



ReInHerit

Redefining the Future of Cultural Heritage,
through a disruptive model of sustainability



www.reinherit.eu



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0. Executive Summary

Smart tourism apps are mobile applications designed to enhance the travel and cultural experience for tourists, visitors and travellers. These apps leverage technology and data to provide users with up to date helpful information, navigation, and services, making their trips and visits more convenient, enjoyable, and memorable.

Smart Tourism involves digitalisation, technology, and data-driven smart solutions to enhance the overall tourism experience for visitors. The goal is to create more efficient, sustainable, and personalized travel experiences through the integration of various technologies. Key aspects of smart tourism include cultural heritage preservation and promotion, by using technology to digitally preserve and showcase the cultural heritage of a tourist destination, such as digitalisation of museums, heritage sites, and interactive exhibits.

In this document 'Policy Guidelines for Smart Tourism Apps' are given, in terms of:

- Compliance with '**European Smart Tourism Capital**' components
- Contribution towards '**Smart Destinations**'
- Inclusion of all Cultural Assets, Tangible and Intangible
- Privacy and Data Protection
- Data Security
- User Consent
- Data Minimisation
- Transparency
- App Accessibility
- Compliance with Regulations
- Informed Consent for Push Notifications
- User Reviews and Moderation
- Intellectual Property Rights
- Ethical Use of Technology
- Emergency and Safety Information
- Sustainability and Environmental Responsibility
- Data Backup and Recovery
- User Support and Help Resources
- Regular Updates and Maintenance.

1. Introduction

This document provides 'Policy Guidelines for Smart Tourism Apps'.

Smart tourism apps are mobile applications designed to enhance the travel and cultural experience for tourists, visitors and travellers. These apps leverage technology and data to provide users with up to date helpful information, navigation, and services, making their trips and visits more convenient, enjoyable, and memorable.

The Apps within ReInHerit should be for 'Smart Tourism'(rather than Smart Apps for Tourism). The 'Smart Tourism' character of the Smart Tourism Apps (STAs) is stipulated in the description of D7.10 which states "... guidelines on actions for smart tourism based on the developed smart tourism apps." Therefore, the STA should conform to the definitions and components of 'Smart Tourism', as defined by the European Commission DG GROW European Capital of Smart Tourism initiative (www.smarttourismcapital.eu), viz:

"Smart tourism responds to new challenges and demands in a fast-changing sector, including the evolution of digital tools, products and services; equal opportunity and access for all visitors; sustainable development of the local area; and support to creative industries, local talent and heritage."

And more specifically:

"Smart Tourism initiative recognises outstanding achievements by European cities as tourism destinations in four categories: sustainability, accessibility, digitalisation as well as cultural heritage and creativity."

Smart Tourism is thus closely related to the preservation and promotion of cultural heritage with digitalisation, in sustainable cultural tourism development and promotion. The aim is to promote innovation to strengthen smart destinations in Europe, to enhance tourism offers for visitors and to facilitate new partnerships. It also aims to foster the EU's forward-thinking tourism offer to global audiences and sustainably increase attraction to pioneering destinations that offer unique visitor experiences.

Cultural Heritage aspects are about protecting and capitalising on the cultural heritage, as well as local potential and its creative assets for the benefit of the tourism destination, the industry and the visiting tourists in general.

All of the above lead towards 'Smart Destinations'. The initiative of UNWTO 'Smart Destinations' (including cultural heritage and creativity, accessibility, lowcarbon smart and sustainable mobility, climate action, host communities' engagement, etc) is closely related to the next generation of cultural tourism development and promotion.

A smart destination according to the UNWTO is one with a strategy for technology, innovation, sustainability, accessibility and inclusivity along the entire tourism cycle: before, during and after the trip.

A smart destination is also one with residents as well as tourists in mind, factoring multilingualism, cultural idiosyncrasies, and seasonality into tourism planning. Smart Destinations are key to the transformation of the tourism sector; by continuously and accurately measuring, integrating and analysing data for efficient decision-making, prioritization and anticipation of challenges, they create a seamless and exciting experience for tourists while managing local resources efficiently, including cultural assets.

Smart destinations deploy digital applications that make it possible to offer increasingly customized services and to differentiate cultural tourist destinations that provide added value while preserving the natural, social and cultural environment. Smart destinations can make tourism governance more inclusive through inclusive entities, such as boards, trusts or foundations, which represent all public/private stakeholders in the destination. They can help ensure maximum accessibility in sites, products and services, eliminating barriers to mobility.

Therefore, the ReInherit Smart Tourism Apps co-creation process should respect and comply with the above definitions by the European Commission and UNWTO.

The ReInherit Smart Tourism Apps should have a generic structure that can be freely adapted and customised to specific cultural tourism destinations. In this sense, the generic Apps should have the following features or modules:

- General description of the tourist destination
- Cultural Heritage assets of the destination (both tangible and intangible)
- Accessibility for all (inc. for persons with disabilities and mobility handicaps)
- Sustainability of Tourism (as defined by UNWTO, inc. seasonality)
- Digitalisation, to enhance the tourism experience
- Creativity possibilities – Creative Tourism offers, also involving CCIs (optional)

- Interactive maps
- Interaction between users
- Integration into social media
- Links to European Cultural Routes
- Links to European heritage Label sites.

The co-creation of the generic Apps - 'demonstrator' - should allow for customisation to any tourist destination by adding relevant content and specific information for travellers, etc, according to the above features or modules.

The Smart Tourism Apps are an integral part of the ReInHerit Toolkit (i.e. specific tools in the toolkit, amongst the other tools).

Following the introduction, the report defines and discusses the highly relevant concepts and initiatives of Smart Tourism (Chapter 2) and Smart Destinations (Chapter 3), presents the framework of Smart Tourism Apps (Chapter 4) and gives the respective Policy Guidelines (Chapter 5). Relevant references are also given at the end.

2. Smart Tourism

Smart Tourism involves digitalisation, technology, and data-driven smart solutions to enhance the overall tourism experience for visitors. The goal is to create more efficient, sustainable, and personalized travel experiences through the integration of various technologies. Key aspects of smart tourism include cultural heritage preservation and promotion, by using technology to digitally preserve and showcase the cultural heritage of a tourist destination, such as digitalisation of museums, heritage sites, and interactive exhibits. Other relevant aspects of Smart Tourism include inter-alia:

- **Mobile Apps:** Developing dedicated mobile applications that offer tourists information about attractions, maps, navigation, real-time updates, and personalised recommendations based on their preferences.
- **Digital Connectivity:** Providing tourists with access to high-speed internet and mobile networks is essential for seamless communication and access to online resources during their travels.
- **Data Analytics:** Collecting and analysing data from various sources, such as social media, sensors, and booking platforms, to understand tourist behaviour, preferences, and trends. This information can be used to optimise services and marketing strategies.
- **Augmented Reality (AR) and Virtual Reality (VR):** Offering immersive experiences to tourists through AR and VR technologies, allowing them to explore historical sites, cultural landmarks, and attractions virtually before, during and after their visit.
- **Sustainability:** Incorporating sustainable practices into tourism operations, such as energy-efficiency, waste reduction, and sustainable mobility options, to minimise the impact on the environment and mitigate climate change.
- **IoT (Internet of Things):** Integrating IoT devices and sensors within a destination to gather real-time data on crowd density, environmental conditions, energy consumption, and more. This data can inform decision-making and enhance visitor experiences.
- **Smart Mobility:** Implementing efficient and sustainable mobility solutions, such as real-time public transport information, demand responsive transit services, and electric vehicle charging stations, to facilitate mobility and accessibility within the destination.

- Personalisation: Using data analytics and AI to provide personalized recommendations for cultural activities, accommodation, and dining options based on a visitor's interests and preferences.
- Collaborative Platforms: Creating platforms that facilitate communication and collaboration among tourists, locals, services, museums, and heritage sites, allowing for the exchange of information, reviews, and recommendations.
- Smart and integrated ticketing to cultural venues, museums, and heritage sites, possibly combined with public transport and micro-mobility services (such as communal bikes and electric scooters).
- Real-Time Updates: Providing real-time updates on weather conditions, local events, traffic congestion, and other relevant information to help tourists make informed decisions.

Overall, smart tourism aims to enhance the visitor experience, assist local economies, and promote sustainable practices within the tourism industry by leveraging technological advancements and data-driven insights.

Smart Tourism facilitates, promotes, and enhances **Cultural Tourism** in particular. Smart Tourism and Cultural Tourism are two interconnected concepts that can work together to enhance the overall visitors' experiences and promote the appreciation of a destination's cultural heritage with sustainability. Incorporating smart tourism practices into cultural tourism can enhance the overall visitor experience, foster a deeper appreciation for cultural heritage, and support the sustainable development of tourist destinations. By using technology to bridge the gap between modernity and tradition, destinations can attract a diverse range of visitors while preserving and promoting their cultural heritage assets and identity.

'**Smart Tourism**' is defined by the European Commission as follows:

"Smart tourism responds to new challenges and demands in a fast-changing sector, including the evolution of digital tools, products and services; equal opportunity and access for all visitors; sustainable development of the local area; and support to creative industries, local talent and heritage".¹

¹ https://smart-tourism-capital.ec.europa.eu/about/european-capital-smart-tourism_en

2.1. European Capital of Smart Tourism – EU initiative

Smart Tourism is the subject of an initiative by the European Union, namely the ‘**European Capital of Smart Tourism**’ initiative, financed under the EU COSME Programme since 2021. It is built on the successful experience of the Preparatory Action proposed by the European Parliament and implemented by the European Commission since 2019. Due to the outbreak of the COVID-19 pandemic the 2021 edition of the competition was suspended. The initiative seeks to strengthen tourism-generated innovative development in European cities and their surroundings, increase their attractiveness, and foster economic growth and job creation. It also aims to establish a framework for the exchange of best practices between cities participating in the competition, create opportunities for cooperation and new partnerships.

The 2024 European Capital of Smart Tourism is the fifth edition of the competition. Pafos and Seville were the winners of the 2023 European Capital of Smart Tourism competition. Previous winners include Bordeaux and València (2022), Gothenburg and Málaga (2020), Helsinki and Lyon (2019).



The new ‘**European Capital of Smart Tourism Award**’ by the European Commission since 2019 has components of ‘Sustainability, Accessibility, Digitalisation, Cultural Heritage & Creativity’, viz:

- **Accessibility** includes services that are multilingual and digitally available to all travellers and visitors, regardless of their age, cultural background or their physical disability.
- **Sustainability** does not only mean to manage and protect natural resources, but to reduce seasonality impacts on the environment and to involve the local community.
- **Digitalisation** uses digital technologies to enhance all aspects of the tourism experience, enabling simpler access to services for all travellers, as well as to help local businesses to grow.
- **Cultural Heritage and Creativity** refers to protecting and capitalising on the cultural heritage as well as local potential and its creative assets for the benefit of the tourism destination, the industry and the visiting tourists in general.



Smart Tourism is thus closely related to the preservation and promotion of cultural heritage with digitalisation in sustainable cultural tourism development and promotion.

The aim of the Smart Tourism Capital awards is to promote innovation to strengthen **smart destinations** in Europe, to enhance tourism offers for visitors and to facilitate new partnerships, networking and the exchange of best practice. It also aims to foster the EU's forward-thinking tourism offer to global audiences and sustainably increase attraction to pioneering destinations that offer unique visitor experiences.

In terms of **Cultural Heritage and Creativity**, the following aspects are highly relevant:

- making resourceful use of cultural heritage and creative industries to enrich tourism experience and quality of life
- actions implementing to boost the recognition as a smart tourism destination and to incorporate the **tangible and intangible heritage** of art, history and culture, in an enhanced tourism offer
- use cultural heritage and creativity to attract tourists, as well as exploit synergies between tourism and cultural and creative industries.

In terms of **Digitalisation**, the following principles apply:

- offering innovative tourism and hospitality information, products, services, spaces and experiences adapted to the needs of the consumers through ICT-based solutions and digital tools.
- providing digital information about destinations, their attractions and tourism offers
- information on public transport, attractions and accommodation digitally accessible, or integrated if possible
- a digital-friendly environment for businesses to grow in
- supporting tourism businesses in the development and use of digital skills and tools

- using digital solutions for enhancing innovative tourism offers.

In terms of **Sustainability**, including Environmental, Social and Economic aspects:

- working to preserve and enhance the natural environment and resources and balancing economic and socio-cultural development
- managing natural resources (including innovative, environmentally friendly measures)
- implementing resource efficiency measures and actions aimed at combating, or adapting to, climate change
- putting in place measures aimed at reducing tourism seasonality
- involving the local community, share revenues with local communities, local tourism revenues channelled into local development, communities and businesses
- contribute to local employment
- support businesses and local communities to develop sustainable solutions or collaborations for the tourism industry.

In terms of **Accessibility**:

- physically accessible to travellers with special access needs, regardless of age, their social or economic situation and whether they have disabilities or not
- easily reachable by different means of transport and with a strong network by car, train, plane, and bike
- tourism services accessible to all
- barrier-free for people in a wheelchair, with mobility challenges, families, aged visitors
- restaurants, museums, walking tours information available in multiple languages, multilingual service-staff
- street guidance routing for blind people, accessible tourism services for people with mental disabilities, people hard of hearing, parents with young children, the elderly, etc
- services, activities, exhibitions, and attractions allowing everyone to participate, regardless of disabilities.
- accessible booking systems, websites and services offering multilingual information,
- websites/apps user-friendly and intuitive.

The ReInHerit Horizon 2020 CSA partner ECTN presidency **Pafos**, Cyprus (2021-2024), has won the title of '**European Capital of Smart Tourism 2023**' (together with Seville, Spain) amongst 29 candidates and 7 finalists.

Pafos 2023 European Capital of Smart Tourism

The capital of Cyprus in Roman times, Pafos is an all-year-round destination and one of the most diverse and historically rich areas on the island. Pafos was European Capital of Culture in 2017 and is European Capital of Smart Tourism in 2023.

- **Transforming quantity into quality with innovation and creativity**

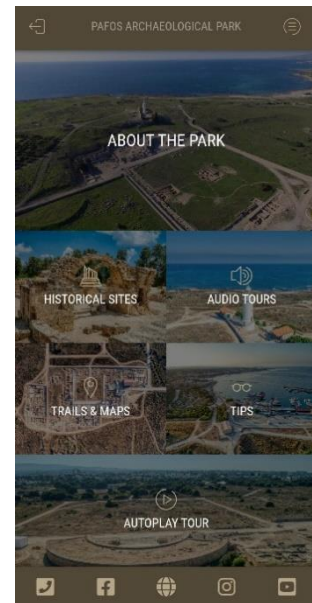
Pafos is one of the most popular tourist destinations in Cyprus and it attracts most of the visitors coming to the island. The whole city is included in the UNESCO world heritage list and people can discover important places of interest, such as the UNESCO Archaeological Park of Kato Pafos, the Medieval Castle by the ancient harbour, the Old Town, among others. This rich area attracts then over 550,000 international visitors with an average duration of stay of 8 days, has the capacity of 12,000 license tourist beds and it is estimated that the tourism industry within the city of Pafos employs around 14,000 people. The city is currently investing heavily in the region's infrastructures, tourist products, services and experiences offered, tourism technology and environmental protection. Pafos has transformed from a traditional mass sun-and-sea tourism hotspot into a modern and innovative tourism destination.

- **Where myth meets technology**

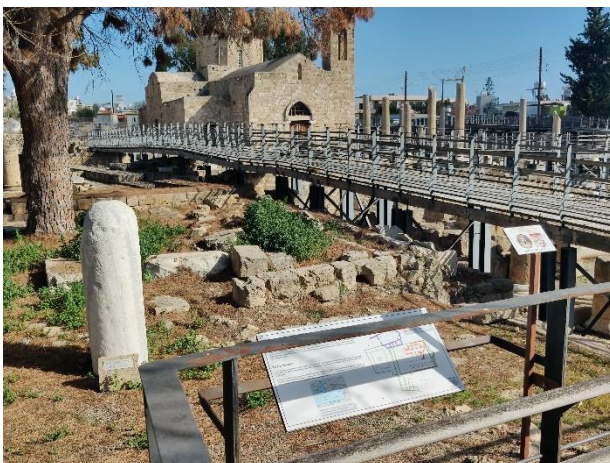
Pafos is at the heart of the myth of Aphrodite, with the beach of her birthplace. The city then offers a new experience to visitors with the possibility – coming soon – to download the Myth of Aphrodite app for free, after the success of the pilot project using AR (Augmented Reality). Users will be able to scan relevant photos of Aphrodite in three different places on the beach, to enjoy Aphrodite in a real environment through their smart devices. The scenes include the mythical goddess emerging from the foam of the sea, sitting on a rock, and reading a book on the beach. Users can then interact, and find information on the app, with locations and description. Culture lovers or explorers, all can download the app and enjoy it.



Examples of smart tourism facilities in the Pafos region, Cyprus, are given below.



Smart phone app for the Pafos Archaeological Park, UNESCO World Heritage Site, Cyprus



QR code at the St Paul's pillar, St Paul's footsteps European Cultural Route (candidate for Cultural Routes of the Council of Europe), Pafos, Cyprus



Aphrodite's Birthplace
PAFOS - CYPRUS

Augmented reality app at Aphrodite's birthplace, 'Petra tou Romiou', Pafos region, Cyprus

2.2 Transition Pathway for Tourism

The Transition Pathway for Tourism² (TPT) was launched by the European Commission in February 2022, following co-creation with stakeholders, as an essential collaborative process to help the transformation of the European tourism ecosystem which was hardest hit by the pandemic and faces major challenges to achieve the twin transition (digital and green).



The aim of the TPT is to describe the measures and outputs needed to accelerate the green and digital transitions and improve the resilience of the tourism ecosystem. The objective is to encourage and invite all groups and stakeholders in the tourism ecosystem to engage and play their part in the initiative. The work to prepare the pathway has followed a collaborative approach involving all stakeholder groups. Similar active and productive collaboration should also support the way forward. Following the publication of this report, the Commission will invite tourism stakeholders to present their commitments to the transition pathway for tourism, and it will establish collaboration processes for the co-implementation and monitoring of the work. The follow-up of the transition pathway is facilitated by an online stakeholder collaboration platform.

² European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Transition pathway for tourism, 2022, <https://data.europa.eu/doi/10.2873/344425>

The report includes several references in relation to cultural heritage and tourism. In particular, several and highly relevant references on cultural heritage, smart and sustainable tourism:

- cultural heritage and the potential to give customers unique and authentic experiences
- cultural and creative industries in their key role in the tourism ecosystem
- innovative tourism based on cultural heritage, traditions, arts and authentic cultural experiences
- cultural and active tourism experiences for visitors
- virtual and augmented reality services provide new ways to help preserve natural and cultural resources at risk, while enabling real-like visitor experiences
- linking with the objectives of European data space for cultural heritage to digitise cultural heritage assets, R&I in this area could provide new innovative, sustainable and accessible forms of tourism services
- innovative tourism services using advanced technologies (virtual reality, augmented reality, AI) and digitized cultural heritage
- use of cultural centres such as museums, theatres, libraries and archaeological sites, together with the integration of European and regional tourism policies, UNESCO sites, archaeological, marine and natural parks, villages and spa tourism, will be fundamental to increase the attractiveness of tourism
- develop and implement smart and sustainable tourism strategies at the right level in order to emphasise local identity specialities by encouraging the promotion and quality craftsmanship, especially for regions that highlight their gastronomy, local knowledge and traditions.

There are specific references to:

Smart and sustainable tourism strategies

Stakeholders confirmed that the green and digital transition to achieve greater resilience in tourism at national and regional levels should be guided by comprehensive tourism strategies. These strategies should be built on sustainable development principles, which factor in economic, environmental and social sustainability. It also requires effective and collaborative governance that takes into account inputs from and the views of all stakeholder groups.

Tourism strategies should pay close attention to:

- implementing the above regulations (in terms of their environmental objectives, digitalisation, data collection and monitoring);
- tackling the specific challenges of tourism destinations (climate mitigation and adaptation needs, infrastructure needed to improve sustainability, pressures on biodiversity, water resources or pollution);
- specific strengths of tourist destinations in terms of natural resources, cultural heritage and the potential to give customers unique and authentic experiences;
- inclusiveness and accessibility, including for persons with disabilities;
- supporting SMEs and cultural and creative industries in their key role in the tourism ecosystem, in terms of technical assistance and the funding needed to meet the objectives of the strategy.

Depending on the tourism management setup in the Member States and regions, the bodies in charge of developing tourism strategies may be national, regional or local level bodies. In cross-border areas, such as in coastal communities, it could be beneficial to develop a comprehensive strategy at a sea basin or at a macro-regional level, aligned with the existing initiatives, which would support the coordination and collaboration of stakeholders across borders. It could be appropriate for EU regions such as the outermost regions to develop such cooperation for sustainable tourism strategies together with third countries and territories in their direct geographic proximity. Smart specialisation strategies can also be helpful in developing smart and sustainable tourism.

Collaborative governance of tourist destinations

To make the national or regional tourism strategies specific, functional and applicable, they need to be complemented with locally developed and adapted work plans. Depending on the local destination, the responsibility for developing or managing work plan may lie with the local authority or destination management organisation (DMO). As the skills and resources of both are needed to support tourism stakeholders in their work, the best solution would be to ensure that they jointly prepare and follow up the local tourism strategy and work plan. The stakeholder consultation highlighted that collaboration between all stakeholders is important to ensure sustainable tourism that generates positive net effects for the visited communities around the tourism destination. This should include public and private-sector organisations, local producers and services, cultural and creative sectors and industries, local authorities, tourism management organisations and local associations and residents. Visitors should also

be able to provide their input, which could help improve the visitor experience while factoring in the needs and interests of the visited community. This collaborative work should support local public spaces and services, tourism marketing and services design, and monitoring mechanisms of the impact of tourism locally. Some of the best practices collected in the European Capital of Smart Tourism competitions take the collaborative and inclusive governance approach, where destination management organizations take on strategic tasks, and the local community and authorities are involved in the decision-making process. These are good example practices for other destination management organisations to follow across the EU.

All of the above lead to the development and delivery of '**Smart Destinations**'.

3. Smart Destinations

The term '**Smart Destinations**' refers mainly to the smart infrastructure solutions offered by tourist destination authorities, such as Destination Management Organisations (DMOs), tourist boards and associations, in facilitating **Smart Tourism** activities, products and services.

Smart destinations play a significant role in enhancing **cultural tourism** experiences. Cultural tourism involves travellers seeking immersive experiences that allow them to explore and engage with the cultural heritage, traditions, arts, and history of a destination. The integration of smart technologies and approaches into cultural tourism can greatly enrich these experiences.

The concept of '**Smart Destinations**' is closely associated with the work of the United Nations World Tourism Organization (UNWTO). The UNWTO defines a smart destination as one that "makes the most of technology to improve the quality of the visitor experience, improve the quality of life for residents and make efficient use of resources." This concept aligns with the broader idea of Smart Tourism, focusing on using technology and innovation to enhance the overall tourism experience and destination management.

The UNWTO emphasises several key principles when it comes to smart destinations:

- **Collaboration:** Smart destinations foster collaboration among various stakeholders, including governments, businesses, local communities, and tourists, to create a cohesive and effective tourism ecosystem. This also refers to closer collaboration between museums and heritage sites.
- **Innovation:** Smart destinations encourage the adoption of innovative technologies and approaches to enhance the tourism experience, sustainability, and competitiveness of the destination.
- **Technology Integration:** These destinations leverage information and communication technologies (ICTs) to provide real-time information, enhance communication with visitors, and streamline various aspects of the tourist experience.
- **Sustainability:** Smart destinations prioritize sustainability by using technology to manage resources more efficiently, reduce environmental impact, and promote responsible tourism practices.

- **Accessibility:** Technology is employed to make destinations more accessible and inclusive for all types of travellers, including those with disabilities.
- **Local Engagement:** Smart destinations involve and engage local host communities in the development and management of inclusive tourism initiatives, ensuring that the benefits of tourism are distributed widely.
- **Quality of Life:** The goal of smart destinations is not only to improve the tourism experience but also to enhance the quality of life for local residents by creating a more sustainable and liveable environment.
- **Resilience:** By using technology and data, smart destinations can better prepare for and respond to crises, such as natural disasters or public health emergencies.

The UNWTO provides guidelines and resources for destinations looking to embrace smart tourism practices. These guidelines cover topics such as governance, innovation, technology infrastructure, data management, and stakeholder engagement.

Overall, the concept of smart destinations, as advocated by the UNWTO, underscores the importance of using technology as a tool to enhance the sustainability, competitiveness, and overall appeal of tourist destinations while also benefiting local communities and **preserving cultural and natural heritage**.

The **'Smart Destinations' initiative of UNWTO** is closely related to the next generation of cultural tourism development and promotion. A smart destination according to the UNWTO is one with a strategy for technology, innovation, sustainability, accessibility, and inclusivity along the entire tourism cycle: before, during and after the trip. A smart destination is also one with residents as well as tourists in mind, factoring multilingualism, cultural idiosyncrasies, and seasonality into tourism planning. Smart Destinations are key to the transformation of the tourism sector; by continuously and accurately measuring, integrating and analysing data for efficient decision-making, prioritization and anticipation of challenges, they create a seamless and exciting experience for tourists while managing local resources efficiently, including cultural assets. Smart destinations deploy digital applications that make it possible to offer increasingly customized services and to differentiate cultural tourist destinations that provide added value while preserving the natural, social and cultural environment. Smart destinations can make tourism governance more inclusive through inclusive entities, such as boards, trusts, or foundations, which represent all public/private

stakeholders in the destination. They can help ensure maximum accessibility in sites, products and services, eliminating barriers to mobility.

Smart Destinations is a new tourism model based on Innovation, Technology, Sustainability and Accessibility. Innovation and technology have led to changes in the tourist profile (highly informed, multichannel, independent). In the digital age, cultural tourists expect personalised services, they need to be online almost at all times, and they demand authentic experiences, destinations which can offer tourists something new and distinctive, consistent with the natural, social and cultural environment. This means that tourist destination authorities must evolve to meet the requirements of these new tourists at every stage of their trip. A destination that can innovate, implementing new systems that facilitate the analysis of multiple sources of information (Big Data, Business Intelligence) and enable them to be more efficient and competitive. Thus, a complete overhaul, which does not repeat or rehash old patterns, is needed in tourist destinations. The end goal is to ensure the destination is sustainable in the long term, economically, socio-culturally and environmentally. In this ever-changing context, where new proposals appear every day all over the world, it is essential to examine these new models in depth towards enhancing the visitor experience, particularly in sustainable and smart cultural tourism.

Smart destinations implement and increase the use of technology that connects different physical elements, services and spaces, such as museums and cultural heritage sites, and that facilitates the analysis of the resulting data. As this can improve the management of these elements in real time, among others, big data analysis, the Internet of Things (IoT), open data strategies are fundamental elements for transitioning to more intelligent tourist destinations.

When developing smart destination systems, objectives, strategies and action plans shall aim at supporting the destination's sustainable development, reflecting different contextual elements such as available resources; residents' and visitors' needs; the destination's specific socio-cultural / environmental context; its current challenges and needs, etc. Because not all existing challenges can be overcome at once, prioritization is essential when implementing smart solutions. For such purpose-driven development, and in order to create feasible action plans for the destinations, it is of high importance that efforts are made to create a detailed analysis, at the beginning of the planning process, which clearly identifies and reflects the local characteristics, the main challenges and needs, the prevailing regulatory framework, necessary interventions and other essential aspects. Throughout the process, data

visualization is crucial for a transparent and understandable interaction with the host and guest.

With cultural tourism playing an important part in many urban or rural communities, the successful planning of smart destinations depends very much on its integration within these environments. Consequently, meaningful partnerships between individual or specific groups of actors are key for the successful transition towards smart destinations, not only in respect to developing and implementing new solutions but also to ensuring continuity. This includes not only partnerships between and within the private and public sectors, between data providers and recipients, but also with other stakeholders such as the local communities, museums and heritage sites.

It is essential for cultural tourism stakeholders involved in developing smart destinations to form and be represented through inclusive entities, such as foundations, tourist boards and associations; it is of similarly high importance to seek close cooperation and connections to cultural organisations, museums and heritage sites, that are also aiming to create **smart solutions for enhancing the visitor experience** (a people-centered approach).

Smart solutions enable destinations to better respond to changing travel behaviours and needs of the more informed, hyper-connected and multi-channelled cultural tourist by offering more relevant, integrated services (e.g. from door to door) and incorporating fast adaptation processes in individual business models as well as in destinations themselves. In this respect, cultural tourism particularly benefits from better cooperation between museums and heritage sites in enhancing the visitor experience through smart solutions.

The digital environment allows companies to promote cultural destinations, products and services more successfully than ever, creating higher value through, for example, better market segmentation, personalization of products and services, and more transparent and immediate communication with visitors at museums and heritage sites. Therefore, destinations are more equipped to actively steer and respond to their visitors' needs, increasing their satisfaction and the overall competitiveness and quality of the destination.

Smart solutions are only intelligent if they improve sustainability. While advances in data management have been made predominantly in the economic area of sustainability in the past, the new digital transformation of the sector offers opportunities to strengthen a more universal approach towards sustainability, supporting stakeholders at all levels to profit from

decision making mechanisms based on tangible evidence in all three pillars of sustainability, allowing destinations to govern their tourism activity more effectively. It is also important to foster smart solutions that integrate knowledge from different sources and drive circular design of products and services for higher resource productivity, strengthening the sustainable management of cultural resources overall.

New technological solutions for smart destinations should be based on, and should preserve and promote, local identities and values, destinations' successful governance is highly dependent on continuous participatory processes involving all stakeholders, public and private, across all levels. In order to strengthen participatory policy-making, local authorities shall therefore make increasing use of tools such as participatory budgets that ensure long-term participation of local host communities. Within the social dimension of sustainability, new technologies and smart systems shall be encouraged that serve to improve accessibility for people with handicaps, ensuring that destinations and trips to cultural assets, museums and heritage sites are barrier-free and accessible for all.

Efficient management needs shared governance between the public and the private sectors.

4. Smart Tourism Apps

Smart tourism apps are mobile applications designed to enhance the travel experience for tourists and travelers. These apps leverage technology and data to provide users with helpful information, navigation, and services, making their trips more convenient, enjoyable, and memorable.

Common features and functions of smart tourism apps are:

- **Travel Guides:** Smart tourism apps often offer detailed guides to cultural tourist destinations, including information about heritage (tangible and intangible), monuments, attractions, history, culture, and available activities. They may also include user reviews and ratings to help visitors make informed decisions.
- **Maps and Navigation:** These apps typically provide interactive maps with GPS functionality, helping users find their way around a heritage site or a city, locate points of interest, and get directions to their desired destinations.
- **Offline Access:** Many smart tourism apps allow users to download maps and content for offline use, ensuring that travelers can access information even when they do not have an internet connection.
- **Augmented Reality (AR):** Some apps incorporate AR features that superimpose information, such as historical facts or reviews, onto the real-world view through a smartphone's camera and special effects.
- **Multilinguality and Language Translation:** To overcome language barriers, apps may offer multi-lingual versions, or real-time translation features and functionalities allowing users to translate spoken or written text into their preferred language.
- **Local Events and Entertainment:** These apps often provide information about local events, concerts, festivals, and other entertainment options happening in the area during the visitors' stay.
- **Weather Updates:** Smart tourism apps may include real-time weather updates, helping travelers plan their activities based on the local climate.

- **Booking Services:** Many apps allow users to book special tours, tickets, mobility and other travel-related services directly through the app, often offering exclusive discounts and deals.
- **Local Transport:** Information on public transportation options, schedules, and fares can be essential for navigating a tourist destination.
- **Custom Itinerary Planning:** apps enable visitors to create and customize their itineraries by selecting attractions and activities they want to experience during their trip.
- **Travel Tips:** These apps often include travel tips and advice, such as cultural norms, safety information, and local customs.
- **Reviews and Recommendations:** Users can leave reviews and recommendations for others, helping fellow travelers make decisions about where to go and what to do.
- **Savings and Discounts:** Apps may offer special deals, discounts, and incentives for various services, making tourism experiences more affordable.
- **Feedback and Ratings:** Users may rate and provide feedback on the places they visit, contributing to a community of recommendations, suggestions as well as risks and warnings.
- **Real-Time Updates:** Information on opening times, closures, delays, or other real-time updates related to tourist attractions or services.

5. Policy Guidelines

When developing and deploying **smart tourism apps**, it is essential to adhere to **policy guidelines** and best practices to ensure the cultural access, privacy, security, and overall positive experience of users. On the basis of the information, discussion and implications presented in previous chapters, such relevant **policy guidelines for smart tourism apps** have been devised, as given below.

1. Compliance with '**European Smart Tourism Capital**' components:
 - Accessibility.
 - Digitalisation.
 - Sustainability.
 - Cultural Heritage and Creativity.

2. Contribution towards '**Smart Destinations**':
 - Facilitating seamless and exciting experience of tourists.
 - Involving inclusive and innovative solutions.
 - Eliminating barriers to mobility.
 - Providing customised services.
 - Engaging key stakeholders.
 - Ensuring multilinguality.
 - Enhancing the visitor experience before, during and after the trip.

3. Inclusion of all cultural assets, tangible and intangible:
 - Museums.
 - Heritage sites (including UNESCO World Heritage Sites, if applicable).
 - Links with European Cultural Routes (including Cultural Routes of the Council of Europe, if applicable).
 - Intangible heritage (if applicable).
 - Industrial heritage (if applicable).
 - Contemporary art and culture.
 - Cultural and Creative Industries.

4. Privacy and Data Protection:

- Clearly stating a privacy policy, informing users about the data collected and how it will be used.
- Obtaining explicit consent for collecting and processing personal information.
- Ensuring strong data protection measures and encryption to safeguard user data.
- Allowing users to control their data and offer the option to delete their account and associated data.

5. Data Security:

- Protecting user data from unauthorized access, breaches, and cyber threats.
- Regularly updating the apps to patch security vulnerabilities.
- Storing sensitive data securely and using secure authentication methods.

6. User Consent:

- Ensuring that users provide informed consent for location tracking and any other data collection.
- Clearly explaining the benefits of sharing location data and allow users to opt in or out.

7. Data Minimisation:

- Collecting only the data necessary for the apps' functionality.
- Avoiding collecting sensitive or excessive information.

8. Transparency:

- Being transparent about how user data is used, and providing a clear explanation of the apps' features and services.
- Clearly disclosing any advertising, sponsored content, or partnerships.

9. App Accessibility:

- Ensuring that apps are accessible to users with disabilities by following accessibility guidelines, such as WCAG (Web Content Accessibility Guidelines).
- Respecting UNWTO and ENAT guidance on Accessible Tourism.

10. Compliance with Regulations:

- Comply with relevant local, national, and international data protection regulations, such as GDPR (General Data Protection Regulation) in the EU.

11. Informed Consent for Push Notifications:

- Request permission for push notifications and provide a clear explanation of why they are needed and how they benefit the user.

12. User Reviews and Moderation:

- Monitoring user reviews and content, removing inappropriate or offensive material.
- Responding to user feedback and complaints promptly.

13. Intellectual Property Rights:

- Respecting copyright and intellectual property rights when using images, content, and data from other sources.
- Obtaining necessary licenses or permissions for content not owned.

14. Ethical Use of Technology:

- Avoiding promoting harmful activities or content through the app.
- Promoting ethical and responsible tourism.
- Respecting the UNWTO Global Code of Ethics for Tourism.

15. Emergency and Safety Information:

- Providing users with access to emergency contact information, local authorities, and safety tips in case of emergencies.

16. Sustainability and Environmental Responsibility:

- Promoting sustainable tourism practices and provide information about eco-friendly options.
- Promoting responsible tourism behaviour.

- Facilitating climate action according to Climate Heritage Network, UNWTO Glasgow Declaration, etc.
- Promoting relevant aspects of the UN Sustainable Development Goals (SDGs, for target year 2030).

17. Data Backup and Recovery:

- Implementing data backup and recovery procedures to ensure user data is not lost due to technical issues.

18. User Support and Help Resources:

- Offer user support, FAQs, and help resources to assist users with any issues they may encounter while using the apps.

19. Regular Updates and Maintenance:

- Regularly updating and maintaining the apps to ensure that they remain functional and secure.

By following these **policy guidelines**, responsible and user-friendly **smart tourism apps** can be developed, that prioritise the privacy and security of the users while providing a valuable travel and cultural experience.

It is also essential to stay informed about evolving regulations and best practices in the field of mobile apps development, user interaction and data privacy.

References

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