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INSTANT PAPER

Culture and Tourism: New Tech Frontiers

Rethinking cultural venues, enhancing tourism and local development

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Index

Index

01 | A new Strategic Vision

01
A New Strategic Vision

The identity of places and the uniqueness of heritage amplified by technology and experience

Cultural policies and management models are undergoing an evolutionary process marked by a shift in the very concept of cultural enjoyment, as well as in the roles played by the public and private sectors, the latter being called upon to play a more active part. People, empowered by new technologies, the web, and social media, are organizing themselves, experimenting, and seeking engagement and emotional connection. This evolution demands increasingly timely and targeted responses from local governments and central institutions.

Investing in innovation is therefore essential to reactivate development processes at all levels and in all geographic areas, while also potentially creating new jobs. New technologies contribute to making cultural offerings more competitive by renewing their spirit and, to some extent, redefining their scope and meaning. When digital tools are introduced into spaces of art, history, and nature, they can increase both the tangible value of heritage and the perceived value of the visitor experience, while also helping manage tourist flows and enabling the socioeconomic revitalization of territories.

This transformation process has also been driven by **National Recovery and Resilience Plan funding (M1C3)**. The Plan has opened up exceptional opportunities for local entrepreneurial development in the cultural sector through medium- to long-term initiatives and actions aimed at facilitating and supporting investments in the tourism and cultural sectors, with lasting economic impacts.

At the core of this change lies a new approach and strategic vision, built on the ability to share and replicate successful experiences across different territories, create new circuits based on experience and perception, overcome language barriers and accessibility challenges, and move beyond the "hit-and-run" tourism model by attracting and retaining visitors.

Destination management, digitalization, the control and management of flows (including for safety purposes), the creation of immersive and personalized pathways (even for children), Extended Reality, Artificial Intelligence, avatars, chatbots, and gaming are just some of the many innovative tools that can meet these new needs. The proper implementation of these tools must be accompanied by

equally effective territorial marketing strategies, so as to attract tourists not only to major cities but also to lesser-known destinations, breaking out of traditional circuits—such as, for instance, historic villages.

01 | A new Strategic Vision

Our Solutions

From AI to Extended Reality and gamification to personalize the storytelling of museums and cultural sites

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The use of enabling technologies, among other tools, makes the storytelling of heritage and culture more democratic, coherent, immersive, sensory-rich, and customizable, offering:

- Innovative ways to represent both tangible and intangible historical-cultural heritage

- New, enhanced modes of user–tourist engagement and access to services

- A seamless user experience, with no discontinuity between physical and virtual environments in the exploration of cultural sites

Engineering Group's solutions introduce new ways to access and experience spaces and events by using highly innovative tools that support the governance of tourism and cultural sites.

Extended Reality (XR) allows the cultural and tourism experience to become more engaging and participatory.

These technologies also enable on-demand, remote access. Through **Augmented Reality (AR)**, users can explore 3D reconstructions of environments, with real elements enhanced by virtual ones that recreate architectural features from the past or future, along with additional information and content.

Mixed Reality (MR) takes user involvement further, integrating digital models into the physical world and allowing interaction with virtual objects through mobile devices.

These technologies support a deeper level of interaction through gamification. With AR and interactive maps, visitors can take part in challenges that lead them to interact with cultural and tourist assets in order to achieve goals, solve problems, and propose solutions. Motivation is boosted by rewards and competition dynamics.

The model is scalable and modular, adaptable to different contexts, and based on open standards and interfaces, open-source software components, and a web-based microservices architecture. This enables integration with existing services, preserving past investments and allowing for future developments.

Key features include:

- **Remote Visits (Outdoor & Indoor)**: Platforms for simple or immersive tours of real locations, museums, or historically reconstructed cities

- **Ticketing:** A unified ticket reservation system for public and private points of interest, both free and paid

- **Event Planning & Flow Management:** Tools for joint planning and scheduling of events across a city or region, including crowd management for safety

- **Virtual Assistants & Digital Avatars:** AI, analytics, deep learning, and NLP to ensure barrier-free access

- **Virtual & Immersive Exhibitions:** Immersive digital exhibitions for one or more points of interest (such as a square or unique site), available for touring experiences worldwide

02 | Our Solutions

02 | Our Solutions

- **Incoming Tourism Promotion:** Enhancing tourist flows through branding, networking, stakeholder engagement, and destination identity development

- **Proximity Marketing:** Geolocation of mobile devices or proximity technologies (beacons, RFID, NFC) embedded in urban furniture or museum routes (IoT) to trigger contextual information services based on the principles of info and proximity marketing. Tourists can receive real-time notifications on their devices with maps, local events, or site-specific content.

When designing digital solutions to enhance cultural and tourism heritage, it's essential to integrate **accessibility** from the earliest stages. Digital accessibility, as outlined by AGID guidelines and EU regulations, is a fundamental right, ensuring full and equal access to content, services, and cultural experiences for all.

Engineering Group adopts a comprehensive and integrated approach to accessibility, combining regulatory expertise, design capabilities, inclusive user experience (UX), and specialized training. Every project phase—from technical consultancy to project management, from developing inclusive interfaces to training—is designed to deliver smooth, engaging, barrier-free experiences.

The **EngX team** specifically promotes practical, inclusive solutions that eliminate digital barriers by implementing intuitive interfaces and dedicated tools. These are designed to guarantee every citizen—regardless of physical, sensory, cognitive, or linguistic abilities—the full right to participate in cultural life.

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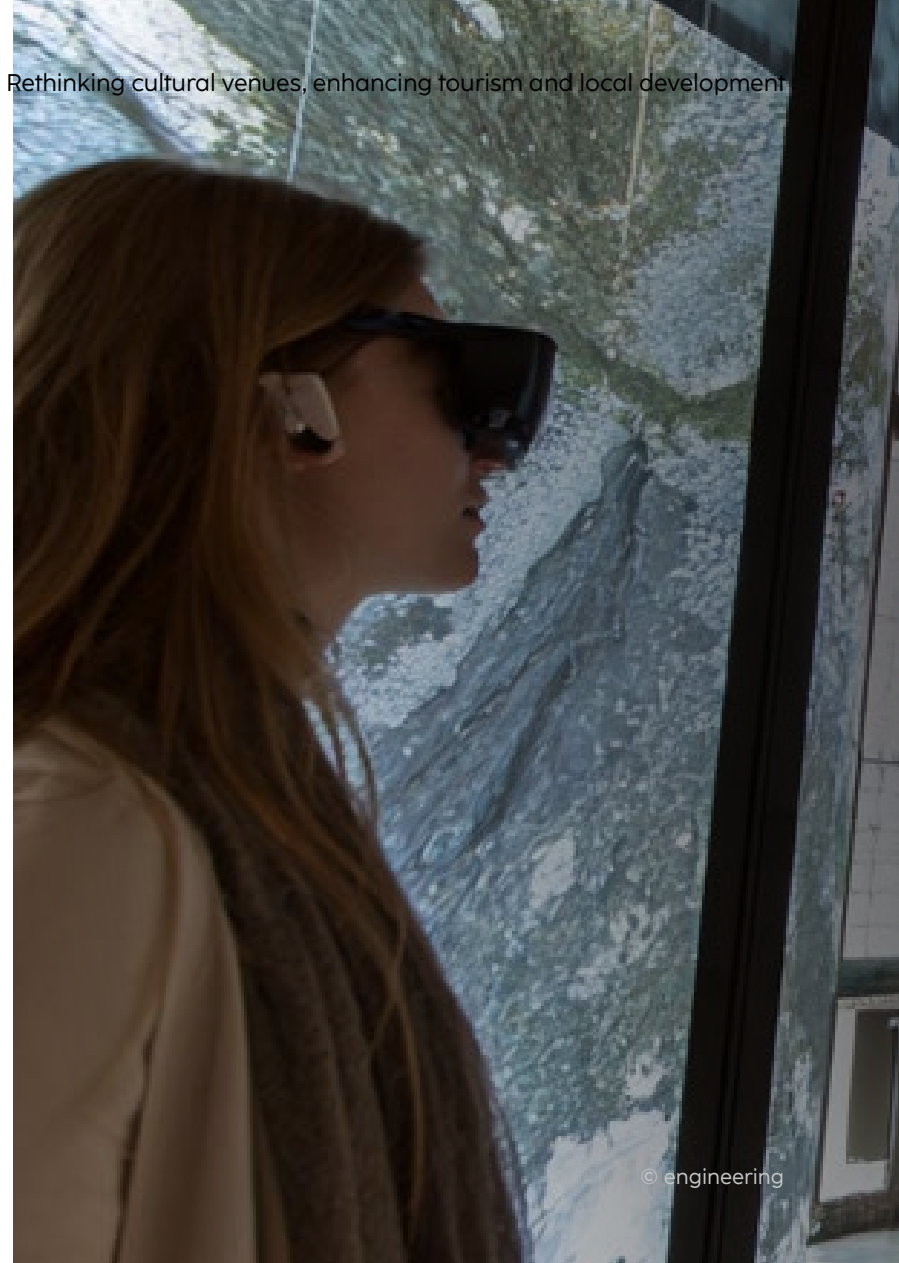
"Technological innovation enables and supports the process of territorial enhancement in terms of services, participation, and preservation of historical and cultural heritage—a heritage that must be strengthened, protected, and made accessible to all.

02 | Our Solutions

03 | The Digital Cultural Heritage

The Digital Cultural Heritage

Digitizing cultural heritage is essential to building a true ecosystem capable of preserving, enhancing, and making available resources through advanced technological tools and platforms. This is a strategic process within the new vision and management of cultural sites, covering a wide range of areas—from the digitization of ancient manuscripts and cadastral records (such as registries, maps, and post-unification daily newspapers), to photographic archives, museum objects (including historical-artistic and archaeological holdings, drawings, and prints).

In this context, the National Recovery and Resilience Plan, under Mission 1 – Component 3 "Tourism and Culture 4.0", has allocated €500 million to Investment 1.1 "Digital strategy and platforms for cultural heritage", with €200 million specifically dedicated to digitization. This major initiative aims to create a digital cultural heritage system based on a coordinated and interdependent set of infrastructures and platforms designed for the creation and management of services related to the production, collection, preservation, distribution, and access to digital cultural resources.

Investing in digitization, therefore, means not only preserving the memory of a territory but also promoting and revitalizing cultural heritage—making it a shared asset and a source of inspiration for the future.

04 | The role of Artificial Intelligence

EngGPT: the Made-in-Italy GenAI for Supporting the Tourism Offering

EngGPT is Engineering's proprietary Large Language Model, built on Private Generative AI, enabling companies and public institutions to harness the power of Artificial Intelligence through a solution natively optimized for the Italian context. It ensures full data control, privacy, regulatory compliance, and perfect alignment with specific organizational needs.

Developed using cutting-edge techniques in Generative AI, EngGPT can be seamlessly integrated into any application, with domain-specific customizations—such as for the tourism sector. Among its many applications, EngGPT can power virtual assistants through an agent-based AI framework capable of handling a wide range of natural language processing tasks and use cases, including document information extraction, data analysis, image processing, data quality checks, and more.

Its high level of customizability also applies to how it interacts with users—adopting a tone of voice aligned with the organization's communication style and delivering information in a simple, engaging way for end users.

This allows organizations to tailor their Generative AI to meet specific needs, maintaining full control over the solutions developed and gaining a strong competitive advantage. Ultimately, EngGPT enables the creation of highly personalized services and products, enhancing customer experience and enabling differentiation in the marketplace.

USE CASE

AI for Proactive Tourist Flow Management

Tourist flow management is often reactive and based on historical data, using tools that are inflexible or difficult to interpret. Public authorities struggle to anticipate overtourism scenarios, allocate resources efficiently, or personalize offerings. By combining Generative AI with Advanced Analytics, it becomes possible to forecast and anticipate visitor flows to specific sites or entire municipalities. A Virtual Agent powered by EngGPT supports public staff and decision-makers through natural language interaction, enabling them to query data and receive actionable insights. This enhances planning and resource allocation capabilities, reduces congestion and service disruptions, and helps optimize both cultural and commercial offerings.

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USE CASE

An intuitive and interactive app for discovering local heritage

Visitors to a city often struggle to obtain immediate and reliable information about points of interest. Paper guides are often outdated, incomplete, or hard to find, while websites are not always optimized for mobile use or able to adapt to user movements and preferences. An app powered by EngGPT allows visitors to simply scan a monument to automatically identify it and receive real-time dedicated content: history, anecdotes, visiting hours and fees, links to other points of interest, and additional possible itineraries. Visual recognition technology integrated with Augmented Reality thus simplifies access to information, making local heritage more accessible and engaging.

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USE CASE

A personalized Virtual Travel Assistant

A local authority's website can be enhanced with a Travel Assistant that helps users plan their stay by offering personalized suggestions aligned with the city's branding— what to see, where to stay, and activities to do—preventing users from leaving the site to search elsewhere for updated information and offers. The Virtual Assistant powered by EngGPT recommends itineraries, events, cultural destinations, and nature experiences, displays real-time hotel availability and prices, and enables instant bookings. Available 24/7, multilingual, and constantly updated, it provides fast, personalized responses.

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04 | The role of Artificial Intelligence

Focus On

Opportunities for Public Administration

Managing and Enhancing Museums, Cultural, and Tourism Offerings through Special Public-Private Partnerships

Recent legislative changes—such as Article 134 of the Public Contracts Code—have made it possible to create simplified public-private partnerships (PPP) aimed at enhancing cultural heritage, with increasing examples of such agreements. This form of PPP seeks to reduce timelines and simplify processes, enabling public administrations to seize funding opportunities while leveraging private capital as a multiplier of public funds.

The Engineering Group, specifically through its company Municipia focused on municipal markets, acts as an integrated design and execution entity. Starting from needs analysis, constrained timelines, and project ideas, it plans and implements all phases—initial, intermediate, and final—according to Public Procurement Code requirements, assuming part of the risk and ensuring potential long-term impacts.

The goal is to make the storytelling of heritage and culture increasingly immersive, sensory, and customizable. The visitor should not need to choose the best technology or connectivity; rather, the technological architecture adapts to the environment and offers the best support to the visitor. These goals allow Engineering to support public bodies via the **Special Public-Private Partnership**, a collaboration model characterized by highly simplified governance, operational flexibility, and broad technical discretion, aimed at the optimal enhancement of assets.

SPPP acts as a multiplier of resources from the National Recovery and Resilience Plan, as private involvement injects additional financial resources, engages the local territory and community, and fosters partnerships with volunteer organizations and the Third Sector.

What Changes:

- Unified and coordinated management of cultural and tourism offerings

- Integrated management and enhancement of museum attractions under a business museum logic

- Innovative ways of representing tangible and intangible cultural heritage of the community

- Innovative user-tourist experience modalities

- Seamless user experience with no discontinuity in the transition between physical and virtual environments for territory enjoyment

- Destination marketing and promo-commercialization

It becomes possible to:

- Manage digital content (images, videos, Virtual and Augmented Reality)

- Collect information from user interactions during promotion and use of goods and services

- Learn and predict user preferences to help administrations offer a more attractive and competitive "tourist product"

- Improve promotion of territorial resources

- Increase engagement during the user experience

- Analyze data for strategic insights, including in real time

Benefits

For the public entity and the territory:

- **Economic impacts:** Improved accessibility and development of cultural resources, stakeholder engagement; the hospitality system supports and facilitates visits, creating value for the entire sector, ensuring business survival of all sizes, and protecting employment levels.

- **Planning tools:** By monitoring data and gathering quantitative and qualitative feedback, investments can be effectively managed and planned, promoting territorial development aligned with real needs and aspirations.

- **Destination marketing and promo-commercialization** on national and international channels and networks.

For users:

- **Information and services always at hand:** New technologies ease interaction between Public Administration and city users, enhancing communication and delivering data and information to everyone, often in a targeted manner. This means simplified access to services, where information reaches users rather than users having to seek it out.

- **Direct experience and sharing opportunities:** Technology use is attractive and engaging, fostering peer-to-peer information exchange and diffusion. By sharing their experiences and emotions, users become true "ambassadors of cultural and tourist beauties" of their territories.

05 | Focus On

Our Stories

06

CASE STUDY

Planetaria Festival: Interactive theater with an avatar on climate change

We developed a digital avatar with EngGPT for a unique theatrical experience. A system capable of answering questions on environmental topics in a cryptic manner. We also created a text-to-speech and speech-to-text component to enable AI interaction with actors and the audience. Thus, we created an interactive avatar able to dialogue in real time with artists, scientists, and the audience during live performances.

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CASE STUDY

Enhancement, management, and promotion of the Imperia city museum circuit

A Special Public-Private Partnership initiative to enhance and integrate the city's cultural attractions through digitalization of visitor services. Direct management of the Museum Circuit by the RTI, which brings investments, know-how, experience, and technological solutions. The project focuses on two fundamental aspects: communication and promo-commercialization of the cultural-touristic offer and experiential and emotional engagement of visitors. Investments are planned in digital tools and services for management and fruition, new informational and cultural content, marketing, and promo-commercialization.

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CASE STUDY

Card Cultura: a new ecosystem for user services, promotion, and commercialization

Creation of a new ecosystem for managing the Card Cultura that includes back-office, management, and front-end functionalities, offering new services to users and addressing promotion and commercialization needs. The Municipality of Bologna already had our CMS for managing content and information of 13 museum sites: it became the core on which to build the evolution of another important cultural offering tool, thus creating new modes of user interaction.

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CASE STUDY

Orvieto in the Metaverse

Engineering, together with the Municipality of Orvieto, designed an ecosystem where it is possible to access public services, cultural and artistic assets, 3D exhibitions/shops, informational content, and more. The guide is Anna's avatar, the city's mascot. Users can take a virtual tour either via traditional devices or 3D headsets. The experience does not replace the on-site visit but encourages it by offering a virtual tour that enhances perception and enjoyment of the city, removing all barriers to make the experience truly inclusive.

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06 | Our Stories

06 | Our Stories

CASE STUDY

Sporty: Tourism at your fingertips in Lombardy

Ahead of the 2026 Winter Olympics, the Lombardy Region has launched an innovation path for the territory's tourism offer. The project aims to enhance the regional informational heritage and the entire network of stakeholders: ski resort owners, agritourism owners, alpine guides, ski schools, municipalities, sports associations, etc. An omnichannel customer experience project to innovate and enhance Lombardy's tourism offer.

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CASE STUDY

Rimini Chatbot: A Digital Assistant at the service of citizens

The solution foresees the integration of a Digital Assistant on the official website of the Municipality of Rimini and the Riminiturismo page. The main implemented functionality is orientation and informational support to users for immediate and direct resolution of their informational needs on all public and tourist services managed by the municipal administration. Through natural language conversational interfaces, the system interprets expressed needs and always guarantees a response.

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USE CASE

Engineering Metaverse Dome Experience

An immersive and innovative experience that revolutionizes how to live the cultural heritage of cities, explore cutting-edge educational models, and experiment with new forms of sharing and entertainment. The project aims to overcome physical and accessibility barriers, extending access to cultural heritage. The goal is to introduce innovative and interactive educational models, strengthen social interaction, and create new opportunities for cultural tourism, enhancing local heritage and enriching visitors' experience.

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CASE STUDY

Puglia Region: Digital visitor experience

We designed a digital marketing and customer experience solution capable of transforming the emotional interest generated by the multimedia communication campaign, across all physical and digital touchpoints, into user engagement on which to build a personalized and profiled relationship strategy in an omnichannel mode. In this way, we were able to attract, engage, and retain users by integrating the informational assets of the regional Destination Management system with Newsletter Marketing tools.

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CASE STUDY
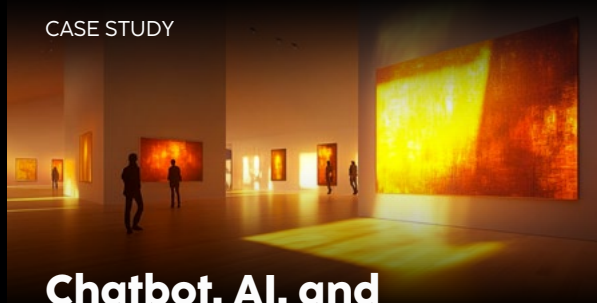
Chatbot, AI, and Gamification for the MAXXI Museum

A modern and flexible solution that allows the Museum to stay in touch with every single visitor, informing them about exhibitions, events, and other activities even after their visit period. The solution consists of a virtual assistant that, leveraging an Artificial Intelligence engine, communicates with visitors, anticipates their curiosities, and tests their knowledge through gamification.

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06 | Our Stories

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