

EXISTING DIGITAL SOLUTIONS FOR HERITAGE SECTOR

Compiled by UNESCO Bangkok (October 2020)

EUROCRAFT

- Strength:** Education and training resources
- Creator:** The National and Kapodistrian University of Athens
- Link:** <http://patrec.ece.upatras.gr/cohere-game/>
http://www.talent.gr/docs/eurocraft/About_en.pdf
- Purpose:** To promote the communication of cultural heritage(s) between people within Europe, as well as to encourage the dialogue and the understanding of the “European Other”.
- Users:** Pupils of multicultural schools, preservice teachers and educators.
- How it Works:** It travels around Europe as a matrix to collect data (images, videos, sound) and stories concerning European Heritage and Identity. The selected material is the key to create Vid-maps (multilayer dot maps) to represent heritage and identity as well as the key to unlock the stands with the heritage objects and create a heritage air-museum.
- Key Features:** Allow for the public to participate in the serious game, Eurocraft, to enhance the critical dialogue on cultural heritage.

RURITAGE

- Strength:** Professional collaboration and education and training resources
- Creator:** The Ruritage consortium consists of 38 partners coming from 14 EU countries, Iceland, Norway, Turkey and one south American country (Colombia).
- Link:** <https://www.ruritage.eu/>
- Purpose:** To establish a new heritage-led rural regeneration paradigm able to transform rural areas in sustainable development demonstration ‘laboratories’, through the enhancement of their unique Cultural and Natural Heritage potential.
- Users:**
- Municipalities and towns in rural areas
 - Local Action Groups (LAGs)
 - Local agencies (public or semi-public organizations), responsible for the design and implementation of specific policies (economic development, energy supply, health services, transport, etc.).
 - SMEs and Start-ups
 - Private foundation, banks, investment agencies
 - Non-profit organizations (NGOs, local associations, etc.)
- How it Works:** The thirteen selected Role Models will be analyzed and then utilized for the selected Replicators. Both will create the Rural Heritage Hub as a means to have a physical meeting and exchange knowledge on how to address challenges and specific needs faced by the Replicators and adapt and tailor the Role Models’ strategies.
- Key Features:** RMs will mentor and support the Replicators in the development and implementation of their strategies and, at the same time, will further increase their knowledge and capacities.

EMOTIVE: STORYTELLING FOR CULTURAL HERITAGE

- Strength:** Professional collaboration education and training resources
- Creator:** EMOTIVE Consortium
- Link:** <https://emotiveproject.eu/>
<https://emotiveproject.eu/wp-content/uploads/2019/10/EMOTIVE-booklet-2019-web.pdf>
- Purpose:** Seek to alter the single-user experience, which could lack emotional romance or impact, into cultural-content storytelling for the transformation of heritage and museum visitor experience, encouragement of repeat visits, facilitation of direct and ongoing interaction and reinforcement of knowledge transfer.
- Users:**
- Authors: members of the cultural and creative industries in charge of creating interactive cultural experiences
 - Visitors: people visiting the site and experiencing it through the cultural experiences created by the authors
- How it Works:** the EMOTIVE will help design tools and develop methods, based on the power of storytelling, to support CCIs. The output of this process will be a number of prototype tools and mobile applications for heritage professionals and visitors to interactively experience museums and cultural sites.
- Key Features:** Creators and cultural heritage experts are empowered to collaborate and create interactive storytelling experiences for museums or cultural sites. Visitors can then download these experiences on their smartphone and are encouraged through immersive narratives to engage more meaningfully and deeply at different stages of their visit.

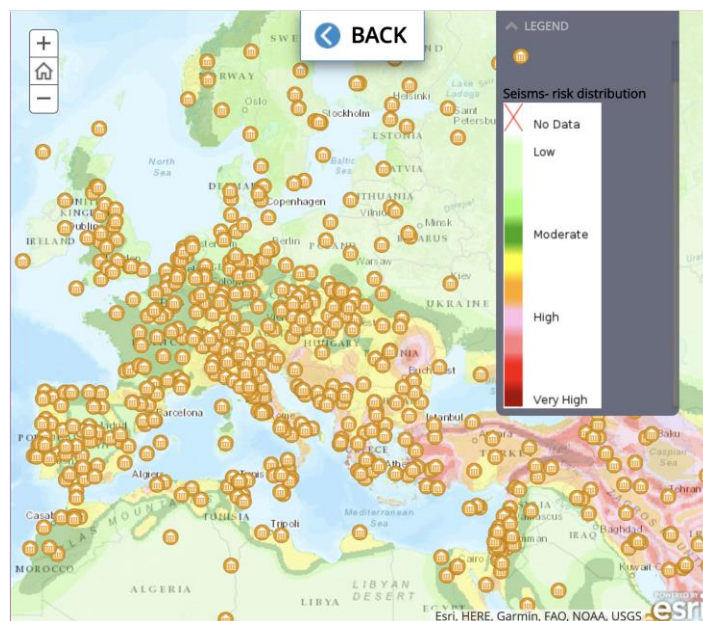
CIRCULAR HERITAGE IMPACT ASSESSMENT (CHIA)

- Strength:** High level condition assessment tools
- Creator:** Circular Models Leveraging Investments in Cultural Heritage Adaptive Reuse Consortium
- Link:** <https://www.clicproject.eu/>
<https://www.clicproject.eu/wp-content/uploads/2018/11/Fair-EU-Innovators-presentations.pdf>
- Purpose:** To assess impact in cultural heritage sector for adaptive reuse projects in the perspective of the circular economy
- Users:** Creative and cultural organizations, social entrepreneurs, other industry practitioners, and NGOs.
- How it Works:** The assessment tool can highlight the actual impacts and areas of potential improvements to enhance up-scalability based on the three levels of circularity:
- Level1: Cultural heritage values conservation, regeneration and transmission: enlarging the lifetime of heritage
 - Level2: Circularity of conservation works: reuse and reduce materials, energy, water and soil consumption
 - Level3: Positive impacts in the area/city/region linked to enhance place attractiveness: regenerating economic, social, environment and cultural resources
- Key Features:** The project is based on heritage impact assessment methodology that considers historic-cultural attributes and values, as well as economic-financial self-sustainability, economic spillovers, social and environmental impacts.

MESCH

- Strength:** High level condition assessment tools and education and training resources
- Creator:** meSch Consortium
- Link:** <https://www.mesch-project.eu/about/>
- Purpose:** Design, develop and deploy tools for the creation of tangible interactive experiences that connect the physical dimension of museums and exhibitions with relevant digital cross-media information in novel ways
- Users:** Cultural heritage organizations, tourism organizations, and cultural heritage professionals e.g. artists, curators, exhibition designers
- How it Works:** The project acts as a platform to upload content, define visitors' interaction, and use the smart blocks to compose the smart setting the visitors interact with. meSch has hardware and software components that can be mastered by non-technical users in a short period of time to create interactive installations.
- Key Features:** Professionals can create smart objects and intelligent spaces and to compose digital content to be embedded in smart objects and spaces without the need for specialized technical knowledge.

THE CULTURAL HERITAGE INTERACTIVE MAP



- Strength:** Visualization tools
- Creator:** The Joint Research Centre of the European Commission
- Link:** <https://eu-commission.maps.arcgis.com/apps/MapJournal/index.html?appid=e3e538d4e4b743c8a6bc7a363fbc2310>
- Purpose:** To increase citizen interactions and engagement in rating cultural heritage sites or identifying the ones that are at risks or deserve special attention
- Users:** General public and the cultural heritage experts
- How it Works:** The visual presentations (text, photos, videos, illustrations) of map journal, relating to the preservation of cultural heritage in Europe, are available online for the users to know where the events happen.
- Key Features:** The use of visually appealing story maps to convey complex spatially based messages to the general public.

ARCHAIDE

- Strength:** Education and training resources
- Creator:** Mappa Lab, CNR-ISTI Visual Computing Lab (VCL), Deep Learning Lab, Archaeology Data Service (ADS), ARQUB Material Culture and Archaeometry, CoDArchLab - Archaeological Institute, professional archeologists, and ICT company
- Link:** <http://www.archaide.eu/>
- Purpose:** To optimize and economize the process of pottery automatic identification/recognition, making knowledge accessible from around the world
- Users:** Archeologists and stakeholder community who have an interest or involvement in archaeological research or management responsibilities
- How it Works:** Pottery fragments can be photographed through application. Their characteristics will then be compared with typical pottery types and characteristics which activate the image recognition system, resulting in a response with all relevant information linked. The information will be stored within a database that allows sharing online.
- Key Features:** Provide the innovative application for tablets and smartphones for archeologists to recognize potsherds and transformed the data collected into a formatted electronic document for future use.

PLUGGY

- Strength:** Education and training resources
- Creator:** Mappa Lab, CNR-ISTI Visual Computing Lab (VCL), Deep Learning Lab, Archaeology Data Service (ADS), ARQUB Material Culture and Archaeometry, CoDArchLab - Archaeological Institute, professional archeologists, and ICT company
- Link:** <http://www.archaide.eu/>
- Purpose:** To optimize and economize the process of pottery automatic identification/recognition, making knowledge accessible from around the world
- Users:** Archeologists and stakeholder community who have an interest or involvement in archaeological research or management responsibilities
- How it Works:** Pottery fragments can be photographed through application. Their characteristics will then be compared with typical pottery types and characteristics which activate the image recognition system, resulting in a response with all relevant information linked. The information will be stored within a database that allows sharing online.
- Key Features:** Provide the innovative application for tablets and smartphones for archeologists to recognize potsherds and transformed the data collected into a formatted electronic document for future use.

INNOCASTLE

- Strength:** Professional Collaboration & Connection to Existing Policies
- Creator:** Interreg Europe
- Link:** <https://www.interregeurope.eu/innocastle/>
- Purpose:** To use historic castles, manors, and estates in rural or remote areas to stimulate rural and regional development and innovation.
- Users:** Partners from The National Institute of Heritage in Romania, the Province of Gelderland in the Netherlands, University College Ghent in Belgium and the Provincial Government of Badajoz in Spain
- How it Works:** Researchers from the partnership will share experiences and situations to learn from each other and create regional action plans to improve policy instruments based on the data collected from the research.
- Key Features:** Forum for collaboration between heritage sites for managers to discuss and solve common issues and work towards shared goals
- This tool was developed to demonstrate the importance of partnership in sustainable revitalization of heritage sites. This project addresses priorities that have been identified in Romania's Regional Operational Program, Belgium's Decree on Immovable Heritage, Spain's Extremadura Operational Programme, and the Netherland's Policy Programme for Culture and Heritage. Developing a similar tool could highlight shared Asian identities through promotion and visibility for local and regional actors.

CHERISH

- Strength:** Professional Collaboration & Connection to Existing Policies
- Creator:** Interreg Europe
- Link:** <https://www.interregeurope.eu/cherish/>
- Purpose:** To improve regional development policies to protect and promote cultural heritage in fishing communities in order to boost attractiveness of these regions for businesses, citizens, and tourists.
- Users:** Members of European fishing communities
- How it Works:** Members identify and analyze good practices, share their learning and experiences with each other, and develop action plans at regional, national and EU levels through stakeholder meetings. This information can then be shared disseminated to the public through Youtube and other forms of social media.
- Key Features:** The app allows members of local fishing communities to work together to solve problems related to climate change, tourism, and industry changes while protecting the intangible heritage associated with traditional fishing practice.
- This tool is consistent with EU policies for sustainable development and interregional cooperation through the Policy Learning Platform of the Interreg Europe Programme. It also allows for intangible cultural heritage to be shared through storytelling and collaboration with local communities so they can share their own histories. There are opportunities to create a similar model for our app.

COASTSNAP

- Strength:** Public Photo Stations
- Creator:** Government of Australia, NSW Office of Environment and Heritage
- Link:** <https://www.environment.nsw.gov.au/research-and-publications/your-research/citizen-science/digital-projects/coastsnap>
- Purpose:** To recruit users to upload photos of the coastline as part of a research program to monitor how beaches across Australia respond to changing ocean conditions
- Users:** 'Citizen scientists' – members of the public who download the app
- How it Works:** Members of the public can take photos at designated phone cradles positioned at key locations along the coastline and upload the data via the app. Researchers are then able to access the data to measure the changing beach width and shape, movement of the shoreline, and changing conditions.
- Key Features:** Phone cradle stations with a descriptive panels that explain how to share the photos. Requires minimal expertise and effort by the public, and off-site data analysis can be conducted by trained professionals.

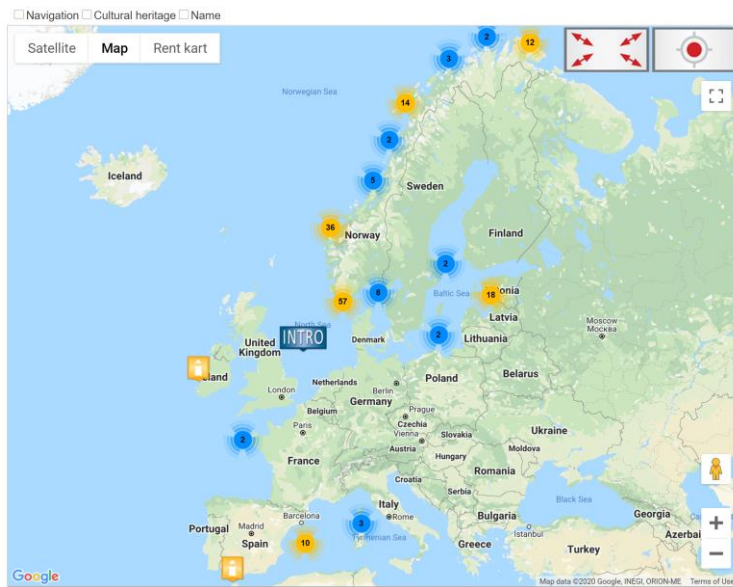


NEW MEDIA FOR CULTURAL HERITAGE (NEMECH)

- Strength:** Education and training resources
- Creator:** University of Florence
- Link:** <http://nemech.unifi.it/>
- Purpose:** A competence center on cultural heritage established by the Tuscany Region who develops research projects and innovative solutions on digital technologies applied to cultural heritage, with national and international companies.
- Users:** Members who enroll in NEMECH courses
- How it Works:** NEMECH offers courses, events, and workshops on different topics related to heritage and technology. Through their research and experiments on topics such as smart tourism, digital museums, and interactive technologies they attain data for dissemination. This allows the university to transfer research know-how to places where cultural assets are shared and accessed by the public.
- Key Features:** Educational training courses and seminars to educate invested partners

HERICOAST

- Strength:** Visualization tools and digital mapping
- Creator:** Interreg Europe
- Link:** <https://www.interregeurope.eu/hericoast/>
- Purpose:** To create a partnership from 6 countries to create an interregional learning process to identify and analyse heritage and territorial situations, exchange experiences and good practice, and develop regional action plans.
- Users:** Partners from Norway, Spain, Italy, Romania, Ireland, and the Netherlands
- How it Works:** As a result of the research from different participating countries, Hericoast developed an app called Coastlight (<https://coastlight.net/>), which is a website to disseminate content related to maritime history based on a digital map. This is one of the examples of the end result of the research and analysis developed through Hericoast to identify solutions for awareness of vulnerable coastal heritage sites.
- Key Features:** Interactive mapping system showing sites of cultural heritage. Easy to differentiate between different types of cultural heritage through symbols and colours.



SPOT-A-BEE

Strength: Visualization tools and digital mapping

Creator: University of Glasglow

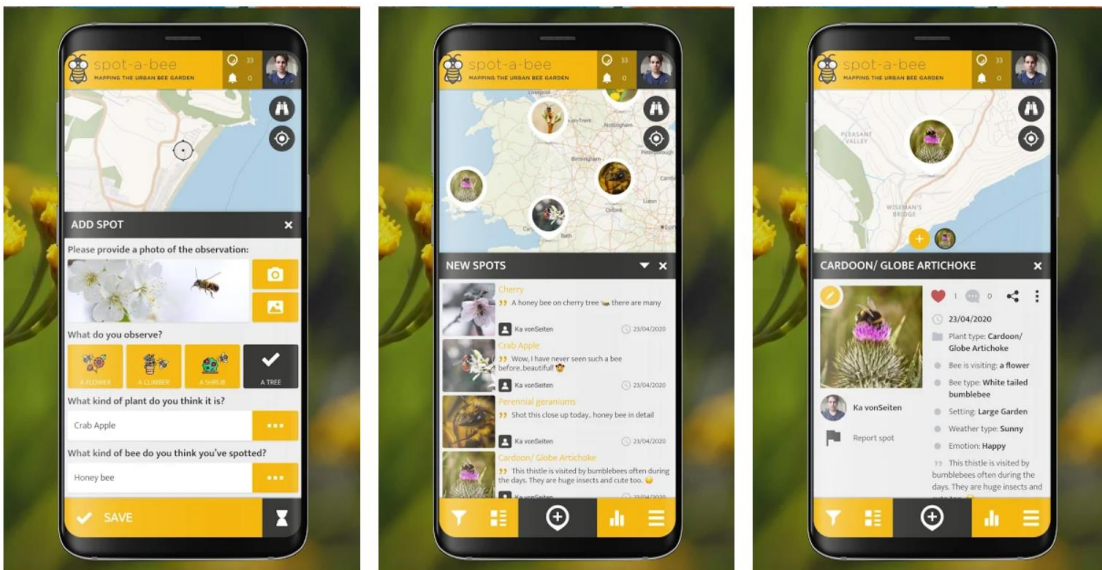
Link: <http://spotabee.buzz/>

Purpose: To photograph bees in urban settings to understand more about how bee populations can be sustained in an increasingly urban environment.

Users: Any member of the public

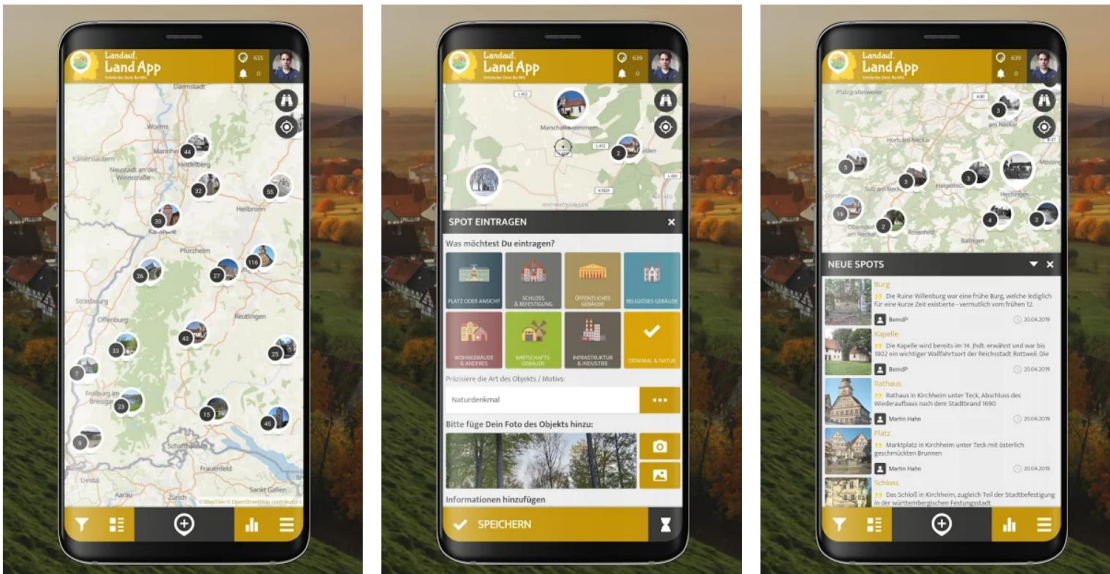
How it Works: Users upload photographs of bees which are analyzed to identify plants which are most often visited, map bee friendly locations, and support pollination.

Key Features: Great visual cues to help users as they fill out the forms. Interactive digital maps, comments on photos to allow members to interact and solve questions (ex. What type of plant or bee is this?). Not directly heritage related, but there could be crossover for members of the public to determine which types of damages are seen in photos of heritage sites.



LANDAUF LANDAPP

- Strength:** Visualization tools and digital mapping
- Creator:** Landeskunde Entdecken Online: Baden-Württemberg
- Link:** <https://www.leo-bw.de/web/guest/ueber>
- Purpose:** To map architectural, cultural and natural monuments from all over Baden-Württemberg as part of a regional studies program for the German southwest.
- Users:** Residents of Baden-Württemberg
- How it Works:** Users photograph historic sites, architectural details, city views or other inspiring buildings and describe in a few lines why it is remarkable or their personal relationship with the place or object. Users can see other entries and get to know and better understand the community around them.
- Key Features:** Comparisons with historic images, interactive maps of local cultural heritage, and sort sites by building typologies (ex. Historic churches near me).



HERITAGECARE

- Strength:** High Level Condition Assessment Tools
- Creator:** Centro de Computação Gráfica (Center for Computer Graphics) at University of Minho
- Link:** <http://heritagecare.eu/>
- Purpose:** To create an integrated and sustainable methodology for the preventive conservation and maintenance of cultural heritage in Europe.
- Users:** Researchers through the University of Minho
- How it Works:** Inspectors come to help owners and managers of heritage buildings to manage deterioration and provide condition screening through the combination of an immersive reality tool, a system for inspection, and the development of a mobile application for inspection. There are different levels of care, each of which use a mobile application for rapid condition assessment through a standardization of tools and a damage atlas. Final data is given to the property owners via the online website.
- Key Features:** Detailed notes for condition assessment, an atlas of typical damages, and a standard form in which to enter this data

EUROPEANA

Strength: Connection to Existing Policies

Creator: Europeana Foundation

Link: <https://www.europeana.eu/en>

Purpose: To digitize cultural material with an online library, archive, and museum for objects from 2500 organisations across the EU.

Users: European archives, libraries, and museums can upload content

How it Works: This website empowers the cultural heritage sector to digitize their material for cultural education, research, creation, and recreation. Once the files have been uploaded, they are accessible by any members of the public. Material must be either about Europe, made in Europe, or owned by a European institution.

Key Features: This tool was developed to meet the Digital Agenda for Europe, which focuses on modern technologies and online services that will allow Europe to create jobs and promote economic prosperity. Something like this in Asia could be a great way to disseminate cultural heritage knowledge in Asian culture. Also, the information could be expanded into a damage atlas or an identification tool for cultural heritage so that users could look at previous entries to help create new entries in the app.

How to create more diversified and resilient income streams?

- Local Alike/Local Aroi (Thai community based tourism/e-commerce) (<https://localalike.com/>, <https://localaroi.com/>)
- Apps/websites to book musicians: <https://encoremusicians.com/>
- Online art marketplace: <https://www.maecenas.co/>

How to connect cultural and creative practitioners and organizations to resources?

- A CLT version of Craigslist or TaskRabbit
- Online music booking studio: <https://musicwise.io/recording-studios>

How to expand access to arts, cultural heritage and creative goods and services?

- GoogleArts and Culture 3-D/virtual museum and site visits
- Apps for virtual site visits (https://play.google.com/store/apps/details?id=com.vizerra.muar&hl=en_US)
- Live streaming app with special focus on Asian content like Inke (China) or PinkFong (Korea)

How to enhance training and education to support culture and creative professionals and consumers?

- Coursera and other MOOCs on culture, heritage, arts management (per our online list in April)
- Digital arts education apps/software (Adobe Spark for Education)

How to expand networking and collaboration among culture, creative, business and tech sectors?

- Online networking apps/platform for artists (like ArtHub https://play.google.com/store/apps/details?id=com.arthub.android&hl=en_US)
- Collaborative music making app (<https://www.soundtrap.com/>)

How to upgrade knowledge management and harness data for more informed decision/policy making?

- Data analytics for arts/culture (<https://www.artanalytics.com/>)

How to safeguard cultural heritage in a more effective and inclusive manner?

- Mobile apps for heritage monitoring (AMAL: <https://www.amal.global/>, <https://fpan.us/projects/HMSflorida.php>)
- Queue management app now used at Khao Yai NP (QueQ: <https://play.google.com/store/apps/details?id=com.jorlek.queqcustomer&hl=en>)
- Data loggers (humidity, temp, etc) for museums and heritage site (http://eltekdataloggers.co.uk/applications_museum_nhm_singapore.php)
- Indonesian folklore for kids on Youtube (<https://www.thejakartapost.com/life/2018/12/01/youtube-kids-wants-to-help-preserve-indonesian-folktales.html>)
- App for African folktales (<https://www.amazon.com/Lizzies-Creations-AfroTalez/dp/B013JBJSY0>)