



Digital Transformation and Green Urban Tourism Futures

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Tourism Trends

1 Conde Nast Traveller	Workation	Private Islands	Glamping	Hedonism	No-fee changes	Travel Testing	Last-minute Book	Conservation
2 Destination Deluxe	Regenerative	Workation	Simple Pleasure	Staycation	Escapism	Travel Safety	Bucket List	Tech & Travel
3 Responsible Travel	Rail & River Tours	Citizen Traveller	Low Impact	Responsible	Space& Health	Sustainable	Milestone	Staycation
4 Pure Wow	Staycation	Milestone	Retro-style	Home Away Home	Butler Services	Private Bar Expe	Private Dining	Communal Smaller
5 Travel Weekly UK	Staycation	Villa Holidays	Self-drive Break	Late Booking	Outdoor Voyage	Domestic	Train Travel	Sustainable
6 National Geographics	Staycation	Bucket List	Slow Travel	Thoughtfull	Digital Nomad	Learning Skills	Villa, Jet, Yacht	Health & Wealth
7 Survey Crest	Workation	Open Space	Staycation	Milestone	Sustainable	Private & Cozy	Health & Safety	Virtual
8 Bold Traveller CA	Outdoor Travel	Family Reunion	Slow Travel	Transformative	Culinary	Staycation	Bucket List	Retracing Heritage
9 Kasia Writes	Staycation	Outdoor Travel	Wellness	Transformative	Slow	Workation	Sustainable	Less-travelled Dest
10 Exploding Topics	Staycation	Covid Safety	Single Traveller	Once in a Lifetime	Travel Tech App	Workation	Sustainable	Environment
11 Travel Line RU	Glamping	Workation	Wellness	Conservation	Authentic	Safe Travel	High tech	Last Minute
12 Finance Online	Business Mixed	Vacation Style	Self-booking	Flexibility Corporate	Technology Apps	The Rise of AI	Blockchains	Emerging Markets

Safety & Health	1	6	Staycation, Domestic
Luxury, Private Travel	2	7	Workation, Digital Nomads
Responsible, Sustainable, Conservation	3	8	Bucket List, Milestone
Regenerative, Inner Values	4	9	Late Booking, No fee Changes
Outdoor, Authentic	5	10	Travel Tech, Blockchains

Development of Tourism

Tourism 1.0
Nature



What to **Sell**

Tourism 2.0
Culture/History



What to **See**

Tourism 3.0
Experience



What to **Sense**

Everyone in tourism supply chain must be experience designer.

Digitalization (Hi-tech)

Tourism Experience

Hospitality (Hi-touch)





The Twin Forces Reshaping Urban Tourism

DIGITAL TRANSFORMATION

AI, IoT, big data, AR (Augmented reality), and mobile-first service ecosystems transform urban tourism. According to UNWTO (2023), 76% of Asian travelers research, book, and experience destinations primarily through digital channels, compared to 68% globally.

SUSTAINABILITY IMPERATIVES

Tourism needs to focus on reducing carbon footprint, preserving cultural heritage, ensuring resource efficiency, community inclusion, and biodiversity protection.

Embracing both digital transformation and sustainability is crucial as these elements enhance tourism recovery rates, offering a path forward for resilient and sustainable urban tourism development. Cities integrating these strategies achieve superior recovery outcomes.

Digital Innovation Trends

Revolutionizing the urban tourism experience

WHEN TECHNOLOGY MEETS TOURISM



- ✓ Online booking platforms make travel planning seamless.
- ✓ AI-driven chatbots provide instant customer service to travelers.
- ✓ Virtual reality (VR) tours allow travelers to explore destinations before they even arrive.
- ✓ Mobile apps & e-wallets ensure smoother journeys.
- ✓ Big Data & Analytics help businesses predict trends and deliver personalized experiences.

Together, IT and Tourism create a smart travel ecosystem that connects people, cultures, and businesses globally.

**The future of tourism is digital,
smart, and connected**

Digital Innovation Trends

ARTIFICIAL INTELLIGENCE

AI personalizes tourism with recommendations, chatbots, and predictive analytics anticipating visitor needs.

INTERNET OF THINGS

IoT enables real-time data and resource management in tourism infrastructure like hotels and waste systems.

BIG DATA ANALYTICS

Big Data provides insights into tourist behaviors, optimizing city infrastructure and services.

{STE//AR
DIGITAL}



Digital Trends In Travel & Tourism Sector



**High-tech
& high-tech
are the ways
forward in
tourism and
hospitality.**

Digital Transformation in Asian Tourism Context

MOBILE-FIRST APPROACH

90% Chinese tourists use smartphones for travel, showcasing Asia's mobile-first tourism strategy.

SUPER APPS DOMINANCE

WeChat, Grab, and Zalo and many other apps lead by integrating multiple tourism services, highlighting app dominance.

QR CODE UBIQUITY

QR codes are crucial for payments and contact-free services in Asian tourism.

DIGITAL PAYMENT PENETRATION

In urban centers like Seoul, Singapore, Peking cashless transactions surpass 80%, indicating high digital payment use.

Asia Pacific is predicted to account for 55% of global digital tourism market growth by 2025 (McKinsey & Company, 2023)

Digital Innovation Transforming Tourism

Xếp hạng DT1 2021	Tỉnh/ TP	Xếp hạng nhận thức số	Xếp hạng thể chế số	Xếp hạng hạ tầng số	Xếp hạng nhân lực số	Xếp hạng an toàn thông minh mạng	Xếp hạng hoạt động chính quyền số	Xếp hạng hoạt động kinh tế số	Xếp hạng hoạt động xã hội số
1.	TP Đà Nẵng	16	6	3	2	1	2	2	1
2.	Thừa Thiên- Huế	3	6	2	15	2	1	10	3
3.	TP Hồ Chí Minh	10	4	1	11	32	4	1	29
4.	Bắc Ninh	16	4	7	34	5	9	21	10
5.	Lạng Sơn	41	23	15	1	10	13	5	6
6.	Ninh Bình	3	10	18	4	23	15	35	12
7.	Quảng Ninh	8	9	9	30	35	7	24	30
8.	Thái Nguyên	2	23	27	5	9	20	16	24
9.	Bình Phước	27	10	8	13	42	3	28	11
10.	Bắc Giang	3	10	40	14	22	23	6	5





Policy Implications of Digital Tourism

DATA GOVERNANCE & PRIVACY

Tourism data collection must balance personalization with protection of visitor privacy, requiring updated regulatory frameworks

DIGITAL INFRASTRUCTURE INVESTMENT

Public-private partnerships are vital for developing smart city infrastructure and 5G networks.

DIGITAL INCLUSION

Ensuring technological benefits reach smaller tourism providers and communities beyond major urban centers

Sustainable Destination Management

Using technology to balance tourism's benefits and impacts

Sustainable Destination Management

BALANCING VISITOR EXPERIENCE

Asian cities face challenges from high population density and rapid tourism growth, needing to balance visitor experience with environmental protection.

TECHNOLOGY'S ROLE

Technology is crucial for managing destination carrying capacity, enabling sustainable urban tourism through precise measurement and management.

Sustainable Tourism Management

Technology-Enabled Visitor Dispersion

Cities are increasingly using technology to combat overtourism through strategic visitor dispersion:

GEOTARGETED MARKETING

Promotes lesser-known attractions and neighborhoods to disperse visitors and reduce overtourism.

REAL-TIME CONGESTION ALERTS

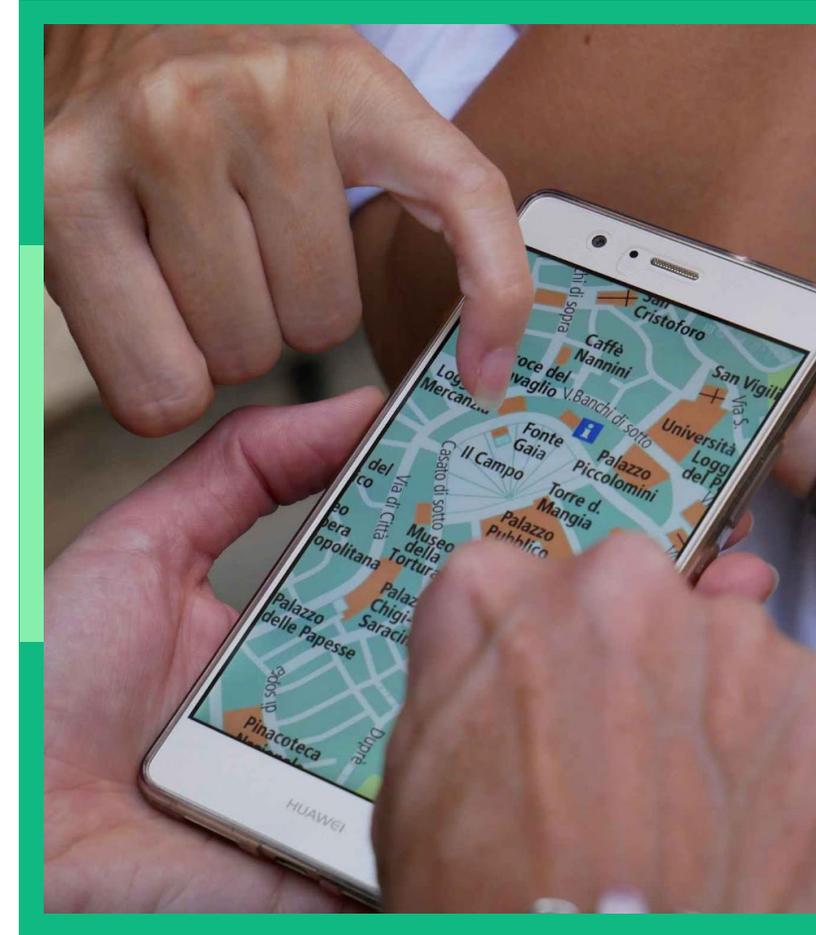
Offers alternative recommendations to manage visitor flow and reduce congestion in popular areas.

DYNAMIC PRICING

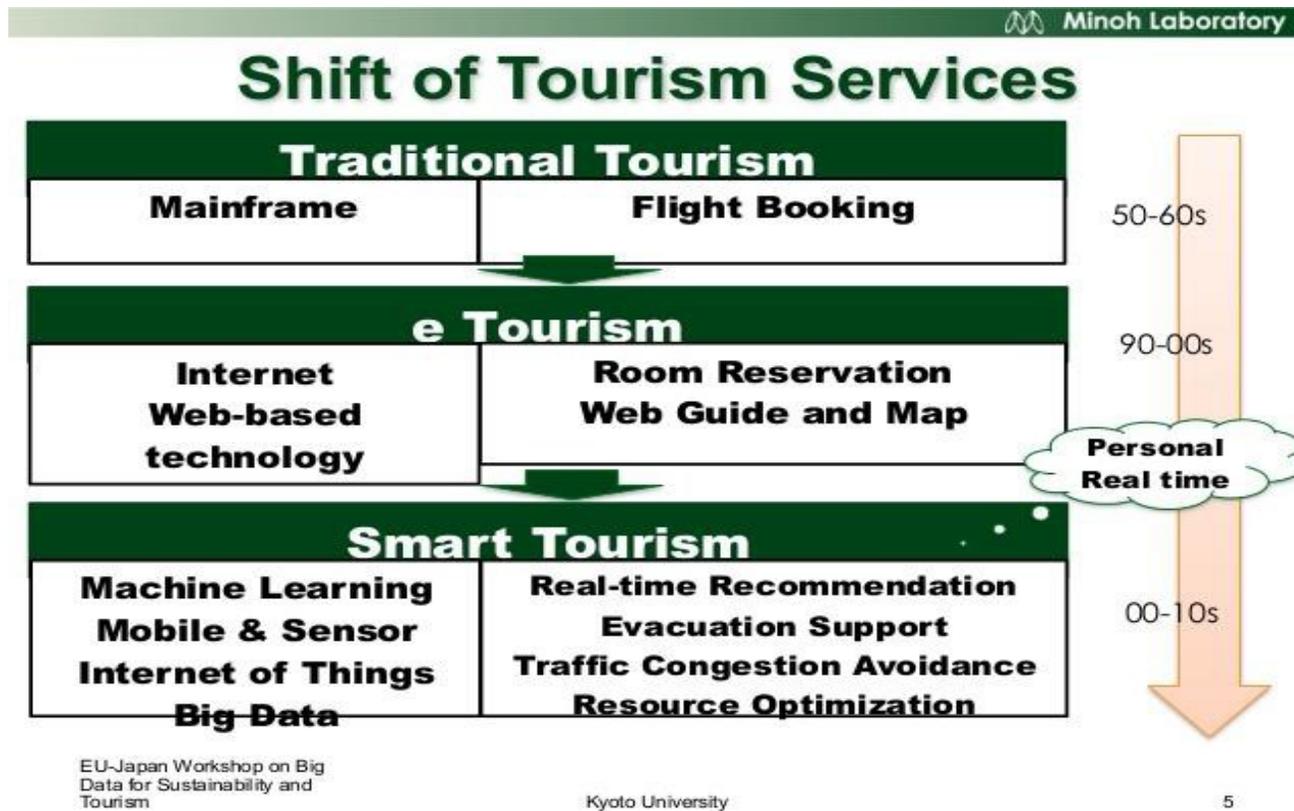
Incentivizes visits during off-peak times to manage tourist numbers and decrease pressure on popular sites.

DIGITAL STORYTELLING

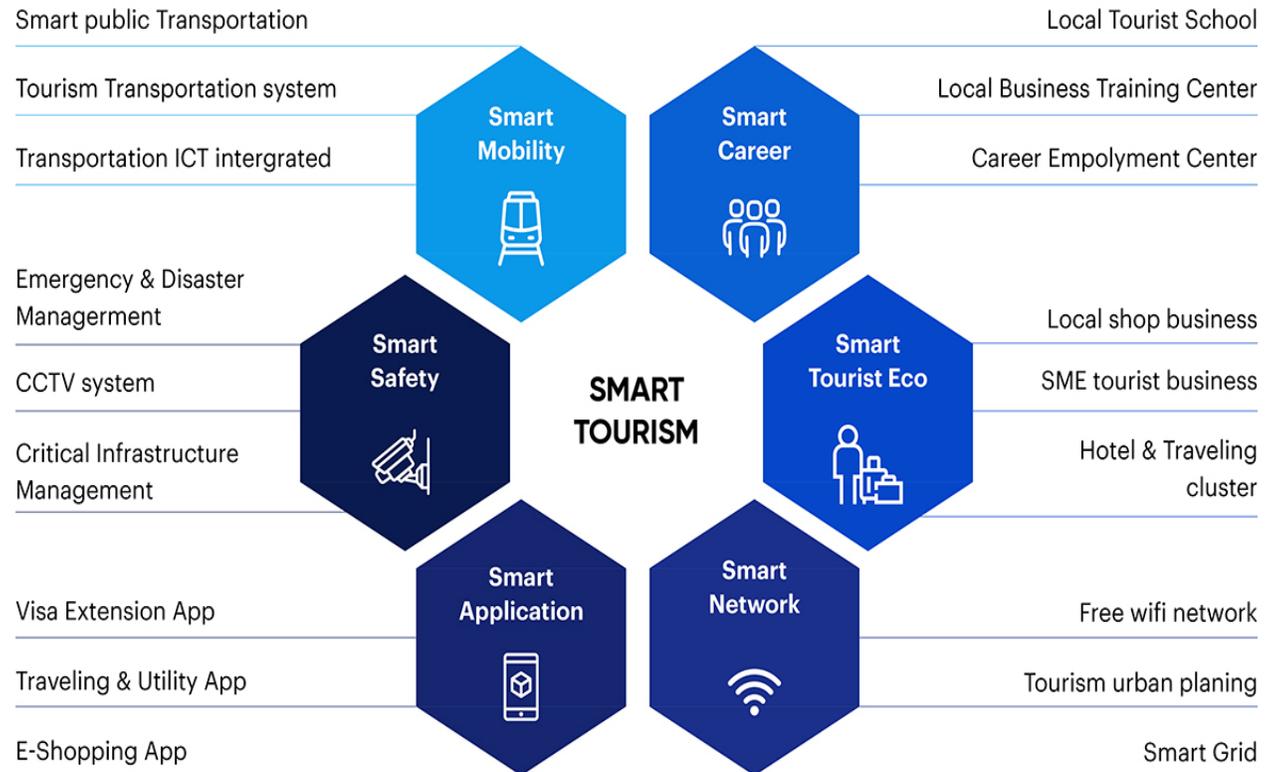
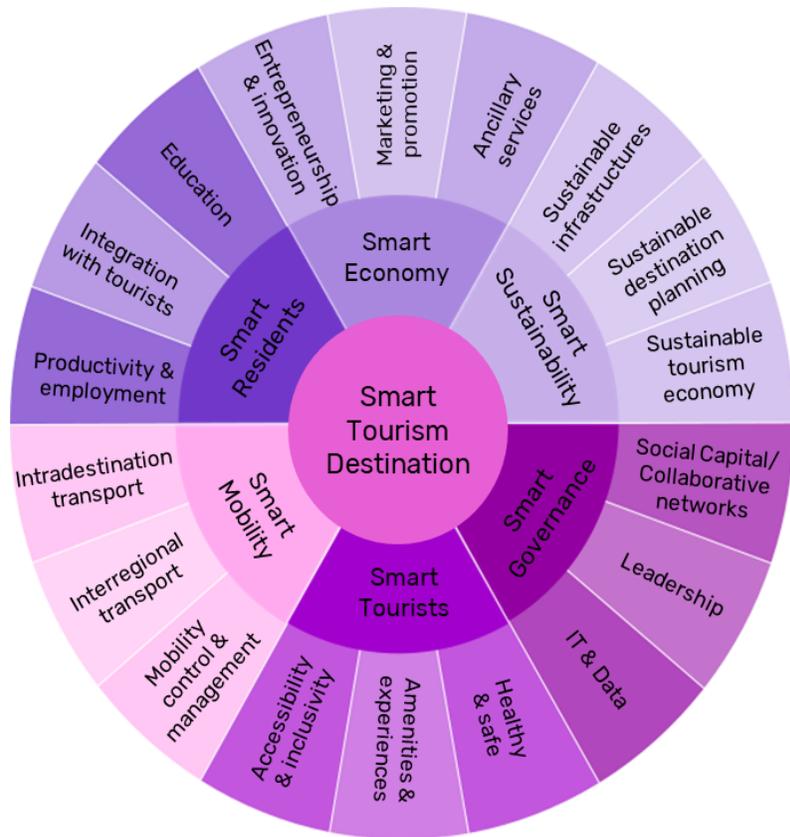
Creates engaging narratives around secondary attractions to draw visitors from crowded hotspots.



Smart tourism



Smart Destination Management Systems



Smart Destination Management Systems

DATA COLLECTION

Collect diverse data to understand visitor behaviors and preferences for better tourism management.

DATA PROCESSING

Analyze data to extract insights crucial for managing tourism activities effectively.

INSIGHTS

Leverage insights from data to make informed decisions, enhancing tourist satisfaction.

ACTION & FEEDBACK

Implement changes based on insights; gather feedback to refine strategies continuously.

Asian Case Studies: Smart Tourism Leadership



Singapore

Tourism Board's Singapore Smart Experiences platform integrates AR/VR, chatbots, and contactless technologies with sustainability initiatives at major attractions

37% reduction in paper usage and 24% energy savings at participating attractions (Singapore Tourism Board, 2023)



Seoul, South Korea

Smart Tourism Ecosystem using IoT, big data, and AI to distribute tourism benefits across all 25 districts while monitoring environmental impacts

Achieved 41% broader visitor dispersion across the city compared to 2019 (Seoul Metropolitan Government, 2023)



Kyoto, Japan

Digital congestion management system with real-time alerts and incentives to visit alternative sites during peak periods

Reduced overcrowding at top temples by 28% while increasing visitor satisfaction by 15% (Japan Tourism Agency, 2023)

Singapore achieves global destination sustainability certification

Singapore, 28 February 2023 – Singapore has been certified^[1] as a sustainable destination based on the Global Sustainable Tourism Council (GSTC)'s Destination Criteria, after being the first to apply the certification process on a country level. This reflects Singapore's efforts and commitment in becoming a sustainable urban destination.

The GSTC Criteria are the global standards for sustainable travel and tourism, and Singapore was certified based on our performance in four pillars: sustainable management, socio-economic sustainability, cultural sustainability and environmental sustainability. Singapore's achievement reflects the commitment towards the Singapore Green Plan 2030, and is also in line with the Singapore Tourism Board's (STB) Tourism Sustainability Strategy. The Tourism Sustainability Strategy was launched in 2022 and sets out actionable strategies for the tourism industry so that Singapore can become a sustainable urban destination.

Singapore's certification follows similar achievements by key tourism partners such as Sentosa Development Corporation, Resorts World Sentosa and Marina Bay Sands Singapore, which had also achieved certification based on the relevant GSTC Criteria.

SINGAPORE HOTEL SUSTAINABILITY ROADMAP



VISION

To create a hotel industry in Singapore that



Integrates sustainability as a core value across the entire hotel ecosystem



Is established as a living lab for innovation and utilises sustainability as a key thrust to drive business competitiveness and growth



Is recognised as an industry leader for sustainability in the region

TARGETS



At least 60% of hotel room stock to achieve internationally-recognised hotel sustainability certification (e.g. by the Global Sustainable Tourism Council) by 2025



For hotels to commence tracking of emissions by 2023, reduce emissions by 2030, with a view to achieve net-zero emissions by 2050

4 CORE AREAS OF FOCUS



Water Conservation



Energy Conservation



Waste Management, Recycling & the Circular Economy



Sustainable Sourcing and Procurement

SINGAPORE MICE SUSTAINABILITY ROADMAP



1 VISION

To be Asia Pacific's Leading Sustainable MICE Destination by 2030



Integrate sustainability as a core value across the MICE ecosystem



Collaborate for joint success and greater impact

3 TARGETS



Develop sustainability standards by 2023 and aim to be internationally recognised by 2024



Obtain sustainability certification¹ for purpose-built MICE venues² & 80% of SACEOS members³ by 2025



Start tracking waste and carbon emissions by 2023, reduce waste and achieve net zero emissions by 2050

2 FOCUS AREAS



Circular Economy - Reducing, Recycling & Managing Waste



Reduce Energy and Carbon Emissions

¹ Internationally or nationally recognised sustainability certification, or both
² Changi Exhibition Centre, Raffles City Convention Centre, Resorts World Convention Centre, Sands Expo and Convention Centre, Singapore EXPO, Suntec Singapore Convention & Exhibition Centre.
³ Target applicable to Event Organisers, Venues, Stand Builder Contractors and F&B Caterers. All MICE players can get certified through education and collaboration initiatives provided by SACEOS.

CO-DEVELOPED BY



Quality vs Quantity



Spotlight: Smart tourist applications debut in Hoi An

SMART (E-) TICKETING SYSTEM

Manages visitor numbers to prevent overtourism and protect heritage site conditions.

ENVIRONMENTAL AND SAFE SENSOR NETWORK

Tracks air and noise levels, and waste in real-time for sustainable site management. A smart camera and a data storage system to create better management for public security and early warnings of natural disasters

Using solar power systems for public lighting, lanterns, folk performances, the Japanese Bridge and its public loudspeaker system.

Battery-power cars and non-plastic bags have also been promoted.

AR-ENABLED HISTORICAL STORYTELLING

Offers immersive narratives, eliminating the need for physical displays.

DIGITAL MARKETPLACE

Links guests to local sustainable businesses, supporting eco-friendly commerce.



Green Technologies in Urban Tourism

RENEWABLE ENERGY INTEGRATION

Solar panels at tourist sites cut emissions, showing a commitment to sustainability.

WATER MANAGEMENT SYSTEMS

Smart monitoring reduces water use in urban areas under stress.

WASTE REDUCTION TECHNOLOGIES

IoT bins and composting minimize tourism's environmental impact.

SUSTAINABLE MOBILITY

EV infrastructure and bike-share systems cut emissions in cities.

Challenges in Implementation

INFRASTRUCTURE GAPS

Asian cities face connectivity issues and digital infrastructure challenges beyond central areas.

INVESTMENT REQUIREMENTS

Smart tourism systems need high initial costs, challenging for smaller cities.

DIGITAL DIVIDE

Small businesses and older tourists may struggle with digital-only tourism services.

CULTURAL PRESERVATION

Technology must enhance, not replace, genuine cultural experiences.



Implementation Steps



Assessment & Planning

- Digital readiness evaluation
- Stakeholder mapping
- Tourism carrying capacity analysis
- Environmental baseline establishment



Foundation Building

- Digital infrastructure deployment
- Tourism data collection systems
- Workforce skills development
- Regulatory framework updates



Solution Implementation

- Visitor flow management systems
- Green technology integration
- Digital marketing platforms
- Smart certification programs



Scaling & Optimization

- Expansion to secondary areas
- Cross-destination integration
- Advanced analytics implementation
- Continuous improvement cycles

Implementation for Stakeholders

Stakeholders	Characteristics of the requirements
Government	<ul style="list-style-type: none"> • Establish Public-Private Partnership • Maintain adequate network coverage within the city to avoid gap between dense and rural areas • Support open-data • Regulate data privacy
Tourism companies	<ul style="list-style-type: none"> • Digitalize their core business activities • Give access to information in real-time and in a readable format for users • Engage with local communities, tourists and government in co-creating the experience or developing crowd-sourced applications
Local communities	<ul style="list-style-type: none"> • Actively involved in developing cultural heritage
Tourists	<ul style="list-style-type: none"> • Connected, active, committed • Co-create the experience • Contribute to the content • Use end-user devices at multiple touch points • involved in social media
Destination	<ul style="list-style-type: none"> • Innovative ecosystem • Capture information from users and their activities • Interconnected through IoT • Interoperable services • Eco-friendly environment • Educate their citizens and visitors on how to best use the technology

Source : Adapted from Buhalis (2013)

Conclusion: The Twin Transition is not a Choice but an Inevitability

Key Takeaways

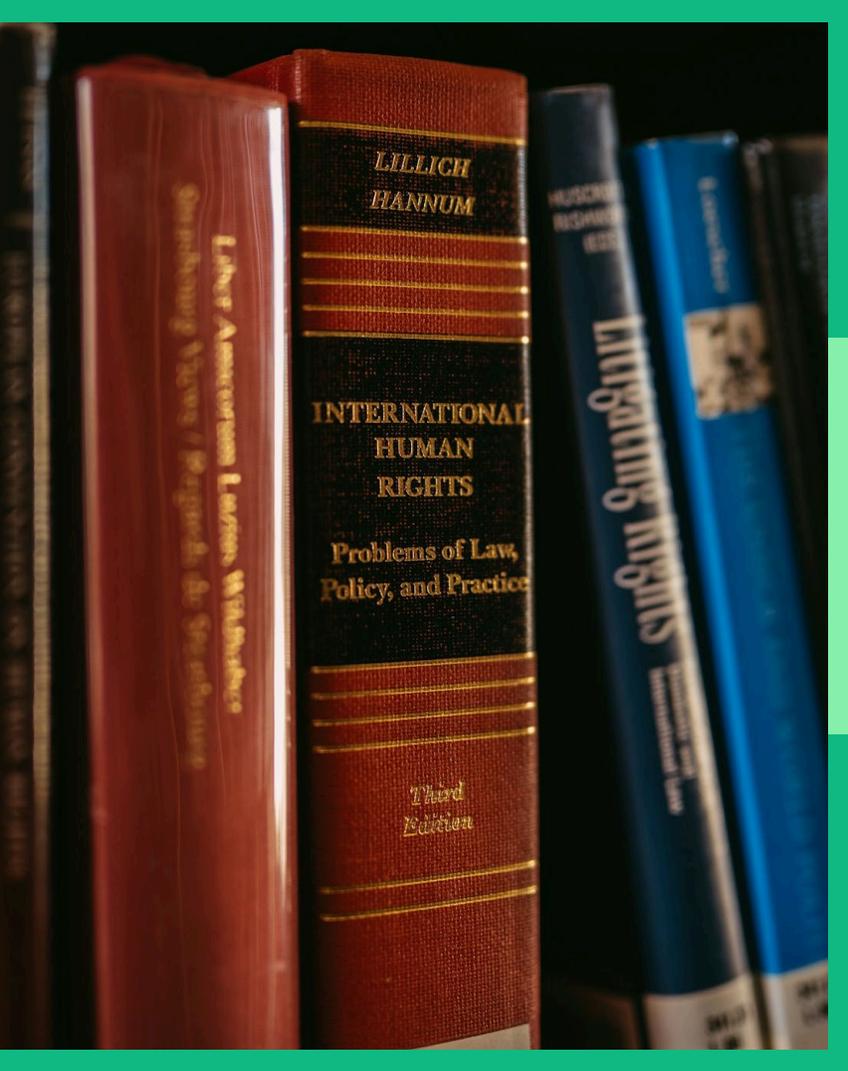
- Digital transformation and sustainability are inseparable forces reshaping Asian urban tourism
- Vietnam and other Asian destinations have unique opportunities to leapfrog legacy systems
- Technology enables more precise management of tourism's environmental impacts
- Implementation requires balancing ambitious goals with practical realities
- Success depends on inclusive approaches that distribute benefits equitably

By embracing digital transformation while prioritizing sustainability, Asian cities can create tourism economies that are not only economically prosperous but also environmentally responsible and socially inclusive.

Looking Forward

The future of urban tourism in Asia will be characterized by:

- Hyper-personalization with cultural sensitivity
- Seamless physical-digital experiences
- Real-time destination management
- Circular tourism economies
- Climate-resilient infrastructure



References

KEY SOURCES

Asian Development Bank, ASEAN reports, and the United Nations World Tourism Organization. Key reports also from the Vietnam National Administration of Tourism, McKinsey, and Hoi An People's Committee detail regional developments. Research insights provided by Deloitte, and Pacific Asia Travel Association enhance tourism strategy understanding.