaborative authoring of (cultural) experiences (place-based content, such as memories/stories) with low effort and with intelligent assistance. Additionally, we discussed our vision for a Shared Experiences Ecosystem (SEE) that aims to provide media-rich content and tools that will eventually foster the inclusive access of heterogeneous socio-cultural groups to shared experiences, increasing social cohesion in resilient local environments. The paper presents the iCARE framework and a proposed architectural design, as well as a validation and evaluation approach with a specific community of practice and interest (immigrants, refugees and locals within the context of collaboratively creating and sharing semantically annotated cultural content and knowledge, related to the physical and digital artifacts of a modern art museum).

Future work includes the implementation of the proposed framework and the evaluation in a real setting, as the one presented in this paper. It is expected that such a work will be funded by a related project proposal in the near future.

Although our paper captures our vision for a SEE created by the deployment of the proposed framework, its evaluation in a single domain only (such as the cultural domain) is a limitation that must be considered in future lines of this research. A domain-independent framework would better support the concept of SEE in a new era of multicultural people having multiple experiences in different domains, creating interconnected and synthesized experiences that are able to dynamically change over time and space. In a new interconnected global world, the creation of content must not be limited by places, cultures and media. Such barriers/limitations must be overcome for SEE to be a truly shared experiences ecosystem.

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