

# UPREST

UP- & REskilling Sustainable  
Tourism in a new digital era

Training Package  
fostering digital skills  
in sustainable tourism

**TRAIN THE TRAINERS  
MANUAL**





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# UPREST *Project* TUTOR'S MANUAL Introduction

## **For whom is this manual?**

You who hold this manual in your hands, or is looking at the manual on our website, is supposedly someone who work with vocational training of professionals in the tourism sector. You want to use this manual to teach professionals on the importance of sustainability in tourism and how to implement eco-friendly practices for tourists. This manual provides you with instructions on how to train staff of travel agencies, hotels, tourist agencies, natural parks, cultural centers, museums, etc.

Nowadays, it is important to up-skill and re-skill employees in digital technologies to achieve the goals of sustainable tourism as defined by the European Union. This manual directly supports local authorities and those who train professionals and civil servants in the tourist sector. The manual should be of help in understanding the benefits of sustainable tourism and the fostering of digital skills in sustainable tourism.

## **Who produced this manual?**

The UPREST project has composed and written this manual, with the assistance of lecturers at University West, Sweden. The general objective of UPREST is to increase the digital skills of the actors in the field of sustainable tourism while promoting new learning pathways to contribute to the recovery of the sector.

## **How to use the manual**

The manual consists of three modules (that can be studied separately) with different knowledge foci.

Module 1 – Fundamentals of Sustainable Tourism

Module 2 – Digital Innovations in Tourism

Module 3 – Implementing Technology-Driven Sustainable Tourism

Each module contain material to be used to construct a lesson in a training context. This material can be either a manuscript, PowerPoint presentation, or a link to recorded lectures by academics in the subject area. This manual presents the overall structure of the modules but does not contain any manuscripts or subject presentations as such. The vocational trainer can access the materials (manuscript, presentations and videos) through the links in the manual. The manual rather contains short introduction to the modules and instructions on how to present these modules and where to find the material connected to each module.

## Planning the training

Ideally, the manual should be used by a vocational trainer who will teach participants in the subject areas of sustainable tourism and digital innovation in sustainable tourism. The trainer should carefully study all the material in advance and plan the content and presentation according to their own context and the number of participants. Here it is appropriate to remind the trainer to reflect on the learning questions, for whom, when, where (location), why and how you can facilitate the learning for others.

The participants will listen to the trainer's lessons and conduct group discussions and reflections, organized by the trainer, to encourage deep learning and critical thinking.

But the manual may also be used by individuals in remote places without interaction with other participants. However, this may not encourage learning as much as when participants learn together in groups.

### Location

Choose a spacious venue that can comfortably accommodate all participants. Ensure the venue has appropriate seating arrangements for groups of 6-8 participants and sufficient space for group discussions and reflections.

### Equipment and digital tools

Ensure access to necessary audio-visual equipment, such as projectors, screens, and speakers, for presentations and multimedia materials.

Prepare additional tools and materials, such as a flipchart, markers, and handouts of the slides, to facilitate interactive learning.

### Workshop and quiz

Allocate sufficient time for interactive groupwork, group discussions, and practical application of learned concepts, based in, for example, the quiz found last in this manual.

Don't get lost in theoretical explanations but focus on hands-on activities and applications of digital technologies in the tourism sector.

## Module 1

### Fundamentals of Sustainable Tourism

Sustainable tourism is built around a set of key principles designed to ensure that tourism development is a positive experience for local people, tourism companies, and tourists themselves. These principles help to minimize negative social, economic, and environmental impacts while enhancing the cultural integrity and ecological conservation of destinations.

The **objective** of this module is to introduce the concept of sustainable tourism, its importance, and the impact on local communities and the environment.

The **duration** of this module is approximately 3 hours and is divided in three sessions:

### **Part 1: Introduction to Sustainable Tourism**

- Definition and principles of sustainable tourism.
- The triple bottom line of sustainability in tourism: Economic viability, social equity, environmental protection.

### **Part 2: Sustainable tourism: Global and Local Impact**

- Case studies of successful sustainable tourism initiatives.
- Negative impacts of tourism and how sustainability can mitigate these effects.

### **Part 3: Role of Policy and Regulation**

- Overview of international and national policies promoting sustainable tourism.
- The role of certifications and standards in sustainable tourism practices.

### **Instructions on how to use the material**

The material connected to this module consist of one lesson manuscript, containing the content of all three sessions. There is also a PowerPoint presentation that can support the trainer when giving the lesson. The manuscript and presentations are to be used in parallel. Engage your participants by presenting groups activities or questions to be discussed in small groups. Such questions and proposals of group activities are found in the lesson manuscript.

## *Module 2*

### **Digital Innovations in Tourism**

The **objective** of this module is to explore how digital technologies like VR, AR, and AI are transforming the tourism industry and enhancing sustainable practices.

The **duration** of this module us approximately 3 hours and is organised in 4 sessions:

#### **Part 1: Introduction to Digital Technologies in Tourism**

- Overview of VR, AR, and AI and their applications in tourism.
- Benefits of digital technologies in creating immersive and sustainable tourism experiences.

#### **Part 2: Virtual and Augmented Reality in Sustainable Tourism**

- Case studies on VR and AR applications for virtual tours, conservation education, and heritage preservation.
- Practical session: Participants experience a VR/AR application.

#### **Part 3: Artificial Intelligence for Sustainable Management**

- Using AI for customer service, personalized experiences, and operational efficiency.
- AI's role in data analysis for sustainable decision-making and reducing carbon footprint.

#### **Part 4: Group Activity and Discussion**

- Here you can access the lesson manuscript, with links to PowerPoint presentations and the integrated recorded lectures on Immersive Technologies, Reality Capture and VR, and Visualization and VR.

### **Instructions on how to use the material**

The material connected to this module consist of one lesson manuscript. In this manuscript you will find links to the recorded lectures from University West, Sweden, and PowerPoint presentations that support the oral lessons presented by the trainer and the recorded lectures. The manuscript is to be used in parallel with the PowerPoint presentations and the videos with recorded lectures. Engage your participants by presenting group activities or questions to be discussed in small groups. Such questions and proposals of group activities are found in the lesson manuscript.

## *Module* **3**

### **Implementing Technology-Driven sustainable Tourism**

The **objective** of this module is to provide participants with the tools and strategies to implement sustainable and digital innovations in their tourism practices.

The **duration** of this module us approximately 3 hours and is organised in 4 sessions:

#### **Part 1: Strategic Planning for Sustainable Digital Adoption**

- Frameworks for integrating VR, AR, and AI into tourism business models.
- Assessing organizational readiness for digital transformation.

#### **Part 2: Sustainability and Technology Ethics**

- Ensuring digital inclusivity (and accessibility) in tourism experiences.

#### **Part 3: Monitoring and Evaluation**

- Setting measurable goals for sustainability and technological implementation.

#### **Part 4: Workshop: Developing an Action Plan**

- Participants work in groups to develop an action plan for integrating sustainable practices and digital technologies in their settings.

### **Instructions on how to use the material**

The material connected to this module consist of lesson manuscripts, recorded lectures from University West, Sweden, and PowerPoint presentations that support the oral lessons presented by the trainer and the recorded lectures. The manuscripts and presentations are to be used in parallel. Engage your participants by presenting group activities or questions to be discussed in small groups. Such questions and proposals of group activities are found in the lesson manuscript.



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*Module* **1**

**Fundamentals of Sustainable Tourism**

*Module* **2**

**Digital Innovations in Tourism**

*Module* **3**

**Implementing Technology-Driven sustainable Tourism**





# Module 1

# Fundamentals of Sustainable Tourism



<b>Duration</b>	3 hours
<b>Instructions to the tutor/trainer</b>	<p>This is a manuscript to be used to introduce the topic of sustainable tourism. The manuscript should be used together with the PowerPoint slides.</p> <p>It is advisable to rehearse the presentation one or two times to be acquainted with the text, the topic, the integrated group activities, and the accompanying slides.</p>

## Lesson plan

### Introduction



**Welcome to the lesson on Sustainable Tourism in a New Digital Era!**

<b>Duration</b>	15 minutes
<b>Instructions to the tutor/trainer</b>	<p>Show PowerPoint slide with the illustration of the objectives and contents of the course.  <a href="#">CLICK HERE</a> </p>

The objective of the first lesson is to introduce the concept of sustainable tourism, its importance, and the impact on local communities and the environment.

The key contents addressed by the first lesson are:

#### 1. Introduction to Sustainable Tourism

- Definition and principles of sustainable tourism.
- The triple bottom line of sustainability in tourism: Economic viability, social equity, environmental protection.

#### 2. Sustainable tourism: Global and Local Impact



- Case studies of successful sustainable tourism initiatives.
- Negative impacts of tourism and how sustainability can mitigate these effects.

#### 3. Role of Policy and Regulation

- Overview of international and national policies promoting sustainable tourism.
- The role of certifications and standards in sustainable tourism practices.

## PART 1

# Introduction to Sustainable Tourism

<b>Duration</b>	45 minutes
<b>Instructions to the tutor/trainer</b>	Show PowerPoint slide with the illustration of the key principles of sustainable tourism  <a href="#">CLICK HERE</a> 

**Definition:** Sustainable tourism can be defined as tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities.

### Discussion activity

<b>Instructions to the tutor/trainer</b>	Engage the participants by presenting the following questions: <ul style="list-style-type: none"><li>• “Why is sustainability important in tourism?”</li><li>• “Can you share examples of sustainable practices you’ve encountered in your travels or work?”</li></ul>
	Divide the participants in small groups, or two by two. Let them discuss the two questions for 20 minutes and ask them to take notes by making a list of sustainable practices they’ve seen or would like to implement in their businesses.
	When group discussion is completed use additional 10 minutes for the participants to present their discussions and notes.

## PART 2

# Global and Local Impact

<b>Duration</b>	60 minutes
<b>Instructions to the tutor/trainer</b>	In this part of the lesson the focus will be on how tourism can both positively and negatively impact destinations. While it can bring economic opportunities, it can also lead to environmental degradation, cultural loss, and social displacement if not managed sustainably.

**Case Study Review:** Examples of successful sustainable tourism projects.

### Case Study 1

## Italy: The Cinque Terre Eco-Sustainable Project



<b>Location</b>	Cinque Terre, Liguria Region, Italy
<b>Overview</b>	<p>Cinque Terre, a UNESCO World Heritage Site, is renowned for its picturesque villages, rugged coastline, and terraced landscapes along the Italian Riviera. However, the area's beauty and uniqueness have led to an influx of tourists, posing significant challenges to its delicate ecosystem and the well-being of local communities. To address these challenges, the Cinque Terre National Park Authority initiated an eco-sustainable project aimed at promoting sustainable tourism practices that protect the environment while enhancing the visitor experience.</p>
<b>Detailed Description</b>	<p>The project encompasses a comprehensive approach to sustainable tourism, including the management of tourist flows, the promotion of eco-friendly transportation, and the support of local agriculture and artisanal products. One of the key initiatives is the Cinque Terre Card, which provides access to trails, public transportation, and cultural sites, encouraging visitors to minimize their carbon footprint by using trains and buses instead of cars.</p> <p>Additionally, the project supports local vineyards practicing terraced farming, a traditional agricultural method that prevents soil erosion and preserves the landscape. The promotion of local products and crafts is another cornerstone, encouraging visitors to support the local economy by purchasing authentic goods.</p>
<b>Key Aspects</b>	<p><b>Tourist Flow Management:</b> Implementing strategies to control and distribute tourist traffic throughout the year to avoid over-tourism during peak seasons.</p> <p><b>Eco-Friendly Transportation:</b> Promoting the use of public transportation with the Cinque Terre Card, reducing the reliance on personal vehicles, and mitigating environmental impact.</p> <p><b>Preservation of Traditional Practices:</b> Supporting terraced agriculture, which is vital for preventing soil erosion and maintaining the area's distinctive landscape. This includes promoting the cultivation of native grape varieties and traditional winemaking techniques.</p> <p><b>Sustainable Local Products:</b> Encouraging the consumption and purchase of local products, including wine, olive oil, and artisan crafts, contributing to the sustainability of local businesses and reducing the carbon footprint associated with imported goods.</p> <p><b>Education and Awareness:</b> Educating tourists about the fragility of the Cinque Terre ecosystem through guided tours, informational materials, and signage along trails. This initiative aims to foster a sense of responsibility and encourage visitors to adhere to sustainable practices during their stay.</p>

## Case Study 2 The Icehotel, Sweden



### Location

Jukkasjärvi, Northern Sweden

### Overview

The Icehotel in Jukkasjärvi stands as a pioneering example of sustainable tourism and innovative design, about 200 km north of the Arctic Circle. Founded in 1989, it's the world's first hotel made entirely of ice and snow, rebuilt each year from the frozen waters of the nearby Torne River. This ephemeral creation offers guests a unique experience of sleeping in rooms kept at sub-zero temperatures, surrounded by stunning ice sculptures and architecture.

### Detailed Description

Each winter, artists from around the world gather in Jukkasjärvi to design and construct the Icehotel. The hotel uses approximately 2,500 tons of ice and 30,000 cubic meters of snice (a mixture of snow and ice that strengthens the structure) sourced from the Torne River. The design of the hotel changes annually, making each iteration a unique art project that showcases innovative designs and techniques in ice construction.

The hotel comprises guest rooms, a bar, a chapel, and art galleries, all of which are made of ice. Furniture and even beds are crafted from ice, with warm reindeer hides and specially designed sleeping bags provided to ensure guests' comfort. The Icehotel also offers warm accommodations and a range of Arctic experiences, such as Northern Lights tours, dog sledding, and ice sculpting workshops, to complement the ice stay experience.

### Key Aspects

**Environmental Impact:** The Icehotel leverages the natural cycle of the Torne River, with all ice used in construction returning to the river each spring, ensuring minimal environmental impact. This cycle of creation and melting epitomizes the principles of sustainable use of natural resources.

**Energy Efficiency:** Despite its icy construction, the Icehotel employs several measures to minimize its energy consumption. The hotel uses renewable energy sourced from hydroelectric power for all its electricity needs, significantly reducing its carbon footprint.

**Promotion of Local Culture and Economy:** The Icehotel plays a crucial role in promoting local Sami culture and traditions, providing guests with an authentic experience of the Arctic way of life. It also significantly contributes to the local economy by attracting tourists to the region during the winter months, creating jobs, and supporting local businesses.

**Innovation and Education:** The hotel serves as a living example of innovative design and sustainable tourism practices. It educates visitors about sustainable living in extreme conditions and the importance of environmental conservation. The annual reconstruction offers continuous opportunities to explore and implement sustainable building techniques and materials.

The Icehotel offers a unique accommodation experience and represents an example of the possibilities of sustainable tourism and the creative use of natural resources. Its commitment to environmental sustainability, combined with its support for local culture and the economy, makes it a model for innovative and eco-friendly tourism practices.

### Group Activity

<b>Instructions to the tutor/trainer</b>	Engage the participants by asking them to analyse the impact of tourism in a given destination and proposing sustainable solutions. Approx. 20 minutes. Divide the participants in small groups, or two by two.
	When group activity is completed use additional 10 minutes for the participants to present their examples and ideas for solutions in the whole group.

### Case Study 3

#### Sustainable Tourism Challenges and Solutions in Santorini



[CLICK HERE](#)



<b>Location</b>	Santorini, Greece
<b>Overview</b>	Santorini, officially known as Thira, is an island in the southern Aegean Sea, about 200 km (120 mi) southeast of Greece's mainland. It is the largest island of a small, circular archipelago, which bears the same name and is the remnant of a volcanic caldera. Santorini is famous for its breathtaking views, stunning sunsets, white-washed buildings with blue domes, and its rich historical and cultural heritage, including ancient ruins and traditional villages.
<b>Challenges</b>	<ul style="list-style-type: none"> <li>• <b>Environmental Impact:</b> The natural beauty that attracts tourists to Santorini also suffers from their presence. Environmental concerns include waste management issues, with littering affecting the pristine landscapes and marine pollution impacting the surrounding sea.</li> <li>• <b>Overcrowding:</b> Santorini has faced significant challenges with overcrowding, especially in the peak tourist season (June to September). The narrow streets of Oia and Fira are often jam-packed with tourists, which affects the quality of life for residents and the experience for visitors. The island has been on the verge of exceeding its capacity, with cruise ships sometimes bringing in thousands of visitors daily.</li> <li>• <b>Water Scarcity:</b> The island's limited freshwater resources are under strain due to the demands of agriculture, local residents, and the tourism industry. Many areas rely on desalinated water, which is energy-intensive to produce.</li> </ul>



**Sustainable Solutions**

- **Infrastructure and Local Community Strain:** The local infrastructure, from roads to sewage systems, faces pressure from the high number of tourists. Additionally, the influx of visitors impacts the availability of affordable housing for locals, as properties are increasingly converted into vacation rentals.
1. **Visitor Cap and Sustainable Planning:** Implementing a cap on the number of visitors, especially from cruise ships, could help manage the flow of tourists to sustainable levels. Strategic planning and investment in infrastructure that supports sustainable tourism are essential.
  2. **Promoting Off-Season Visits:** Encouraging tourists to visit during the off-peak seasons can help spread out the economic benefits of tourism while alleviating the strain on resources and infrastructure.
  3. **Water Conservation Measures:** Introducing and promoting water conservation measures, such as rainwater harvesting, efficient irrigation for agriculture, and water-saving fixtures in hotels and accommodations, can address the issue of water scarcity.
  4. **Waste Management and Recycling Programs:** Enhancing waste management systems and promoting recycling and composting can mitigate the impact of pollution. Encouraging tourists and businesses to reduce plastic use is also crucial.
  5. **Eco-Friendly Transportation:** Developing and promoting the use of eco-friendly transportation options, such as electric buses, rental bicycles, and electric scooters, can reduce congestion and lower the carbon footprint.
  6. **Supporting the Local Economy:** Encouraging tourists to buy local products and engage with local businesses can help ensure that the benefits of tourism are more evenly distributed among the island's residents.
  7. **Cultural Heritage Preservation:** Investing in the preservation of Santorini's cultural and historical sites, and promoting respectful tourism that educates visitors about the local heritage, can enhance the sustainability of tourism.

**Group Activity**

<p><b>Instructions to the tutor/trainer</b></p>	<p>Watch the <a href="#">Video</a> about implications that should be considered when addressing tourism as a driver for local development.</p> <p> <a href="#">CLICK HERE</a> </p>
	<p>Considering the challenges faced by Santorini due to its popularity as a tourist destination, how can sustainable tourism practices be implemented to ensure the island's environmental, economic, and social sustainability? Discuss specific actions and policies that could be adopted by local authorities, businesses, and tourists themselves to address issues like overcrowding, environmental degradation, water scarcity, and the strain on local infrastructure and communities.</p>

	Participants are encouraged to analyse the situation in Santorini and propose a comprehensive strategy that balances the needs of the tourism industry with those of the local environment and community, drawing on the proposed sustainable solutions.
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### Discussion activity

<b>Instructions to the tutor/trainer</b>	Engage the participants by presenting the following question <ul style="list-style-type: none"> <li>• "What challenges do destinations face in balancing tourism with sustainability, and how can these be addressed through a comprehensive strategy?"</li> </ul>
	Divide the participants in small groups, or two by two. Let them discuss the question for 20 minutes. When group discussion is completed use additional 10 minutes for the participants to share some of their main points from their discussion.



### Break

<b>Duration</b>	15 minutes
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### PART 3

## Role of Policy and Regulations

<b>Duration</b>	60 minutes
<b>Instructions to the tutor/trainer</b>	In this part of the lesson the focus is on how governments and international organizations play a crucial role in promoting sustainable tourism through policies and regulations and labels. These can range from environmental protection laws to incentives for businesses adopting sustainable practices.
	Show PowerPoint slide with the overview of key policies and certifications in sustainable tourism.  <a href="#">CLICK HERE</a> 

## Group Activity

<b>Instructions to the tutor/trainer</b>	Engage the participants by presenting the following question <ul style="list-style-type: none"><li>• "How do policies and certifications influence tourism practices? Can you think of how this applies to your context?"</li></ul>
	Ask the participants to identify one policy or certification relevant to their work and to discuss its impact. Divide the participants in small groups, or two by two. Let them discuss the question for 15-20 minutes.
	Optional: When group discussion is completed use additional 10 minutes for the participants to share some of their main points from their discussion.



## Conclusion and Q&A

<b>Duration</b>	15 minutes
<b>Instructions to the tutor/trainer</b>	The trainer concludes the lesson by making a short recap of the basics of sustainable tourism, its impacts, and the importance of supportive policies and regulations.
	<b>Q&amp;A Session</b> Address participants' questions and encourage sharing of insights.



# Module 2

# Digital Innovations in Tourism

<b>Duration</b>	3 hours
<b>Instructions to the tutor/trainer</b>	<p>This is the second lesson. Use the manuscript to introduce the topic of digital innovations in tourism. Please use the manuscript together with the PowerPoint slides found here  <a href="#">CLICK HERE</a> </p> <p>It is advisable to rehearse the presentation one or two times to be acquainted with the text, the topic, the integrated group activities, and the accompanying slides.</p>



## Lesson plan

### Introduction



**Good morning/afternoon, everyone!**

Today, we'll embark on an exciting journey through the world of digital innovations in tourism. We'll explore how Virtual Reality, Augmented Reality, and Artificial Intelligence are not just reshaping the way we experience travel but are also pivotal in promoting sustainability within the tourism industry. By the end of today's session, you'll have a deeper understanding of these technologies and how they can be leveraged to enhance both customer experiences and environmental stewardship."

<b>Duration</b>	15 minutes
<b>Instructions to the tutor/trainer</b>	<p>Show PowerPoint slide with the illustration of the objectives and contents of the course.  <a href="#">CLICK HERE</a> </p>

The objective of this second lesson is to explore how digital technologies like VR, AR, and AI are transforming the tourism industry and enhancing sustainable practices.

This is the content of this lesson:

**1. Introduction to Digital Technologies in Tourism**

- Overview of VR, AR, and AI and their applications in tourism.
- Benefits of digital technologies in creating immersive and sustainable tourism experiences.

**2. Virtual and Augmented Reality in Sustainable Tourism**

- Case studies on VR and AR applications for virtual tours, conservation education, and heritage preservation.
- Practical session: Participants experience a VR/AR application.

**3. Artificial Intelligence for Sustainable Management**

- Using AI for customer service, personalized experiences, and operational efficiency.
- AI's role in data analysis for sustainable decision-making and reducing carbon footprint.

**4. Group Activity and Discussion**

- Brainstorming session on innovative applications of digital technologies in participants' organizations



**PART 1**

# Introduction to Digital Technologies

<b>Duration</b>	45 minutes
<b>Instructions to the tutor/trainer</b>	Here follows three recorded lectures from University West, Sweden. Each lecture ought to be introduced by the tutor (see "introducing the lecture" below) before showing the video to the participants.

This part of the lessons will be focussing on Virtual Reality and Augmented Reality. Virtual Reality immerses users in a completely digital environment, while Augmented Reality overlays digital information onto the real world. Artificial Intelligence, on the other hand, enables machines to learn from experience, adjust to new inputs, and perform human-like tasks. These technologies are game-changers in how we design, experience, and manage sustainable tourism."

**LECTURE 1**  
**IMMERSIVE TECHNOLOGIES**  
 By Daniel Sjölje (University West)

<b>Duration</b>	80 minutes
<b>Instructions to the tutor/trainer</b>	<p>Please click <a href="#">HERE</a> for the lecture (the lecture is divided in ten different sequences according to separate themes).</p> <p> <a href="#">CLICK HERE</a></p> <p>Please click <a href="#">HERE</a> for the presentation in PDF format.</p> <p> <a href="#">CLICK HERE</a></p>

### Introducing the lecture

This lecture navigates through the expansive terrain of Virtual Reality (VR), Mixed Reality (MR), and their intersection with Artificial Intelligence (AI). Starting from VR's foundational principles, the lecture advances to explore the construction of immersive, interactive environments and the pivotal role of avatars in personalizing the virtual experience.

The integration of AI is underscored for its potential to elevate interactive virtual experiences, enabling dynamic, intelligent environments.

Special emphasis is placed on the capturing and recreation of real-world environments, highlighting the seamless blend of physical and digital realms in MR applications, and showcasing how these technologies can vividly reimagine historical sites for virtual tourism.





The lecture contemplates the implications of VR in societal contexts, particularly around the challenges of misinformation, underscoring the need for ethical considerations.

Addressing technical hurdles, such as optimizing for real-time applications and combating VR-induced motion sickness, the lecture proposes innovative solutions to enhance user comfort and immersion. The lecture ends by considering VR and MR's future, pondering over their current limitations and the untapped possibilities they hold for reshaping our interaction with digital content.

Segmented for in-depth exploration and totalling about 80 minutes, this lecture serves as a comprehensive primer on the current state and future prospects of VR and MR, providing insights into how these technologies are steering the evolution of immersive digital experiences.



**LECTURE 2**  
**REALITY CAPTURE AND VR**  
 By Zakarias Mortensen (University West)

<b>Duration</b>	17 minutes
<b>Instructions to the tutor/trainer</b>	<p>Please click <a href="#">HERE</a> for the lecture</p> <p> <a href="#">CLICK HERE</a> </p> <p>Please click <a href="#">HERE</a> for the presentation in PDF format.</p> <p> <a href="#">CLICK HERE</a> </p>

### Introducing the lecture

This lecture examines the practical applications of Reality Capture technology and the range of tools available for this purpose. It focuses on the process of capturing real-world environments and objects and transforming them into 3D models. These models are then usable in various digital realities, including virtual reality (VR), augmented reality (AR), and mixed reality (MR), offering an enhanced way to visualize and interact with digital content.

Throughout the presentation, we will explore the essential methods and technologies used in Reality Capture, such as photogrammetry, laser scanning, and the use of 3D modelling software.

The discussion will also cover the impact of these technologies in different sectors, including construction, historical preservation, and entertainment, highlighting how they improve project efficiency, research quality, and create innovative storytelling methods.

Additionally, the lecture will address the recent progress in Reality Capture technology, emphasizing how advancements have made these tools more straightforward and affordable.



This evolution has broadened access to high-quality 3D digitization, enabling a wider range of applications and making it easier for professionals and enthusiasts to implement Reality Capture in their projects.

This session aims to provide a clear overview of Reality Capture technology, its applications, and its significance in bridging the gap between physical and digital worlds. It is intended for both newcomers to the field and those who have a basic understanding but are looking to deepen their knowledge about the current state and potential of Reality Capture.

### LECTURE 3

## VIZUALISATION IN VR

By Clara Larsson (University West)

<b>Duration</b>	21 minutes
<b>Instructions to the tutor/trainer</b>	Please click <a href="#">HERE</a> for the lecture  <a href="#">CLICK HERE</a> ✖ Please click <a href="#">HERE</a> for the presentation in PDF format.  <a href="#">CLICK HERE</a> ✖

### Introducing the lecture

In this lecture, we delve into the diverse ways visualization can be used, focusing on how virtual technology can expand our understanding and interaction when it comes to visualization. Think of your daily life - when we interact with visualizations in our everyday life it is often in the form of flat diagrams or numbers on a paper or screen.

Currently, our interactions with visualizations often involve static diagrams or numerical representations on paper or screens. Consider, for instance, a political election depicted through pie charts showcasing percentages of the candidates, or a stock market graph in the daily paper, illustrating the value of assets.

However, with technology such as virtual reality (VR), such data can now be visualized in a far more dynamic, interactive, and immersive manner. The use of VR for visualization can heighten the experiences and understanding of a specific phenomenon, event, or concept.

How do we visualize the invisible, such as microscopic particles or molecules? For what purpose? What about abstract sensations like the feeling of love or wonder? And how can we present events we haven't witnessed firsthand, such as historical occurrences predating the invention of cameras?

Consider the tragic fate of Pompeii or the sinking of the Titanic. In this lecture, these kinds of thought provoking questions and more invites viewers and the lecturer alike to ponder the possibilities together. Through collaborative exploration, we delve into how such visualizations can be used for purposes ranging from conservation efforts to enhancing experiences and spread awareness, among others.

# Quiz

## Group Activity



### Instructions to the tutor/trainer

The participants can now make a quiz to see what they have learnt from the video lectures. Please see the following link and follow the instructions:

[CLICK HERE](#) 

## PART 2

# Virtual and Augmented Reality in Sustainable Tourism

<b>Duration</b>	60 minutes
<b>Instructions to the tutor/trainer</b>	Show PowerPoint slide with the illustration of the objectives and contents of the course.  <a href="#">CLICK HERE</a> 

In this part of the lesson the focus will be on how VR and AR are specifically applied in sustainable tourism. Imagine visiting a fragile ecosystem or a historical site without causing any physical impact. VR and AR make this possible.

If we look at the European context, in exploring the potential of Virtual Reality (VR) in tourism Italy has been at the forefront of integrating these technologies to enhance tourist experiences and destination marketing. VR applications within the tourism sector offer immersive previews of sites, destinations, and attractions, significantly impacting tourist decision-making processes. These immersive technologies are used extensively in the initial phases of the customer buying cycle, providing detailed information crucial during the search and decision-making stages. This approach allows for effective planning and management by offering almost-realistic navigations for trip and activity planning processes (Emerald Insight).

A notable trend in the tourism industry is the provision of virtual tours, including interactive experiences with virtual objects and realistic depictions of sites. This method has been widely adopted in heritage areas, hotels, and museums, among others, transforming the room booking process and destination marketing. For example, hotels and theme parks use VR to provide experience previews, engaging potential tourists through simulations that include 3D images, aromas, sounds, and more, thereby offering an entertaining and immersive experience. The Dreamworld theme park, with its simulated car rides, is an example of how theme parks are leveraging VR for entertainment (Emerald Insight).

These advancements in VR technology not only cater to enhancing the tourist experience but also address broader implications for sustainable tourism practices, community engagement, and accessibility. By offering a glimpse into destinations before actual visits, VR aids in trip planning and can influence the decision-making process, aligning with sustainable tourism by potentially reducing overtourism and enabling access to remote or fragile destinations without physical presence (Emerald Insight).

The evolution of VR in tourism underscores a growing trend towards immersive, digital-first experiences that can enrich planning, enhance engagement, and offer unique insights into destinations even before tourists set foot on the actual site. As this technology continues to evolve, it will undoubtedly open up new avenues for engaging with potential tourists, offering them a blend of entertainment, education, and planning tools that could fundamentally change how destinations are marketed and experienced.

The integration of VR and AR technologies in heritage conservation and tourism offers immersive experiences that not only enhance visitor engagement for example in sites or in museums but also play a key role in the preservation of cultural heritage sites. These technologies allow users to explore historical and archaeological sites in unprecedented detail, often in ways that would be impossible in the physical world due to accessibility, preservation concerns, or the destruction of the site.

<b>Case Study 1</b> <b>The "Brabant Remembers" AR app</b>	
<b>Overview</b>	<p>The "Brabant Remembers" AR app presents an innovative case study of how Augmented Reality (AR) technology can be utilized in the tourism industry, specifically within the context of historical and cultural heritage. This application is designed to bring World War II stories to life in the Dutch province of Brabant, offering users a deeply immersive experience by blending historical narratives with the physical locations where these events occurred.</p>
<b>Key Features and Implementation:</b>	<ol style="list-style-type: none"> <li>1. <b>Immersive Storytelling:</b> The app focuses on 30 personal stories from World War II, transforming these narratives into engaging, location-based experiences. Users are taken on a journey back in time as the app augments the real world with historical photos, documents, and narratives directly linked to the location they are visiting.</li> <li>2. <b>Engagement and Education:</b> By leveraging AR technology, the app encourages both tourists and locals to explore the region's war history in an interactive manner. It serves an educational purpose, enhancing the understanding of the war's impact on the region and its people.</li> <li>3. <b>Accessibility and User Experience:</b> The application is accessible to a wide audience, including educational groups, history enthusiasts, and casual tourists. It provides a user-friendly interface, allowing visitors to easily navigate through stories and locations, thereby enriching their visit to Brabant with a layer of historical depth and context.</li> </ol>
<b>Impact on Tourism:</b>	<p><b>Enhanced Visitor Engagement:</b> The AR app deepens visitor engagement by providing a unique way to experience historical sites, beyond traditional tours or guidebooks. It offers a personalized tour experience, allowing visitors to interact with stories at their own pace.</p> <p><b>Promotion of Cultural Heritage:</b> By highlighting significant WWII stories, the app plays a crucial role in preserving and promoting the region's cultural heritage. It also aids in attracting a diverse group of visitors interested in history and technology.</p> <p><b>Sustainable Tourism Development:</b> The app encourages the exploration of less-visited sites within Brabant, contributing to sustainable tourism by distributing tourist traffic more evenly across the region.</p>

The "Brabant Remembers" AR app exemplifies the potential of AR technology in enhancing tourism experiences, offering a compelling blend of education, engagement, and immersion. This case study underscores the value of integrating digital innovations into cultural tourism, providing insights that could inform future projects aiming to leverage technology in heritage presentation and tourism promotion.

<https://www.brabantremembers.com/ar-app/> <https://youtu.be/UCGZ7xqloO4>

<https://youtu.be/UCGZ7xqloO4>

## Case Study 2 The Palace of Knossos (Crete- Greece)

### Overview

Multimodal Access to the Palace of Knossos: Another groundbreaking initiative involves the Palace of Knossos in Greece, where a combination of aerial photogrammetry, terrestrial photogrammetry, and laser scanning was used to digitize the entire archaeological site. This comprehensive digital representation then served as the basis for creating a unique virtual visiting experience accessible through VR and AR. The project, in collaboration with the Ephorate of Antiquities of Heraklion, provides a novel way for the public to explore the palace and its peripheral sites, both offline and on-site, enhancing the educational and leisure value of heritage visits (MDPI).

The Virtual Tour in ancient Knossos palace is designed and supervised by renowned archaeologists of prehistoric Aegean. With the App it is possible to enjoy an exclusive 3D Reconstruction of the famous Minoan Palace, that follows the last archaeological and architectural evidences. The immersion in antiquity will lead the visitor in the corridors with frescos, the King's and Queen's Megarons, the west magazines the room of double axes and many other Halls and rooms. Moreover, as a user you will watch a bull leaping show and other animations in 3D and 360 that revives life in the ancient Knossos Palace.





### Group Activity

<p><b>Instructions to the tutor/trainer</b></p>	<p>After the presentation of the case studies, a group discussion can be arranged based on the reflections and two different set of questions (see below). Organise the discussion as was done in Lesson 1 or in another way that is deemed suitable.</p> <ol style="list-style-type: none"> <li>1. Impact on Tourism and Conservation: How do VR and AR technologies impact traditional tourism and conservation efforts? Are there risks of reducing physical visits to sites, or do these technologies provide a complementary avenue that raises awareness and interest in heritage conservation?</li> <li>2. Future Developments: Imagine the future of heritage site tourism with advancing VR and AR technologies. What new opportunities and challenges do you foresee? How can these technologies further contribute to sustainable tourism practices?</li> </ol>
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### PART 3

## Artificial Intelligence in Sustainable Tourism

<p><b>Duration</b></p>	<p>45 minutes</p>
<p><b>Instructions to the tutor/trainer</b></p>	<p>Show PowerPoint slide with the illustration of the objectives and contents of the course.  <a href="#">CLICK HERE</a> </p>

The tourism industry is currently undergoing a significant transformation, driven largely by the integration of Artificial Intelligence (AI). This technological evolution is reshaping the operational aspects of tourism and its marketing strategies, highlighting AI's extensive capabilities and disruptive potential.

AI technologies mimic sophisticated human intelligence capabilities, playing a critical role in problem-solving across the tourism spectrum. These technologies have made their mark through various applications, from enhancing customer service with AI-powered chatbots to refining marketing strategies through deep customer data analysis. AI-driven systems can provide personalized experiences, process and interpret vast amounts of data for predictive analytics, and improve operational efficiency, thereby boosting profitability and customer satisfaction.

One of the primary advantages of AI in tourism includes the ability to offer personalized customer service. AI chatbots, for example, can handle inquiries 24/7, offer customized travel recommendations, and streamline booking processes. This level of automation not only improves service quality but also reduces wait times, contributing to increased customer loyalty. On the marketing front, AI's analytical prowess allows for detailed customer segmentation, enabling businesses to tailor their marketing efforts more effectively.

By analyzing past behavior, preferences, and demographics, tourism providers can engage customers more personally, enhancing loyalty and engagement. Despite its potential, integrating AI into tourism comes with challenges, including the need for high-quality data, the complexity of integrating AI with existing human roles, and a traditional reluctance within the sector to adopt new technologies. Overall, AI's impact on the tourism industry is profound, offering opportunities to enhance operational efficiency, improve customer service, and gain deep insights through data analysis. As the sector continues to embrace digital transformation, AI stands out as a key player in reshaping how tourism businesses interact with their customers.

**Case Study 1**  
**"Eco-Guide AI" in Slovenia**

<b>Overview</b>	"Eco-Guide AI" is an innovative AI-powered system implemented in several eco-friendly resorts and hotels across Slovenia. This system aims to enhance sustainable tourism by providing personalized recommendations, optimizing energy efficiency, and reducing waste. Slovenia, known for its commitment to sustainability and green tourism, serves as an ideal location for deploying such advanced AI technologies.
<b>Implementation</b>	<p><b>Personalized Recommendations</b> Eco-Guide AI analyzes user data to offer personalized travel suggestions. Guests input their preferences via a mobile app, receiving recommendations for activities like guided hikes and visits to organic farms. The system also provides real-time updates on events and initiatives.</p> <p><b>Energy Efficiency</b> Eco-Guide AI integrates with energy management systems to optimize consumption. It uses occupancy patterns and weather forecasts to adjust HVAC settings. Intelligent lighting systems reduce energy usage based on natural light and occupancy.</p> <p><b>Waste Reduction</b> The AI system monitors and optimizes waste management. Sensors track waste levels, optimizing collection schedules. In kitchens, image recognition tracks food waste, providing insights for portion adjustments.</p>

**Group Activity**

<b>Duration</b>	30 minutes
<b>Instructions to the tutor/trainer</b>	The trainer concludes the lesson by underlining how digital technologies are revolutionizing the tourism industry, offering tools to enhance sustainability and create immersive, educational experiences for travellers. Based on what was discussed and explored in the lesson the trainer asks the participants "what is one innovative application of digital technology you could envision being implemented in your organization?"

# Module 3

## Implementing Technology-Driven Sustainable Tourism

<b>Duration</b>	3 hours
<b>Instructions to the tutor/trainer</b>	<p>This is the third lesson. Use the manuscript to introduce the topic of implementing technology driven sustainable tourism.</p> <p>It is advisable to rehearse the presentation one or two times to be acquainted with the text, the topic, the integrated group activities, and the accompanying slides.</p>

### Lesson plan

## Introduction

The objective of this third lesson is to provide participants with the tools and strategies to implement sustainable and digital innovations in their tourism practices.

This is the content of this lesson:

### 1. Strategic Planning for Sustainable Digital Adoption

- Frameworks for integrating VR, AR, and AI into tourism business models.
- Assessing organizational readiness for digital transformation.

### 2. Sustainability and Technology Ethics

- Ensuring digital inclusivity (and accessibility) in tourism experiences.

### 3. Monitoring and Evaluation

- Setting measurable goals for sustainability and technological implementation.

### 4. Workshop: Developing an Action Plan

- Participants work in groups to develop an action plan for integrating sustainable practices and digital technologies in their settings.

# Strategic Planning for Sustainable Digital Adoption

<b>Duration</b>	45 minutes
<b>Instructions to the tutor/trainer</b>	Discuss frameworks such as the Technology Acceptance Model (TAM) and SWOT analysis for assessing the viability of integrating these technologies into business models.

## Frameworks for Technology Integration into business models

Discuss frameworks such as the Technology Acceptance Model (TAM) and SWOT analysis for assessing the viability of integrating these technologies into business models.

### *Technology Acceptance Model (TAM)*

The Technology Acceptance Model (TAM) was introduced by Fred Davis in 1989 as a way to predict and explain user acceptance of information technology. The model has been widely adopted across various sectors, including tourism, to understand how users come to accept and use technology. TAM proposes that two primary factors influence the acceptance of technology:

- **Perceived Usefulness (PU):** This refers to the degree to which a person believes that using a particular system would enhance their job performance or experience. In the context of tourism, this could mean how a technology like VR enhances the visitor experience or streamlines booking processes.
- **Perceived Ease of Use (PEOU):** This is the degree to which a person believes that using a particular system would be free of effort. For example, how easy it is for both customers and employees of a tourism SME to adopt and interact with AR applications.

These factors are influenced by external variables (e.g., system design features, user support) and lead to attitudes toward using the technology, which in turn affects the actual usage behavior.

Possible Application in Tourism SMEs

- 1. Assessing New Technologies:** TAM can help tourism SMEs assess how likely it is that a new technology (e.g., AI-powered chatbots for customer service) will be accepted by both their staff and customers.
- 2. Training and Support:** Understanding that ease of use is crucial, SMEs can invest in training and support for new technologies to increase acceptance and usage rates among their teams and customers.
- 3. Marketing Strategies:** By focusing on the perceived usefulness of a new technology in their marketing strategies (e.g., how VR tours can enhance the booking experience), SMEs can increase adoption rates.

### Example

## Virtual Reality (VR) in Destination Marketing

<p><b>Background</b></p>	<p>A tourism board aims to promote its region as an attractive destination for international tourists. It decides to leverage VR technology to create immersive experiences that potential visitors can explore from the comfort of their homes.</p> <p><b>Stage 1: Introduction of VR Tours</b></p> <ul style="list-style-type: none"> <li>• Objective: Utilize VR to allow prospective tourists to experience key attractions virtually, offering a unique preview of what they can expect.</li> <li>• Perceived Usefulness (PU): The tourism board believes that by providing these VR experiences, potential visitors will see the value in exploring the destination in person. This is based on the understanding that experiencing a place virtually can enhance a user's desire to experience it physically.</li> </ul> <p><b>Stage 2: Assessing Perceived Ease of Use (PEOU)</b></p> <ul style="list-style-type: none"> <li>• Development: The VR tours are designed to be intuitive and user-friendly, requiring minimal effort from users to navigate and explore the virtual environment.</li> <li>• Perceived Ease of Use (PEOU): Prospective tourists find the VR platform easy to use, with clear instructions and navigational aids. This ease of use encourages them to explore various attractions in detail, increasing their interest in visiting the destination.</li> </ul> <p><b>Stage 3: User Feedback and Adoption</b></p> <ul style="list-style-type: none"> <li>• Feedback Collection: After initial exposure to the VR tours, feedback is collected from users regarding their experiences, focusing on both PU and PEOU.</li> <li>• Adjustments: Based on feedback, the tourism board makes necessary adjustments to improve the VR experience, such as enhancing the resolution of VR content, incorporating interactive elements, and simplifying navigation.</li> </ul> <p><b>Stage 4: Integration and Marketing</b></p> <ul style="list-style-type: none"> <li>• Integration: The VR tours are integrated into the tourism board's official website and promoted through various marketing channels, including social media, email newsletters, and travel expos.</li> <li>• Marketing Strategy: The marketing emphasizes the unique opportunity to "try before you fly," highlighting the usefulness and ease of using the VR tours to plan a visit.</li> </ul>
<p><b>Outcomes</b></p>	<ul style="list-style-type: none"> <li>• Increased Interest: The immersive VR tours lead to increased interest in the destination, as measured by website traffic, brochure requests, and pre-bookings.</li> <li>• Positive Reception: Users appreciate the innovative approach to destination marketing, particularly the ability to virtually visit key attractions, which plays a significant role in their decision-making process.</li> </ul>

**REFLECTION:** This example demonstrates how the Technology Acceptance Model (TAM) can be applied to understand and influence the adoption of new technologies in tourism. By focusing on perceived usefulness and ease of use, the tourism board successfully introduces a digital innovation that enhances the tourist experience from the planning phase, leading to increased interest and potential visitation. This approach not only showcases the destination in a novel way but also provides actionable insights into how technological solutions can be tailored to meet user expectations and drive tourism growth.

## SWOT Analysis

SWOT analysis is a strategic planning tool used to identify the Strengths, Weaknesses, Opportunities, and Threats related to business competition or project planning. It provides a straightforward framework to assess both internal and external factors affecting the viability of integrating new technologies into business models.

Application in Tourism SMEs

- 1. Strengths:** Identifying internal strengths (e.g., innovative culture, tech-savvy staff) can help SMEs leverage their existing resources to integrate technologies like AR or AI more effectively.
- 2. Weaknesses:** Recognizing internal weaknesses (e.g., limited budgets, lack of technical expertise) allows SMEs to address these gaps, possibly through partnerships or external funding.
- 3. Opportunities:** External opportunities (e.g., growing demand for immersive tourism experiences, technological advancements) can be capitalized on to differentiate SMEs in the marketplace.
- 4. Threats:** Identifying external threats (e.g., competitive pressures, technological obsolescence) helps SMEs develop strategies to mitigate these risks, ensuring long-term sustainability.

### Example

#### SWOT Analysis of VR in Destination Marketing

##### Strengths

- **Innovative Engagement:** VR technology allows for an innovative and immersive way to engage potential tourists, offering a novel preview of the destination's attractions.
- **Competitive Edge:** Providing VR tours can differentiate the destination from competitors, appealing to tech-savvy travelers looking for unique experiences.
- **Rich Content Delivery:** VR enables the delivery of rich, interactive content that can convey the atmosphere and beauty of the destination more effectively than traditional photos or videos.

##### Weaknesses

- **High Implementation Costs:** The development and maintenance of high-quality VR content can be costly, requiring significant initial and ongoing investment.
- **Technology Limitations:** Not all potential tourists may have access to VR headsets or the necessary technology, limiting the reach of the VR tours.
- **Complexity in Content Updating:** Keeping the VR content updated with the latest attractions and information can be complex and resource-intensive.

##### Opportunities

- **Market Expansion:** VR tours can attract a broader audience, including those unable to travel due to physical or financial constraints, by offering a virtual tourism experience.
- **Partnerships:** Collaborations with tech companies and content creators can enhance the quality of VR tours and mitigate development costs.
- **Technological Advancements:** Advancements in VR technology can lead to more affordable and accessible solutions, expanding the potential user base.

##### Threats

- **Technological Obsolescence:** Rapid technological advancements can render existing VR content and platforms obsolete, requiring constant updates.
- **Competition:** As VR in tourism gains popularity, increased competition from other destinations using similar technology could dilute the unique value proposition.
- **Cybersecurity Risks:** The integration of digital technologies like VR increases exposure to cybersecurity risks, necessitating robust security measures.

By conducting this SWOT analysis, the tourism board can better understand the strategic considerations of implementing VR tours. This understanding will aid in making informed decisions, allocating resources effectively, and developing a comprehensive strategy that maximizes the benefits of VR technology while mitigating its risks and challenges.

## Combining TAM and SWOT

Integrating TAM with SWOT analysis offers a comprehensive approach for tourism SMEs:

- **TAM** focuses on the user acceptance and internal factors influencing the adoption of technology, guiding SMEs in making user-centered decisions.
- **SWOT** provides a broader view of the internal capabilities and external market conditions, helping SMEs position themselves strategically in the adoption of new technologies.

By combining these frameworks, tourism SMEs can better assess the viability of integrating emerging technologies into their business models, ensuring they are both beneficial and sustainable. This dual approach allows for a more specific understanding of technology adoption, addressing both the human and strategic aspects of implementing innovative solutions in tourism.

### Group Activity

<b>Duration</b>	50 minutes
<b>Instructions to the tutor/trainer</b>	Implement here an interactive session with the participants using a checklist to assess participants' organizational readiness for digital transformation. The participants should reflect on the elements of the checklist and discuss about their organisations' readiness.

#### ORGANIZATIONAL READINESS FOR DIGITAL TRANSFORMATION

##### **Strategic Alignment**

- Vision and Leadership: Is there a clear digital transformation strategy supported by top management?
- Digital Culture: Does the organizational culture embrace change, innovation, and digital learning?
- Stakeholder Engagement: Are stakeholders (employees, customers, partners) considered in the digital transformation strategy?

##### **Technology Infrastructure**

- Current Technology Assessment: Is there an audit of existing technologies and their effectiveness?
- Technology Gaps: Are there identified gaps in current technology that hinder digital adoption?
- Integration Capabilities: Can new digital tools easily integrate with existing systems?

##### **Data and Analytics**

- Data Management: Is there a system in place for collecting, storing, and analyzing data securely?
- Data Utilization: Is data used strategically for decision-making and personalized customer experiences?

##### **Digital Skills and Literacy**

- Employee Skills Assessment: Is there an assessment of current employee digital skills and literacy?
- Training Programs: Are there ongoing training programs for enhancing digital skills?

##### **Customer Experience**

- Customer Digital Engagement: Is there an understanding of how customers engage digitally with your services?
- Digital Experience Optimization: Are there efforts to optimize the digital experience for customers?

##### **Security and Compliance**

- Digital Security Measures: Are there robust cybersecurity measures in place?
- Regulatory Compliance: Is the organization compliant with digital privacy and data protection laws?

<b>Task</b>	Each participant: should reflect on what are possible key areas for development in his/her organisation and what strategies could be implemented.
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### Hotels

Example of key development: Enhancing personalized guest experiences through digital innovations like mobile check-in/out, room customization via apps, and AI-driven customer service.

Example of possible strategies: Implement customer relationship management (CRM) systems to best exploit customer data for personalized experiences and invest in employee training on new digital tools.

### Museums

Example of key development: Leveraging AR, VR, and interactive displays to create immersive educational experiences.

Example of Strategies: Collaborate with technology providers for pilot projects in digital exhibits and invest in digital literacy programs for staff to manage and curate digital content effectively.

### Municipal Tourist Boards

Example of Key Development: Digitalizing tourist information and creating interactive platforms for visitor engagement and analytics.

Example of Strategies: Develop a comprehensive digital platform that integrates with local businesses and attractions for real-time information and use data analytics for targeted marketing.

## PART 2

# Digital inclusivity in Tourism

<b>Duration</b>	40 minutes
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This part of the lesson is focussed on a short introduction of the theme followed by Interactive discussion on overcoming barriers to digital inclusivity.

Ensuring digital inclusivity in the tourism industry, encompassing hotels and tourist boards, is essentially about enhancing the user experience, expanding market reach, and fostering an environment of equality and respect. By prioritizing digital inclusivity, these entities can reach out to a broader audience, including people with disabilities, the elderly, those from varying socio-economic backgrounds, and individuals with limited digital literacy. This inclusive approach enriches the user experience for all but at the same time promotes a positive image of the brand, potentially leading to increased loyalty and a broader customer base.

The benefits of ensuring digital inclusivity include:

- **Enhanced User Experience:** Making digital interfaces more intuitive and easier to navigate improves the overall experience for all users, not just those with specific accessibility needs.
- **Increased Reach and Market Share:** By accommodating a wider range of users, organizations can tap into new market segments that were previously underserved or excluded.



- **Compliance and Reputation:** Adhering to accessibility standards helps avoid legal issues and enhances the organization's reputation as socially responsible and inclusive.
- **Innovation and Improvement:** The focus on inclusivity can drive innovation, leading to the development of new products and services that benefit all users.

### Examples and Driving Questions

#### Hotels

Example: A hotel chain revamps its online booking system to make it fully accessible. The new system includes features like keyboard navigation, screen reader compatibility, and options for high-contrast and text-only versions of the site. Additionally, the hotel creates virtual tours of its facilities that include audio descriptions for the visually impaired.

Driving Questions:

1. How do we ensure our online booking system is accessible to people with various disabilities?
2. In what ways can we leverage technology to provide accessible in-room entertainment and information services for all guests?
3. What training do staff need to support guests in using digital services and to respond to accessibility-related feedback or requests?

#### Tourist Boards

Example: A tourist board develops an inclusive digital campaign to promote local attractions. This includes an accessible website with information available in multiple formats (text, audio, video with subtitles), an app that guides users through accessible routes in the city, and interactive maps that highlight accessible facilities.

Driving Questions:

1. How can we ensure our digital information platforms are accessible to tourists with different needs, including those with visual, hearing, mobility, and cognitive impairments?
2. What steps can we take to promote digital inclusivity among local businesses listed on our tourist board website?
3. How can we use feedback from tourists to continually improve the accessibility and inclusiveness of our digital content?

### PART 3

## Monitoring and Evaluation


<b>Duration</b>	40 minutes
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#### Setting Goals

Setting SMART (Specific, Measurable, Achievable, Relevant, Time-bound) goals for sustainability and digital innovation in tourism is crucial in order to be able to monitor and assess the introduction of technologies functional to an increasingly sustainable tourism.

#### SMART Objectives

The concept of SMART objectives is a powerful framework for setting clear, actionable goals. SMART is an acronym that stands for Specific, Measurable, Achievable, Relevant, and Time-bound.



Each element of the acronym guides the goal-setting process to ensure that objectives are effective and realistic, providing a clear path for execution and evaluation. Let's break down each component:

### **Specific**

Objectives should be well-defined and clear to anyone who has a basic knowledge of the project. Specific goals answer the "who, what, where, when, and why" questions. They pinpoint what needs to be accomplished, who will be involved, where it will take place, and why it's important.

### **Measurable**

A goal must have criteria for measuring progress and success. This means identifying what metrics or indicators will be used to determine if the goal has been met. Measurable goals answer the question, "How will I know when it has been accomplished?"

### **Achievable**

Objectives should be realistic and attainable within the resource, time, financial, and technological constraints of the organization or team. Achievable goals challenge the team but are still possible to accomplish, ensuring that everyone is motivated to work towards them.

### **Relevant**

The goal must matter to the business or project and align with broader objectives and strategies. It should be worthwhile, match other efforts or needs, and be appropriate for the current socio-economic environment. Relevant goals answer the question, "Why is the result important?"

### **Time-bound**

Every goal needs a target date or deadline to focus efforts and prioritize tasks. A time-bound goal answers the question, "When will it be accomplished?" It creates a sense of urgency and prompts action.

Once SMART objectives have been introduced the trainer should show examples of measurable goals for both sustainability and technological implementation.

Setting measurable goals is crucial for tracking progress and ensuring the successful implementation of sustainability and technological initiatives, especially within the tourism sector. These goals should be specific, measurable, achievable, relevant, and time-bound (SMART). Below are examples of measurable goals tailored to the specific needs of hotels, museums, and municipal tourist boards, focusing on both sustainability and technological implementation.

## **Hotels**

Example of sustainability goal: to reduce water usage by 15% within the next 2 years. Implement water-saving fixtures in all guest rooms and public areas, and adopt landscaping practices that require minimal irrigation. Measure progress by comparing monthly water usage statistics against the baseline year.

Example of technological Implementation goal: Achieve a 25% increase in online bookings through the newly designed accessible website within 1 year. Enhance the website's accessibility features to cater to users with various disabilities, implementing changes based on WCAG (Web Content Accessibility Guidelines). Track the number of online bookings monthly and analyze the growth rate.

## Museums

Example of Sustainability Goal: to decrease overall energy consumption by 20% over the next 3 years. Transition to LED lighting, install energy-efficient HVAC systems, and implement an energy management system to monitor and optimize energy use. Energy consumption metrics will be tracked monthly and compared to the baseline year.

Example of technological implementation goal: to increase virtual tour participation by 30% in the next 12 months. Develop and market interactive virtual tours that incorporate AR (Augmented Reality) to enhance the visitor experience. Utilize web analytics to monitor participation rates and user engagement.

## Municipal Tourist Boards

Example Sustainability Goal: to enhance local biodiversity by planting 5,000 native trees and plants in tourist areas within the next 5 years. Collaborate with local environmental groups and businesses to identify key areas for planting and maintaining these native species. Progress will be monitored through annual biodiversity assessments in the targeted areas.

Example of technological implementation goal: to improve digital inclusivity by ensuring all online tourist resources are fully accessible to individuals with disabilities, achieving full compliance with international accessibility standards within 2 years. Conduct an audit of current digital resources, identify gaps in accessibility, and implement necessary improvements. Progress will be evaluated through regular accessibility audits by an independent third party.

A tool that can be used by Tourist Board to assess the level of knowledge and attention to sustainability in local tourism policies is the [UST Self-Assessment questionnaire](#). This tool can be useful in setting the stage for the identification of local sustainability objectives.

## PART 4

# Developing an Action Plan

<b>Duration</b>	70 minutes
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### Group Activity

<b>Duration</b>	55 - 60 minutes
<b>Instructions to the tutor/trainer</b>	<p>Participants form small groups to develop the key elements of an action plan that integrates sustainable practices and digital technologies in their tourism businesses or destinations.</p> <p>Each group identifies one organisation for the group exercise (it can be one of the organisations of the participants) and use it to discuss and reflect the organization's readiness, inclusivity, and sets measurable goals.</p>

### Presentations

<b>Duration</b>	10 - 15 minutes
<b>Instructions to the tutor/trainer</b>	Each group presents their action plan, receiving feedback from peers and the trainer.

## Q&A and Wrap-Up

<b>Duration</b>	20 minutes
<b>Instructions to the tutor/trainer</b>	The trainer Opens floor for participants to ask questions, share concerns, and discuss how they plan to implement their learning.

### Closing Remarks

The trainer Opens floor for participants to ask questions, share concerns, and discuss how they plan to implement their learning.





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