

World Tourism Innovation and Development Report (2021-2022)



WORLD TOURISM ALLIANCE

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Preface

The World Tourism Innovation and Development Report (2021-2022) is an annual research report jointly compiled by the World Tourism Alliance (WTA) and the Tourism Research Center of the Chinese Academy of Social Sciences. As the first research report focusing on the theories and practices of global tourism innovation, the Report provides decision-making reference and intellectual support to governments and the tourism industry by building an analytical framework for world tourism innovation, presenting the latest features of world tourism innovation, analyzing the key elements of innovation in the tourism industry, and predicting the future trends of global tourism innovation.

Innovation is a major force that drives human society forward, and it also holds the key to the creation and evolution of modern tourism. Compared to the colorful and ever-changing practices of tourism innovation, systematic research on tourism innovation, especially the overall assessment on a global scale, remains inadequate. In particular, the COVID-19 pandemic that started in 2019 has caused a major impact on human life, the world economy and tourism development, and raised new requirements for global tourism innovation. The complexity of the pandemic, combined with the restructuring of the global socio-economic order in the post-war era, has brought four historical changes in international relations, human-machine relations, industrial structure and climate & environment. To adapt to the great historical changes and meet the dual objectives of delivering comprehensive benefits and improving efficiency, the international tourism industry is pursuing a path of recovery based on innovation, and putting in place an

innovation mechanism driven by technology, rooted in culture, underpinned by the enterprising spirit, connected by the bond of cooperation and oriented toward future market. In the meantime, the industry is seeking innovation in the six areas of technology, organization, product, marketing, policy and public service in order to reinforce its appeal to talent, technology and capital at the front end, and construct a development framework that is more advanced, wide-ranging, effective, deep-going and more broadly valuable than in the past. Such a transition will enable the tourism industry to move past the historical low, cross the tipping point of innovation and embrace its full potential as a modernized industry. It will also generate self-sustaining driving force for global tourism development in the next phase.

The World Tourism Innovation and Development Report (2021-2022) that is presented before you contains a systematic analysis of the innovation practices of the changing tourism industry in six areas: science and technology, organization and business, products and services, marketing and communication, industrial policy and public services. Based on the specific context of world tourism innovation at the current stage, the Report captures the latest trend of global tourism innovation. In addition to a comprehensive analysis, the Report has chosen six typical practices of global tourism innovation out of a large collection of cases, providing a detailed analysis of the needs, measures, effects and prospects of innovative practices and producing experiences and inspirations for future reference.

WTA is a comprehensive, non-governmental, non-profit international tourism organization established under China's initiative. With the vision of Better Tourism, Better Life, Better World, it is dedicated to building a platform of extensive consultation, joint contribution and benefit sharing for the global tourism industry. In 2021, a year of landmark importance in human history, WTA is launching this Report together with the Tourism Research Center of the Chinese Academy of Social Sciences with a view to making its contribution to the development of the world tourism industry. We are ready to join hands with other international organizations and government departments and tourism enterprises of all countries to promote the recovery and revitalization of the global tourism industry.

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I. Adapting to the great historical changes with innovation

1.1 Living through changes unseen in a century

The COVID-19 pandemic that started in 2019 has caused a serious impact on people's life, the world economy and tourism development. The complexity of the pandemic, combined with the restructuring of the global socio-economic order in the post-war era, has brought four historical changes in international relations, human-machine relations, industrial structure and climate & environment.

First, country-to-country relations are being reshaped, inter-regional and inter-state relations are being adjusted, and the global economic, trade and industrial landscape is going through the biggest transformation since World War II. Second, over recent years, the application of new-generation technologies represented by artificial intelligence (AI) has penetrated into new areas and expanded in scale, tipping the balance between man and machine and altering the underlying logic of human capital. Third, all industries are being restructured to varying degrees during the pandemic. In particular, the service sector, which the tourism industry belongs to, has seen major adjustments in industrial factors and relations, and faced changes unseen in the post-war era. Fourth, since the conclusion of the *1992 United Nations Framework Convention on Climate Change*, there has been a growing global consensus on the management of carbon emissions, and the adoption of the *Paris Agreement* has laid the foundation for the post-2020 international climate regime. As of February 2021, a total of 201 countries have submitted their Nationally Determined Contributions (NDCs), and the changes caused by the climate & environment are already reflected in the global framework for actions. According to the statistics of the United Nations World Tourism Organization (UNWTO) and the United Nations Environment Programme (UNEP)¹, tourism represented 4.9% of global CO₂ emissions in 2005, and the tourism sector contributed 5%-14% of global climate change from anthropogenic causes. With the development of the global climate economy, the tourism sector is expected to undergo significant changes. All the above changes are part of the great historical transformation we are witnessing today. The global tourism industry should fully recognize these changes,

study them thoroughly, and adapt to the changes through systematic innovation and transformation.

1.2 The tourism industry is being reshaped in four aspects

The major changes in international relations, human-machine relations, industrial relations and environmental relations have brought new complexities, new growth instruments, new activation models and new development requirements for tourism. Against such a backdrop, the tourism industry is being reshaped in four aspects, i.e. tourism landscape, growth driver, industrial logic and growth model.

1.2.1 Reshaping the tourism landscape

The regional pattern of the tourism industry formed after World War II, centered on Europe and the United States, will be overturned at a faster pace. Emerging countries will become the key driving force of tourism growth. The weight of various countries in the new international economic and trade structure, their role in the large-scale technological application in the tourism industry, the regulatory and innovation capability they have developed during the response to the pandemic as well as the harmonization of their tourism industries with the climate economy will determine their position in the global tourism network beyond the pandemic.

1.2.2 Reshaping the growth driver

The tourism industry will gradually explore, develop and establish the boundaries and scale of technology application in the new round of innovation, define human-machine relations in the tourism industry by exploring innovation in products, services, management and human resources, and reshape the growth driver of the industry on this basis, which will be crucial for repairing the tourism industry after the pandemic.

1.2.3 Reshaping the industrial logic

Under the new framework of socio-economic development, the logic of the tourism industry also needs to be reshaped. It is imperative to redefine the relations between the government and the market and between multinational companies and local companies, rearrange the factors of production, reset the business logic, reinvent the forms of products, readjust the relationship between tourism and other industries, and recreate new tourism jobs.

1.2.4 Reshaping the growth model

The tourism industry will be prompted to reshape its relationship with climate and nature, reconstruct the cost and benefit model, push for industry-wide transformation in energy, manufacturing, modality and services, and seek new sources of growth in the reconstructed relations.

1.3 A tipping point for innovation breakthroughs

Historical breakthroughs in reshaping the tourism industry can only be achieved through unprecedented innovation. In his 1985 classic *Innovation and Entrepreneurship*, the management guru Peter Drucker introduced the seven sources of innovative opportunities: unexpected events, incongruities, innovation based on process needs, changes in industry and market structures, demographic shifts, change of mood or perception, and new knowledge. Over the past years, especially since the outbreak of the COVID-19 pandemic, these seven conditions have appeared at the same time though to varying degrees — the rapid digitization of tourism businesses prompted by the pandemic, the unexpected expansion of tourism frontier into the outer space amid the industry's most serious contraction, the demand generated by the post-COVID tourism recovery, the widening income fault line and the change in the industry and tourist sources caused by the demographic shift of key tourist markets, the unprecedented global reflection and rising nationalist sentiment, and the imminent conversion of the technologies and knowledge accumulated in the previous stage and the subsequent empowerment of the industry. Because of all the above factors, the tourism industry is now at a tipping point for innovation breakthroughs.

1.4 The six tourism innovation systems

Due to the impact of the great historical changes, the international tourism industry is pursuing a path of recovery based on innovation. To meet the dual objectives of delivering comprehensive benefits and improving efficiency, the tourism industry is putting in place an innovation mechanism driven by technology, rooted in culture, underpinned by the enterprising spirit, connected by the bond of cooperation and oriented toward future market. In the meantime, the industry is seeking innovation in the six areas of technology, organization, product, marketing, policy and public service in order to reinforce its appeal to talent, technology and capital at the front end, construct a development framework that

is more advanced, wide-ranging, effective, deep-going and more broadly valuable than in the past, and transition toward a future-oriented, modern service industry. This will be a necessary phase for the tourism industry to move past the historical low, cross the tipping point of innovation and embrace its full potential as a modernized industry. It will also generate self-sustaining driving force for global tourism development in the next stage.

1.4.1 Embracing the technology trend

As in the previous three technological revolutions, tourism is once again standing at the forefront of the large-scale civil application of new technologies. 5G, AI, big data, robotic and space technologies are all being explored on a wide scope in the tourism industry. By embracing the new technological revolution, the tourism industry has taken on a new look and gained new possibilities for future growth. On the demand side, technological innovation has expanded tourism demands, made more time available for leisure, and strengthened the motivation for travel. On the supply side, applicable technologies such as drone light shows and immersive experience have notably increased the varieties of tourism products; the intensive application of AI technologies has boosted the efficiency of tourism production and services, and demonstrated the possibility for tourism to escape Baumol's cost disease; new transport technologies, heritage preservation and exhibition technologies, and security protection and emergency response technologies have also been widely applied in the tourism industry, and notably strengthened the tourism infrastructure; new electronic payment methods and Internet of Things (IoT) technologies have contributed to the modernization of tourism public services; the development of social media and short videos has created new platforms and means for tourism marketing. Technology is driving innovation in the tourism industry by reducing costs, boosting economies of scale, enriching visitor experience, improving service efficiency, strengthening tourism infrastructure, targeting specific customer groups and amplifying marketing effects. It is also bringing significant changes to the demand, supply and growth model of the tourism industry.

1.4.2 Reinventing organizations and businesses

Under the new framework of technological, regional, demographic and industrial coordination, tourism enterprises that have the spirit and power of innovation are all readjusting their business focus and structure, and transitioning toward future-oriented

organizations, either by strategy-led cross-sector integration, or by technology-driven resource organization, or by market-oriented breakthroughs. Basically, there are the following four types of organizational transformation: first, intelligent transformation focusing on the nature of industry; second, digitization focusing on the nature of business; third, low-carbon transformation focusing on the development concept; fourth, internationalization focusing on the development prospect. The whole industry is being reconstructed based on the lessons learned during the pandemic. New tourism entities that are more advanced, flexible, resilient and internationalized are in the making, providing the basic cells for driving the innovative development of the tourism industry.

1.4.3 Restructuring products and services

The COVID-19 pandemic has accelerated the innovation in tourism products. Based on new market demands, the tourism industry has made a series of major innovations in products and services. First, the boundaries of tourism destinations have been expanded. The traditional types of natural and cultural destinations are now expanding into the space, digital, macro and micro dimensions. The expanded boundaries of tourism products also unlocks new imagination about the future of tourism. Second, the tourism industry is seeking new business opportunities in the crisis and exploring new types of services to adapt to the changes brought by the pandemic. Third, the scope of tourism products has been expanded in line with the upgrade in consumption to meet the demands of the new generation of consumers. Fourth, with greater emphasis placed on sustainable development, the tourism industry has become a front-runner leading the global trend toward carbon neutrality and carbon peak. These innovations are pushing for the development of quality, refined, customized, digitized, experience-based and sustainable tourism products and services.

1.4.4 Riding the new trend of communication

The outbreak of the COVID-19 pandemic has the potential of driving the progress of digital marketing. Taking advantage of technological advances, tourism destinations and companies are rearranging their marketing channels and using big data to promote new forms of tourism marketing. Based on digital channels and digital technologies, they have explored innovative solutions in the following six areas: first, conducting targeted touchpoint marketing during consumers' journey of purchase; second, keeping up with the latest

advertising and technology trends; third, managing and tracking profit and performance data of cross-channel marketing campaigns; fourth, adjusting existing marketing strategies according to the fact that consumers are 24/7 online; fifth, reaching and acquiring new customers; and sixth, providing personalized advertising and services in real time.

1.4.5 Opening up new policy space

The COVID-19 pandemic has presented a new task for the making of tourism policies, rules and standards. More and more countries and regions are now exploring the policy conditions for relaxing border control and revitalizing the tourism sector. In terms of border opening, countries and destinations have experimented with a series of innovative initiatives, such as “Country Opening”, “Sandbox”, “Quarantine-free Travel”, “Travel Pass”, “Vaccine Passport”, “Travel Bubble” and “Traffic Light” system. In terms of tourism rejuvenation policies, the examples include Japan’s “Go to Travel” program, the “Thai Tiew Thai” program of Thailand, and the “Stay, Dine and See Macao” program introduced by the Macao Special Administrative Region of China. Countries and destinations around the world are all looking for innovative ways to balance pandemic control and tourism revitalization. These explorations have also provided the basis for innovation in the boundaries and instruments of tourism policies beyond the pandemic.

1.4.6 Promoting innovation in public services

The COVID-19 pandemic has transformed people’s way of life, social communication status, travel preferences and behaviors. The changes in the concept of leisure and means of travel have raised higher requirements for the standards of tourism public services. Under the new innovative conditions, we have seen dynamic progress in both the connotation and outreach of public services, and new forms of innovation are emerging in tourism public services. The advance of digital and intelligent technologies is pushing for innovation in tourism public services, and bringing about new changes in areas such as tourism safety protection, tourism supervision and management, tourism information services and tourism public resources development. This will help build a more efficient, diversified, popular and equitable tourism industry, and pave the way for the all-round transformation in the industry.

Notes:

1. UNWTO & UNEP, *Climate Change and Tourism: Responding to Global Challenges*, 2008.

II. Scientific and technological innovation: riding the trend of the new technological revolution

2.1 The tree of technology and the flower of tourism

Scientific and technological innovation is the source of power for economic growth and social progress, and the underlying variable driving tourism development. The development of modern tourism is the product of technological revolution. The use of machines in manufacturing production not only frees the labor force, increases their leisure time and promotes wealth accumulation, but also improves the transportation conditions and increases the varieties of tourism products, making recreational and entertainment tourism a possibility, and expanding the geographical distance and spatial scope of tourism. Since the second technological revolution, the endogenous evolution of technologies has continued to drive changes in the tourism sector, leading to expanded tourism demands,

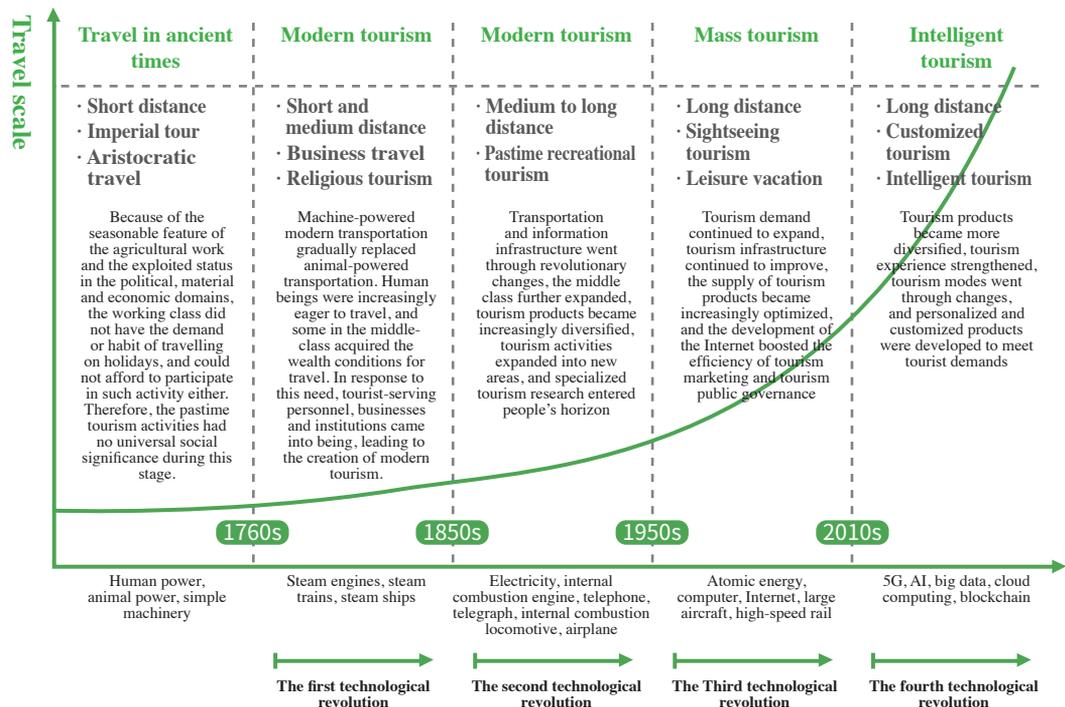


Figure 2.1 Technological revolution and tourism development

improved supply of tourism products, better tourism infrastructure, and changes in tourism marketing and public management. Entering the 21st century, the extensive application and profound revolution of the Internet as well as the long-term accumulation and intensive exploration of big data have made tourism marketing more targeted and tourism public management more efficient. The tourism industry is changing and evolving at a faster pace, and the growing tree of technology continues to provide nourishment for the beautiful tourism flower.

2.1.1 Scientific and technological innovation expands the scale of tourism demand

The comprehensive impact of scientific and technological innovation continues to loosen the constraints over tourism demands such as income and leisure time. First, scientific and technological innovation increases people's income. As a key factor of production, science and technology has changed the nature of economic growth. It is also reshaping other factors of production, and thus becomes the primary productive force. The innovative development of science and technology has notably boosted labor productivity and generated social wealth, resulting in a significant increase in per capita income and providing the economic conditions for tourism activities. Second, technological innovation makes more leisure time available. Leisure time is an essential condition for recreational tourism. With the progress of science and technology, the application of scientific management practices as well as automated and intelligent production have significantly increased labor productivity. As a result, people's average working hours have notably dropped, and their leisure time such as holidays and paid vacations has increased. Third, scientific and technological innovation strengthens the motivation for tourism. As people's scientific literacy, education level and quality of life keep improving, some tourists are no longer satisfied with pure enjoyment, but motivated to learn the new knowledge brought by scientific and technological innovation during tourism activities. Travel has thus become a way of learning, which raises higher demands for modern tourism. In the information age, the popularity of social media is also strengthening the motivation of knowledge-seeking tourists, and the emergence and application of high and new technologies is inspiring tourists to pursue new types of tourism unlike any in the traditional tourism.

2.1.2 Scientific and technological innovation enhances the quality of tourism supply

First, scientific and technological innovation increases the types of tourism products

and prolongs their lifecycle. The tourism industry is using technological innovation to improve the supply of tourism products and promote the upgrade of tourism services. For example, technological applications such as drone light show and immersive experience can enrich the tourist program of scenic spots. Investment in technology also prolongs the lifecycle of tourism products. Taking Disneyland as an example, from the beginning of construction to operation, it has all along attached high importance to the investment in science and technology and built entertainment facilities that are able to meet the varying needs of different people. This is the very secret of its lasting popularity. Disneyland has also been active in embracing drone technology. With the light graffiti show, spraying show and creative aerial performance presented by the drone fleet, it provides visitors with a visual feast that shows the power of technology. In addition, scientific and technological innovation has added a pair of intelligent wings to tourism services, paving the way for an AI-powered “intelligent transformation” in the route designs of travel agencies, online search services of online travel agencies (OTAs) and revenue management of hotels. IBM Watson, one of the most popular AI systems, is a perfect example. From recipe analysis to sports team management, from health advises to concierge services, Watson applications have generated business opportunities in tourism, fashion, finance, medical, legal, education, transportation and other fields. In another example, Revfine, a knowledge platform in the hotel and tourism industry, provides revenue optimization services for leading hotels and uses AI and other technologies to give feasible revenue management suggestions to hotels.

Second, scientific and technological innovation promotes socialized tourism services and integrated service contents. For example, all-for-one tourism platforms on mobile devices such as “Tour of Yunnan at Your Fingertip” and “Tour of Shanghai App” have integrated the WeChat public platform, mini programs, Tencent cloud, WeChat payment, face recognition, AI, smart retail and several other core technologies and capabilities, and provide visitors with one-stop intelligent services through the development of digital identity system, digital consumption system, digital credibility system, geographic information open system, LBS-based digital resource services, business aggregation services and other service systems. In 2020-2021, the COVID-19 pandemic has caused massive disruptions to museums around the world. Google Art & Culture adopted digital means to overcome the geographical restrictions, bringing the public closer to museums and providing a more convenient and diverse digital exhibition experience for its subscribers.

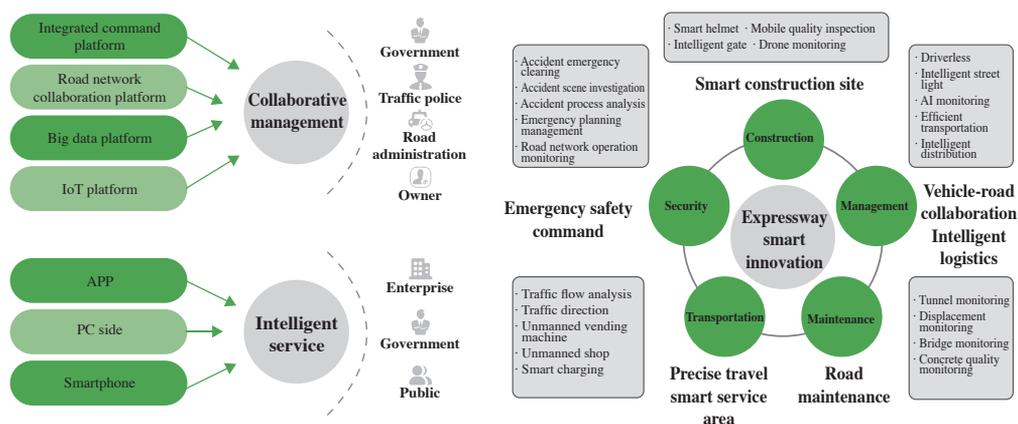


Figure 2.2 Smart transportation diagram
Source: Qiang Rong Group

Third, scientific and technological innovation also improves the tourism service facilities. Driven by digital technologies, tourism service facilities have grown more and more intelligent. The combination of new technologies and tourism is reshaping the tourism industry. For example, more and more destinations are now applying VR/AR technology to their tourist programs. Japan’s TeamLab interactive light show provides visitors with a phenomenal immersive experience. TeamLab’s floral forest creates a magical space using computer programming, sensors, projection, lighting, interactive animation, music effects and glass. The flowers of the four seasons can be found in different sections. They will wither if the visitors touch them with their hands, while appearing in full blossom where the crowd gathers. This virtual ocean of flowers is created by computer programs and able to interact with the visitors in real time.

2.1.3 Scientific and technological innovation improves the tourism infrastructure

First, scientific and technological innovation improves the transportation infrastructure. The rapid development of highways, high-speed rails and civil aviation has enabled the tourists to travel further and faster and pushed for the transition from point-based to route-based layout in the tourism industry. Innovations in transportation technologies have notably strengthened the tourism infrastructure and boosted the development of the tourism industry. As private cars enter average households, self-driving tour is now a preferred solution for tourist travel. The extensive use of ETC and the parking payment function provided by Alipay and UnionPay have saved the waiting time at manual toll stations; the parking space search function on WeChat and various maps & navigation Apps has saved the trouble of parking in self-driving tours. In addition,

the development of science and technology has also led to a series of convenient measures, including electronic travel code, electronic boarding pass, electronic check-in and boarding with face recognition, which have all served to improve the travel experience of tourists.

Second, scientific and technological innovation improves the information infrastructure. With the help of modern communication technologies, more and more tourist destinations have achieved full coverage of wireless network in the destination area. Through IoT applications, tourists are now able to use the screens on their cell phones, PCs and other terminal devices to access all types of tourist information about the destination, such as site introduction, electronic maps, recommended routes, traffic conditions and tourist infrastructure, at any time and anywhere. For example, Virgin Hotel has developed a mobile App, which allows its guests to access and control the thermostat or TV in their room with cell phone. In another example, Red Roof Inn uses API to collect flight cancellation and weather information and then calculates flight cancellation probability using conditional algorithms. The predicted results are then sent to the travelers in areas likely to be affected, together with information on room availability and distance to the airport. This innovative practice has increased the hotel's bookings by 266%.

Third, scientific and technological innovation improves tourism governance. Firstly, scientific and technological innovation facilitates the protection and preservation of tourism resources. Sorting out the common tourism data resources based on key and core technologies such as the classification and identification of tourism resources, digitized acquisition and management, cross-cluster communication and data migration helps resolve the problems associated with the storage, management and computational analysis of scattered and heterogeneous data at the infrastructure level. For example, the Dunhuang Academy China has established a unique digital file for each and every mural and sculpture through photographic image acquisition and processing, virtual tour, digital video, multimedia display, three-dimensional reconstruction and other technologies, realizing permanent preservation and perpetual utilization of the heritage. Secondly, scientific and technological innovation strengthens tourism emergency management. The application of technologies facilitates the upgrade of security and emergency management at tourism destinations. The development of a multi-dimensional, intelligent security protection system improves the performance of security and emergency management. Intelligent security, drone patrol, emergency rescue command system and other safeguard measures ensure the effective monitoring of fire, traffic safety and other risk factors in

tourism destinations, and the timely activation of effective preventive measures. In the meantime, scientific and technological innovation also helps mitigate the losses incurred by tourists in these emergencies. Since emergencies are highly time-sensitive and require timely response, emergency management is commonly applied in business travels. For example, the 4site tool developed by Cornerstone Information Systems aims to improve the efficiency of business travels by predicting the occurrence of emergencies and mitigating the losses suffered by travelers and operators: 4site is able to predict travel disruptions based on data such as weather information, current delays and airport services, and send timely notifications to alert the users and automatically activate the emergency plan. If the destination is covered by heavy snow and all flights are diverted to another airport, 4site will help its users search for available hotels in the new location or provide transfers from the actual landing location to the initial destination. Finally, scientific and technological innovation enhances smart governance. Big data, AI and other technologies play an important role in monitoring the economic operation of the tourism market and the regional tourism consumption trends. They can help governments and enterprises put in place data-oriented policy making and decision adjustment mechanisms. Empowering the government's public management functions and services with big data and digital applications, and using IT tools to strengthen the supervision of the tourism market, especially the online tourism market, will help foster a quality tourism environment to the satisfaction of the people. For example, China Mobile and Xishuangbanna Dai Autonomous Prefecture of Yunnan Province have jointly constructed a cloud platform for the digitized management of the Mengbala Rainforest Town, with the embedded functions of environmental monitoring, smart parking, smart hotel, electronic ticketing and VR live broadcast. Taking the scenario of a sightseeing car deviating from the set route or going at a wrong speed as an example, the IOT chip inside the car will automatically send an alert to the town's digital management platform, and the security personnel will take actions right away to fix the problem and ensure the safety of the passengers².

2.2 Frontiers of technology application in tourism

Emerging technologies are mostly in the areas of electronic information and Internet technologies, biological and new pharmaceutical technologies, new material technologies, aerospace technologies, new energy and energy-saving technologies, high-end equipment manufacturing technologies, resource and environmental technologies, and high-

tech service industries. As the underlying technologies affecting economic and social development, the application of these technologies in tourism scenes will contribute, directly or indirectly, to the high-quality development of tourism. Among them, network and information technologies, including big data, cloud computing, VR/AR, have the most extensive application and profound impact in the tourism industry.

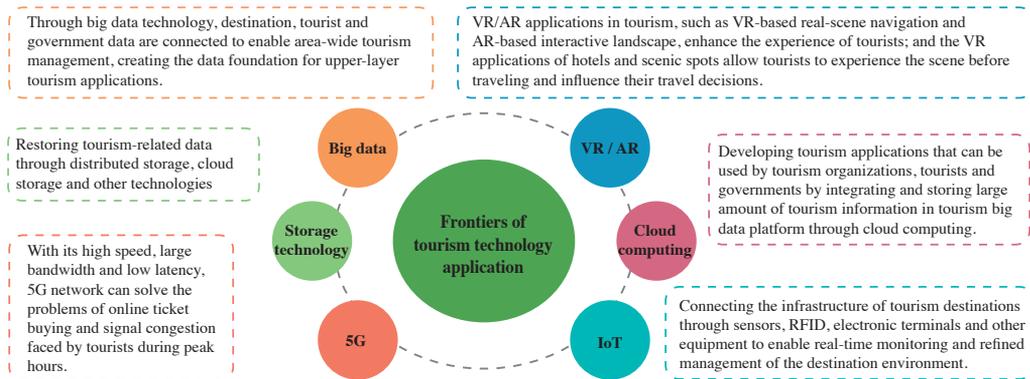


Figure 2.3 Application of emerging technologies in the tourism industry

2.2.1 AR/VR technology

AR (Augmented Reality) is an integrated technology that enables interaction between the virtual world and the real world with 3D scene recognition, SLAM, AI object recognition and scene restoration technologies, while VR (Virtual Reality) is a form of human-computer interaction created with the help of computer and sensor technology. AR/VR has an all-round and multi-dimensional impact on tourism, with disruptive effects in scene restoration, history reproduction, staggered display, extreme experience, intelligent tour guide and navigation, brand promotion and outdoor advertising, tourism souvenirs, etc. AR/VR has penetrated into all aspects of tourism experience, tourism marketing, tourism products and tourism management. It points the direction for the development of smart tourism and provides a model of technology-enabled tourism development. With AR/VR technology, people can “teleport” to the most distant corners of the planet without leaving their couch. For example, Everest’s App Everest VR allows its subscribers to see the top of the world without having to climb to the peak, or cross the Grand Canyon in a kayak to enjoy the landmark’s sights and sounds. The “Mobile VR in Heritage Location” program created by TM Forum and Catalyst delivers rich and engaging video-based experiences to users exploring an area of the Roman Baths, one of the most popular

tourist attractions in the UK. The AR experience allows visitors to “travel back in time” to reconstructions of the site in key moments throughout history. The BBC ran a test project at the site, which saw over 80% of the participants reporting they would be more willing to visit a museum if it had such an AR experience³. There are many other applications of VR/AR technology in the tourism industry. For example, the San Francisco Museum used AR in the Terracotta Warriors exhibition to present knowledge on the background of Terracotta Warriors; Qantas launched a Video VR App on the flight destinations; and Marriott Hotels provided its users with the opportunity to enjoy a 360° travel experience with VR. Google Arts & Culture has developed a technology to capture 360° panoramic images in museums and launched the iOS and Android App “Wonders of China, from Google Arts & Culture” together with 40 Chinese partners, including the Palace Museum, the UCCA Center for Contemporary Art and the Power Station of Art, presenting some 8,000 digitized exhibits, more than 200 online exhibitions, and 70 panoramic images.

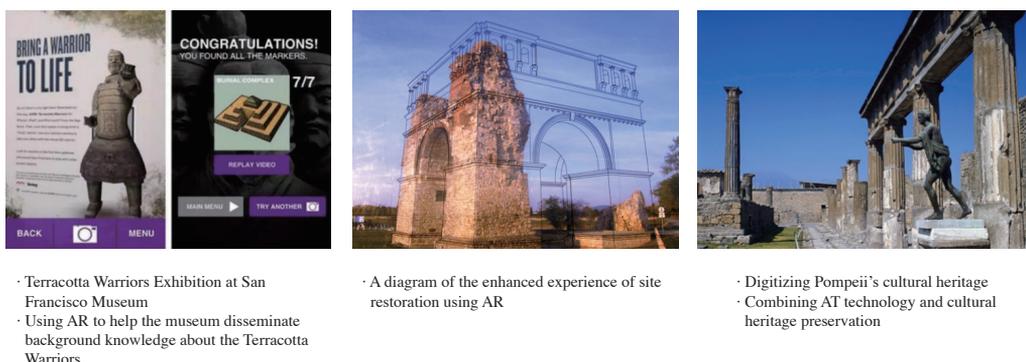


Figure 2.4 Application of AR technology in the tourism industry



Figure 2.5 Application of VR technology in the tourism industry

2.2.2 Big data technology

The application of big data in the tourism industry is to use big data technology in the mining, cleaning, storage and analysis of tourism data. It help the users to actively explore tourism resources, tourism activities, tourism economy and other valuable information, and supports tourist attractions, government and other departments to conduct accurate planning, marketing and development of the tourism market, practice IT-based tourism management and rational allocation of tourism resources, and improve the travel experience of tourists. The impact of big data technology on the tourism industry is manifested in two aspects. First, through analysis of the source of tourists, tourist behaviors and the experience associated with tourism products, big data technology provides government departments and tourism enterprises with management decision support, such as monitoring public opinions, recording tourists' length of stay in scenic spots and analyzing the structure of tourist sources, which helps improve the quality of tourism products and the performance of tourism marketing. For example, The Meliá Hotel Chain uses big data screening to go through guest records and determine the best targets for marketing campaigns: the hotel first keeps a record of the amount of spending by the guest as well as his/her reason for travel and nationality, and then cross-check the information with public data from the government to improve the customer profile. In this way, the hotel can better target different tourist segments with smarter investment to improve marketing effectiveness⁴. Second, the application of big data in the tourism industry can help tourists get accurate information about different tourism programs and scenic spots in various regions, in order to better plan their itinerary and travel efficiently. The big data application of OTA enables tourists to book hotels, tickets and air tickets online and saves their time. For example, Hopper uses big data applications to recommend tourist attractions to travelers. With 95% accuracy in the prediction of future flight and hotel prices, it could notify tourists at the best time of booking and help them avoid paying excessive costs⁵.

2.2.3 5G technology

As a fifth-generation mobile communication technology with high speed, low latency and large connectivity, 5G is a network infrastructure for the interconnection of humans, machines and things, and has the prospect of extensive application in the tourism industry. In terms of tourist experience, 5G provides a full upgrade in the travel experience of

tourists. With the support of 5G, the application of VR/AR, big data and AI technologies is able to break the technical confinements and bring new and instant cultural and tourism products to tourists. As for intelligent management and services in tourism destinations, the 5G application accelerates the digitization of various industries and sectors in tourism destinations and promotes the building of smart scenic spots, future hotels and intelligent travel agencies at a faster pace; with the help of AI, mobile edge computing, HD video and other technologies, 5G brings more convenient services to tourists. In tourism marketing and promotion, with the support of 5G, big data analysis can be conducted to improve the profiling of visitor sources and tourists. Tourism marketing programs have become more targeted and better aligned with the consumption behaviors of tourists, and helped boost the marketing performance and efficiency of tourist destinations. On the whole, the progress of 5G communication technology, compounded with the development of advanced technologies such as big data, AI, AR/VR, mobile edge computing, HD video and IoT, will undoubtedly make a huge impact on tourism experience, tourism services, tourism management and tourism marketing. For example, 5G technology has helped China build a smart tourism town: China Mobile has partnered with local companies to build a digital town, Mengbala Rainforest Town, in Xishuangbanna Dai Autonomous Prefecture in China’s southwestern Yunnan Province. Previously, during peak seasons with heavy tourist traffic, it was difficult for tourists to find toilets. Now, with China Mobile’s IoT technology, they can easily locate the nearest toilets with the App on their mobile phone and check the queuing status. In addition, with cameras capturing 360° images of the town, the visitors can watch the town’s beautiful scenery on VR live even if they can’t visit in person⁶.

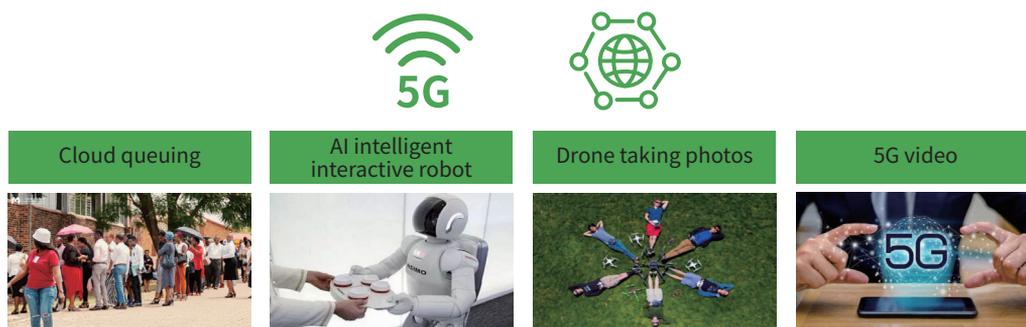


Figure 2.6 Illustrations of 5G+ New Service Scenarios

2.2.4 Blockchain technology

Blockchain is a new application model of computer technologies such as distributed data storage, peer-to-peer transmission, consensus mechanism and encryption algorithms. Blockchain technology brings disruptive transformations to the traditional tourism industry. The distinctive features of blockchain technology, i.e. distributed storage, decentralization and data immutability, could help the tourism industry overcome the pain point caused by the lack of trust. Judged by its position in the industrial chain, the application of blockchain technology in the tourism industry falls into the midstream channel and belongs to the distribution category, with a focus on resolving the channel problem between the resource owners and travelers. For example, Webjet, an Australian online travel portal, has partnered with Microsoft to develop a blockchain solution that enables efficient tracking and trading of vacant hotel rooms. Companies such as Airbnb have started to use blockchain to streamline transactions and improve consumer experience and efficiency of the tourism industrial chain, while ensuring the privacy and trade security of residents and tenants. Meanwhile, Travala, a blockchain-based travel booking platform, is planning to launch Dtravel, an online service that allows travelers to pay for travel activities such as hotels, accommodations and flights with cryptocurrencies (70% of the website’s revenue is generated through cryptocurrencies)⁷.

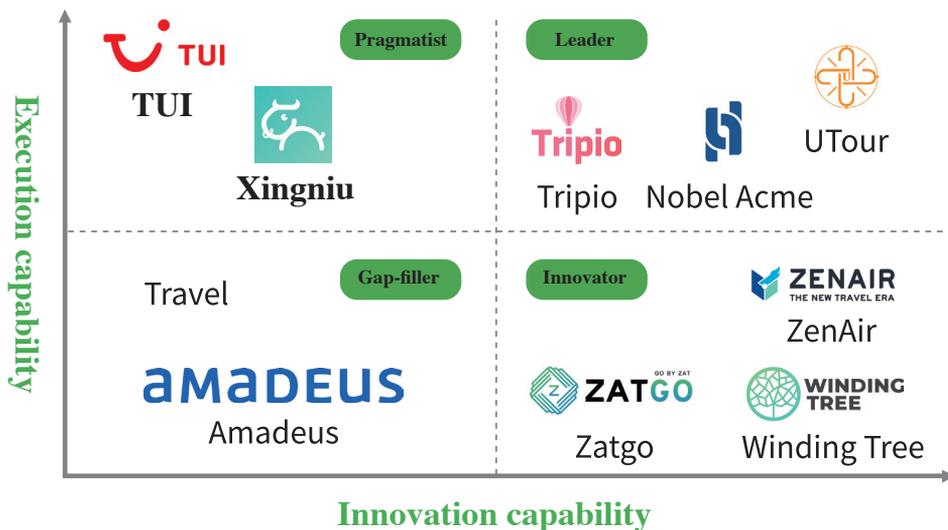


Figure 2.7 Strength matrix of blockchain travel platform projects⁸
 Source: Blockchain + Tourism Industry Research Report 2018

2.2.5 LBS technology

LBS is a location-based service. Combining the applications of mobile GIS, spatial positioning and network communication technologies, mobile communication service providers are able to deliver information services to their customers based on their spatial geographic location. With the rapid growth of the tourism industry, LBS has been integrated into the development of tourism and provides technical support for the innovation of tourism services. Tourism information inquiry, tourism rescue, tourism destination marketing, tourism public information and tourism vehicle management are all typical examples of LBS application in the tourism industry. The LBS technology turns mobile phones into location-based, real-time interactive platforms, and enables travelers to discover nearby leisure sites, sign up in scenic spots and post reviews to share their fun experience during the journey with fellow travelers. The fresh, multi-dimensional and spatial experience brought by location-based services helps tourists build a vivid and lively memory about the exciting moments of their travels. For example, tourists can use Google Maps to search for scenic spots, hotels, restaurants, car shows and other service facilities (programs) around their destinations, and receive personalized customer services, such as distance between the hotel and the destination, estimated time of arrival based on the moving speed and plan for travel routes, before arriving at the destination. In 2019, Google Maps switched to larger icons for city landmarks so that visitors could locate the tourist attractions faster on the map. Google Maps is also partnering with hotel groups and travel companies to provide better services to visitors. For example, AccorHotels is using Google Maps to streamline the booking process, allowing visitors to find suitable hotels through Google Maps and Google Places (with contact information provided on the software page), explore the surrounding area and points of interest, and use predictive search to quickly access the hotel page or make reservation⁹.

2.2.6 Green and low-carbon technology

The tourism industry is a major carbon emitter. According to the research of *Nature Climate Change*, the carbon footprint of global tourism probably accounts for 8% of all carbon emissions. Green and low-carbon technology aims to reduce energy and carbon consumption, and mitigate air pollution and environmental damage in the process of tourism development. Green development is the trend of the times, and the concept of environmental protection is gaining increasing public recognition. The effective protection

of the environment and rational use of resources both concern the sustainable development of tourism. The accommodation sector is one of the main contributors to carbon emissions in the tourism industry. Having integrated the concept of environmental management into business operation, green hotels follow the principles of environment-friendliness, health and safety, and commit to the practices of green management and clean production. For example, Power Valley Jinjiang International Hotel Baoding, the first building in China completely powered by solar energy, is now in full operation. The total installed capacity of this five-star hotel has reached 0.3 megawatts, equivalent to a small power station, and the electricity generated is not only used by the hotel, but directly connected to the local power grid. In another example, to address the problems of depleting water resources, rising energy costs and increasing landfill, the Crowne Plaza Melbourne has implemented a host of initiatives to reduce energy consumption (replacing incandescent bulbs with energy-saving lamps, installing intelligent thermostats in guestrooms, installing variable speed drives, installing building management system, etc.), conserve water (installing shower jet heads with adjustable water pressure and water flow in guestrooms, etc.) and improve landfill methods with the aim of saving costs and preserving the environment in a long-term timeframe. Most of these initiatives are attributable to technological innovation, which have proven to be effective in reducing waste and providing owners with a higher return on investment while controlling costs¹⁰.

2.3 Tourism innovation powered by technological revolution

The new round of technological revolution is not dominated by a single technology, but characterized by multi-point and cluster breakthroughs. Against the backdrop of all-round progress in information technology, life science, new materials, new energy and other fields, the impact of the technological revolution on tourism innovation will cover all sectors and all dimensions. To be specific, tourism innovation in the context of the new round of technological revolution has the following characteristics.

2.3.1 Trend-setting: reshaping the popular trend

Today's tourism industry is moving from the middle and back row to the front line of technological applications, and the applications of technologies such as 5G and VR all started early in the tourism industry. The continued expansion of the tourism industry has made tourism a priority scene for the innovative applications of technologies, and the combination with cutting-edge technologies has transformed and upgraded tourism

services and experiences. The transformation and upgrade of digitized, networked and intelligent scenic spots, tourist resorts and museums has provided sustained drive for the building of smart cities. In the area of tourism marketing, technological revolution and Internet development have given stronger impetus to the marketing of online tourism. The growing diversity and digitization of the display and service of tourism products have contributed to the development of new business forms such as cloud tourism, cloud performing arts, cloud entertainment, cloud live streaming and cloud exhibition. From marketing to channels, and from the means of production to the industrial chain, the key actors in the tourism market have all achieved innovation in the use of the Internet by embracing the power of technology. The booming digital economy is providing new impetus for industrial upgrade and urban development. The building of smart cities, smart transportation, smart culture and museums, digital government and digital communities has improved the basic tools and scenes supporting tourism development. While providing the application scenes for digital technologies, the tourism industry is also driving digitization through its own innovations. For example, New York is showcasing its high-tech features through a smart tourism service platform: with the support of VR technology, New York has successfully presented its image as a fashionable and tech-rich metropolis. The “Virtual New York” platform, an online channel on the city’s official tourism website, promotes all the major attractions and popular events in the city. Through video footage, live-streaming, digital exhibitions, real-time video conferences, social media gatherings and virtual tours, this digital platform provides global visitors with a unique window to appreciate New York’s signature fashion culture.

2.3.2 Digitization: reshaping the core of development

As the result of a new round of technological revolution underpinned by the advances of new-generation information technologies such as AI, big data, blockchain and 5G, the world is entering a new digital era, and the digital economy has become the new driving force of global economic innovation and development. In the era of digital economy, the tourism industry is embracing unprecedented historical opportunities of digital innovation. Digitization and related technologies will become the key technologies leading the future upgrade of the tourism industry. With the advanced application of digital technologies, the tourism industry is going through a transformation in quality, efficiency and driving force, and transitioning from resource-driven, extensive growth into a new stage of efficient

growth driven by technological innovation. For example, riding the trend of digitization, the Palace Museum is using digital technologies to promote and interpret its exhibitions and collections. The interactive and participatory tour provided by the museum has improved the quality of cultural tourism products, and boosted the experience and interest of the public. The Duanmen Digital Pavilion, the first fully digital museum in China, has perfectly blended the ancient architecture and traditional culture with modern technologies. Art Camera, a robotic camera developed by Google Arts & Culture for photographing artworks, provides images of over one billion pixels for various kinds of paintings. As of now, it has digitized over 12,000 masterpieces around the world, including the *Two Birds with Plum Blossoms* by Emperor Zhao Ji of the Song Dynasty and the *Story of Tian Heng and His Five Hundred Followers* by Xu Beihong.

Main sections	Virtual tours
Outdoor scenery Popular attractions Museums & exhibitions Night-time entertainment Performances	Real-time interactive virtual tours: the tour guide goes to the tourist attraction for the tourist, and provides real-time feedback from a first-person angle with video – and audio-recording equipment; services provided by virtual tour providers such as youvisit Webcam live-streaming: installing webcams in zoos and aquariums to facilitate “cloud visits” Image, video and online meetings: digitizing popular offline exhibitions by photo and video recording, and allowing online visitors to participate in the interactive session of the exhibition through real-time access to web-meetings Video recording of popular shows: presenting classic Broadway shows in video form on the Virtual New York platform, and providing online access to visitors from around the world Live broadcast: providing visitors with diverse channels to experience Broadway’s special events through paid contents such as stand-up comedy, reading sessions, and acting instruction
Broadway and other theaters	

Figure 2.8 Virtual tour

2.3.3 Intelligence: re-engineering human capital

In the tourism industry, there is now a parallel trend of large-scale expansion of personalized and intelligent products and services. Against such a backdrop, AI is penetrating into the whole process of tourism production and consumption. In 2018, the McKinsey Global Institute conducted a survey on the commercialization of AI and released the report *Artificial Intelligence: The Next Digital Frontier?* According to the report, companies adopting AI have higher profit margins, and the more the industry invests in AI, the higher the profit margins. More importantly, data proves that the adoption of AI strategies has resulted in a significant improvement in profit margins for the tourism industry¹¹. AI is reshaping the tourism, hospitality and related industries, bringing “smart changes” that are visible in areas such as the travel route designs of tourist attractions, the cloud systems and technologies for hotel operation, the online search function of OTAs and the revenue management of hotels. The development of tailored products and services is an important trend in tourism

consumption. Tourism of the future will focus on meeting the personalized demands of each and every consumer. With the help of AI, it will be able to precisely record and calculate all data information about the consumers, from demand generation to consumption experience and to customer review. Based on the algorithm of the system, all resources will be actively mobilized, automatically matched and efficiently allocated in order to provide intelligent services that are easy to use, efficient, convenient and flexible. The liberation of labor force will pave the way for tourism's transition from a labor-intensive to a technology-intensive industry, and give a boost to its labor productivity. That said, the increased technology penetration and the release of unsophisticated labor also require a matching increase in the technical capability and human capital of future tourism professionals.

2.3.4 Virtualization: making travel more convenient

The application of technologies such as AR/VR and 5G in the tourism industry has generated new business forms such as cloud tourism and live-stream tourism, and pushed for deep transformation in tourism marketing and tourism experience. Virtual technologies have given a powerful boost to the tourism revolution, especially the development of virtual tourism, a new form of tourism combining network technology, 3D visualization, VR, geographic information technology and traditional tourism. It has played a critical role in the transformation of tourism. Virtualized tourism transcends the traditional form of information and connects user perception with tourism decision-making. The combined use of virtual technologies and modern information technologies overcomes the limitations of traditional means of information expression such as text, pictures and videos, and generates richer information in the space dimension. Most notably, it has escaped the temporal and spatial limitations of travel, enabling visitors to see not only the panoramic view of the scenic spots, but also tourism resources that are not open to the public or open on a regular basis. It also provides more specific and detailed information about the tourist sites and presents the scenery in multiple dimensions. The combination of virtual tour and reality has notably enhanced tourists' interactive experience and sense of participation, giving them the opportunity of "trying before buying" in order to make better decisions and proper arrangements. The innovation in tourism virtualization re-engineers the business process of tourism enterprises and promotes the upgrade of tourist experience, which also makes tourism more convenient. The application of virtual technologies provides instant profiling of tourists and generates contents with dynamic and private experience. It encourages tourists

to spontaneously build image perceptions and reinforce the memories of the scenic spots, and helps destination brands construct an unprecedented platform of “immersive” experience and “lifelike” interactive tours. By replacing “description and explanation” with “real-time experience”, the content in the virtual scene generates visual, auditory and other sensory feedback to the users, allowing them to interact with the content in real time.

2.3.5 Integration: delivering better services

The advance of digital, intelligent and virtualization technologies has prompted the integration of online and offline tourism, virtual experience and reality, and technologies and ideas, leading to complex and diverse tourism innovations. The integration of tourism innovations enhances the quality of tourism and shapes a better tourism industry. In the field of tourism, the growing maturity of big data technology has accelerated the development of AI technology. Big data, AI and virtualization technologies continue to integrate deeper with the tourism market, and provide intelligent, convenient and quality tourism services and innovative forms of business for tourists. Various scenic spots and hotels have embraced intelligent technologies to provide tourists with high-quality experience of intelligent services. Applications such as robot services, robot-guided tours and VR/AR experience at scenic spots, AI assistants in unmanned and regular hotels, as

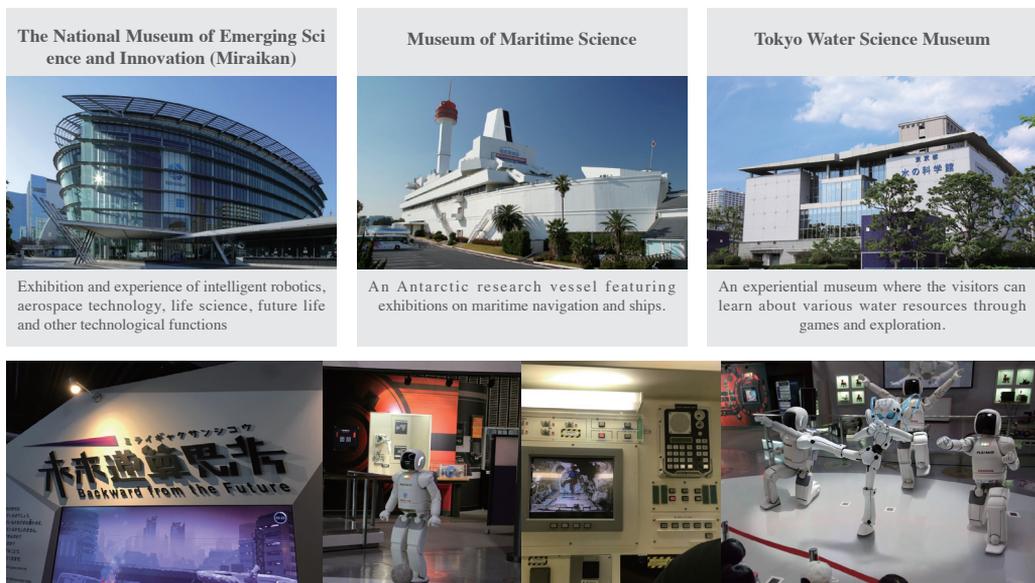


Figure 2.9 Science and technology shows and intelligent robots displayed in Odaiba

well as voice-assistant, photo-taking and translation software have penetrated into all aspects of tourism. The integration of various types of technological innovation has pointed the direction for the future, and paved the way for tourism modernization. For example, Odaiba in Tokyo, originally a warehousing base and a deserted port, regained its vitality through the development of cultural and creative industries such as TV, radio and media, technology and information, and convention and exhibition. Building on various types of exhibition halls in the area, Odaiba is now integrating cultural and creative industries with modern technologies, and constructing a composite functional platform that brings cultural industries closer to people.

2.3.6 Platform: constructing integrated application platform

The digitization and integration of technologies and the expanded scale and mobility of the tourism industry have paved the way for the construction of global travel platforms of technology applications, such as Expedia, Airbnb and Ctrip. Information technologies and the Internet have made it possible for people to book hotels and air tickets through OTAs, thus reversing the information asymmetry in the production and consumption of tourism services. As people can now travel in ways other than organized tourist groups, traditional travel agencies no longer play a dominant role in tourist travels. In recent years, major platforms of travel technology applications have all demonstrated new trends of development. They have cooperated with mature intelligent travel service platforms, life service Apps or offline merchants and connected with external platforms to build a full-fledged ecological service system. For example, Trip Advisor, Booking and other OTAs have worked closely with the official tourism websites of cities like Dubai and London, as well as social media platforms such as Facebook and Instagram and third-party Apps to provide new functions. Tourism programs exclusively developed by third-party organizations, including life services, transportation, social media, booking and screening, have enriched the ecosystem of tourism products and filled the missing functions of official tourism platforms. It has not only improved the tourism services and experience enjoyed by its subscribers, but also facilitated the use of intelligent tourism service platforms. In addition, the mobile Internet has given a strong boost to the development of business models that are based on the concept of sharing, and the simultaneous progress of personalized, quality and family-based consumer demand and mobile Internet technology has reinforced such trend. However, it must be noted that tourism innovation should not

only adapt to the trend of platform-based development and focus on economies of scale, but also properly handle the relationship between monopoly and innovation.

2.3.7 De-carbonization: re-inventing growth

Humanity's dependence on carbon-based energy has caused excessive CO₂ emissions and the greenhouse effect, which is making a huge impact on the global environment and economy and the human society as a whole. The trend of low-carbon development requires the de-carbonization of energy, transportation, buildings, agriculture, industry, services and consumption, all of which have a direct bearing on the growth model of the tourism industry. St. Moritz, a small Alpine town that has developed into a first-class resort with global reputation through low-carbon development, offers a good case for study. It has the first light-rail tram and the first carbon-neutral hotel in the Alps that produces more energy than it consumes. The hotel has a new indoor swimming pool that uses renewable and CO₂-free energy wherever possible, and a "Clean Energy" program that aims to reduce the use of fossil fuels (heating oil, gasoline and diesel) and expand the use of renewable local energies (water, sun, geothermal and biomass). Most notably, the development of St. Moritz is a joint endeavor of the government and the business sector. While pursuing low-carbon and sustainable development, the local businesses have received various kinds of support from the government. Corvatsch AG and Diavolezza Lagalb AG have been awarded certificates by the Energy Agency of the Swiss Private Sector (EnAW) for the planning and implementation of projects aimed at reducing CO₂ emissions and optimizing energy efficiency. The Badrutt's Palace Hotel in St. Moritz is not only a leader in the upscale hotel industry, but also a pioneer in the field of environmental protection. It has adopted state-of-the-art technologies in renovation and worked with the Electric Power Company of Zurich (EWZ) to provide heating for the hotel, a school building and the apartments with thermal energy extracted from Lake St. Moritz. The heat pump system saves some 475,000 liters of heating oil annually, resulting in a reduction of 1,200 tons of CO₂ emissions, equivalent to an 80% drop. The residents of St. Moritz have practiced the concept of sustainability and made it part of their daily life. The town has been awarded the "Energy City" label in recognition of its sustainability performance. With the growing demand for environmental protection and the formation of the low-carbon model of growth, energy-saving and eco-friendly technologies are expected to make big advances in the tourism sector. The transition toward low-carbon, eco-friendly and technology-

intensive growth, and the pursuit of technological innovation and tourism development on the condition of protecting the eco-environment, i.e. improving the quality of tourism development through intelligent applications, cultural preservation and ecological conservation, will be unstoppable.

2.4 The future of technological innovation in tourism

With the expanded application of technological innovation to the tourism scenes, the tourism industry is also going through a process of self-evolution and innovation. Looking to the future, the technological innovation in the tourism industry will inevitably concentrate on the key players of tourism, focus on the goal of improving the efficiency of tourists, tourism enterprises and the governments in tourism destinations, and aim for high-quality development.

2.4.1 Tourist-oriented technological innovation: convenience, diversity and customization

Technological innovation centered on tourist experience aims to deliver convenient and customized travel services to meet diversified tourist demands. The evolution of new technologies and the high-quality development of the tourism industry are ushering in the era of smart tourism. Frederick Engels wrote in *Engels to W. Borgius* that “If society has a technological requirement, the latter will do more to promote science than ten universities.” Demand-driven development is the main theme in the evolution of tourism technology. Be it the growth of quality-oriented new consumerism or the call for safer and better experience, science and technology is undoubtedly an important driving force for future tourism development. With the innovation of science and technology and the evolution of demands with individual characteristics, convenient, diverse and personalized travel will become the new trend. In the development of future tourism, we must continue to strengthen technological innovation, design personalized tourism products that can satisfy the unique travel demands of different tourist groups, and develop customized tourism strategies to support the sustainable development of tourism.

2.4.2 Business-oriented technological innovation: quality service, precision marketing and efficient operation

Technological innovation centered on high-quality development of tourism businesses aims to help tourism businesses achieve high-quality services, precision marketing and

efficient operation, and develop accessible, intensive and feasible services. Through the application of new technologies, tourism enterprises will be able to upgrade their tourism facilities and optimize tourism services. In the building of future tourism destinations, innovative science and technology will be applied in the design of facilities in multiple dimensions. The simultaneous presentation of real and virtual scenes, and digitized monument restoration and cultural heritage preservation have transformed the model and means of destination construction. Many tourism scenes will be presented through science and technology, thus greatly increasing the field effect of tourist attractions. Tourism businesses can also leverage technological innovation to conduct targeted marketing and build tourism brands. Facing the increasingly fierce competition in the tourism industry, tourism enterprises are seeking the help of advanced science and technology to expand the scope and depth of data mining and analysis. They have been able to extract information from past tourism data such as the unique features of tourism market segments, consumer demand and competitors' advantages, and then develop solutions for tourism businesses to properly position themselves in the market through scientific and systematic analysis and calculation. In addition, through multi-chain integration and compounded applications of various service scenes, tourism businesses have been able to accelerate the construction of shared digital infrastructure, and spread advanced technologies such as 5G, block chain, human-computer interaction, IoT and AI into their management process, operation process, service supply chain, product and service innovation, cross-regional delivery in urban and rural areas, and integration of online and offline services, especially in the innovative applications in the service and business models of scenic spots, theme parks, hotels, travel service providers and others.

2.4.3 Government-oriented technological innovation: intelligent governance, public services, emergency management

Technological innovation centered on efficient governance aims to help the government of tourism destinations improve intelligent governance, public services and emergency management, and exercise monitored, predictable, managed and guided governance. The tourism industry has a long industrial chain covering wide areas, and the top-down model of government regulation cannot meet the practical needs of future tourism, nor can it effectively solve the problems and tensions arising from tourism development. The transition from supervision-based management to big data-based service is therefore

an irreversible trend. Service-oriented management with decisions made based on the collection and sharing, mining and insight, analysis and prediction of tourism big data is better aligned with actual needs, and more effective in helping regulators make the right and effective decisions. The government needs to improve the effectiveness of public management and public services, and empower public services and industry regulation with big data and digitization in order to create a quality tourism environment that makes people satisfied. The informatization of tourism public services should start with priority areas such as electronic ticket selling and checking, portal websites of smart scenic spots, virtual experience, visitor guidance in tourist destinations, information release, and the construction of WiFi network in smart scenic spots. The government also needs to leverage the application of big data, AI and other technologies in areas such as the monitoring of tourism market operation and surveillance of regional tourism consumption trend to

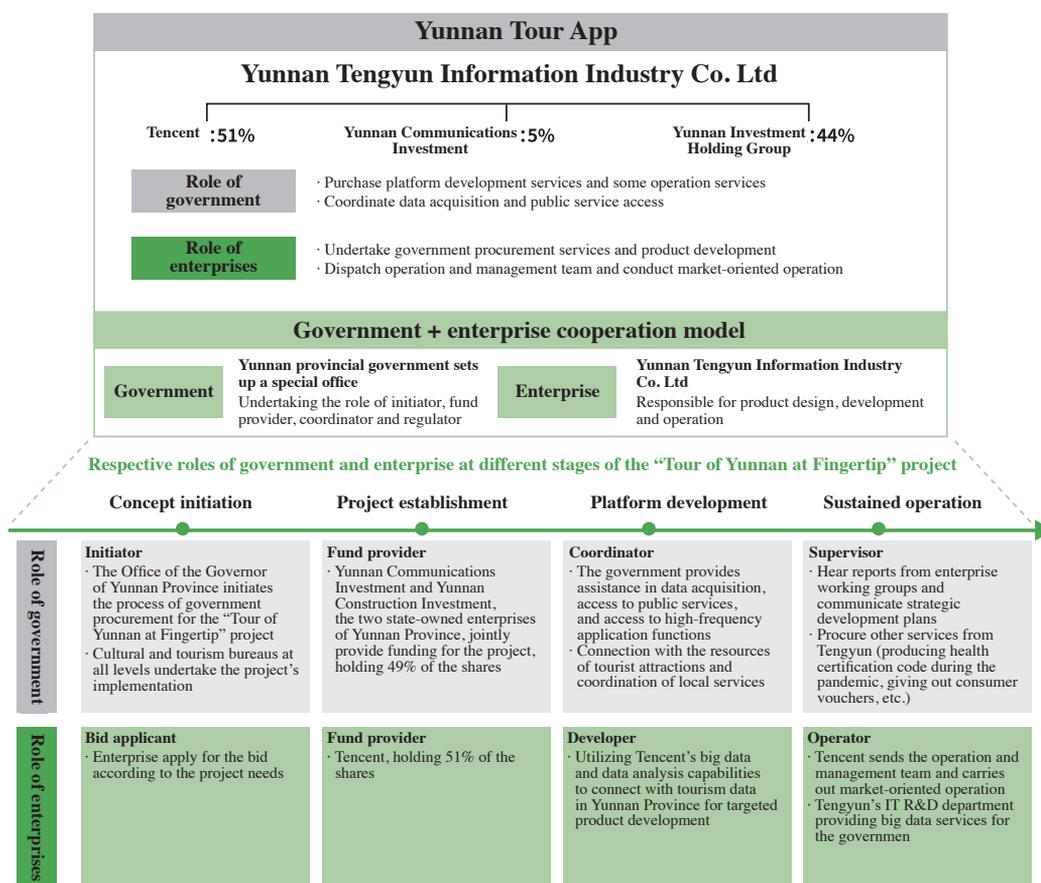


Figure 2.10 The operation model of Yunnan’s smart tourism service platform
 Source: Building a Smart Tourism Service Platform to Promote High-Quality Tourism Development (2021)

enhance the effectiveness of public management and services, and adopt information technologies to strengthen the supervision of the tourism market, especially the online tourism market. In terms of emergency management, the focus should be placed on the security surveillance system, internal ERP management and emergency rescue services of tourism destinations. A tourism forecast and early-warning mechanism should also be established through information sharing and collaboration with public security, traffic, industry and commerce, health, quality inspection and other departments, and based on the security data of tourism destinations and tourism information data in all dimensions to strengthen emergency management and protect tourist safety.

The “Tour of Yunnan at Fingertip” has adopted the architecture of “three platforms + one data center”, i.e. visitor platform, enterprise platform, government platform and data center. The product provides a series of targeted functions for tourists, tourism enterprises and the government. Tourist service (C-side) is a key business of the “Tour of Yunnan at Fingertip”. On the C-side platform, tourists can access a full range of services such as local tourism information, public services, culture and education with their mobile phones. Some of the most popular functions include “Flowers and Plants Recognition” in the popular science and education section, “Find Toilets” in the public service section, and “Visitor Complaints” in the government feedback section. The business service (B-side) platform, which is still under construction, provides three major functions: enterprise platform connection and promotion, merchant information management, and information certification of tour guides and travel agencies. On the enterprise side, the platform is involved in two main businesses: digital marketing and wholesale of tourism resources. In the business of digital marketing, the platform provides targeted online marketing and promotion services for local tourism merchants through big data. In the business of tourism resources wholesale, the platform conducts coordinated planning for the packing and selling of tourism resources and promotes cooperation between enterprises. The construction of the government service (G-side) platform, with the main functions of complaint handling, 30-day return processing and merchant supervision, makes “tourism management on mobile phone” a reality. The government service platform is involved in two main businesses: first, data empowerment that enables the government to make coordinated planning for the digitization of the tourism industry; second, development of digital industries. The platform undertakes the functions of smart town construction, smart services for beautiful counties and management of highland lakes in the province. In

In addition, the “Tour of Yunnan” is embedded with the functions of high-speed toll services and Yunnan Health Code, providing convenience for both the tourists and the government in dealing with the pandemic.

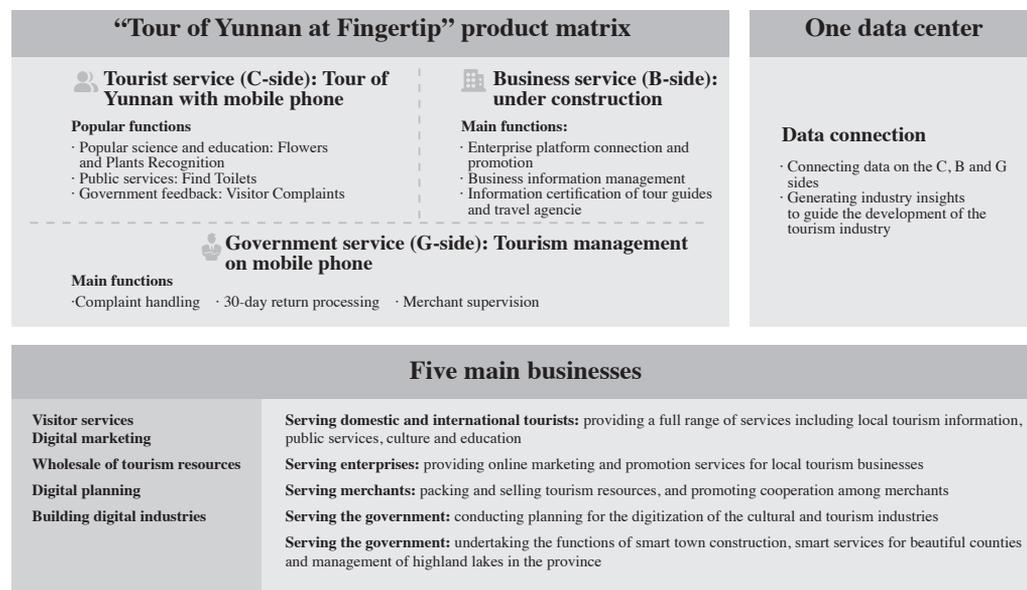


Figure 2.11 “Tour of Yunnan at Fingertip” smart tourism products and services

Notes:

- Source: <https://global.chinadaily.com.cn/a/202010/27/WS5f978c8ba31024ad0ba8141a.html>
- Source: <https://www.tmforum.org/5g-enabled-tourism-experience/>
- <https://www.waremarketing.com/blog/tourism-and-technology-how-tech-is-revolutionizing-travel.html>
- Source: <https://www.waremarketing.com/blog/tourism-and-technology-how-tech-is-revolutionizing-travel.html>
- Source: <https://www.hopper.com/>
- Source: <https://global.chinadaily.com.cn/a/202010/27/WS5f978c8ba31024ad0ba8141a.html>
- Source: <https://bitcoinist.com/binances-travala-launches-blockchain-powered-airbnb-competitor/>
- The strength matrix is an analytical model that reflects the expected market performance and competitive position of major blockchain travel platform projects in two dimensions: execution and operational capabilities and innovation capabilities. The horizontal axis measures the innovation capabilities, which include the innovation capabilities related to consensus mechanism, industrial chain, business model, ecosystem construction, products, etc.; the vertical axis measures the execution and operation capabilities, which include the execution of the project plan, user scale, etc.
- Source: <https://www.webgeoservices.com/industry/tourism/> and <https://bgr.com/tech/google-maps-features-landmarks-icons-for-tourist-attractions/>
- Source: TOWARDS THE BUSINESS CASE FOR SUSTAINABLE HOTELS IN ASIA
- Source: <http://www.199it.com/>

III. Organizational innovation: re-engineering tourism enterprises

3.1 Organizational innovation of tourism enterprises driven by multiple forces

3.1.1 Technological advances

Science and technology have brought to the world new efficiency, new convenience, new experience, new order, new pattern and new challenges, and made a profound and extensive impact on the tourism industry. In the coming years, cutting-edge technologies will reshape the business models and operational mechanisms of the tourism industry. AI and related cloud computing and blockchain technologies will enhance the operational efficiency of the global tourism industry and improve the quality of tourism services and product standards in all respects. Blockchain, cloud computing and other technologies will improve the payment efficiency and settlement model of the tourism industry and reshape the customer loyalty program. Technologies such as VR, human-computer interaction and AI will expand the scope of tourism experience, and bring new tourism products, facilities and equipment for the upgrade of destinations. New energy, IoT and other technologies will provide strong technical support for the development of green and low-carbon tourism, which is crucial for meeting the targets of “carbon peak and carbon neutrality”. The advance of technology not only improves the penetration rate of tourism products and services, but also increases the consumers’ sense of gains and happiness.

3.1.2 Gravity shift across regions

In the past decade or so, global tourism investment has demonstrated a trend of rapid growth. Except for the few years affected by the financial crisis or the COVID-19 pandemic, the growth of tourism investment has been substantial in most of the periods. In the global map of tourism investment, the Asia-Pacific region has recorded the largest volume and fastest growth. In 2019, the region accounted for 38% of total global tourism investment. China has been a leading investor in the Asia-Pacific region. Through the implementation of policy initiatives under the Belt and Road framework, cooperation

between China and the participating countries has presented new investment opportunities for tourism enterprises. In addition, as China has contained the spread of the virus more successfully than other major global economies, it is expected to enjoy a relative advantage for growing tourism investment in the post-COVID era. China's domestic tourism market may become a main battleground in the immediate and medium-term period. In recent years, Disney, Universal Studios, Booking and Thomas Cook have all expanded their business presence in China, which proves that market with potential is capable of influencing organizational changes in travel companies.

3.1.3 Demographic changes

The *World Population Prospects* published by the United Nations concludes that the generally low fertility rate worldwide has led to a clear trend of population aging. Some countries have been aging for a long period of time, such as Japan (elderly population accounting for 33% of the total population), Italy (29%), and Portugal, Bulgaria and Finland (28%). The proportion of the global population aged 65 and above is expected to increase from 10% to 20% in 2050. By that time, the Millennial Generation and Generation Z¹² will reach the peak of their income, and the global elderly population will exceed 1.6 billion. The tourism industry will put greater focus on serving these two population groups, and tourism companies will be motivated to pursue organizational innovation in order to secure their share in the future market and seek an increase in market position and competitiveness.

3.1.4 Cross-industry integration

Tourism has now developed from an individual pursuit to a leisure activity for all, and the tourism industry has penetrated widely and deeply into all aspects of the society. The synergistic integration of "tourism + other industries" has become a new trend and a new way of tourism development. The inherent attributes of tourism make it highly compatible with other industries, and the deep integration of tourism with industry, agriculture, forestry, aviation, water conservancy, transportation, traditional Chinese medicine, science and technology, culture and education has generated new forms of economic activities, lifestyles, social organization and advanced productivity, which raises new requirements for the products and services of tourism enterprises. Through organizational innovation, the factors of production will be re-arranged in a more creative and efficient fashion to better meet the needs of tourism consumers.

3.2 Frontiers of organizational innovation in tourism enterprises

3.2.1 Strategy-led innovation

To attract more travelers to its Loyalty Program and accelerate local market penetration, Marriott has partnered with Alibaba in the following areas, setting a benchmark for cross-sector cooperation in the hotel industry: First, sharing sales channels. Marriott and Alibaba have set up a joint venture company for running the Marriott flagship store on Fliggy, the Marriott Chinese website and the Marriott Chinese App, “combining the three networks into one single portal” through the harmonization of the technology systems. Second, sharing members. The two sides have worked out an arrangement of inter-changeable membership rights and benefits and introduced a matching mechanism for their premium members. Third, complementing on each other’s comparative strengths. Alibaba has advanced Internet technology and massive data, while Marriott has expertise in hotel management. By synergizing their respective advantages, the partnership between the two companies has totally reconstructed and upgraded the business model, and formed a close loop of online and offline experiences. Fourth, promoting best practices. To further penetrate into the Southeast Asian market, Marriott is expected to cooperate with Japan’s Internet service company Rakuten as well as Grab, the most popular car-hauling App in Southeast Asia, and other similar “Super App” Internet companies.

Cross-sector cooperation will become a key strategic direction for the organizational innovation of enterprises. Travel companies will continue to look for opportunities in different areas such as hotels, airlines, finance and technology to serve their needs. The external cooperation of tourism enterprises will no longer be limited to cooperation within the industry or the expansion into the upstream and downstream of the industrial chain. More and more cooperation will be cross-sector in nature. Cross-sector cooperation enables tourism companies to reduce the exploratory costs, and quickly build up higher barriers by counting on leading companies in other sectors.

3.2.2 Technology-enabled innovation

As an industry leader in the application of technology, Disney has been promoting the integration of technology and content through the following initiatives. First, building technology reserve through investment, acquisition, cooperation and independent research. Investment-wise, Disney has invested in several well-known technology companies such

as Jaunt VR, Ambidio, Epic Games and Void; acquisition-wise, Disney has purchased Pixar Animation Studio, the video-streaming website Hulu, the social network game developer Playdom, and the 3D printing toy company MakieLab; cooperation-wise, Disney has worked closely with Carnegie Mellon University and other institutions; research-wise, the Walt Disney Animation Studios has independently developed the “physical ray tracing rendering tools”, “plant generation system” and “model replication system”. Second, laying out the core organizational structure, i.e. Disney Research and Disney Launchpad. Disney Research focuses on computer graphics, video processing, computer vision, robotics, wireless and mobile computing, human-computer interaction, behavioral science, materials research, etc. Disney Launchpad provides funding and resource support to technology start-ups that it sees potential for a three-month incubation period. Third, building the team of technology professionals. In Disney, every business department will appoint a CTO and set up a CTO committee, and most of the board members have working experience as senior executives in the technology companies of the Silicon Valley such as Facebook and Twitter. The composition of the technology team makes technological innovation a distinctive character of Disney’s corporate culture. Fourth, readjusting the organizational structure. In 2018, Disney conducted a sweeping reform of its online streaming business, dismantling the Consumer Products & Interactive Media division and creating a new Direct-to-Consumer & International division. In 2020, Disney launched another round of business restructuring to support DTC marketing, and upgraded the Media & Entertainment division into the Content & Products business group.

For Disney, investing in and acquiring technology companies, setting up research centers and building the team of technology professionals is a process for storing and learning technology resources, and the two rounds of business restructuring have facilitated the reallocation and matching of these technology resources. Technology combined with popular IP resources are now part of Disney’s business model. Due to the COVID-19 pandemic, Disney’s business pillars, theme parks, are almost paralyzed. But the test of the pandemic has also revealed the value of streaming media and created a new blue ocean market for Disney to complete the close loop of profit delivery and foster a more diversified and stable business structure.

3.2.3 Innovation driven by market pressure

Having achieved rapid expansion in the local market, Huazhu Hotels Group

hit the ceiling of growth. To find a breaking point, the company has adopted an internationalization strategy with the aim of constructing a global hotel network in five years' time. To achieve this goal, Huazhu has introduced the following four measures.

First, implementing the global expansion program through acquisition. Huazhu has accelerated the expansion into the international market by purchasing Deutsche Hospitality's new hotels in Singapore and Japan, and restructured its business structure to fit into the internationalization strategy by setting up two management structures, i.e. Huazhu Group and Huazhu China. Second, rapidly expanding the business network. While consolidating its leading position in the budget and mid-range hotel markets, Huazhu has also moved up its position in the markets of upscale, luxury and resort hotels, and constructed a business network covering hotels at all levels, from budget to luxury. Third, improving the quality of products or services. Huazhu has selected thousands of premium hotels to provide appealing, high-quality and innovative experience for customers. Fourth, investing in human capital. By improving the training, mentoring and career development of employees, Huazhu aims to unlock the full potential of its dedicated employees to enhance the company's core competitiveness for the future.

The restructuring undertaken by Huazhu as part of its business strategy offers a good case for study. Through the platform of Huazhou China, the company has been able to maintain a strong focus on China, and continue to strengthen front-line partners and implement the lower-tier market strategy. Huazhu Group, on the other hand, is responsible for "exploratory and ambiguous things", i.e. exploring the possibility of entering overseas markets to avoid "putting all eggs in one basket". Huazhu's acquisition of overseas entities also shows that in the face of fierce market competition, leading enterprises are forced to make changes. Large-scale M&A, strategic cooperation and other forms of partnership with market leaders may be the new options for companies seeking further breakthroughs in the future.

3.3 Future trends of organizational innovation in tourism enterprises

The development and evolution of all industries follows a set of rules, and the tourism industry is no exception. The organizational innovation in the industry will not stop its pace.

3.3.1 Intelligent transformation

At present, there is a huge imbalance between the supply of high-quality tourism services and fast-growing tourism consumption. The fragmented environment and pent-up demand caused by the COVID-19 pandemic have further reinforced the imbalance between supply and demand. The future of tourism remains inseparable from services. The organizational innovation of the tourism industry will continue to focus on the awareness, standards, quality and process of services and permeate into all aspects of tourism consumption to improve the experience and satisfaction of tourism consumers. The tourism industry is going through rapid transformation and iteration, with constant innovation in the model of development. However, no matter how the tourism industry develops, services will remain the essential feature of tourism, and the delivery of personalized services can only be achieved by refining management.

Focusing on the essential feature of services, organizational innovation in the tourism sector will move toward the direction of intelligent application. The COVID-19 pandemic has accelerated the digitization and intelligent transformation of traditional tourism companies. Digital technology is reconstructing the organizational process and streamlining the business cycle. The management model, operation model, business model and work model of companies will also transform at a faster pace. Listed tourism companies will accelerate the coordinated planning of offline and online businesses and introduce the model of contactless/low-contact intelligent services. Contactless services is not a new thing for hotels, and the pandemic will only speed up the wider application of such services, leading to enhanced service quality and improved consumer experience.

3.3.2 Digital transformation

The essence of business is value and cost. On the one hand, business creates values through products or services, and stimulates demands by tapping into potential markets; on the other hand, business reduces the cost of product supply and ensures the sustainable operation of companies. Both of the two factors are indispensable. The organizational innovation of future tourism enterprises will surely be based on value and cost. The standardization of the catering business and hotel chains such as Home Inn, and the booming business of OTAs are all proof of this point.

Having overturned or revolutionized the existing business models, organizational innovation will now aim for more refined management. The pandemic has pushed the

pause button on the fast-growing tourism industry. The deep-seated problems of the traditional approach for managing listed tourism companies, such as blind pursuit of scale and speed, excessive debt borrowing, poor coordination of project implementation and lack of strategic vision, have been fully exposed. As most of the tourism enterprises lack the support of big data analysis, they cannot accurately locate the cost & income and growth potential of various businesses. Prematurely stripping off businesses or cutting expenses becomes their only choice. Having paid a huge price to survive this existential crisis, smart tourism enterprises will surely learn the hard lessons. In a labor-intensive industry like tourism, refining management will be an inevitable choice for companies seeking lower costs and higher efficiency.

3.3.3 Low-carbon transformation

Based on international experience, when the economy is in recession, countries tend to have higher expectations for tourism's role in driving economic growth. At the same time, tourism development should focus not only on the economic benefits, but also on the creation of jobs, the distribution of wealth and the protection of important resources. To achieve the orderly, healthy and sustainable development of the tourism industry is a long-term subject for the practice of organizational innovation.

Guided by the concept of sustainable development, organizational innovation will embark on the path of low-carbon transformation. On the World Tourism Day in 2020, UN Secretary-General Antonio Guterres called for the transition to a carbon-neutral tourism economy. In 2021, following the China-EU cooperation agreement on carbon neutrality, China and the United States issued the *China-US Joint Statement on Addressing the Climate Crisis*. Carbon neutrality has now become a global consensus. If tourism enterprises can seize this opportunity and further leverage their advantages in low-carbon emission, they may be able to lead the low-carbon transformation among all industries. From business philosophy, business means to business projects, low-carbon and zero-carbon development is an emerging trend in all sectors. Low-carbon recreational programs, electronic, paperless business operation, and the construction of green transportation system are all robust practices in this field.

3.3.4 Internationalization

The international landscape and balance of power are evolving at a faster pace. The trend toward multi-polarity and economic globalization are advancing amid twists and

turns. Unilateralism and protectionism are on the rise, and multilateralism is under serious impact. Despite the noises of de-globalization, the tourism industry has not stopped its development and globalization process.

With firm confidence in future development, organizational innovation will make progress toward internationalization. In recent years, the Asia-Pacific market has emerged as the growth pole of the global tourism economy. Major tourism companies are all seeking organizational innovation with business planned for the Asia-Pacific region, and tourism enterprises in the Asia-Pacific are also going out in search for the “second curve” of corporate growth.

To avoid hitting the “limit point” and losing competitive advantages, competition for consumer market, factor market and capital market and pursuit of development in the global tourism market will become an irreversible trend.

Notes:

12. The Millennial Generation refers to the population born between 1981 and 2000, and the Generation Z generally refers to the population born between the mid-1990s and late-2000s

IV. Product innovation: tourism products with novelty and quality

4.1 Innovation in tourism products driven by multiple factors

4.1.1 Rising demand and structural changes

On the demand side, the continuous rise and structural changes in tourism demand is a key driver of innovation in tourism products. According to the *Report on World Tourism Economy Trends*, in 2019, global tourist trips (including domestic tourism and inbound tourism) totaled 12.31 billion, or 1.6 trips per person, and total tourism revenue accounted for 6.7% of global GDP. Tourism activities are becoming part of people's daily life. In 2020, due to the COVID-19 pandemic, the number of global tourist trips dropped to 7.28 billion. However, the impact of the pandemic is not without limit, and it will not reverse the long-term trend of growing tourism demand. It can be well expected that the growing tourism demand, which is already at a large scale, will raise higher requirements on tourism products. Innovation in tourism products thus becomes more urgent than ever.

At the same time, due to factors such as rising income level, upgrade in consumption structure, changes in demographics, family structure and lifestyle, and accumulation of travel experience, the structure of tourism demand is also going through fundamental changes. Given the increased demand for diversified, personalized, sophisticated and specialized tourism products, there is an urgent need for tourism products to innovate and adapt to the new tourism demand structure. In the 2019 edition of the *International Tourism Highlights*, the UNWTO elaborated on the six consumer travel trends, including quest for authenticity and transformation, travel to “show”, pursuit of a healthy life (walking, wellness and sports tourism) and rising awareness on sustainability (zero plastic and climate change). The changing structure of tourism demand is also a key driving force for innovation in tourism products. Developing new types of tourism products is an important means for adapting to the changing demand structure of the tourism market and better aligning products and services with market demand.

4.1.2 Increased market competition and the requirement of high-quality development

On the supply side, the increased competition in the tourism market and the requirement of high-quality development of the tourism industry have also underscored the importance of innovation in tourism products. First, tourism product innovation is an important way to build competitiveness in the tourism market. Although global tourism demand is growing, the deterioration of the overall economic and social environment has caused a negative impact on tourism development: the global economic downturn has dampened the demand for quality-of-life consumption. Tourism consumption, as an important component of quality-of-life consumption, inevitably gets affected; external factors such as worsening international relations also have an important impact on international tourist flows. Against such a backdrop, tourism suppliers must seek active innovation of tourism products, and stimulate/satisfy emerging tourism demand or add new satisfaction to the old demand to improve the situation of tourist consumers. This would help boost the willingness and demand for tourism consumption and enhance the company's competitiveness in the tourism market. Second, tourism product innovation provides an important means for promoting high-quality tourism development. Tourism product is the most basic content and key component of tourism supply, and innovation in tourism products can improve their content and structure, which in turn helps increase the quality and efficiency of tourism development and facilitate the high-quality development of the tourism industry.

4.1.3 Impact of COVID-19

The COVID-19 pandemic has resulted in significant changes in tourists' willingness, preferences, interests and behaviors, and further accelerated the innovation of tourism products: tourists are now less active in social networking but keeping a longer social distance; they now prefer traveling in smaller groups and to nearby destinations, thus pushing up demand for small-group and local/peripheral travels; they also have greater preference for self-guided tours, self-drive tours, outdoor/nature tours and recreation tours, and pay notably greater attention to the safety and hygiene of travels. It must be pointed out that the outbreak of the pandemic has already affected tourists' travel intentions, motives, choice of destinations, and means of travel, and the content and structure of the original tourism products can hardly keep up with the changes in market demand. Therefore, fully studying and understanding the changes in tourist demands, building new

market perceptions, and meeting new tourist demands through innovation in the form, content and structure of tourism products holds the key to reviving the tourism industry beyond the pandemic. It is not difficult to see that although the pandemic has dampened tourism demand in the short term, it has also, to some extent, accelerated the process of tourism product innovation and provided an opportunity for the upgrade and iteration of tourism products.

A Year in Travel: Charting the Travel Industry's Path to Recovery, a report jointly released by Tripadvisor and Phocuswright in December 2020, revealed the following trends of tourist demand and behavior in the world's major countries in 2020: 66% of the consumers considered safety and cleanness of establishments an important factor when traveling locally; the proportion of US consumers saying they were more likely, as the same as and less likely to take an outdoor/nature trip than they were before the pandemic was respectively 62%, 32% and 6%. For the same question, the results were 55%, 37% and 8% in the UK; 59%, 37%, and 4% in Italy; 43%, 50% and 7% in Australia; 49%, 42% and 9% in Japan; and 42%, 45%, 13% in Singapore. Sixty-two percent (62%) of the consumers said that for their next trip, they would prefer to travel to somewhere where they can support local business.

4.2 Frontiers of tourism product innovation

Tourism enterprises and destinations have conducted many useful explorations in tourism product innovation, such as paying more attention to the tourism demands of the trend-setting new generations, developing new retail services to boost the quality and variety of tourism products/services, and enhancing tourist experience based on “virtualization + tourism”. By adopting the two approaches of “improving/upgrading existing tourism products” and “developing/shaping new tourism products”, and employing the three innovative means of increasing product content, optimizing product structure, and improving product quality, tourism enterprises and destinations will be able to enhance the stickiness of existing customers and expand the coverage of new markets, and ultimately achieve the goal of business survival and long-term sustainability. The following are the four frontier areas of tourism product innovation.

4.2.1 Expanding the boundaries of destinations

With the growing popularity of tourism activities, new tourism demands keep emerging. For example, the desire of wealthy people to try new things and seek adventure and

excitement has created the market for space tourism. A report published by Industry ARC estimates that the total value of the space tourism market will reach US\$1.3 billion by 2025, with a compound annual growth rate of 12.4% between 2020 and 2025¹³. These staggering numbers have revealed the enormous potential of the space tourism market. Virgin Galactic, a company dedicated to providing space services for private individuals and researchers, is also targeting at this blue ocean market. On July 11, 2021, Virgin Galactic founder Richard Branson took a space trip on SpaceShipTwo and successfully returned from an orbit at the height of 86 kilometers. The trip provided experience for the company's subsequent expansion of commercial space flight business. According to reports, Virgin Galactic has already sold more than 700 tickets for a trip to the space at the price of US\$200,000-250,000 and announced the plan to give away two "flight tickets" to the winners of a lucky draw. The successful space trip of Virgin Galactic founder Branson has brought space tourism to the attention of more people.

4.2.2 Finding business opportunities out of a crisis

Since the beginning of 2020, the COVID-19 pandemic has dealt a heavy blow to the transportation industry, and airline companies have all been struggling with the harsh reality of plummeting passenger numbers and funding shortage. To survive the crisis, China Eastern Airlines (CEA) launched a new product, "Weekend Fly Anywhere", on June 18, 2020. Inspired by the idea of "unlimited domestic flights on weekends", the product has taken full advantage of the non-storable nature of airline products. The subscribers of the product can fly economy class on the domestic flights of CEA and Shanghai Airlines for unlimited times during weekends, which makes it an ideal choice for people studying/working away from their home cities or living apart from their spouses. The product has provided urgent cash flow and valuable market exposure for CEA, and given a boost to the low seating rate and the lukewarm weekend travel market. In the Digital Travel Awards (DTA) of 2020, "Weekend Fly Anywhere" won the Gold Award for innovation in travel products.

4.2.3 Expanding the scope of products

In the context of consumption upgrade, tourists have raised higher demands for tourism products. In the hospitality industry for example, traditional hotels can no longer serve the diversified demands in the market. B&B, boutique accommodation and theme hotels

are winning the favor of consumers. To meet the differentiated accommodation needs of various market segments, Hilton Hotels & Resorts has launched several new brands, including the micro-hotel brand Motto in 2018, the high-end business/conference hotel brand Signia in 2019 and the lifestyle brand Tempo in 2020, which has further expanded the outreach of the hotel group. Among the three brands, Tempo is targeting at the niche market of modern achievers, i.e. millennial generations that are in the age of 20-40 and willing to spend more on travel. The comfortable, stylish and eco-friendly accommodation environment and facilities provided by Tempo hotels have catered to the demands of lifestyle-seeking consumers.

4.2.4 Focusing on sustainable development

Given the growing severity of global environmental challenges (e.g. climate change, solid waste, ocean pollution, etc.), tourists are now increasingly concerned about environmental issues, and COVID-19 has only directed more public attention to sustainability/environment and resources. According to the *Sustainable Travel Report 2021* published by Booking.com, between 2016 and 2021, the percentage of surveyed travelers that “intend to stay in a sustainable accommodation, at least once in the upcoming year” rose from 62% to 81%; 61% of the surveyed travelers want to travel more sustainably in the future; and the percentage of travelers who want to reduce their energy consumption, use more environment-friendly modes of transport and reduce water usage are 83%, 79% and 69% respectively. As the figures demonstrate, more and more tourists are now willing to adopt sustainable behaviors during their travels, and taking a stronger interest in the sustainable products and services provided by tourism companies (e.g. hotels). The sustainability experience of Bucuti & Tara Beach Resort on the island of Aruba is a worthy case for study. The resort has been voted the most romantic hotel in the Caribbean by TripAdvisor for six years running. It is the only hotel with carbon neutral certification in the region, and the best-rated hotel in the world for sustainable operations and management with a 98% scoring on Green Globe’s sustainability criteria. The hotel has introduced a series of sustainability initiatives, including introducing low-carbon menu, inviting guests/staff to monthly beach clean-ups, and reducing the use of non-biodegradable materials (e.g., using durable cups at the bar, installing in-room dispensers for shampoo/conditioner, and providing reusable water canteens), which offers valuable inspirations for other hospitality businesses.

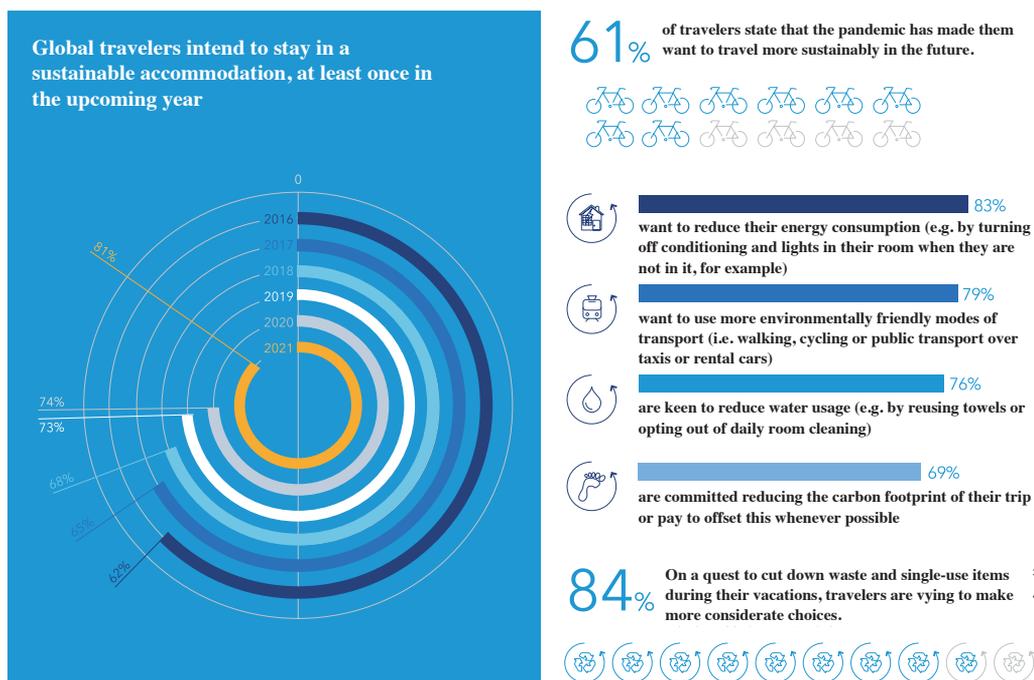


Figure 4.1 Intention of surveyed travelers to travel sustainably
Source: *Sustainable Travel Report 2021*

4.3 Future trends of tourism product innovation

The future trends of tourism product innovation are mainly reflected in six aspects: quality, sophistication, customization, digitization, experience and sustainability.

4.3.1 Quality

As a result of economic development and growing spending power, consumers are now more willing to purchase high-quality products. For example, according to the relevant research, over 80% of the Chinese people are willing to spend on high-quality tourism products, which shows the popularity of these products among the public. Quality is a major trend in the innovation of tourism products. By promoting the transition from primitive, low-standard tourism products to sophisticated, high-standard tourism products, the emphasis on quality plays a positive role in fostering sound market reputation and enhancing the competitiveness of the tourism industry. Furthermore, in order to promote the development of quality tourism products and provide better products and services, a multi-pronged approach involving the supply chain, content and tourist experience must be adopted to put the concept of quality into practice throughout the tourism industrial

chain. It would also be helpful to establish a tourism product standard system to guarantee the quality of products and services. Meanwhile, tourism brands have the advantages of visibility and quality assurance, and therefore should be strengthened to promote the upgrade of products and optimize the services, so as to better meet the leisure/travel demands of global citizens.

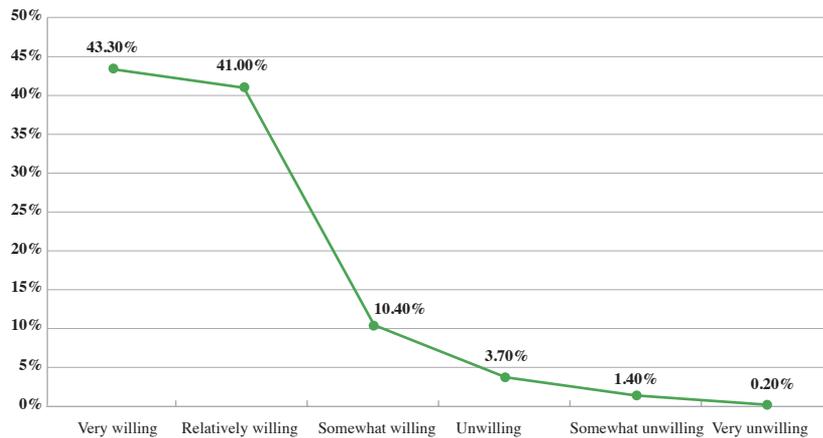


Figure 4.2 Consumers' willingness to spend on high-quality tourism products
 Source: *Thematic Analysis on the Quality Development of Tourism Products in China 2019*, https://www.sohu.com/a/365105548_114819

4.3.2 Sophistication

Travelers of different age groups, regions, education levels, personality and psychological characters have vastly different travel preferences. No single tourism product is able to meet all market demands, which makes sophistication another defining trend of tourism product innovation. The tourism industry should pay full attention to the diversified market demands, identify the market segments with large scale and recognizable demands, adopt tailored strategies and provide targeted tourism products in different niche markets. The business philosophy of “producing what the customers demand” must be faithfully observed in order to meet the sophisticated, personalized travel demands of tourists. Particular attention should be given to the travel demands in the niche markets of high-value customers, parent-child groups, honeymooners and adventure seekers.

4.3.3 Customization

Given the growing spending power and autonomy of travelers, “flexible travel” is becoming a visible trend in tourism consumption. “Self-guided tour”, with its strong

personalized features, has become the most popular means of travel for tourists, which provides fertile soil for the customization of tourism products. It is easy to see that customization is also a major trend in tourism product innovation. To be specific, customized tourism products are developed based on the “demand-driven and customer-led” principles and with a particular focus on the special needs and personalized experience of tourists. Compared to standard tourism products, these products are more flexible and elastic and with higher customer participation. Currently, some tourism companies, including leading Chinese brands on customized travels Yue Club and Mustard Seed/Nordic, are already paying attention to tourists’ customization needs, but on the whole, the customization of tourism products remains the blue ocean for tourism product innovation in the future.

4.3.4 Digitization

The digitization of tourism products generates benefits on both the supply and demand sides. On the demand side, digitization expands the access to information and evaluation channels for tourists, increases the speed of information acquisition and product booking, and makes the travel process more convenient, comfortable and satisfying for tourists; on the supply side, digitization enables tourism companies to keep track of tourist information and changes in tourist demand in a timely manner.

With the development of digital economy, 5G, VR/AR, AI, big data and other technological innovations will give a further push to the digitization of tourism products. In this sense, digitization is also a major trend in tourism product innovation. Taking full advantages of the supporting policies, technologies and platforms for new infrastructure construction, embracing technologies when seeking innovation in tourism products, and increasing the penetration rate of digitized tourism products will be an important driving force for the transformation, upgrade and high-quality development of the tourism industry.

4.3.5 Experience

In the age of experience economy, tourism products with high participation and interactive experience can better satisfy travelers’ pursuit of cultural attainment. As such, experience is also an important trend of tourism product innovation. Therefore, we could create new forms of experience-based tourism products through cultural blending,

art presentation, interactive participation and other means, or upgrade/replace existing tourism products by underscoring the element of experience in product designs, so as to encourage tourists' wholehearted participation and enhance the personal experience they enjoy in the tourism activities. Such innovations can well serve the tourist demands in the age of experience economy, and leave them with an unforgettable memory of their travel experience.

4.3.6 Sustainability

As mentioned above, tourists now pay more attention to sustainable behaviors and consider sustainable travel as critically important. However, according to the *Sustainable Travel Report 2021* published by Booking.com, almost half (49%) of the surveyed tourists believe there are not enough sustainable travel options. Therefore, sustainability is also potentially a major trend of tourism product innovation. Stepping up the development of green tourism products and providing sustainable tourism products by reducing disposable plastics, reducing carbon emissions and increasing the use of environment-friendly materials will make the tourism industry greener and healthier.

Notes:

13. Source: <https://baijiahao.baidu.com/s?id=1705157473698417701&wfr=spider&for=pc>

V. Marketing innovation: new models, new media, new communication

5.1 New communication trend

5.1.1 COVID-19 changes the consumption pattern of tourism products

The outbreak of the novel coronavirus in 2020 has caused serious damage to inbound and outbound tourism, pushing tourism companies and destinations to update their thinking about the innovation of marketing models in the new environment and re-conceptualize the changes in tourist behavior under the new circumstances.

First, the pandemic has contributed to the digitization of tourism marketing. In the coming year, the wave of digitization is expected to sweep across all industries, and tourism will be no exception. Tourism destinations and businesses must embrace the trend of digital transformation with a sense of urgency. In the age of digitization, tourism marketing will face challenges in the following areas: firstly, conducting accurate touchpoint marketing during consumer's journey of purchase; secondly, keeping up with the latest advertising and technology trends; thirdly, managing and tracking profit and performance data of cross-channel marketing campaigns; fourthly, adjusting existing marketing strategies to serve consumers that are always online; fifthly, reaching and acquiring new customers; and finally, delivering personalized advertising and services on a real-time basis. Given the above challenges, traditional marketing skills can no longer bring the desired outcomes. Only by adapting to current trends and embracing digitization can tourism destinations stay competitive.

Second, the pandemic has also had an impact on travelers. Travelers are now more concerned about the "virus" and safety issues, and they also pay more attention to the factor of safety when making travel decisions. At the same time, in order to be assured of their safety and security, travelers are inclined to collect and obtain more travel information before departure in order to get a full picture of the destination, which also raises higher requirements for the marketing of tourism destinations.

5.1.2 Technological advances reshape the distribution of tourism marketing channels

In recent years, information technologies represented by mobile Internet and big data have achieved rapid development. In the tourism marketing segment, the advance of technologies has driven the progress of technologies and means for tourism marketing, and reshaped the distribution of tourism marketing channels.

First, in recent years, tourism marketing channels have shifted the focus to mobile Internet platforms represented by social media. The rapid development of mobile Internet has triggered the boom of social networking Apps such as Facebook and WeChat, which has in turn influenced the channels and means for people to access information on the Internet. As a result, the marketing of tourism products is focusing more on social media platforms with higher popularity. According to the *Report on the Digital Marketing Strategy Trends in Tourism Destinations 2020*, digital advertising is the highest spending item, accounting for 45% of the budget; a further 21% of the budget is spent on print media and the rest on TV, radio, outdoor campaigns and other marketing channels¹⁴ Among the venues for digital advertising, social networking platforms such as Facebook, Instagram, Snapchat and WeChat have become the main battlegrounds, which is consistent with people's social networking habits and the frequent use of social media platforms. In addition, the rapid development of OTAs such as Ctrip has also provided an important platform for arranging the marketing channels of tourism products. In the future, tourism marketers will step up the advertising campaigns on mobile Internet platforms represented by social media media and OTAs, expand the influence of tourism brands in digital channels and secure the high exposure of tourism marketing among mobile Internet users, so as to boost the advertising effect and adapt to the changes in the communication environment in the mobile Internet era.

Second, technological advances have facilitated the application of big data in tourism marketing, and made it easier to accurately grasp customer needs, and conduct personalized tourism marketing with greater precision. Through big data and digitized marketing, tourism marketers are now better able to pinpoint the target customers according to their preferences or means of purchase, and provide them with personalized advertising or tourism product recommendations. The development of big data will enable tourism marketers to focus more on consumers' search behavior, digital footprints and spending records on the websites of travel companies, social media platforms and OTAs, in order to predict and evaluate

tourism consumers’ purchase intention and travel needs, and provide them with targeted travel advertising or travel products that are close to their expectation.

5.1.3 Digitization changes travelers’ behavioral pattern

The emergence of new digital marketing channels and the development of new technological devices such as smartphones, tablets and intelligent wearables will lead to a significant increase in the number of digital tourists, and digital channels and digital technologies will change the behavioral pattern of tourists during their trips.

First, the digital trend makes it easy for tourists to access information about the places they are going to visit. As a result, tourists will tend to make detailed travel plans before their trips, and their travel itineraries will be strongly affected by online and digital information sources.

Second, the ease of access to travel information also enables tourists to tailor their travel plans to their own needs or change their plans at any time during the trip. Travel decisions and experiences thus become more personalized, flexible and adaptable.

Third, the digital trend has changed the behavior of tourists not only before and during, but also after the trip. Instead of waiting until after the trip to share their travel experience, tourists can now post comments, images or videos on social media throughout the travel to share their travel experience in real time, which poses new challenges for destination marketing.

As shown in Figure 5.1, the changing behavioral pattern of tourists in the digital context requires destinations to change their marketing models and adapt to this new complexity to ensure a satisfying experience for tourists. It also turns tourists into agents of word-of-mouth communication to boost the reputation of the destination.

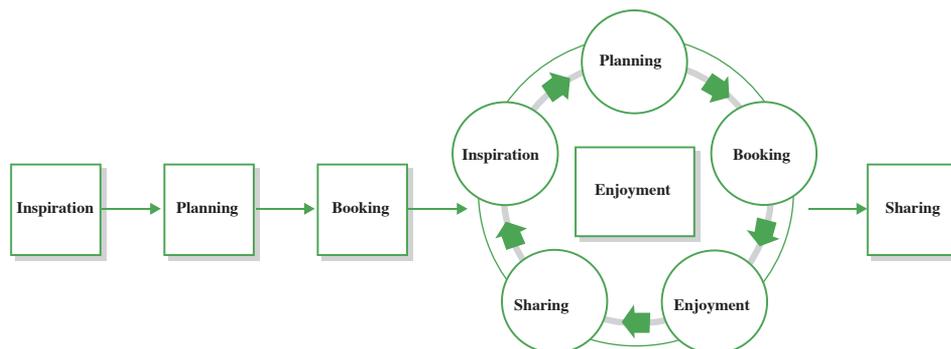


Figure 5.1 Behavioral pattern of tourists in the digital context
 Source: <https://www.goodrebels.com/new-management-models-destination-marketing/>

5.2 Frontiers of tourism marketing

5.2.1 Short videos expand the boundaries of tourism marketing

In the era of diversified, fragmented and audiovisual-based online features, short videos, which generally refer to videos under five minutes, have created a new marketing model for tourism products. As the means through which young people communicate with the world changes, short videos have gained growing popularity with their concise forms, rich contents and social networking functions. According to a report released by Wyzowl, a UK-based video marketing agency, in 2020, 96% of the respondents watched explainer videos to seek more information about a product or service; 84% of the respondents purchased a product or service after watching the brand video. To benefit from the high ROI of short videos, 85% of the brand marketers used them as a marketing tool, and 99% of the respondents said they would continue to use videos for marketing in the future. By breaking the boundaries of contents and formats, building on the momentum of hot topics or creating new headlines, short videos can reinforce personalized contents, capture the attention of the fan community, and translate the generated interest into real gains. For example, Booking.com has invited its customers to share their travel stories and create

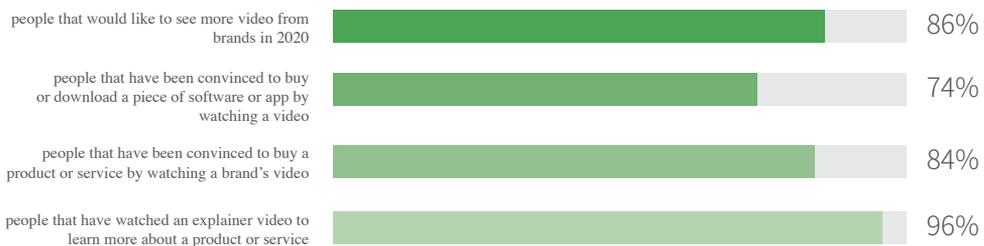


Figure 5.2 Viewers' perspective: consumers and video
Source: Wyzowl, State of Video Marketing Survey 2020

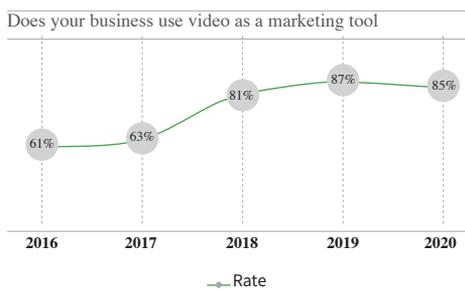


Figure 5.3 Survey on the use of video as marketing tools
Source: same as above



Figure 5.4 Survey on the use of video as a key component of marketing strategy
Source: same as above



Figure 5.5 ROI of video-based marketing
Source: same as above

featured videos for Facebook. It has also launched video-based advertising campaigns to promote its services and updates.

5.2.2 Storytelling creates emotional label for destination

Storytelling is about creating a valuable and engaging content that consumers can associate with and share with the target audience. With the goal of attracting potential buyers, it is in essence a process of content marketing. The design and production of quality stories holds the key to effective content marketing.

Given the rise of popular culture, the rapid development of the Internet and the active operation of new media platforms, IP resources such as novels, comics and games have gathered a huge fan base. As part of the cultural industry, the content and outreach of these resources can be fully expanded when merged with the tourism industry. By creating values in multiple dimensions, they have served as an important model of content marketing for tourist destinations. With the help of big data, marketers are now able to learn about user behaviors and preferences, combine tourism products and services with engaging stories, build momentum and capture the target audience through new media platforms. To make the best use of storytelling, *National Geographic* now attaches captions to the images posted on social media platforms such as Instagram and Twitters to share first-hand experience. Such a practice has enabled the magazine to build a deep emotional bond with its fans, reach out to them, and stimulate their curiosity.

5.2.3 Social selling enhances marketing conversion efficiency

Social selling is a marketing model based on social connections, which is mainly

defined by high participation, high interactivity, fixed theme and sense of belonging. The development of this social media model conforms to the new trend of online marketing and meets the real needs of Internet users. It allows the brands to share information about their products and services on their social media accounts, receive the direct feedback of target consumers through pinpointed screening of the fan community, and make timely adjustment to their promotional strategies based on the feedback. The social selling model makes it easier for companies to convey their brand information to users, and harness the power of word-of-mouth communication to amplify brand communication effect. As the target consumers of social selling are relatively concentrated, the promotion campaign can directly reach the potential consumers, which makes the practice of precision marketing more effective. Meanwhile, the interactive features of this “many-to-many” model of information delivery also makes it more effective in enhancing users’ knowledge of the brand and its products and reducing the brand’s marketing cost. To attract potential customers, Wizz Air is promoting the Wizz Discount Club on its official Instagram account and showing fans how to save money. It also gives out coupons and promotional packages on its official Facebook and Twitter accounts before shopping season to boost fans’ interest and increase sales.

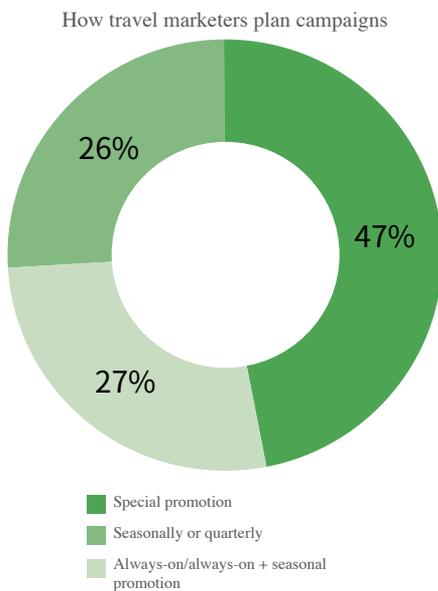


Figure 5.6 Types of marketing activities planned by tourism marketers
Source: Sojern: 2020 Report on Tourism Advertising, 2020

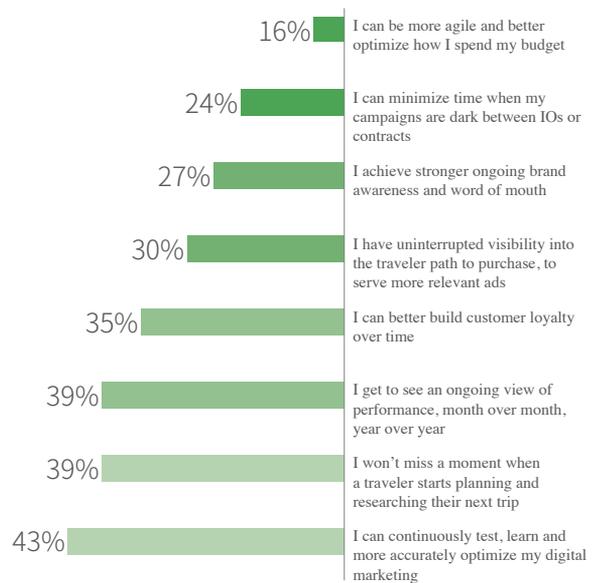


Figure 5.7 The advantages of the “always-on” marketing strategy in the eyes of tourism marketers
Source: same as above

5.2.4 Sustainable marketing responds to online travel behavior

Travel decisions are different from general purchase decisions and are relatively more complex. Travelers at different stages belong to different customer segments. In particular, the way travelers plan their trips today has changed radically, and travel decisions can be made anytime. Therefore, in order to effectively predict travelers' motivations and find usable data out of the behaviors of consumers who are always online and looking for interested products, travel marketers must design a complete and effective digital marketing strategy to provide consumers with the most relevant information about their products and services at the best time. A survey conducted by Sojern in 2020 shows that 47% of the marketers have used sustainable marketing to maintain brand exposure. This strategy not only attracts travelers who are always online, but also raises brand popularity and reputation through the experiment and optimization of marketing strategies. For example, Marriott has adopted a strategy that combines “always-on” promotions with seasonal and special promotions. In addition to the Marriott Bonvoy loyalty program, it also regularly introduces quarterly and targeted promotions for specific customer segments.

5.3 Future trends of tourism marketing innovation

5.3.1 Data technology drives digitization of tourism marketing

How to achieve maximum advertising effect with minimum customer acquisition cost and how to convert potential customers into real orders at the earliest possible opportunities are the two challenges that have been troubling marketers all the time. In the post-pandemic era, the marketing medium has evolved from outdoor, print media and TV advertising in the traditional formats into online and digital advertising enabled by the Internet. Marketers now seek more direct results and conversions, and the high dependence on online interactions means that consumers would expect the brands to provide immediate feedback with unique and personalized products and experiences. In the service industries such as tourism, where there is a high demand for contactless and intelligent services, the need for brand digitization is particularly urgent. Digital transformation refers to the transition from empiricism to digitization. It is a systematic revolution triggered by information technologies such as cloud computing, IoT, AI and blockchain. The key driving force is data, which is also regarded as a new factor of production. Exploring the deeper values of data enables brands to develop more efficiently and swim freely in the

ocean of data. According to the latest survey on digital consumers released by the global digital agency Appnovation, 89% of the Millennial Generation hope that brands could shape their digital experience with technologies, and 55% of the consumers believe that digital experience is highly important in the tourism industry. It is safe to say that the digital transformation of tourism marketing is not a choice, but a necessity.

5.3.2 Innovation in marketing tools enhances tourism marketing experience

With the rapid development of the Internet and technology, the behaviors of consumers and the channels and means through which they receive information have also undergone huge changes. In particular, with the advent of the 5G era, more and more brands have chosen to organize marketing activities with new technologies. Compared with traditional marketing programs, marketing tools and methods with a “high-tech touch” are more attractive and interesting. They immediately stand out among marketing activities of similar styles, and provide a more unforgettable experience for travelers at different stages of their journey. According to the *2020 State of the Industry Report on Travel Advertising* published by Sojern, interactive video, machine-learned generated audiences and chatbots will be the top three investments for travel marketers in the coming five years, with more than half of the respondents saying that AR/VR technologies will have a disruptive impact on destination marketing. In addition, a survey conducted by Statista in September 2020 shows that wearable devices are also becoming more common in travelers’ daily life, with the use of these products expected to grow by approximately 17.65% through 2026[Statista, 2020.]. Such growth will also contribute to the increased use of voice technology, and nearly 70 percent of the US citizens say they are already using voice search when making travel plans. Marketers are now experimenting with the application of instant

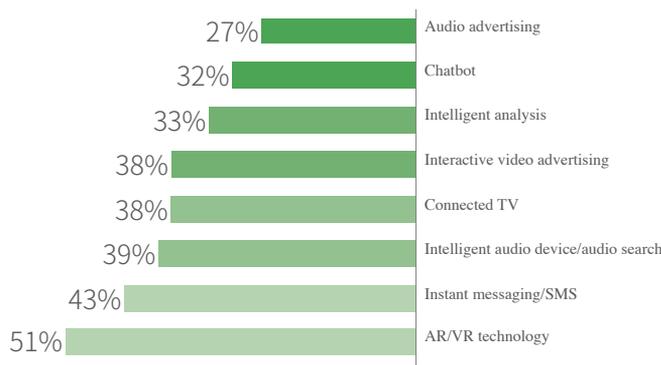


Figure 5.8 Survey on how technologies may disrupt destination marketing
Source: Sojern: 2020 State of the Industry Report on Travel Advertising, 2020

messaging devices and smart speakers, and in the near future, travelers will start using Siri to compare air ticket prices and book their trips, or send messages to hotel robots via WhatsApp to get recommendations for nearby restaurants.

5.3.3 Digital on-demand drives the development of interactive tourism marketing

Video-on-Demand (VOD) is a system which plays video programs according to viewers' requests. It delivers video content clicked or selected by the subscriber. As a new form of media that has emerged in recent years, VOD is a product of the integration of computer, network communication, multimedia, TV and digital compression technologies, and enjoys high popularity. With the increased use of smart TVs, more and better Over-the-Top (OTT) programs will become available, and VOD services will be a popular trend in the coming years. According to a report released by Global Market Insights in 2020, the development of cloud technology has led to the rapid development of the VOD market, which will see substantial growth in the future, with a potential CAGR of 15% from 2020 to 2026. Moreover, due to the impact of the pandemic, the number of subscribers of VOD and streaming services and the user online hours have increased significantly. As of April 2020, Netflix alone added 15.8 million subscribers in Q1 2020 [Global Market Insights: Report on the Demand Forecast of Video on Demand Market, 2020]. According to Omdia, global OTT subscriptions totaled 894 million in 2019, 1.06 billion in 2020, and will increase to 1.14 billion in 2021, roughly the same as the traditional pay TV. Therefore, VOD has huge market potential and is expected to become a new marketing pool. Currently, VOD service providers such as Netflix, Amazon Prime and HBO are using AI technology to track and analyze user data, integrate platform resources, divide market segments, and make targeted recommendations of personalized contents. Tourism marketing through OTT channels makes it easier for brands to interact effectively with their users, and the user data and segment division of the platform also facilitates the classification of user groups and improves the precision of marketing, which saves marketing costs and enables better tracking of marketing results.

Notes:

14. Sojern & Shiji, Report on the Digital Marketing Strategy Trends in Tourism Destinations 2020, <http://www.mice.cn/download/185>

15. Statista, 2020.

16. Global Market Insights: Report on the Demand Forecast of Video on Demand Market, 2020

VI. Institutional innovation: exploration of tourism policies and tourism rules and standards

6.1 Background of tourism institutional innovation

6.1.1 Institutional innovation is the inevitable path for tourism development

Tourism is a highly comprehensive industry. Tourism innovation includes the product/service, management, process, technology and marketing innovations at the enterprise and industry levels, the institutional, policy and governance innovations at the government level and the combination, integration and coordination of all the above innovations. As a matter of fact, with the escalation of global tourism competition, the advance of the new technological revolution, the iteration of the tourism industrial model, and the evolution of the lifecycle of tourism destinations, the governments of countries and destinations around the world have all placed innovation high on the agenda, and adopted policy initiatives to facilitate innovation.

Tourism institutional innovation refers to the new constraints set by institutional subjects, formally or informally, to restrict the stakeholders of the production and exchange activities in the tourism sector. It includes both the transformation of the underlying system and the transition of operational systems and models. Institutional innovation occupies an important position in the industrial innovation ecosystem, and provides strong support and guarantee for industrial innovation. Specifically, the industrial innovation ecosystem has three subsystems: innovation community, internal environment and external environment. The subsystem of external environment, which consists of the factors of institution, market, education, management, culture and capital, affects the operation and development of the industrial innovation ecosystem at all times. Among them, institutional innovation can help the system grow and develop in a way that meets new demands, and drives innovations by strengthening the linkage of all elements within the industrial ecosystem.

6.1.2 COVID-19 accelerates institutional innovation

In the face of the global pandemic caused by the novel coronavirus, the world tourism industry has taken the hardest hit ever in history, which may trigger a worldwide

restructuring of the tourism industry. On the one hand, tourism is an activity characterized mainly by the movement and interaction of people, and therefore highly sensitive to major emergencies. Given the extreme restrictions imposed on the movement of people out of the need to contain the spread of the virus, the damage suffered by the tourism economy is much higher than the average impact on the global economy. On the other hand, as the pandemic is taking place against the background of sluggish global growth, backlash against globalization, and drastic reconfiguration of the international landscape, the global tourism industry may experience substantial changes in its boundaries, chains, models, governance mechanisms and level of technological integration. A new tourism economic structure and order will be formed in the course of recovery and transformation. All this will boost the demand and enrich the practice of tourism institutional innovation.

6.2 Frontiers of tourism institutional innovation

Although the COVID-19 pandemic is still recurring in some countries and regions, there is an urgent demand for tourism recovery on both the supply and demand sides. Moreover, with nationwide vaccination being promoted in several countries, some destination countries have regained confidence, relaxed entry restrictions at a faster pace, and introduced supporting initiatives to prepare for re-opening to the world or selected regions. Some countries have actively conducted exploration and experiment in areas like border control, health certification and industry recovery.

6.2.1 Gradual relaxation of border control

With the easing of the pandemic situation and the progress of nationwide vaccination, more and more countries and regions are now starting to relax border control with conditions in the hope of reviving the travel industry. According to the latest UNWTO data, 32% of the destinations worldwide now have their borders completely closed, significantly lower than the record number of 76% in May 2020. Countries like Greece, Portugal and Spain, which rely heavily on tourism, are front-runners in opening up borders. On May 14, Greece's Civil Aviation Authority opened its borders to the EU, Schengen Agreement countries and 21 other countries including China, allowing travelers holding vaccination certificate or negative nucleic acid test results to enter the country. On May 17, Portugal started receiving travelers from most European countries again on the condition that the country shall have no more than 500 new confirmed cases per 100,000 residents in a 14-

day period. On May 24, Spain lifted travel restrictions on 10 non-EU countries, including China, the ROK and the UK. In addition to the above-mentioned vacation destinations, other European countries have been no less ambitious. France launched a tourism recovery plan, Germany, Austria and the Netherlands also opened their borders to travelers. Thailand, after a serious study on the country-opening program, decided to keep Phuket open to foreign travelers under the “Phuket Sandbox” model.



Figure 6.1 Thailand opens Phuket under the “Phuket Sandbox” model

6.2.2 “Quarantine-free travel” policies in certain destinations

In an effort to boost tourism recovery, some countries have relaxed quarantine regulations for international travelers, exempting those who have received vaccination or hold a certificate of negative nucleic acid test results from mandatory quarantine. Under Austria’s policy, international travelers who are fully vaccinated, tested negative in nucleic acid test or have recovered from COVID-19 infection are free to enter the country without quarantine. Iceland has also waived quarantine requirements for those who have been vaccinated or recovered from COVID-19, although nucleic acid testing is still required. Dubai does not impose mandatory quarantine on inbound travelers, but only requires them to provide a certificate of negative nucleic acid test results prior to departure or upon arrival. The Thai authorities said that foreign travelers who have been vaccinated against the coronavirus can be exempted from mandatory quarantine when entering Phuket, but they must show proof of vaccination and take a nucleic acid test upon arrival, and they must have the Thailand Plus App installed on their mobile phones. In addition, the Canadian government announced the relaxation of border control beginning from July 5, 2021, exempting all fully-vaccinated international travelers from in-hotel quarantine requirement.

6.2.3 IATA Travel Pass

Given the highly divergent pandemic control progress and restrictive measures in various countries, the International Air Transport Association (IATA) has introduced a digital health certificate, IATA Travel Pass, to facilitate seamless and efficient air travel based on the digital proof of viral testing. The program is now being piloted by several airlines. The IATA Travel Pass uses digital technology to connect and share information, making it easier for airlines, medical testing facilities, customs and border control agencies and passengers to issue and validate the health certificates required during travel, and acquire the technology tools needed in the check-in and customs clearance process. In December 2020, Singapore Airlines launched the Digital Health Certification program, which is the world's first health certification based on the IATA Travel Pass framework. Qatar Airways has partnered with IATA and the Qatar Ministry of Public Health to pilot the IATA Travel App. Emirates will also partner with IATA to pilot the IATA Travel App. Air New Zealand and Malaysia Airlines are the newest airlines to join the IATA Travel Pass program. IATA is currently working with about 20 airlines to conduct the relevant testing, and in discussion with another 20 airlines that wish to participate in the trial operation.

6.2.4 Vaccine Passport

As all countries are starting to provide vaccination for their population, “vaccine passport” has served as an important means for promoting safe cross-border travel in Europe and around the world. “Vaccine passport” is not a real passport, but a document that contains information on vaccination against the novel coronavirus. The European Commission has introduced the “digital green certificate” for the purpose of lifting pandemic control restrictions among EU countries and ensuring safety for the free movement of people within the EU. The passport, which contains information on vaccination, is valid in all 27 EU member states as well as Switzerland, Norway, Iceland and Liechtenstein. On May 4, 2021, the G20 tourism ministers' meeting endorsed the launch of a new “vaccine passport”. Based on the harmonization and integration of secure travel measures such as the EU's new “digital green certificate”, the passport program aims to promote the early resumption of worldwide movement while ensuring safety. On June 1, seven EU member states, including Bulgaria, the Czech Republic, Denmark, Germany, Greece, Croatia and Poland, started to issue vaccine passports. In addition, the ROK, Singapore, Thailand, the Philippines, Canada, Japan and other countries have also

considered or launched “vaccine passports” to ease entry restrictions and facilitate the movement of people. For example, the ROK government is studying the idea of “vaccine passports”; Singapore is consulting with interested countries on the mutual recognition of vaccination certificates; Thailand has also indicated that it will consider waiving the mandatory quarantine requirements for travelers holding “vaccine passports” issued by other countries; the Filipino Senator and former Speaker of the House Alan Cayetano is calling for the issuance of “vaccine passports” for the vaccinated population to restore the Filipino people’s ties with other countries; Canadian Health Minister Patty Hajdu said in an interview that the introduction of “vaccine passports” is on the agenda of the G7 member countries; and Japan’s Chief Cabinet Secretary Kato Katsunobu announced the country’s plan to issue a “vaccine passport” in mid – to late-July.

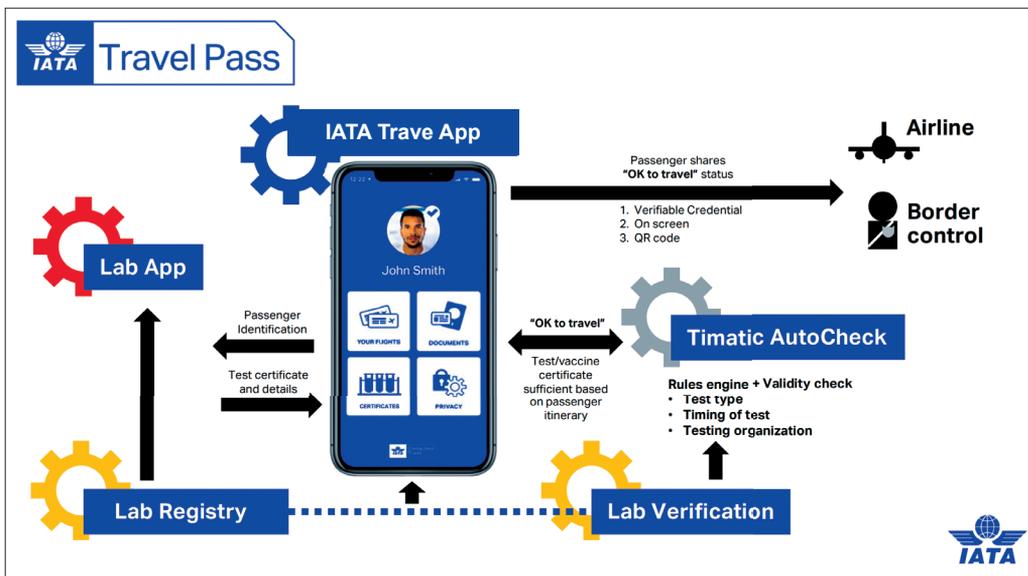


Figure 6.2 IATA Travel Pass

6.2.5 Travel Bubble

The “Travel Bubble” program is also seen as a way to relaunch cross-border travel and has generated much expectation. Under the program, countries and regions where the pandemic is under control are opening borders to each other, and allowing eligible people to travel across borders without quarantine upon entry. The implementation of this program could, to a certain extent, contribute to the tourism recovery in both countries and regions. As of now, several countries and regions have concluded “Travel Bubble”

arrangements between them. For example, on April 1, 2021, China's Taiwan and the Pacific island nation of Palau launched the "Travel Bubble" program; on April 19, the "Travel Bubble" arrangement between Australia and New Zealand came into effect; and on May 26, China's Hong Kong and Singapore launched the "Air Travel Bubble" program. In addition, Sri Lankan Airlines announced the "Travel Bubble" plan between Sri Lanka and India; the Indonesian government is planning to implement the "Travel Bubble" program with countries that are successful in controlling the pandemic, and has already concluded cooperation plans with the United Arab Emirates, Qatar, China, Singapore and the Netherlands; the Netherlands has proposed "Travel Bubble" arrangements with Belgium and Germany to facilitate travel among the three countries; Estonian foreign minister has proposed a similar idea, expressing the hope to launch a "Baltic Bubble" covering Estonia, Lithuania and Latvia.

6.2.6 Traffic Light

To facilitate cross-border travel, some countries have proposed a system for rating the risks of destinations, which is also known as "Traffic Light". Under the system, countries are put into different categories based on their pandemic situation. For example, the French government labels countries as "red", "orange" or "green" according to the severity of the pandemic; the UK government puts destination countries in the "green", "amber" and "red" lists under the "Traffic Light" system, and adopts tailored detection and quarantine measures for countries in different categories. Specifically, people traveling to countries on the "green list" only need to take two nucleic acid tests, one before the trip and one after, and they do not need to be quarantined; people traveling to "amber-list" countries need to be quarantined at home for 10 days after returning; and people traveling to "red-list" countries need to be quarantined in hotels. Recently, based on the vaccination progress and pandemic situation, the EU has updated its green list, lowering the threshold for eligible countries and regions from less than 25 cases per 100,000 people in a 14-day period to 100 cases.

6.2.7 Stimulus plan for domestic tourism

With cross-border travel still constrained by pandemic containment measures, international tourism recovery faces many obstacles, and the domestic tourism market remains the top priority for tourist destinations in the foreseeable future. In order to

revitalize the tourism industry, many countries have introduced stimulus plans for domestic tourism to encourage their citizens to travel domestically. For example, the Japanese government launched the “Go to Travel” program with the aim of promoting tourism recovery through domestic tourism. Under the program, the government will subsidize the accommodation cost for tourists, and issue shopping vouchers to encourage other spending during their trips. Thailand’s Ministry of Tourism and Sports and Ministry of Finance jointly initiated the “Thai Tiew Thai” program, giving out subsidies to the local people to encourage inter-province travels in the country. Canada’s tourism authorities has developed a recovery plan for the domestic tourism market, and removed all travel restrictions for the residents of Prince Edward Island, New Brunswick, Newfoundland and Labrador, and Nova Scotia. On April 15, the Macao Special Administrative Region of China officially launched the “Stay, Dine and See Macao” program to support the recovery of the tourism industry through work relief. Under the program, travel subsidies are provided for six routes, including the exploration of the ancient architectural complex of Ka Ho Village, helicopter flying experience and yacht cruise, plus a local hotel experience.

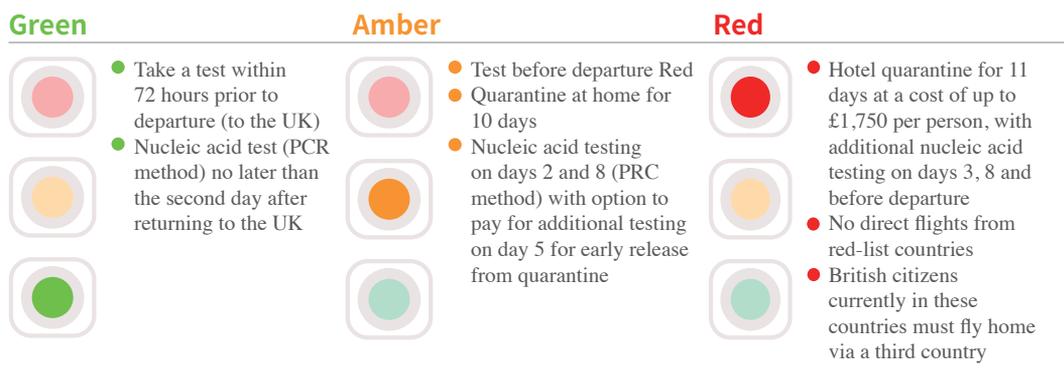


Figure 6.3 The “Traffic Light” risk-rating system introduced by the UK government

6.2.8 Support policies for the tourism industry

Struggling with the impact of the COVID-19 pandemic, tourism businesses urgently need the support of favorable policies. In this connection, countries around the world have adopted extraordinary monetary and fiscal policies to alleviate the financial pressure on tourism businesses and give them greater support and confidence on the path toward recovery. For example, in order to alleviate the capital shortage of cultural and tourism SMEs, China’s Ministry of Culture and Tourism issued a series of

supporting policies to address their urgent needs, including: the *Notice on Ensuring the Implementation of Financial Policies to Further Relieve the Difficulties of Performance Enterprises, Travel Agencies and Other Market Players* that aims to increase the financial policy support for the key players in the cultural and tourism market; the *Notice on Making Effective Use of Monetary Policy Tools to Support Cultural and Tourism SMEs* that aims to increase the monetary policy support for tourism and entertainment, accommodation and catering, transportation and other industries most seriously affected by the pandemic; and the that aims to reduce the pressure on travel agencies through improved market environment, financial support and inclusive relief measures. In the case of Ireland, the government has set up a task force to promote the recovery of the tourism industry, which has recommended a 150 million euro lending plan to help the hardest hit tourism enterprises navigate through the crisis.

6.3 Future trends of tourism institutional innovation

With the roll-out of COVID-19 vaccines, some countries and regions have made active exploration and institutional innovation to reboot and rejuvenate the tourism industry. In retrospect, institutional innovations such as relaxing border control requirements and introducing industry recovery plans have sent positive signals for the tourism industry to escape the current difficulties; looking into the future, tourism institutional innovation mainly shows the following trends:

6.3.1 Greater focus on the effectiveness of cross-border tourism facilitation measures

To prevent the spread of the coronavirus, many countries have imposed strict entry restrictions, including necessary nucleic acid testing, quarantine requirements and border closures. As a result, international travel and cross-border movement of people have been at a low point and restricted for a long time. Despite the recent efforts taken by various countries to promote the opening and recovery of the cross-border travel market, the path to tourism recovery is still fraught with uncertainties due to multiple factors. For example, cross-border travel is not yet open in all countries, and there are no clear and consistent quarantine requirements and travel rules for inbound travelers to refer to. The cost of nucleic acid testing and time spent on quarantine remains the biggest obstacle to cross-border travels. While vaccination against the coronavirus is progressing steadily and positive ideas like “vaccine passports” are being considered, the rapid spread of the

Delta strain across the globe still makes people question about the immunization effect of the vaccines. Whether a “vaccine passport” can be successfully implemented also remains to be seen. In addition, although several countries and regions have raised the idea of “travel bubbles”, there is a high degree of uncertainty about this program. The “travel bubbles” that already exist between certain countries and regions have produced less than satisfactory results, making its large-scale implementation even more difficult. It can be seen that the outcome of institutional innovation currently enforced still falls short of people’s expectation. “Traveling freely” in a real sense is not going to be achieved anytime soon, and greater focus should therefore be placed on the effectiveness of cross-border tourism facilitation measures.

6.3.2 Greater emphasis on the recovery and institutional innovation of domestic tourism market

The pandemic containment requirements have restricted the cross-border movement of tourists, and the recovery of international tourism faces more obstacles than domestic tourism. As a result, tourism market is expected to be dominated by domestic tourism in the coming months, if not years. Statistics show that the share of domestic tourism in the global tourism economy had been fluctuating at around 70% for a long time; however, due to the impact of the COVID-19 pandemic, the figure has rapidly increased to over 80%. Region-wise, the share of domestic tourism in the Asia Pacific and the Americas is 82% and 86.58% respectively; Europe, traditionally the most internationalized tourism region, has seen its share of domestic tourism rising from 60.48% in 2019 to 75.95% in 2020; in the Africa and the Middle East, which are highly dependent on international tourism, have also recorded a 10.60% and 12.69% increase in the share of domestic tourism. Against such a backdrop, countries need to adapt to the new situation and new changes, adjust the pattern of tourism economy, put more emphasis on the domestic tourism market, and further unlock the potential of domestic demand. To this end, relevant departments should quickly put in place a development pattern centered on domestic tourism, and make coordinated use of financial, fiscal, monetary and employment policies to support distressed businesses, stimulate consumption and revitalize the tourism industry. It is also important to improve top-level designing, increase the variety of tourism products, promote tourism consumption and boost market vitality, with a view to promoting the full recovery of the domestic tourism economy.

6.3.3 Government conducting policy evaluation and system optimization from a longer-term perspective

In order to restore tourism as much as possible, countries and regions have introduced a series of temporary policy measures in light of the current situation. It is important to note that these innovative systems are temporary in nature and that the relevant authorities should constantly reflect on and reassess the effectiveness of existing policies and measures as well as the space and direction for improvement based on the latest data analysis in order to reboot the tourism industry more safely and responsibly. In addition, once the WHO declares the end of the COVID-19 pandemic, these temporary policy tools will be discontinued. At that time, the relevant government departments should sum up their experience in managing this global crisis and establish a resilient preparedness system that can be quickly and effectively activated and utilized in the event of similar global pandemics in the future.

VII. Public service innovation: aiming for greater efficiency and equity

7.1 Background of public service innovation

The definition and scope of tourism public services vary from country to country. In China's *12th Five-Year Plan of Tourism Public Services*, tourism public services are defined as the basic and public benefit tourism products and services provided by the government and other social and economic organizations to meet the public needs of domestic and foreign tourists. Meeting people's basic needs and benefiting the public are the essential features of such services. In general, tourism public services include tourism infrastructure, tourism information services, tourism transportation services, tourism safety and security, tourism industry regulation, tourism public resources development, tourism training, and coordination of cooperation among non-governmental organizations. It is worth noting that the connotation and outreach of tourism public services are both progressing with the evolution of technological conditions and economic development. In the post-pandemic era and the context of new public services, tourism public services will present a variety of innovative forms and feature greater balance between efficiency and equity.

7.1.1 COVID-19 changes the standards of people's demand for tourism public services

The COVID-19 pandemic has changed people's way of life, social status, travel preferences and behaviors. The transformation in the concept of leisure and the means of travel has raised higher requirements for tourism public service standards. In the report *The future of Travel & Tourism in the Wake of COVID-19*¹⁷, the World Travel & Tourism Council (WTTC) identified health & hygiene, digitization & innovation and sustainability as the keywords for tourism development beyond the pandemic. Travelers are increasingly dependent on tourism public services including information supply, safety and security, transportation convenience and infrastructure, and look forward to tourism public services with higher safety and hygiene standards, more sophisticated digital and intelligent applications, and green and ecological features.

7.1.2 New public service becomes a universal concept

The development of tourism public services is guided by the concept of new public services and carries the special features of both tourism undertaking and tourism industry. *The New Public Service: Serving, Not Steering*, a book authored by Janet V. Denhardt and Robert B. Denhardt, marks the formation of the theoretical system of new public service: with democracy, citizenship and public interest as the core, the theory stresses that the government should undertake the function of serving, not steering; serve the citizens, not the customers; and focus on citizenship and public services, not entrepreneurship. In response to changing business forms, shifting demands, technological advances and economic development, tourism public services are embracing the concept of new public service and moving toward the direction of digitization, fairness, diversity and sustainability.

7.1.3 Digitization and intelligent applications drive innovation in tourism public services

The COVID-19 pandemic has played an unexpected catalytic role in the tourism industry's quest for innovation and adoption of new technologies. Deeply rooted in the digital and intelligent context, innovation in tourism public services puts emphasis on the three attributes of novelty, expansibility and practicality as well as public value and focuses on the three innovation factors of strategy, capacity and operations¹⁸. According to Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, "COVID-19 has accelerated our transition into the age of the Fourth Industrial Revolution. We have to make sure that the new technologies in the digital, biological and physical world remain human-centred and serve society as a whole, providing everyone with fair access."¹⁹ Therefore, in a digitized and intelligent environment, public services have embraced new concepts and forms, and achieved innovations in systems, technologies and markets, which further improves the balance between equity and efficiency.

7.2 Frontiers of tourism public service innovation

7.2.1 Tourism security and safety

The development of vaccine technologies has paved the way for innovations in policies and institutions such as vaccine passports and created a safe and trusted travel environment for global tourists. According to the statistics of Hopkins University, as of July 7, 2021,

global vaccination had exceeded 3.26 billion doses. China (220 million+ doses) and the US (150 million+ doses) are the top two countries in the world. In the meantime, there are another 15 countries with over 10 million doses of vaccination, including India, the UK, Germany, Brazil, Japan, Russia, Canada, and Chile²⁰. Pushed by the ongoing global pandemic and the nationwide vaccination in various countries, Thailand, Japan, the ROK and several other Asian countries have actively promoted the use of “vaccine passports”. The EU is also planning to introduce three types of digital COVID-19 passports – a certificate for EU-approved vaccination, a certificate for negative nucleic acid testing results, and a certificate for recovery from COVID infection. The certificates will be issued in the form of QR codes for mobile phones, with the option of downloading and print-out²¹.

Similarly, under the global safety protocols, the WTTC provides “Safe Travels” certification to hotels, restaurants, airlines, cruise ships, travel agencies, outdoor shopping venues, transportation service providers, airports and other tourism businesses that have implemented health and safety practices, which helps rebuild the confidence of global consumers through standard and consistent actions on a global scale. Regional “Travel Bubble” programs, also known as “Travel Bridges” or “Travel Corridors”, pilot the policy of point-to-point border opening based on effective pandemic control and mutual trust. The arrangement between Australia and New Zealand, and Indonesia’s plan to set up “Travel Bubbles” with five other countries, including China and Singapore, are all examples of such practices. The Chinese version of the International Travel Health Certificate (ITHC) launched in March 2021 provides a practical “Chinese solution” to world economic recovery and the facilitation of cross-border movement. Through the implementation of vaccination certification at the national and regional levels, as well as unified and standardized innovation in policies and institutions, we will be able to restore global cross-border mobility and reduce the need of quarantine measures, thus creating a safe and trusted environment for global travel.

7.2.2 Travel supervision and management

The Known Traveler Digital Identity concept aims to establish a trusted personal digital identity through voluntary information sharing. As shown in Figure 7.1, in order to establish a trusted “known traveler” identity, a traveler needs to verify himself at a trusted entity such as post office, government or educational institution, add the verified

certification to his personal “known traveler” profile, and continue to build the “known traveler” status by obtaining additional proofs to enable secure and seamless travel.

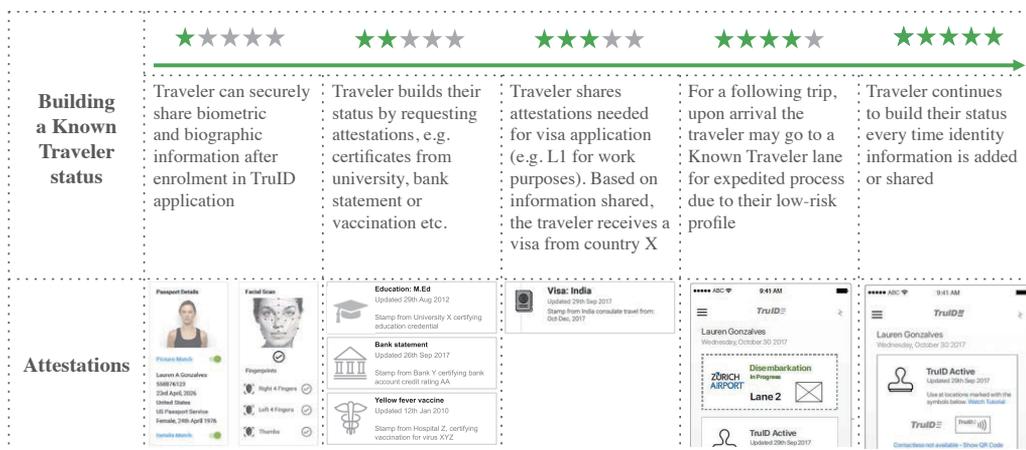


Figure 7.1 Establishing the “known traveler” identity
Source: WEF: The Known Traveler Unlocking the Potential of Digital Identity for Secure and Seamless Travel

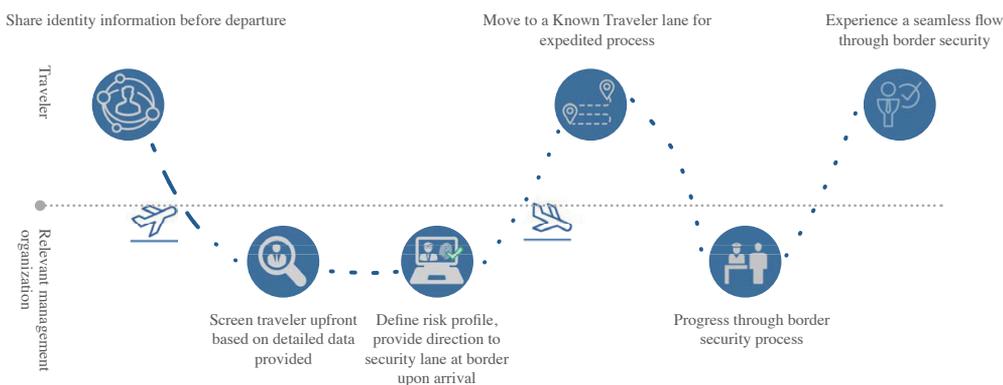


Figure 7.2 Example use case at arrival and border security
Source: same as above

The Known Traveler Digital Identity concept supports personalized screening and risk assessment of information prior to the traveler’s arrival. It allows law enforcement, immigration and aviation security authorities to request and receive information more quickly, thereby shifting the workload of the regulatory authorities to enhanced screening of advanced travelers and clearance of low-risk travelers. Take the use of e-passports in border management as an example, the contactless chip of the passport contains the passport holder’s traditional data and his digital security features in the form of digital signature, with the data sealed to ensure integrity and authenticity. This electronic verification is completed by checking the digital signature contained in the contactless chip,

i.e. verification of the digital certificate chain used by the country for sealing traditional data. Amadeus’ investment in Airside, a digital identity certification provider, is one such example. With the support of Airside technologies, US citizens and Canadian travelers are now able to pass through US customs quickly and securely via the Passport App.

7.2.3 Tourism information services

Existing travel activities are largely enabled by mobile devices such as smartphones or tablets, which also creates a mobile expansion for the traveler’s digital self. According to the WTTC report *Mobile Payments in Travel & Tourism: Unlocking the Potential* (March 2019), with 83% of passengers traveling with them, mobile devices are an essential part of the travel journey today²². Mobile devices have been well integrated into modern-day travel and tourism experience. For instance, travelers can plan their trips to the airport with Apps, get electronic boarding passes, access in-flight entertainment on their mobile devices, use mobile keys to open hotel rooms, check the to-do list, make dining reservations, and share their travel experiences on social media platforms.

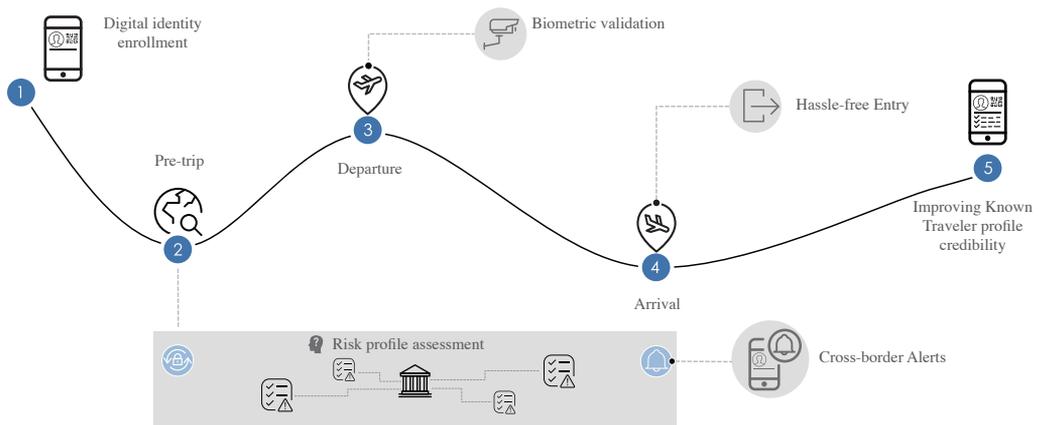


Figure 7.3 Overview of selected intervention steps

Accessing or providing information through public platforms enables effective regulation and the sharing of public information. For example, through the Known Traveler Digital Identity program, the regulators can access traveler information in advance, and determine the type and risks of the traveler based on the information acquired during registration, trip preparation, departure and arrival. The “Online Public Cultural Services” portal of the Chinese Ministry of Culture and Tourism provides visitors with four popular online cultural services, i.e. watching online exhibitions of museums across the

country, visiting the 30-plus virtual exhibition halls of the National Museum, searching for information about the cultural relics of the Palace Museum, and attending online+offline public classes hosted by the National Library.

7.2.4 Development of tourism public resources

Visitor behavior and experience data are very important for the development and management of tourism public resources. The use of IoT technology can help document and analyze tourists' behavioral patterns in order to improve the quality and supply of public resources. Traditionally, the observation and investigation of these data would cost substantial physical resources and manpower. The Louvre in Paris, one of the world's largest museums, has pioneered the use of anonymous longitudinal data sets generated by non-intrusive Bluetooth sensors to study what routes visitors tend to take around the museum and how long they stay in different places. To facilitate the study, seven Bluetooth sensors have been installed at the Louvre with enough coverage to measure visitation sequence and length of stay. A unique cryptographic identifier is used to distinguish each Bluetooth-enabled mobile device within its range, as well as the timestamps of entry and exit. Assuming that each mobile device is owned by a single person, a connection could be built between the movement of mobile devices and the movement of visitors. During the 24-day period of the study, a large amount of tourist information were recorded, giving the tourism managers an opportunity to not only improve the supply of tourism public resources and enhance tourist experience, but also conduct simulation and forecast on crowd density, congestion and other valuable information to better serve the city with tourism public resources.

7.3 Future trends of tourism public services

7.3.1 Providing efficient and safe travel experiences with modern technologies

The applications of IoT, LBS, AI, AR/VR, blockchain and other technologies have made tourism programs more attractive, efficient and inclusive than ever before, and also more sustainable in terms of economic, social and environmental resilience. The advance of technologies has facilitated the innovation and re-engineering of the travel process, provided solutions to challenges such as seasonal visitor fluctuations and overcrowding, enhanced the tourists' travel experience and contributed to the development of smarter destinations.

Through digitization, travel experience is expected to become more seamless and frictionless and feature higher quality. Digitization prompts innovation in smart assets and efficient use of resources, and helps the industry create a more sustainable footprint. Tourism is one of the first industries to digitize the business process on a global scale, with online flight and hotel bookings at the frontier of digitization.

The impact of digitization on the tourism industry is mainly manifested in the facilitation of smart travels, smart destinations and job creation[[https://www.unwto.org/digital-transformation.](https://www.unwto.org/digital-transformation)]. For example, smart applications in the areas of smart visas, border clearance, security processes and infrastructure provide a safe and convenient travel experience, making destinations more technologically sophisticated, innovative, sustainable, accessible and inclusive. It also promotes the endogenous growth of the tourism industry, and supports MSMEs in seeking innovation and creating jobs.

Mobile smart devices, digitization technologies, interactive scenes and other digital and intelligent applications have improved the quality of tourism public services. By creating a new model of smart travel, mobile smart devices have revolutionized the travel process, tourism services, and visitor experience, and enhanced the convenience and safety of travels; by cultivating smart destinations that are technologically advanced, innovative, sustainable, accessible and inclusive in the tourism cycle, balancing the needs of tourists and residents and the differences in off-season and peak season visits, and predicting and managing visitor flows, digital technologies can play a more effective role in destination management and sustainability; tourism businesses are encouraged to innovate tourism public services by exploring new application scenes of digital technologies, including promoting the demonstration of intelligent interactive services, and supporting the application of technologies such as intelligent terminals, service robots, virtual reality, augmented reality and mixed reality in scenic spots, hotels, leisure areas, cultural centers, museums and other places, in order to expand the public service chain, and drive the development of new business forms such as digital creativity, smart tourism and smart culture[Tang Xiaoyun. Enhancing Cultural and Tourism Public Services with Digitization as the Core [N]. China Tourism News, November 19, 2020.].

7.3.2 Providing diversified services via technological means

The provision of tourism public services is increasingly driven by the market rather than the government. With the market's participation in the provision of tourism public services, service providers are becoming more heterogeneous and diversified[Oakerson R J, Parks R B. 2011. The study of local public economies: multi-organizational, multi-level institutional analysis and development[J]. Policy Studies Journal,39(1):147-167.]. The participation of market players increases the efficiency of service delivery and improves the quality of services. Bicycle sharing, passenger codes and health codes are all typical examples of market-based provision of public services. Inspired by the application of digital identity authentication technologies, market players in the tourism industry are also actively involved in the provision and innovation of tourism public services. For example, Google is working with hotel chains to introduce the Nest Hub smart displays and Google Assistant into hotel rooms with the aim enabling

contactless access to information and in-room facilities for hotel guests while saving operational costs for the hotels.

7.3.3 Boosting the efficiency of service delivery through multi-stakeholder participation

Breaking the monopoly of government and government-run institutions, promoting broad-based public participation in the forms of indirect provision, cooperative provision, commissioning or authorizing provision by volunteer organizations or enterprises, subsidizing or financing provision by relevant organizations, and encouraging the competition between public and private sectors could improve the efficiency of the provision of public services and deliver public services with lower cost and higher quality. The multi-stakeholder pattern of service delivery, which involves the government, organizations, society, enterprises and tourists, stimulates competition, ensures adequate supply, and provides tourism public services in a way that is both effective and in line with the public demand for the quantity and varieties of services.

7.3.4 Aiming for better tourist experience

The provision of tourism services, including the system of tourism transportation facilities, the system of tourism information services, the system for the supervision of the tourism industry and the protection of tourists' rights and interests, the system of tourist safety and rescue, and the system of tourism public information services, should be innovated in three dimensions, i.e. experience, interaction and diversity. Through the application of big data, AI and other technologies, a series of personalized services such as online route search and ticket reservation have been launched, and a demand-oriented mechanism of tourism public products has been established to improve the content, means and quality of tourist experience and better serve the diversified and personalized consumption demands of tourists.

7.3.5 Putting greater focus on universality and fairness

Cloud platform, information service website and other digitization initiatives of tourism resources have made it possible to break the limit of time and space for using tourism public resources, and the popularization of Internet technology and mobile terminals has helped put in place an interactive model for sharing tourism public services. At the same time, the interactive function of tourism public resources should also be reinforced in the physical environment, including bringing digital libraries, museums, art galleries and cultural centers to the grassroots, remote and less developed areas, in order to expand the radius of high-quality public service resources. It is also important to promote the integration of cultural and tourism public services by introducing the tourism factor into the transformation of public cultural

services and underscoring cultural empowerment in public tourism services, and synergize the two services to support the delivery, popularization and inclusiveness of cultural and tourism public resources.

Notes:

17. WTTC. The Future of Travel & Tourism in the Wake of COVID-19, September 2020.
18. Chen Jiyao, Richard M. Walker & Mohanbir Sawhney (2019): Public Service Innovation: A Typology, Public Management Review.
19. WEF. Global Technology Governance Report 2021: Harnessing Fourth Industrial Revolution Technologies in a COVID-19 world, December 2020.
20. <https://coronavirus.jhu.edu/vaccines/international>.
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24. Tang Xiaoyun. Enhancing Cultural and Tourism Public Services with Digitization as the Core [N]. China Tourism News, November 19, 2020.
25. Oakerson R J, Parks R B. 2011. The study of local public economies: multi-organizational, multi-level institutional analysis and development[J]. Policy Studies Journal,39(1):147-167.

VIII. Global best practices of tourism innovation

8.1 Tourism robotics and human capital innovation: Marriott’s exploration

8.1.1 Challenges to human capital management in hotels

As a labor-intensive service sector, the hotel industry has long been troubled by the shortage of human capital. Factors like high personnel mobility, inadequate night service staff and uneven personnel quality have added to the difficulties of quality control in hotel services. Given the rising demand for contactless services during COVID-19, the incompetency of traditional hotels in delivering intelligent services has been fully exposed. In the context of consumption upgrade, there is a clearer trend toward 24/7, customized and real-time hotel services. The traditional service process and model of staff allocation, the boundaries between front-desk and backstage services, and the pathways for information transmission between departments have all affected the responsiveness of hotel services. The diversification of accommodation types has also escalated the competition in the hotel market. Delivering better services and building popular brands provide an effective

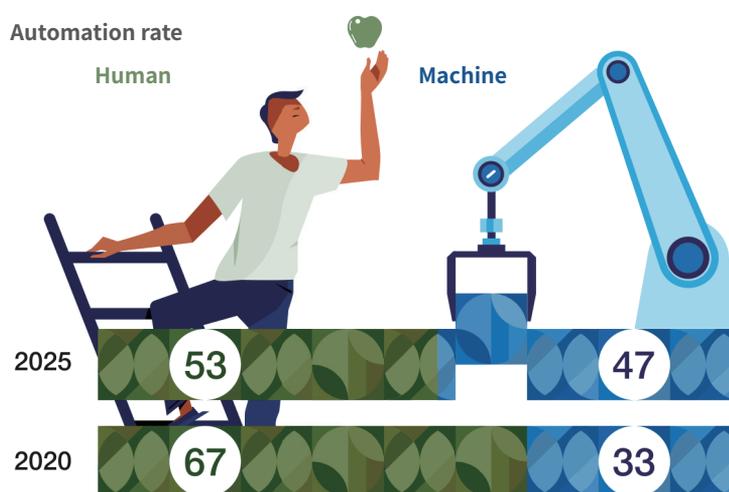


Figure 8.1 Robots will take up 47% of jobs by 2025
 Source: WEF, The Future of Jobs Report 2020, 2020

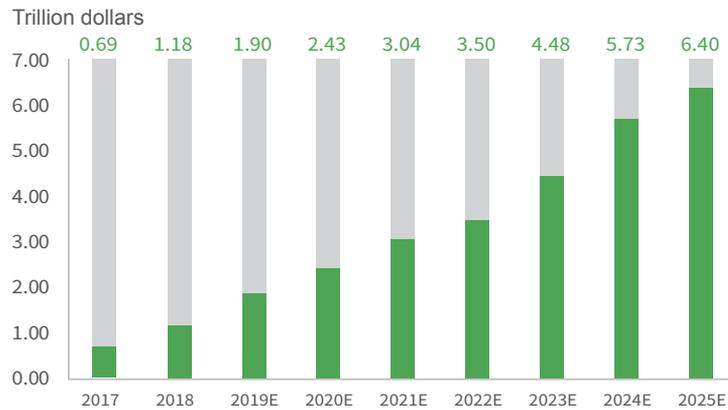


Figure 8.2 Global AI market size
Source: Global Artificial Intelligence Industry Whitepaper, Deloitte Technology, 2019

means for the hotel industry to enhance its competitiveness. The advent of the AI era has pointed the direction for hotels to overcome its human capital challenge and provided the technological underpinning for enhancing the service capability of hotels.

8.1.2 Solutions provided by robotics: the practice of Marriott International, Inc.

Founded in 1927, Marriott International, Inc. now owns 30 brands and more than 7,000 hotels in 131 countries and regions worldwide. From the launch of Botlr, the first-generation intelligent robot, in 2014, to the use of AI, face recognition, VR, big data, IoT and other technologies, Marriott has been endeavoring to overcome the limitation of traditional service model with intelligent applications and raise the satisfaction and loyalty of Marriott customers.

First, enhancing the capability of front-line services. The use of robots in front-line services has increased the contact points between hotels and residents, expanded the scope of contactless services, eliminated the blind spots in guest services, and put in place a two-way communication channel covering the whole business process, while reducing the size of service personnel. With the use of Pepper robots, Marriott is now able to provide high-quality guest services around the clock, and the night service is no longer dependent on the double-shift of hotel staff; ChatBotlr answers most of the customer inquiries and makes recommendations in real time. With reduced amount of repetitive work, the front-desk staff now have more time to serve the personalized demands of hotel guests, and the efficiency of the workforce has notably improved. The Botlr robot responds to customer needs in only five seconds, and provides one-on-one services to hotel guests. The quicker

response compared to the traditional “guest-front desk-department-guest” process reduces the customer’s waiting time. The Mario robot can speak 19 different languages and imitate the dancing steps of Michael Jackson, which not only improves the quality of front-line services but also shapes a positive image of the hotel. Marriott has adopted multiple ways to streamline the complicated process of hotel booking, payment, check-in and check-out, and provided cardless access to hotel guests through its service Apps. It has also cooperated with Apple Pay and Alipay to simplify the payment process and optimize the manpower distribution in various aspects of the business process.

Second, delivering smooth customer services throughout the process. The information and data contributed by robots have provided an important underpinning for re-engineering the hotel service process and optimizing human capital management. By avoiding the drawbacks of the traditional model of department-based guest services, a supply system has been put in place, which responds to customer needs, dispatches hotel resources in real time, and attends to every detail of hotel services. At the same time, the online platform of smart hotels has expanded the service scenes of hotels and enabled real-time, sophisticated and smooth service experience for guests. For example, Marriott guests can now send their requests by SMS to ChatBotlr. The Marriott chatbots on Slack, Facebook and other social media platforms also provide guests with exclusive services through multiple channels. Before guests arrive in the hotel, the chatbot makes room recommendations based on their check-in time and number of persons, and send information about the restaurants and attractions in the neighborhood to the guests. During check-in, the HDL intelligent control system makes connection with the TV, lighting, music, air conditioning and other service facilities, and collects information of the hotel rooms to provide guests with more targeted and convenient services; the “Smart Interactive Experience Room” allows guests to tailor in-room amenities to their individual needs through voice control or mobile Apps. After check-out, the chatbot reaches the customers to give out coupons and other rewards and get their feedback in the form of questionnaire, replacing the old-fashioned way of text messages and emails.

Third, targeted marketing management. The interaction between robots and hotel guests helps with the acquisition of consumption data and consumer preferences. For hotel marketers and the work of marketing, it is important to grasp the market trends through big data analysis, be sensitive about real-time information on market demand to

open up new markets, and better implement the membership program to activate existing customer resources and strengthen customer loyalty. To this end, Marriott has set up the MLive platform to monitor real-time data on social media through multiple screens and predict new marketing trends. The platform supports marketers in developing new and creative promotional initiatives and building closer ties with customers through efficient communication. In Marriott's official direct sales channel, the hotels provide guaranteed best rates in order to access the spending and personal information of some of the guests. Through real-time interaction with hotel guests, ChatBotlr creates accurate customer profiles, and sends personalized service information and recommendations for promotions to them after learning about their preferences, thus increasing the chances of marketing conversion. Pepper provides real-time data for different promotional activities that help hotel staff adjust the content, time and method of marketing to achieve high efficiency; it interacts with the guests through fun games to improve the effect of the hotel's marketing campaigns; Pepper also plays a positive role in promoting Marriott's membership program, which has facilitated new member registrations and solidified the hotel's fan base. The LocalPerks function in Marriott App acquires real-time location of travelers and pushes information to the travelers to promote the hotel's direct sales platform.

Fourth, taking guest services into new fields. Marriott's 2019 statistics show that leisure travel is growing four times faster than business travel, and Marriott is paying higher attention to the needs of leisure travelers in its hotel business distribution and exploring linearized services covering the entire journey. Marriott is now providing online virtual experiences and travel ordering services. In 2019, Marriott launched the Bonvoy Traveler program, which integrates the tourism resources of all countries and regions where Marriott hotels are located to provide a unique travel experience in the destinations for hotel members. The hotel guests can make travel plans and order services on their own based on the information, thus reducing the need for consultation with hotel staff. The Marriott Bonvoy™ Moments program provides its members with an exclusive VIP experience that enhances the value of travel by creating unforgettable memories. The platform recommends hotels in the surrounding area based on the information of the destination, allowing guests to purchase hotel products and redeem experience events. It does not only use hotel resources as an attraction point, but combines the hotel's own resources with the local tourism resources, making the online platform a gateway for

interested customers and saving the hotel’s marketing costs. Bonvoy Boutiques, Marriott’s retail e-commerce platform, sells the bathrobes, pillows and aromatherapy served in the hotels. From offline experience to online purchase, the platform has fully unlocked the value of Marriott’s 100+ million members, and saved the offline marketing and labor costs of the hotels. While boosting sales, it also helps the hotels promote their brands. The use of VR facilities has enriched the experience of Marriott guests and expanded the services of the hotels. The VRoom virtual travel service, which is launched based on Teleporter, allows hotel guests to order VR devices to their rooms, and enjoy an immersive experience of travelers’ stories through the “VR postcard” provided by the hotels.

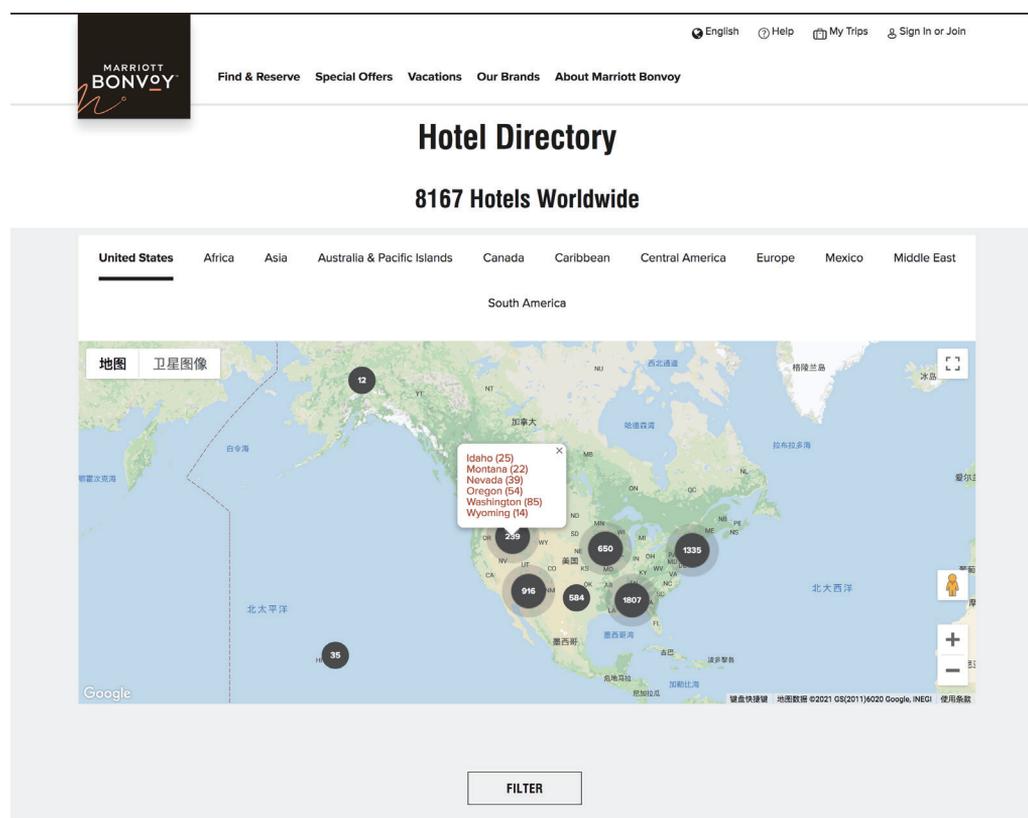


Figure 8.3 Tourism information provided by Marriott Bonvoy Traveler based on location and type of travel
Source: Marriott Bonvoy Traveler official website

8.1.3 Inspirations and reflections

Robots can be used to replace repetitive and low-value hotel jobs, assist the work of marketing, security, finance and other hotel departments with big data and intelligent

facilities, provide add-up and extension services tailored to market demands through the integration of destination information and virtual services, and improve the management of human resources.

First, exploring the “human-machine” model of services. Robots can save substantial human resources and alleviate the labor shortage faced by hotels, but they cannot completely replace human services, High-quality hotel services are bound to be undertaken by “humans and machines” together. In the future, the content of hotel services will only become more complex and sophisticated. It is therefore important to understand the attributes of different types of services, make the best use of the comparative advantages of robot and human services, and construct an efficient and high-quality “human-machine” service system, so as to leave no corners unattended in hotel services. For services that are repetitive and pre-programmed, the use of robots can improve the standardization and efficiency of services. While reducing the waiting time of guests, it also frees hotel employees from the burden of simple and repetitive work, so that they can devote more time and energy to providing personalized services. For services that are difficult to provide manually or where staff are difficult to hire, robots can be used to make up for the shortage of hotel staff and provide hotel guests with 24/7 services; to keep pace with the varied service demands during peak and off-peak seasons, the use of robots can increase the flexibility of the working arrangements and alleviate the shortage of service personnel in peak seasons; the use of robots can also expand hotel services into areas that cannot be undertaken by humans and provide guests with intelligent services and virtual experiences. When developing the “human-machine” service system, hotels should fully consider their brand features, service concept and guest demands, and switch between human and machine services flexibly to avoid providing guests with mechanic services that have no human touch because of the use of robots. Robots have changed the traditional one-person-one-post model of hotels, and raised higher requirements on the competence and system operation capability of the hotel staff. They need more skills training to better control the robots, and instruct the robots to better serve hotel guests.

Second, building the model of front-desk and backstage “integration”. While providing standard services for hotel guests, robots at the front desk can also produce data analysis that enables front-line staff to quickly understand guest demands and deliver tailored services for them. All this work, which required the support of the backstage marketing department in the past, can now be processed instantly by front-desk robots.

Based on the information about guest demands, robots are able to make integrated use of front-desk and backstage resources, which solves the problem of disconnection caused by the clear boundaries between front-desk and backstage departments, and brings hotel supply in line with customer needs as much as possible. The use of AI helps collect hotel business data, analyze the match of hotel personnel and positions, and optimize hotel staffing, recruitment, training and salary management through the quantification of business volume.

The biggest confusion brought by the traditional front-desk/backstage pattern is the impediment to the transmission of service information, which consumes manpower and compromises management efficiency. The use of hotel robots and intelligent facilities can strengthen the connection of room services, engineering management, inventory information and hotel finance, collect timely information on hotel operation, and make quick analysis and rapid response. By monitoring information such as the use of front-desk facilities and consumption of physical items, the backstage department can make real-time adjustment of resource allocation for different posts and time slots, and enable automation in certain aspects of hotel operation.

Third, facilitating the closed-loop marketing model. With the official platform as the marketing channel and big data as the vehicle, hotels can reshape their marketing pattern to create a closed loop of marketing, sales and after-sales services, which improves guest loyalty and reduces dependence on OTAs. Online intelligent marketing can reach a large group of target customers in a short period of time and improve the precision of customer profiling to increase the marketing conversion rate. Within the closed loop of promotion, purchase and review, hotels can better maintain their core target groups and attract online visits in the private domain. Based on the membership information contained in big data, hotels will be able to deliver more personalized offline services, and increase the marketing conversion rate by maintaining their relationship with existing customers. The information obtained from the interaction between front-line robots and guests enables hotels to send timely, targeted product information to potential customers. The real-time data returned by robots on different types of promotional activities also allows marketers to make in-time adjustment of the content, means and delivery period of the promotion campaigns to maximize the marketing results.

Fourth, creating innovative service models. AI applications can help hotels extend their service chain, innovate brand values and enhance guest loyalty. With the

help of robots, hotels can learn about the guests' purpose of stay and provide them with information on the available activities and deliver virtual tourism services in the destination based on their types of travel, such as sightseeing tours, anniversary tours, business tours, group tours and family tours. In this sense, hotels can serve as a gateway and focal point of the destination. By integrating internal and external resources, they can make recommendations and reservations for restaurants, tourist attractions and experience activities to improve the overall experience of their guests in the destination. Under the new retail model, the physical space of a hotel becomes the center of experience for its brand culture and lifestyle. The enjoyment of accommodation, food & beverage, entertainment and other hotel services is not the end of hotel consumption, but the trigger of a new round of consumption. Through robot interaction and big data analysis, hotels can learn about the guests' preferences for the consumer goods they offered, and send targeted product information to potential customers to create a new profiting model.

8.2 The low-carbon innovation in the means of travel: the UK experience

8.2.1 The low-carbon trend has profoundly impacted on the means of travel

Tourism development is one of the main causes of growing global carbon emissions, and the *Djerba Declaration* issued by the UNWTO at the world's First International Conference on Climate Change and Tourism in 2003 suggested that the impact of greenhouse gas emissions generated by tourism transportation and tourism hospitality facilities on climate change cannot be ignored. Studies show that tourism accounts for 8% of global greenhouse gas emissions, including 75% contributed by tourism transportation.

Since 2020, the world's major countries have all accelerated the transition toward a low-carbon energy mix underpinned by the use of clean energies, and introduced the timetables for carbon peak and carbon neutrality. Low-carbon development has served as the goal for collective global actions. The development of low-carbon economy and the improvement of low-carbon technologies have created conditions for the transition toward low-carbon means of travels. Many countries and regions have adopted proactive policies and measures to promote low-carbon transformation and use of clean energies in tourism businesses, and encouraged tourists to choose low-carbon consumption and green transportation in order to reduce the carbon footprints of the tourism industry and explore a sustainable path of harmony between tourism and nature.

8.2.2 Low-carbon economy drives innovation in the way of tourism: the UK experience

The UK is one of the first countries to recognize the economic and security threat posed by climate change. It is the first country to introduce the low-carbon concept and pursue low-carbon development on a sustained basis, and a global champion of “low-carbon economic development”. Low-carbon development is the UK’s national strategy, and the rapid and comprehensive growth of low-carbon economy has given a strong boost to the low-carbon transformation of the tourism industry.

First, a national consensus on low-carbon development. The UK government has played a dominant role in the development of low-carbon economy by setting targets, introducing legislation and giving policy support. In 2003, the UK released the energy white paper *Our Future Energy – Creating a Low Carbon Economy*, which defined the development of low-carbon economy as the primary goal of the national energy strategy and put the country on the journey toward low-carbon development. In the *Climate Change Act 2008*, the UK for the first time set the mid – to long-term target for emission reduction, i.e. reducing carbon emissions to 80% of the 1990 level by 2050, in a codified form, and became the first country to make a commitment on emission reduction. In 2009, the UK released the white paper *The UK Low Carbon Transition Plan*, committing to cut greenhouse gas emissions by 34% in the period centred on 2020 compared to 1990 levels, thus becoming the first country to declare a legally binding carbon budget. In the same year, the UK urged countries in the world to strengthen research on clean energy, carbon budgets and carbon markets, and vigorously develop a low-carbon economy. The UK government has also released a series of reform plans involving transportation and other relevant sectors, including the *UK Renewable Energy Strategy*, to promote the development of the low-carbon economy on the ground. In the newly revised *Climate Change Act* in 2019, the UK government further specified the goal of achieving “net zero” greenhouse gas emissions by 2050. In 2020, the UK government launched the “Green Industrial Revolution” initiative, with the plan to accelerate the promotion of electric vehicles and the research and development of new-generation nuclear energy, and step up efforts in the development of offshore wind energy. The environmental groups in the UK have also made vigorous efforts to promote the habit of energy conservation among the public. They have used public service announcements to disseminate low-carbon information and

knowledge, advocated a low-carbon lifestyle, and supported the government's efforts in promoting low-carbon transition. In the *Manifesto for a Green Recovery*, Greenpeace calls on the government to protect mother nature and wildlife, especially to increase investment in the restoration of degraded wildlife habitats and other areas, accelerate the layout of smart grids, renewable energy and clean transportation, reduce waste “generation” and increase recycling rates, undertake the renovation of old buildings and promote low-carbon heating and cooling. The *One Planet Living*, a joint initiative of BioRegional Development Group and WWF, focuses on the construction of low-carbon communities, requiring them to observe ten sustainability principles, i.e. zero carbon energy, travel and transport, materials and products, land and nature, local and sustainable food, zero waste, sustainable water, culture and community, equity and local economy, and health and happiness. The industry leaders of the UK are living up to their commitment to promote the development of the renewable energy industry and encourage SMEs to manage energy use more effectively and create new “green” business opportunities.

Second, advances in low-carbon travels. The UK is one of the first countries to advocate low-carbon transportation and put it into action. From 1995 to the present day, the UK has introduced a host of policies, including congestion charges and tax incentives, low-emission zone exemptions and purchase subsidies, as well as incentives for charging infrastructure. It has also strengthened the policy framework at the strategic level and in areas including tax policies, technology research, infrastructure and connected transport, and set a clear goal in the *Road to Zero Strategy*: to end the sale of new conventional petrol and diesel cars and vans by 2040, and push for the transition to zero emissions in the UK automotive market. The UK government is vigorously supporting the development of public transport, and encouraging the use of public transport systems such as buses and subways to reduce carbon emissions. It has also adopted multiple steps to improve public transport services so that people will have more choices for traveling on public transport. In the 1970s, the City of London pioneered the park-and-ride program, and in 2000, the UK government proposed to build by 2010 another 100 park-and-ride sites, i.e. large parking spaces built around the edges of towns and cities, where residents can park their cars and transfer to the town center through public transport. To encourage people to travel green, the UK government has taken a wide range of measures. The City of London introduced the bicycle rental service in 2010 and invested £500 million to improve the city's

infrastructure in order to facilitate the bicycle-ride of the residents. During COVID-19, the UK government launched a “£50 bike repair voucher” program to encourage the public to ride their unused bicycles and see cycling not just as a means of commuting but also as a form of fitness; the UK Department for Transport invested £2 billion in the widening and renovation of bicycle lanes and sidewalks to provide a convenient environment for green travels such as cycling and walking after people resume work, and ease the pressure on the public transport system in handling the daily change of the pandemic.

Third, breakthroughs in energy-saving technologies. In the UK, energy efficiency is one of the criteria for measuring the qualification of buildings. In designing green buildings, it is required to take into account energy, environmental protection, materials, recycling, lighting and other factors that affect energy efficiency, and produce an analysis report on the energy performance, which must be approved by the local government before construction takes place. The government also gives various types of subsidies to green buildings. In 2005, the UK government launched a initiative to build one million green apartment buildings, requiring the use of green paints, recycling of bath water and installation of solar panels and other energy-saving products, and provided tax breaks to qualified “green homes”. The City of London has a rating system for green apartment buildings, which gives green ratings (A to G) to the candidate buildings based on their energy performance. The government has also set up a Green Home Service Center to provide necessary assistance to apartment buildings that are less energy efficient. Energy-saving technologies are also widely used in hotel construction. The Green Belt Hotel in Surrey, England is the world’s first five-star hotel that goes underground. The hotel’s green roof resembles the shape of the terrain on the ground, and all the guest rooms and the spa center are located in a sunken garden. The sound ecological environment gives the hotel guests a unique opportunity to embrace mother nature. The green belt built on the roof is a natural insulation layer, which keeps the hotel warm in winter and cool in summer, and saves energy and reduces emissions; the green belt can also be used to separate the traffic and maintain a good visual effect of the landscape.

Fourth, innovation in green tourism attractions. From cities and towns to communities and buildings, the UK’s low-carbon exploration spanning across different spatial scales provides a model for learning, attracting tourists to visit, experience the latest low-carbon technologies, understand the importance of low-carbon living, learn about low-carbon principles and functions, and embrace the low-carbon way of life.

By helping enterprises reduce carbon emissions, building green transportation systems, constructing green buildings and promoting smart grids, the low-carbon transition of British cities, particularly the case of London, has made the “low-carbon economy” a new brand image of the cities. The UK is a pioneer in the construction of eco-towns. In 2008, it set the goal of achieving eco-friendly development through carbon emission reduction, efficient use of water resources, sustainable transportation and construction management, and recycling of solid waste. It also pledged to explore the zero-carbon emission model in the towns’ development and operation to showcase the amazing ecological features of British towns. The Beddington Zero Energy Development (BedZED) in the southern suburbs of London has replaced traditional fossil energy with solar energy, and focused on environmental protection and energy conservation in every detail of the building’s designing, so as to avoid the pressure on the environment caused by community construction and daily activities and give the tourists an opportunity to experience the low-carbon life that defines the community. The Bloomberg Europe headquarters in the City of London is a model of green building. There, the visitors can learn about and experience a series of innovative environmental technologies, including the building’s scale-like facade ventilation equipment, roof rainwater collection and purification, conversion of natural gas to electricity and the use of residual heat, and vacuum toilets in bathrooms.

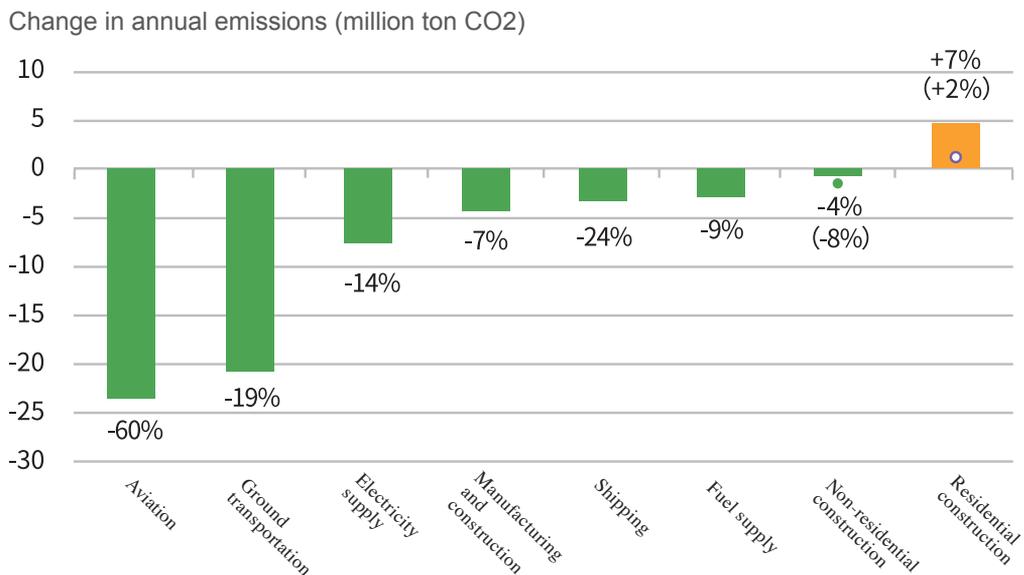


Figure 8.4 Percentage change of CO₂ emissions from different sectors in the UK (2019 vs. 2020)
Source: CCC (UK Committee on Climate Change), 2021

The implementation of low-carbon tourism practices also changes the traditional means of travel. The Eden Project, one of the UK's Landmark Millennium Projects, aims to communicate to the public the vital concept of sustainability in development and survival by documenting the transformation of barren and contaminated land. The development agencies in the UK are also working with schools on ecological education programs and teaching the concept of sustainable development to students to help the future generation understand the importance of living in harmony with nature, which gives the Eden Project irreplaceable values in environmental education; the unique ecological landscape cultivated through environmental transformation and restoration has turned the place into a magnet for the British people. The UK has also built a variety of eco-villages and nature reserves, transformed old country estates such as Monmouthshire, and conveyed the concept of sustainability to young people by opening weekend forest schools and village visitor centers on natural attractions.

8.2.3 Reflections and trends

First, reconstructing tourism values. Environmental issues are becoming increasingly prominent, and humans are making deeper reflections on their behavior. Treating the environment well is an attitude that humans must learn in the future. Tourism development involves not only human-land relations, but also human-human relations. In this complex system, low-carbon development has profoundly affected people's tourism values. Tourism is no longer an industry that simply satisfies consumption and delivers economic value, but a practitioner of the notions of living in harmony with nature and living as part of the society. Although tourism is a consumer demand arising from a certain level of economic development, seeking comfort and enjoyment should not become our sole purpose. Instead, we need to stress the role of ethics in tourism consumption and restrain tourism consumption with negative impact on the environment. Likewise, in tourism supply, we shall not care only about economic benefits and rigidly observe the customer-first principle, but make a choice between the environment and the economy. In particular, the COVID-19 pandemic has made it increasingly clear that natural, eco-friendly, healthy and low-carbon tourism is what we really need, and low-carbon development is the inevitable path to the future of tourism.

Second, changing the behavior of tourism consumption. The values of low-carbon consumption have changed the traditional patterns of tourism consumption. In terms of the

choice of destinations, tourists are now more inclined to choose tourism programs in eco-friendly destinations, such as forest leisure travel, grassland tour, bird watching in wetland, desert adventure, and agricultural experience tour; in terms of the means of travel, tourists now pay more attention to the energy consumption and pollution caused by their travel, and tend to choose low-carbon travel mode. When touring in the destinations, they try to walk, ride bikes, take buses or choose other low-carbon transportation as much as possible; in terms of tourism consumption, they prefer to choose attractions, hotels, restaurants and stores with “green labels” or “carbon labels”, buy locally produced seasonal green food, eco-friendly food and handmade souvenirs, reduce the use of disposable tableware, and consciously bring wastes back home; in terms of tourism activities, they are keen on taking part in green or low-carbon outdoor leisure activities, and getting a taste of pure and authentic folk culture.

Third, increasing the supply of green tourism products. Low-carbon economy empowers tourism innovation, and the supply capacity of low-carbon tourism products and services is rapidly building up. In the national park system, the tourism values of natural high-carbon sinks such as oceans, lakes, rivers, ponds, forests and wetland parks have been quickly explored, and carbon sink-based tourism experience products are also gaining popularity; new types of low-carbon tourism attractions, such as low-carbon tourism parks, low-carbon industrial parks and new energy science education parks, as well as low-carbon neighborhoods, low-carbon towns, low-carbon villages, low-carbon campuses, low-carbon port areas and other types of low-carbon communities are being developed. These diverse spaces of low-carbon experience will be transformed into low-carbon tourism attractions at a faster pace. Ecological landscapes restored by ecological technologies promise great potential for tourism development, and through the restoration of damaged wetlands and contaminated soil, low-carbon tourism attractions with a blend of “natural and artificial” elements will be created. Tourism destinations need to accelerate the planning of low-carbon tourism festivals, provide a rich variety of low-carbon study tour programs, and expand low-carbon leisure and sports activities in outdoor conditions; improve the public transportation system for tourism, strengthen the connectivity across different modes of public transportation, develop green transportation, build “walking cities”, and promote the electrification of buses and taxis; encourage the use of energy-saving means of transport and non-powered sight-seeing vehicles in scenic spots to provide more green travel options for tourists.

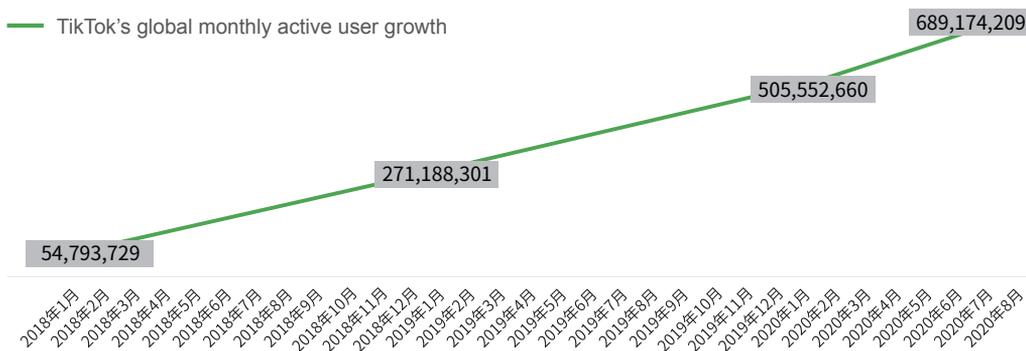


Figure 8.5 TikTok's global monthly active user growth
Source: <http://www.199it.com/archives/1107501.html>

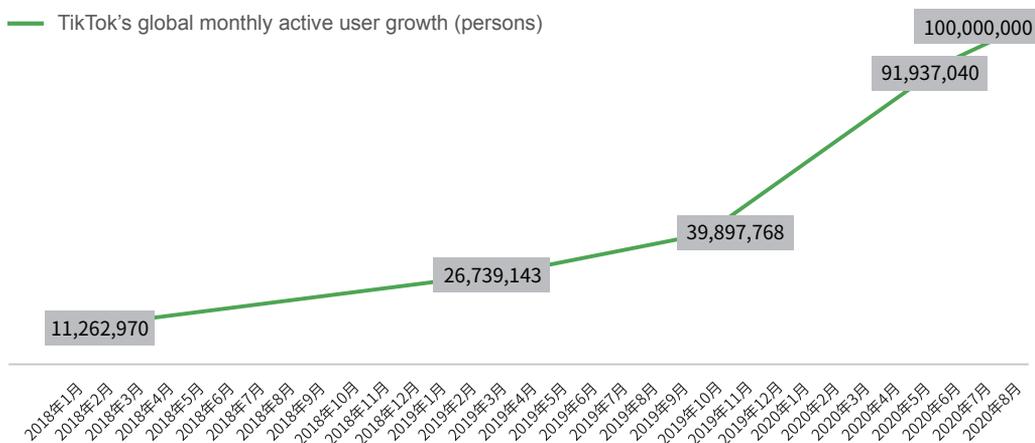


Figure 8.6 TikTok's monthly active user growth in the US market
Source: same as above

8.3 Tourism marketing innovation: Tiktok's exploration

8.3.1 Tourism marketing on TikTok

8.3.1.1 Current status of TikTok

TikTok is a social media platform for short-video content developed by ByteDance. Officially launched in May 2017, with a focus on international users, TikTok is by far China's most successful mobile Internet product in the overseas market. Currently, TikTok adopts localized operation strategies tailored to the needs of different overseas markets. Within a short period of time, TikTok's user growth has surpassed that of other world-famous social Apps with similar functions. It has topped the iOS App Store and Google Play in the US, Turkey, India, Germany, France and other countries many times, and grown into an hugely popular social media platform with high user stickiness over recent years.

First, TikTok’s global users are growing rapidly. Currently, TikTok has more than 100 million active users in the US alone. According to the statistics released by the research agency Sensor Tower, TikTok was the most downloaded App globally in the first quarter of 2021, with over 58 million downloads in March 2021 alone. According to Sensor Tower’s August 2020 data, among all the world’s non-gaming Apps, Douyin and its overseas version TikTok rank on top in combined revenue, totaling US\$88.1 million, registering an annual growth of 6.3 times, with 85% of the revenue coming from China, 7.8% from the US and 1.4% from Turkey²⁶. Of all the international markets where TikTok operates, the US market ranks on top, followed by the Turkish market. Figure 8.5 shows TikTok’s monthly active user growth globally (2018 to 2020), and Figure 8.6 shows TikTok’s monthly active user growth in the US, the largest market outside of China, which could give the readers a glimpse into the speed of TikTok’s expansion and growth in international markets.

Second, TikTok is popular among young users. In terms of user profile, TikTok is positioned as a Gen Z platform, but TikTok is not just a platform for the gathering of young users. As a matter of fact, 43% of the users on TikTok are over 25 years old, and it is also the fastest growing group[<https://cloud.tencent.com/developer/news/838095>]. And in terms of the youth community, according to a study by Piper Sandler, 34% of the teenagers choose Snapchat as their favorite social App, and TikTok comes the second with a support rate of 29%; in terms of user engagement, TikTok also ranks the third in social media Apps with a

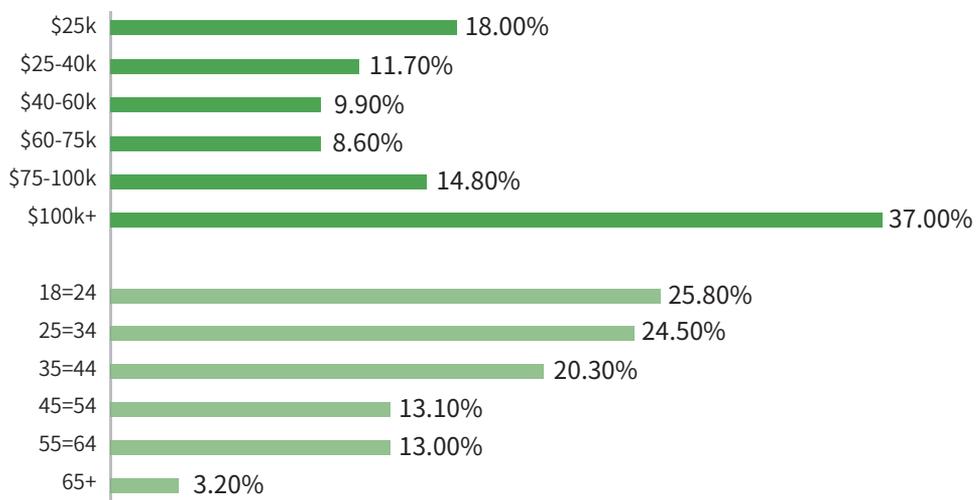


Figure 8.7 Household income and age distribution of TikTok users in the US
Source: <https://www.amz123.com/thread-398480.html>

proportion of 69%. In addition, the report also shows an upward trend in TikTok's popularity among young American users and its market share is also in an upward trajectory²⁸.

Finally, while focusing on the younger generation, TikTok spans across multiple age groups. Take the demographics of adult users in the US as an example, as shown in Figure 8.7, which presents the age and household income distribution of TikTok users²⁹, more than 50% of the American users are aged 18-34, and the teenager community is the main user group of TikTok. On the other hand, the user group aged 45-64 also accounts for over a quarter of the total, which shows the wide age coverage of TikTok. Meanwhile, there is a high percentage of TikTok users among the population group with an average household income of over US\$100,000, while nearly 30% of the users, mostly students or new graduates, have an household income less than US\$40,000. In terms of gender distribution, the number of female TikTok users in the US far exceeds that of male users, with a ratio of about 2:1. This data is useful for TikTok to conduct targeted marketing tailored to different user groups.

8.3.1.2 TikTok's advantages in tourism marketing

Given its unique characteristics, TikTok holds visible advantages in tourism marketing. First, the standard content posted on TikTok is a 60-second video with music in the background. With embedded music function and video editor, TikTok has combined the highlights of multiple social media platforms such as Snapchat, Vine and Instagram, which makes it convenient for creators to post tourism marketing content. Second, TikTok has over 800 million users worldwide and the youngest fan base, which could facilitate the marketing of travel brands targeted at the younger generation. Third, TikTok provides the hashtag function, and “#tiktoktravel” has been one of the most popular hashtags on the platform, with 20.8 billion views. The use of the hashtag on TikTok's targeted travel marketing platform presents a great marketing opportunity for tourism and travel companies. Destinations such as Dubai, Japan, Seoul and Thailand are among the most popular destinations under this hashtag. Fourth, the TikTok platform is backed by strong technical support. With its unique intelligent recommendation technology, TikTok is able to study user preferences through machine learning and recommend their favorite content; it captures the changes in user preferences by observing their act of staying, interacting and sharing every time they watch a video; compared with subscription-based information recommendation, TikTok offers many fun tricks, i.e. expression recognition, AR technology, multi-screen display, multi-face makeup, games, etc. While catering to the

brand's needs, it collects diversified contents and recommends them to interested users.

In addition, according to TikTok's overseas user analysis report, TikTok users have the following five main habits: First, TikTok users like fast-paced, light content. By posting creative and funny short-video contents on the TikTok platform, they are not just sharing moments in their life, but also observing other people's life in fast-forward mode, which makes TikTok one of the best ways to relax after work. Second, TikTok users like an immersive viewing experience. They prefer to watch short-video contents in an immersive atmosphere and free from interruption. Third, TikTok users open the App anytime and anywhere. Data shows that TikTok users may open the App at any time of the day for their favorite content. Fourth, TikTok users like real contents. They like to watch real, original records of moments in life. Fifth, high re-visit rate of the contents. TikTok users like to browse the "topic challenge" section, and most of them will repeatedly watch the video content or topic they have shared.

As the five main habits of TikTok users suggest, the TikTok platform has considerable strengths in tourism marketing. First, TikTok has become a part of people's leisure life, and there is a high probability for TikTok users to log onto the platform and watch its contents. Tourism marketing conducted on this platform will greatly increase the brand's exposure and visibility, and create a memorable impression of tourism brands in people's hearts. Second, TikTok has a preference for immersive and authentic contents. The contents of scene-based tourism marketing are compatible with the user preferences on the platform and will be popular among TikTok users. Furthermore, TikTok's high re-visit rate and strong user stickiness will help tourism brands attract loyal fans on the platform.

8.3.1.3 Key models and methods of tourism marketing on TikTok

Since TikTok users are mostly young people, the traditional way of advertising holds little appeal to this group, making it difficult for paid advertising to play its role in marketing. Currently, the following three models have been used by tourism businesses and brands to conduct tourism marketing on TikTok.

First, hashtag challenge. Hashtag challenge is an interactive game popular among TikTok users. People who post contents with the same hashtag share the same preferences, which makes it easier for tourism companies and brands to locate their target audience. By publishing contents for hashtag challenge, tourism companies or brands can show their brand orientation to the target audience and attract their attention. Figure 8.8 shows the top ten most viewed hashtag categories on TikTok. Among them, hashtags like entertainment

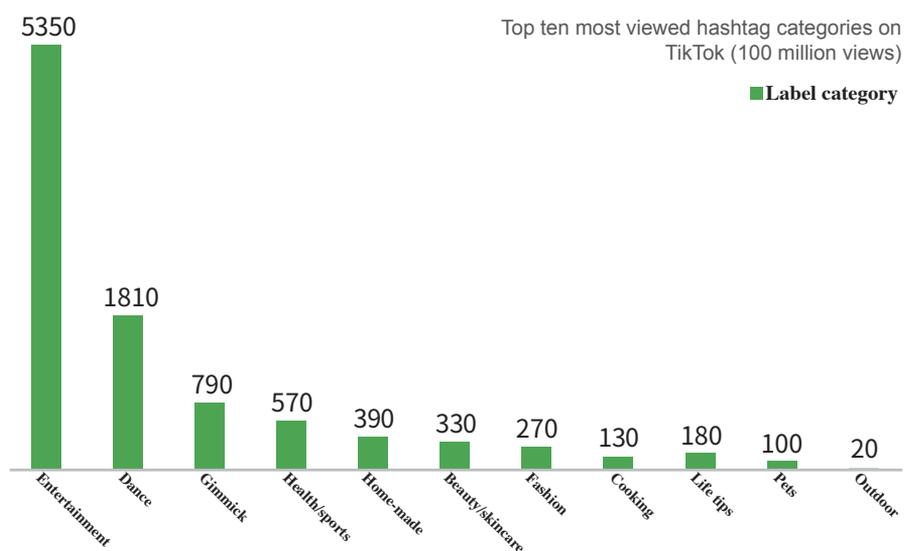


Figure 8.8 Top ten most viewed hashtag categories on TikTok
 Source: <http://www.baijingapp.com/article/29831>

and outdoor are very suitable for tourism marketing.

Second, creating user-interested contents. Considering the unique characteristics of TikTok users, funny and attractive contents can better appeal to their taste and improve the marketing effect. While marketing contents need to be diversified, it is also important to grasp user preferences and send targeted contents to them, such as recommending parent-child products to family travelers.

Third, KOL marketing. Like Facebook, YouTube and other social media platforms, KOL marketing is the most popular and effective marketing tool on TikTok. In tourism marketing, it is important to choose the right KOL for the tourism brand. Only those with high relevance to the target audience can deliver the expected marketing results.

8.3.2 Innovative marketing initiatives on TikTok

8.3.2.1 Chengdu & TikTok: bringing Chengdu to the world

Chengdu has chosen the TikTok platform to promote its tourism resources and build a world-famous tourist city. The short videos created on special themes such as “panda” have well represented Chengdu’s image in the world. With its growing global influence, TikTok provides an important short-video channel for Chinese cities to bring their cultural and tourism industry to the world. Many cities have used the TikTok platform to introduce their natural landscape and culture to international friends, in a bid to enhance the city’s popularity and drive tourism development. Chengdu’s tourism management department

attaches high importance to the use of media in promoting the city's tourism brand. Noting the growing popularity of TikTok in the overseas market, Chengdu has constructed a global marketing platform on TikTok, and launched a global international challenge to recruit "Panda Sleeping Officers" in seven countries: the US, UK, Japan, France, Germany, Italy and Spain. The "Panda Sleeping Officer" international challenge is an exploratory effort taken by the Chengdu Tourism Bureau to promote the city's tourism image to the world. "Challenge" is TikTok's most successful marketing project. TikTok users' participation in the challenge drives viewership of the contents and contributes to the city's promotion. At the early stage of the challenge, more than 40,000 global users participated in the event and created about 80,000 videos, and all the videos on the challenge page were watched more than 30 million times, generating 4 million user interactions, and nearly 2,000 people used the official music for filming. The Chengdu Tourism Bureau saw its number of followers jumping from 0 to 10,000 on several of its official TikTok accounts, which secured a solid marketing position for subsequent communication overseas. The TikTok challenge takes full advantage of the immersive experience function of short videos, helping to convey the brand's message in original and immersive forms and expand the scope of publicity with high-frequency presentation. By stimulating user participation and facilitating the interactions between the brand and UGC users, the TikTok campaign builds a bridge that truly connects the brand with the consumers.

In addition, Chengdu has used the massive data resources of the TikTok platform to conduct open-screen and information-flow promotion. In terms of communication strategy, Chengdu pays close attention to the role of the communication subjects in new media marketing, and takes advantage of the celebrity effect of public figures to boost the project's visibility and the city's popularity among tourists. Music challenge also plays a role in facilitating Chengdu's tourism promotion.

8.3.2.2 Indonesia & TikTok: "TikTok Travel" supports destination Indonesia

In April 2019, the Ministry of Tourism of Indonesia and TikTok entered into a partnership to promote the "TikTok Travel" program. As the official social media brand partner of the Ministry, TikTok encourages tourists to upload short videos on the memorable moments of their travels in Indonesia to showcase the country's diverse cultural and natural landscape.

The "TikTok Travel" program has already helped Indonesia promote several of its tourist destinations. Building on TikTok's influence in the field of short videos, the Indonesian

Ministry of Tourism and many of the country's tourist destinations, including scenic spots and tourist attractions, have opened accounts on this short-video platform and launched online challenges, tourism music and stickers. Wonderful Indonesia, TikTok's signature project in Indonesia, became a major partner for media operations and marketing during the 2018 Asian Games in Jakarta. As of December 2018, TikTok had entered into partnership with government agencies in 75 Indonesian cities. In December 2018, the winners of the annual Google Play Awards were announced. TikTok won the "Best App of 2018" award in Indonesia for its contribution in community interaction and user-generated content.

8.3.2.3 Vietnam & TikTok: building a global tourism image

TikTok has partnered with the Vietnam Tourism Board in launching an influential tourism promotion campaign *Hello Vietnam*, which uses short-video contents to help local communities boost their image. Recognizing TikTok's huge advantages in short video and other areas of media communication, Vietnam's government agencies, industry associations and local governments have all been seeking the use of short video and other forms of new media to boost their tourism image and increase the appeal to tourists. In April 2019, TikTok announced a series of cooperation initiatives in Vietnam. The Tourism Promotion Center of Da Nang, a major tourist destination in Vietnam, established strategic partnership with TikTok, under which it will use the TikTok platform to promote the local tourist attractions and encourage tourists to create short-videos on their tours. On May 28, 2019, the Vietnam Community Tourism Association (VCTC) and TikTok signed a cooperation agreement in Hanoi and launched a branded product – CTC Group Tour. The VCTC account aims to promote the tourism products of the association's members to tourist fans home and abroad through TikTok videos, while TikTok hopes to present the beauty of Vietnam to the world with technological and tourism contents and attract the attention of domestic and foreign tourists to the country's historical and cultural landmarks. In June 2019, TikTok signed an agreement with the Vietnam Society of Travel Agents (VISTA), under which TikTok will use its platform to help VISTA members support the development of Vietnam's tourism industry.

8.3.2.4 Spain & TikTok: hotel promotion through innovative marketing

Spain has explored the use of social media platforms and new media channels to promote tourism destinations in recent years. Most notably, Spain's accommodation industry has applied TikTok to hotel marketing and facility designing, and used social media platforms

to learn about the expectation of tourist consumers and develop the best new media strategy for the accommodation industry. During COVID-19, La Asociación Turística de Apartamentos Costa Brava-Pirineu de Girona launched a series of activities to attract young and energetic tourists and revitalize the local tourism industry. Under the new advertising concept Bravitud, it invited TikTok users to redefine the meaning of tourism on the Costa Brava, in a bid to build a strategic position for brand promotion on the TikTok platform.

Meliá Hotels is a typical example of the important role played by social media in promoting and advertising Spain's accommodation industry. Meliá invited TikTok users to join the development of its new social media strategy on the TikTok platform, and, in this process, learned about the expectations and personal needs of the hotel's customer community. It also organized a challenge for tourism and hospitality graduates from Indonesia, Vietnam, Switzerland and Mexico to design an operational strategy on TikTok.

8.3.2.5 Thailand & TikTok: Live Stream Thailand x TikTok Cultural Festival

In recent years, the Thai tourism industry has used TikTok for tourism promotion mainly in two ways. To start with, Thailand sees great value in the huge Chinese fan community on TikTok and hopes to use the platform to introduce the country's natural landscape, customs and culture and attract potential Chinese tourists. At the same time, Thailand has launched the Live Stream Thailand x TikTok Cultural Festival and other online campaigns to promote its tourist attractions, quality cultural services and products, and art culture through the Douyin platform.

The Live Stream Thailand x TikTok Cultural Festival features live-streaming programs on the theme of "Thailand – a wonderful place to visit, to see and to shop" to promote Thailand's cultural and natural attractions, such as Thai dance performances, Thai movies and TV shows, Thai boxing matches, and the most popular tourist spots for Chinese tourists. Thai artists, celebrities and entertainers such as Tisanart Sornsuek and Kanticha Chumma were invited to endorse the event.

8.3.3 Inspirations and reflections

In the era of mobile Internet, short-video-based social media platforms have a large number of users and a solid community base. Catering to people's reading and leisure habits and equipped with mature and advanced big data analysis capability and intelligent recommendation technology, they present a lively image of tourism destinations in both visual and auditory forms. In recent years, short-video sites represented by TikTok have

served as an important platform for showcasing the natural landscape, customs and culture of tourism destinations, and provided an important tool for destination promotion and tourism marketing in the mobile Internet era.

Going forward, the tourism industry could increase the use of short-video sites and other new media platforms to carry out tourism marketing, promote tourism products, and present the tourism image of destinations in the following areas.

8.3.3.1 Generating public interest through new media platforms and restructuring the advertising campaign

New media platforms represented by TikTok are entering the mainstream of communication. They have a large and growing user base and high user stickiness. Therefore, the tourism industry should optimize the advertising structure by shifting away from the traditional models of webpage and TV advertising, increase the output on new media platforms and take advantage of the high usage rate, high exposure and large user base of new media platforms to better promote the image of tourism destinations.

8.3.3.2 Promoting targeted marketing with platform-based big data technology

Short-video platforms represented by TikTok are equipped with advanced big data analysis capability and intelligent recommendation technology. They can keep track of user preferences through big data analysis; and recommend short videos tailored to viewers' demands with the use of hashtag and other intelligent recommendation technologies. The intelligent delivery of tourism promotion products makes it easier to grasp tourist demands and enhances user stickiness. The recommendation of similar products also increases the appeal of tourism image and tourists' willingness to travel.

8.3.3.3 Harnessing the rallying power of KOL to stimulate the creativity of the public

Challenge is an important part of TikTok's localization strategy in countries around the world, and also an important means to quickly build momentum and visibility. When promoting their image, tourism destinations may launch a challenge and other online programs to create popular tourism topics, and harness the rallying power of KOL to generate popular interests and stimulate the creativity of the public. The KOL's celebrity effect can help attract public attention to tourism issues, increase the appeal of the destination's tourism image, and inspire the creation of UGC. Reversely, these original contents can also activate the immersive experience of short videos, and convey the tourism image of the destinations by generating immersive audio-visual enjoyments. The high exposure of the advertising campaign generates public interest and attention for

destinations, and notably increases the influence and visibility of the destination's image.

8.3.3.4 Strengthening “content-based” core competitiveness of short videos

Short video is becoming an important way for the public to record and share the wonderful moments in their life. In the dazzling world of short video products, the tourism industry needs to focus on the core competitiveness of “contents”, ensure the quality of video and other promotional materials, and enhance the liveliness and aesthetic values of short videos in order to increase the appeal of tourism promotional works.

First, further activating the audio-visual function of short videos. Compared with pictures, short video produces a dynamic visual impact and an auditory touch; unlike TV commercials and web video, the limited duration and focus of short videos generate a powerful visual and auditory shock. In the future, tourism promotion and marketing initiatives could better leverage the unique advantages of short video, and use colorful and textured images to present the beauty of natural scenery and local culture, create a mind-blowing experience for tourists, and boost their willingness to travel.

Second, underscoring the brand features of tourism destinations and reinforcing the structure of destination image. Every locality has its own signature tourism resources. In order to stand out among a myriad of homogenized video products, destinations need to focus on their unique tourism resources and tell a good story of their distinctive tourism features. Chengdu has chosen giant panda as its tourism icon, and used the panda's image to cultivate and promote its own tourism image to the world. This unique tourism image continues to attract tourists from home and abroad.

8.4 Innovation in tourism public services in the context of COVID-19: Dubai's exploration

8.4.1 New requirements of tourism public services in the context of COVID-19

The COVID-19 pandemic has caused a huge impact on the global tourism industry. According to the UNWTO statistics, the number of international tourist arrivals dropped by 1 billion, or 74%, year-on-year in 2020. The whole industry lost about US\$1.3 trillion in revenue, more than 11 times the loss incurred during the global financial crisis in 2009. According to the UNWTO report *COVID-19 Related Travel Restrictions*, as of early February 2021, approximately 32% of the world's 217 destinations were completely closed to inbound travel, with over 38 of the destinations in a state of closure for at least 40 weeks.

To bring about an early recovery of the tourism industry in the context of COVID-19,

governments need to take swift actions to contain the spread of the virus, assess the impact of the pandemic on the consumer market, and reshape the image of tourism safety. They also need to coordinate the public service resources in tourism destinations, and ensure the effective supply of public services such as public health, medical protection, public transportation, public facilities and public information to demonstrate their competitiveness in international tourism.

8.4.2 Innovating public services to revitalize destination tourism: the Dubai experience

In recent years, Dubai has rapidly established itself as a major international tourism destination, with a record number of 16.73 million tourist visits in 2019. Tourism's contribution to the country's economy has reached 11.5%, and the *WTTC Cities Report for 2019* ranked Dubai as the third largest international tourism city in the world. The COVID-19 pandemic has dealt a heavy blow to Dubai's international tourism: total tourist arrivals dropped by 67% in 2020; the World Expo has been postponed by a year due to the pandemic; and in March and April, when the spread of the virus accelerated, the hotels in Dubai only had a 10% occupancy rate. Reviving international tourism in the context of COVID-19 is now a priority for Dubai's economic recovery.

8.4.2.1 Rebuilding the image of a safe tourism destination

The best way for restoring consumer confidence after a pandemic is to create a sense of security. Dubai has worked tirelessly to maintain its image as the world's safest tourist destination. First, the outbreak was quickly contained with the "stay home" campaign, plus a region-wide disinfection program and a new vaccination campaign launched in December 2020. Second, strictly regulating tourism facilities. In accordance with the health and safety guidelines set by the Supreme Committee of Crisis and Disaster Management, Dubai Municipality, Dubai Tourism and Dubai Economy jointly launched a compliance program, updated every two weeks, to issue "Dubai Assured" stamps to hotels, tourist resorts and retail establishments that meet the guidelines. Third, releasing information through multiple media channels. From June to November 2020, there were 8,900 pieces of media coverage on Dubai globally, including newspaper, magazine and TV. The Dubai Promise initiative launched by Dubai Tourism provides a list of tourism facilities compliant with COVID-19 regulations as well as information about the government's epidemic control regulations. Last but not least, speeding up international safety certifications. In 2020, Dubai was

awarded the “Global Safety and Hygiene” seal by WTTC, and became the first city in the world to receive the ISO/PAS 45005:2020 international certification, a proof of Dubai’s compliance with top global standards for occupational health and safety management. The preventive measures taken by Dubai’s Roads and Transport Authority to combat COVID-19 have also gained international recognition from Norway’s DNV.GL.

8.4.2.2 Protecting travelers’ safety and security

The safety and security of travelers is a primary focus of Dubai’s tourism recovery. It has adopted the approach of digital management to innovate public services in the areas of transportation, health care and security. First, aviation services. Through the digitized COVID-19 Vaccine Passport, Dubai has reopened its international travel business and joined the IATA Travel Passport program. Thermal temperature scanning, contact point cleaning and non-contact services have been provided, and face recognition technology has been used to assist passport inspection; Emirates Airline offers a special COVID-19 medical insurance for its customers; and vending machines have been installed in the Dubai Airport to facilitate the purchase of personal protective equipment. Second, public transport services. Posters with COVID-19 warning logo and QR codes for the information on preventive measures are available on all public transport facilities in Dubai; a uniform signage board, with visible icons and colors, has been put up in all public vehicles and places to raise people’s awareness of pandemic prevention; a contactless system has been introduced in taxi companies, which keeps record of drivers’ entry and exit through facial recognition. All taxis are equipped with isolators and disinfected on a daily basis. Third, medical services. Dubai has adopted prevention and treatment measures and prepared medical facilities in accordance with the highest international medical standards. It has launched telemedicine and a “universal doctor” service, delivered medication through the Dawaae App to those who cannot go to hospitals, provided mobile vaccinations through the Wellness on Wheels program, and opened drive-through mobile testing centers. Fourth, law and order. The Dubai Police Department provides the residents with smart services through its App and website. It has launched the “Ride with Dubai Police” initiative, inviting volunteers to patrol with Dubai Police, and shared information with the public on COVID-19 preventive measures. Fifth, digital information services. In 2020, Dubai partnered with Huawei in launching a digital transit card covering metro, bus, water bus and other modes of transport; the Abu Dhabi Health Authority and Dubai Health Authority launched the official virus tracking App AlHosn UAE; Smart Dubai provides online

communication and data exchange services for 62 government departments in Dubai to secure seamless connection.

8.4.2.3 Getting prepared for tourism opening in the future

First, sending a positive message to the market. Dubai hosted a series of online conferences covering extensive fields during COVID-19 to maintain communication with the rest of the world and send a positive message to the global market. In May 2021, Dubai hosted the hybrid Arabian Travel Market at the Dubai World Trade Center as its official partner, and demonstrated its efforts to rejuvenate the international travel and tourism industry based on the theme of a new dawn for travel and tourism. Dubai also hosted the 5th WCO Global AEO Conference, a seminar focusing on the leisure sector, “Trust in Tourism 4.0: How Dubai Adapted to Welcome You Back” and other events, and held a number of in-person exhibitions, including Gulfood and the Gulf Information Technology Exhibition 2020, on the condition of safety and security.

Second, keeping close ties with the market. Dubai has built platforms in several countries to deliver Dubai’s security message and conducted targeted marketing campaigns on major tourist sources. Emirates Airline promoted Dubai in the UK and key European markets using TV, social media and other means, and posted Dubai travel updates on its official website. Dubai Tourism partnered with Easyvoyage.com, a French online travel agency, to develop tour packages; created the “Dubai Within Reach” video series in cooperation with the US travel website Passport; worked with Microsoft Teams, Zoom and other software companies in launching 12 Dubai-themed chat backgrounds that can be downloaded free by global users; partnered with Snapchat to introduce Dubai’s famous landmarks to the App’s British and French users through AR technology; presented Dubai to the global gaming audience in VOLTA soccer mode in cooperation with Electronic Arts; distributed the Lego kits on Dubai’s iconic buildings and Dubai-themed exclusive games to 18 major international markets, and invited over 350 influential public figures to tell the Dubai story in 14 different languages.

Third, boosting the expertise of human resources. During the pandemic, Dubai increased the availability of online education resources to help tourism professionals enhance their skills. The Dubai College of Tourism, an affiliated institution of the Dubai Department of Tourism and Commerce Marketing, provided training courses on the “Dubai Way” platform, including the course of “Chinese Traveler Standards” tailored for the reception of Chinese tourists, and free courses on food safety and information security.

8.4.2.4 Targeted marketing and tourism product innovation

First, marketing and event planning on pandemic response. Dubai Tourism launched three marketing campaigns respectively in April, July, and October 2020, i.e. “Till We Meet Again” on the theme of hope, “Ready When You Are” on the theme of commitment, and “Live Your Story” on the theme of “Only in Dubai”, in an effort to make Dubai a must-visit destination and the first place to go when travel restrictions are lifted. Dubai Tourism also designed a marketing campaign on the theme of tourism festivals in 2021, including Diwali, Eid al-Adha, Summer Surprise and Home Festival, and planned to hold the Dubai Fitness Challenge, which will turn the whole city into a special runway and promote a healthy lifestyle to improve people’s physical health.

Second, innovative designing of tourism products. According to the analysis of tourism consumption trends in the *Dubai Tourism Annual Visitor Report 2020*, Dubai adjusted its image as a destination providing adventurous and exciting tourism experience, but instead focused more on the features of safety, convenience and innovation, and stepped up the development of business, medical, family and creative tour products. Adapting to the growing amount of online work during the pandemic and taking full advantage of its location as a transportation hub and streamlined entry policies, Dubai launched virtual work programs based on its digital infrastructure and leisure living environment to attract sojourners, and provided education, insurance and other services to ensure they can enjoy a safe life in Dubai while working for their employers. The upgraded healthcare system during the pandemic has enhanced the quality of medical tourism in Dubai. The city has also stepped up the development of alternative medicine, stress management and other wellness programs, and launched the “Retire in Dubai” campaign. The development of family-oriented leisure tourism programs, underpinned by new marketing campaigns, has turned Dubai into a popular destination for family vacation. In the meantime, as part of the efforts to implement the *Dubai Creative Economy Strategy* launched by the Department of Culture and Arts in April 2021, Dubai has accelerated the development of cultural heritage museums, historical sites, archives, libraries and the video game industry, and established itself as a most favored destination for creative artists from around the world.

8.4.3 Inspirations and reflections

8.4.3.1 Constructing a flexible and efficient public service supply mechanism

To cope with the crisis caused by public health events, the tourism industry needs

to make rapid innovation in the supply models, contents and mechanism of public services. First, quickly setting up a cross-sectoral cooperation mechanism, strengthening comprehensive supervision and joint law enforcement in dealing with emergencies, and providing the public services needed for rejuvenating the tourism industry and ensuring tourism safety. Second, taking advantage of the digitization of public services to build a smart data platform containing information from multiple sectors, such as transportation, security and health, and ensuring timely allocation of resources and data-based management, decision-making and innovation to improve the government's emergency preparedness. Third, enabling the high-quality and remote supply of public services through human-machine collaboration, and providing contactless public services such as online medical treatment, robot patrol in public places, rapid verification of personnel identity via AI technology, and intelligent voice interaction. Fourth, encouraging public participation in the supply of public services, activating the function of social autonomy, and pooling the strengths of public entities through non-governmental organizations such as associations and volunteer groups. Fifth, deepening government-business cooperation. The tourism management department needs to strengthen cooperation with platform companies to carry out targeted tourism marketing by sharing big data; the health department and commercial medical institutions need to forge public-private partnerships to improve the public health service system.

8.4.3.2 Adapting to consumer changes with image reconstruction and product innovation

Reconstruct the image after a public health event is the best crisis PR, and the first-order priority for the government and tourism department of the destination. Making scientific assessment of the event's impact on the tourism market and initiating crisis marketing at the earliest possible opportunity could help tourism destinations seize opportunities out of the crisis. First, making every effort to shape and communicate the image of safety, increase market exposure and information transparency through multi-channel news coverage, provide timely information on the safety of tourist destinations and tourist reception facilities and the precautionary measures adopted, and seek authoritative international certifications to give tourists confidence. Second, conducting quick analysis of market trends to create a new image and launch new tourism products consistent with market trends, gauging the impact on consumers at different stages of the public health event and organizing interactive marketing campaigns in line with the development of the

situation, increasing the application of UGC in marketing, and reaching out to different types of market players in major tourist sources to conduct tourism promotion on multiple platforms and in multiple formats.

8.4.3.3 Ensuring unimpeded information transmission and providing efficient information services

Releasing positive information holds the key to restoring the relationship between the tourism destination and its partners after a public health event. By securing unimpeded information transmission, the tourism destination will be able to properly guide the mainstream opinion in the market, and keep track of the external changes on a real-time basis in order to take targeted measures to regain market share. First, releasing public information. Transparent information enables the destination to build closer ties with the information recipients, improve their sense of security and confidence, prevent the spread of rumors, and shape a positive public opinion and favorable image. Second, ensuring unimpeded information publication. The tourism destination needs to build an official and authoritative platform for information release, make full use of social networking, communication and other media to establish a communication network with the official mainstream media as the main source of information and new media as communication nodes, and pay greater attention to the cultivation of fan community on social media. Third, building an interactive information platform for promoting exchange and cooperation. Through online international conferences in various fields, the tourism destination can interact with its major partners, and get first-hand information on the development of the tourism industry; cooperate with market players in tourist sources to build a tourism information platform that directly serves consumers, and use the online platform as well as VR, AR and other technologies to disseminate information across time and space.

8.5 New retail business and destination innovation: the case of Changsha City, Hunan Province, China

8.5.1 The evolution of urban tourism and the opportunities presented by new retail business

The transformation of the city's tourism function, from a tourist source to a tourism destination, and from the tour of natural landscape and scenic spots to the experience of culture and life, is closely related to the evolution of urban functions and the innovation and development of urban industries. Commercial prosperity makes better city life. The

development of new retail services in the context of the Internet economy has changed the traditional model of retail business in the city, stimulated the city’s vitality, and profoundly impacted on the innovative development of urban tourism destinations.

New retail is a new business model that seeks innovation in the retail industrial chain through the application of new technologies such as IoT and big data and the generation of online+offline sales & marketing and efficient logistics. New retail business is marked by the features of fast speed, non-conventional scene and ecological empowerment. This data-driven business model has shifted its focus from web traffic to customer needs. By rearranging the factors of “people”, “goods” and “field”, it stresses the need of finding the right consumers for the products and providing customized and personalized products and services. The urban tourism experience is characterized by the interaction between tourists and various elements of the urban environment. The development of the new retail model enhances the participatory experience of tourists in various business scenes, and thereby expands the functions and contents of urban tourism.

8.5.2 New retail innovation increases the value of urban tourism experience: the practice of Changsha

Changsha is a major city in central China and a famous historical and cultural city. It is home to many famous tourist attractions such as Yuelu Academy and Orange Isle. The development of new retail business has contributed to the consumption upgrade of Changsha. By switching to the new economy, Changsha has achieved phenomenal growth in visibility and successfully cultivated the image of a “happy home” for young people. As a result, the value of the city’s tourism experience has rapidly increased.

Year	Changsha		Nationwide	
	Sales volume (billion yuan)	Over the previous year (%)	Sales volume (billion yuan)	Over the previous year (%)
2020	4469.76	-2.6%	391981	-4.8%
2019	5247.03	10.1%	411649	8.0%
2018	4765.04	9.9%	380987	9.0%
2017	4547.68	10.5%	366262	10.2%
2016	4117.4	11.6%	332316	10.4%

Table 8.1 Total retail sales of consumer goods, Changsha vs. nationwide
 Source: Changsha Municipal Bureau of Statistics & National Bureau of Statistics of China, Statistical Bulletin 2016-2020

8.5.2.1 Opening new space for urban cultural experience

New retail aims to create a new consumption model, and the brick-and-mortar stores seek to foster an atmosphere that gives consumers a “real sense of experience”. Changsha’s new retail businesses are adept at integrating the city’s culture into the business environment and creating unique IPs, which not only helps them build a stronghold in business competition, but also inspires the innovation in the city’s business culture, enriches the cultural consumption and experience, and expands the channels for promoting the city’s culture.

Wenheyu, a shopping center famous on the Internet, is a typical example of the new retail business in Changsha. It features a vintage, movie-style setting of Changsha in the 1980s. By restoring the look of the old town, the Wenheyu rekindles the childhood memories of the 80s and 90s generations, and brings to life the historical scenes that the millennial generation knows about only on the TV screen, thus meeting consumers’ demands for a shopping experience that they can emotionally associate with. In order to create a rich cultural atmosphere, Wenheyu has set a high threshold for merchants. They must be able to represent the local culture, and have an exclusive brand, which means no chain stores will be accepted. They must be up and running for at least ten years and still active in business. Wenheyu designs the background scene that facilitates the display of products and creates an immersive shopping atmosphere for the merchants. Consumers gather at Wenheyu to take photos and share them on social media, which also contributes to the spread of the Wenheyu brand itself.

By upholding the “city’s values” and promoting nostalgic cultural marketing and preservation of urban culture, Wenheyu has embraced the aesthetic forms of the contemporary times, and given new life to the traditional culture. The experience of Wenheyu shows that new retail is no longer as simple as creating a new business environment. The designing of the image and scenes of new retail stores and the interactive models all need to be underpinned by the city’s culture, while new retail also gives new vitality to the traditional urban culture and enhances the value of urban experience. In the meantime, new retail places greater emphasis on the harmonization with the city’s values, making the business and the city truly integrated into one. The “city” truly becomes the appeal factor of the urban destination, the new landmark in the urban landscape, and the new business card of urban tourism.

8.5.2.2 Creating new scenes of city life

New retail stresses scene-based marketing, displaying innovative products to consumers through advanced intelligent technologies and means. It promotes the image and brand propositions of the companies, and presents a new way of life to consumers. It also enriches the scenes and contents of the urban life experience enjoyed by the visitors.

The first-store concept is in essence the innovation in goods and services that inspires new consumer trend and stimulates consumer demand. Under the new retail model in Changsha, the first stores set up by established brands have provided the locals with a valuable life experience. The 7FRESH Supermarket, which opened its first store in Hunan, has created a new retail format combining the functions of shopping and catering, and launched a delivery service covering the store's neighborhood; JackPet Changsha is the world's first version 3.0 flagship store. Through the cultivation of functions such as pet hospital, pet boarding, pet training and pet food customization, it provides a diversified space for emotional connection between pets and their owners; Neobio, the first landmark amusement park in Changsha, provides aesthetic nourishment to children by creating an immersive scene for parent-child interactions and blending art design with fun play; the Suning Cloud Store at Wuyi Square is the first "intelligent life experience center" in Hunan and a brand new experience store combining online and offline operations. It gives consumers the opportunity to experience trendy, personalized intelligent and customized products, and features a variety of life scenes in the game experience section, open-shelf experience section and smart home appliances experience section.

New retail has constructed a novel and culturally-sophisticated scene of leisure consumption, and blended artistic expression with individual demands to create an immersive sensory experience. By generating a feeling of empathy, the commercial space is better tailored to the living, shopping and experience needs of people in the modern world, and the city also gets an extra human touch with increased dynamism, diversity and variety for tourism.

8.5.2.3 The integration of business, culture and tourism increases the city's appeal

Under the new retail model, Changsha has embarked on a wider path of business, culture and tourism integration. The obscuring boundaries between shopping, culture and tourism consumption creates tourism attractions with unique appeal in the city. The outlets of the local coffee brand, Wing Cafe, on Huangxing Road Pedestrian Street and in Orange Island, have become popular tourist attractions in Changsha for their coffee machines,

which are inscribed with life quotes like “enjoy a cup of coffee, make a friend” (written in local dialect words) and old photos of Changsha such as the Yuelu Academy, the Fire Palace and Orange Island. Every cup of coffee is connected to an episode of the city’s past, and the coffee machines have become the meeting place of the old and new Changsha. They have grown famous on the Internet and provided a popular photo spot for both the locals and tourists.

The new tourism retail model promotes the integration of cultural tourism and business, and improves the tourist’s experience. Changsha Royalroom is a physical store providing both the function of tourism and the opportunity to try and buy imported latex bedding products from Thailand. Born out of a travel agency, it is the first social media-based new retail tourism business in China. In order to meet the new consumer demands and maximize the value of physical stores, Royalroom has fully leveraged the experience and advantages of the travel agency and targeted at Chinese consumers’ demand for imported value-for-money products by combing the functions of travel agency, product exhibition, product experience and tourist training. By creating the necessary business environment and displaying the cultural features of the products, this new tourism retail model has satisfied consumers’ demand for cultural and shopping experience and buying imported products in Thailand’s tourist destinations. The “tourism service enterprise + business” structure of the new retail model enables consumers to book package tours and buy tourism products in the destination, and also enhances their experience of the destination’s culture.

8.5.3 Inspirations and reflections

8.5.3.1 Reconstructing the image of urban tourism destinations

The new retail model has changed the perception of tourists towards the image of urban tourism destinations. As the evolution of global cities shows, cities in the pre-industrial era were areas of intensive human activities dominated by service and commercial functions, while cities during the industrial era were regional industrial manufacturing centers, and in the post-industrial era, cities have returned to their status as centers of trade and services. The city’s tourism function and image are also evolving. Famous historical and cultural cities and cities with a sound natural landscape have the first-mover advantage in urban tourism development. However, when people form their perception of these urban destinations, they tend to focus on the city’s attractions, landscape and festivals. Although

Consumers are most interested in video streaming and live sports; gaming will benefit from rising 5G adoption

Which of the following do you already have or would consider adding to your mobile subscription?
(Percentage of respondents)

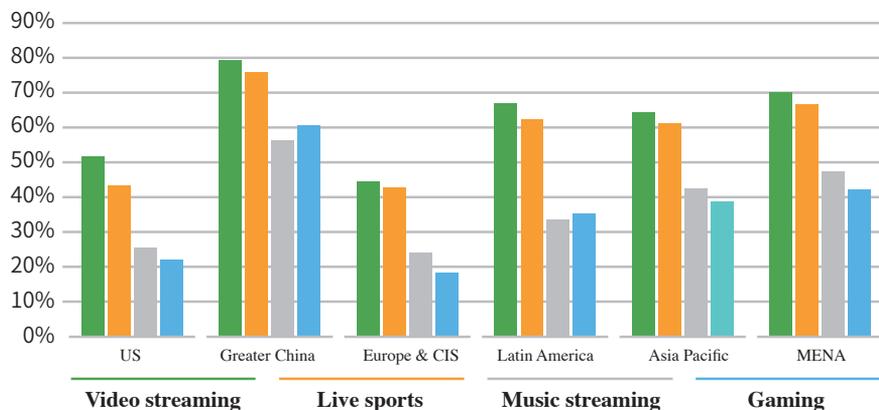


Figure 8.9 Consumers are most interested in video streaming
Source: GSMA (Global System for Mobile Communications Association),
Mobile Economy 2021, June 2021

there are also cities with the image of shopping paradise, people tend to pay more attention to factors such as the brand, diversity and price of the products. The rise of new retail has fundamentally transformed the business model and commerce function of cities. By underscoring the integration with the city’s culture and the focus on life scenes, new retail is expected to reverse people’s deep-seated perception of urban destinations. With new retail playing a visible role in shaping the city’s image, cities with a booming new retail business have also grown famous on the Internet.

New retail can also help promote the image of urban destinations. New pathways are opening for the communication of culture in the age of Internet. The creation of new media forms such as WeChat Moments, Weibo, Douyin and Xiaohongshu has made it possible to quickly communicate the city’s image. The development of short-video streaming media, complemented by the immersive designs of new retail scenes, allows consumers to capture the city’s unique features and create amazing photos and videos, and enables the tourism destinations to conduct word-of-mouth marketing in lightening speed. The growing reputation of cities on the Internet also increases the visibility and influence of tourist destinations.

8.5.3.2 Energizing urban tourism

New retail is a new vehicle of city-wide tourism. Without the need to open in commercial centers, new retail businesses can be evenly distributed in the city. As a

result, the retail industry is less constrained by space but holds the possibility of “infinite scenes”. Traditional stores, street vendors and even street-side flash stores can all become new retail scenes. The availability of physical spaces of different sizes and styles provides consumers with an ideal place for tourism experience, social networking and living, and thus contributes to the development of city-wide tourism.

New retail is also the new black in the urban tourism market. While urban tourism based on traditional attractions and traditional means of exhibition lacks appeal to young people, the cultural and creative elements and customized and personalized features in the designing of new retail products make them highly popular among younger consumers. By launching IP products in partnership with different museums, and through the creative interactive experience generated in offline theme stores, online KOL and KOC promotion, video content interaction, and fun copywriting, the new retail business delivers differentiated scenes and a unique lifestyle to young people and stimulates the vitality of urban tourism.

8.5.3.3 Improving the structure of tourism consumption

First, new retail stimulates growth in consumption and generates stronger purchasing power. By meeting consumers’ needs for convenient shopping, new retail not only retains the consumption of the locals, but also attracts the consumption of tourists. The increase in tourism shopping, which is flexible in nature, improves the low proportion of shopping revenue in tourism income. New retail creates a variety of consumption scenes and enhances the public’s consumption stickiness. Through the construction of a platform covering all consumption channels and based on the multi-channel entrance setting at the front end of the new retail business, shopping has been made much easier for urban residents and tourists. Physical stores are no longer just a place for shopping, but also a place where consumers can go and experience life, which gives them greater motivation to spend.

Second, new retail increases the added value of goods. Through newer application scenes and enhanced audiovisual experience, new retail takes consumption to a higher level of convenience and intelligence. By applying technologies such as VR and AR, consumption scenes are now more responsive to consumers’ choice of life and the focus of tourism consumption has shifted from buying products to shopping experience and onward to lifestyle experience. Tourism consumption in urban destinations is no longer just about buying tickets to tourist attractions, but also about the experience created by new retail business. As an important part of urban tourism consumption, new retail has taken

consumption into new fields and boosted the added value of retail goods.

8.5.3.4 Increasing the value of urban experience

First, new retail increases the value of comprehensive experience in cities. The tourist experience of traditional tourism cities is mainly centered on historical monuments, urban landscape, and leisure facilities, which focuses on cultural, entertainment and aesthetic values. New retail gives cities greater commercial and economic values, allowing tourists to enjoy a more comprehensive experience defined by the diversified city values. New retail generates opportunities for the innovative development of various commercial businesses in cities. By introducing IPs such as fashion, nostalgia and culture, promoting the integration of business and culture, and exploring business opportunities in the entire urban space, it presents tourists with the city's diverse culture, and a one-stop experience of shopping, food, entertainment and sightseeing in the city.

Second, new retail makes the life experience in cities smoother. From subsistence consumption to enjoyment consumption, the consumption structure has changed significantly, and experiential consumption is rapidly increasing. Harnessing the power of “Internet+”, new retail seeks to maximize the value and effect of experience with real and virtual scenes based on its own product orientation and market segment. It combines the online model of digitized operation and the offline model of intensive operation, and delivers visualized and scene-based shopping experience through technological means. By creating specific shopping scenes and adopting unique marketing methods, new retail touches upon consumers' emotions, improves their “psychological accounts”, and provides a smoother urban life experience for tourists.

8.6 Organizational innovation of tourism enterprises in the digital age: the exploration of BTG Homeinns Hotel

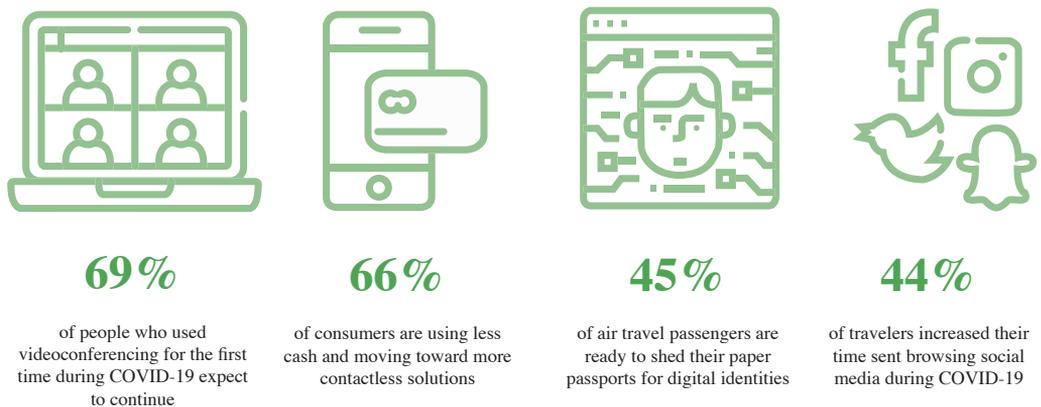
8.6.1 Challenges for the organizational innovation of tourism enterprises in the digital age

Enterprise organization refers to the rational allocation of human resources and effective division of labor under the common goal of the enterprise. It is the basic guarantee for the implementation of corporate strategy. The changes in the enterprise's external environment and the different industries to which the enterprise belongs will have different impacts on the behavioral pattern of enterprise organization. The organizational behavior of tourism enterprises is best characterized as “external engagement and internal integration”.

Enterprises need to grasp the distinctive features of consumer demand, and at the same time integrate the internal resources to ensure the supply of services in a way that reflects the coordination and efficiency of the organization.

The Internet of Everything in the digital age is changing the behavior of society, enterprises and individuals, and tourism consumption is becoming more diversified, complex and personalized than ever; digital technology also promotes the shift of the business logic of tourism enterprises, which directly drives organizational change and innovation. Tourism enterprises need to strengthen digital transformation, improve the learning ability and responsiveness of the organization, and establish a new type of organization that is open, adaptive and resilient in order to cope with the rapidly changing tourism consumer market, gauge, answer and meet customer demands in real time, and build a competitive edge for enterprises under the digital economy.

Digital technologies are on the rise...



...requiring changes in the sector

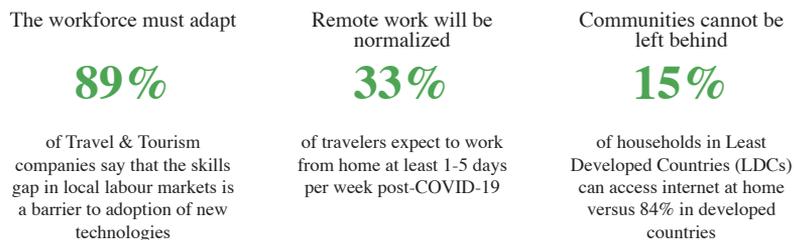


Figure 8.10 Digital applications beyond the pandemic (telemarketing, contactless, digital identity information, etc.)
Source: WTTC, To Recover & Beyond the Future of Travel & Tourism in the Wake of COVID-19, 2020

8.6.2 Practices of organizational innovation in response to new consumer demands: the case of China's BTG Homeinns Hotel Group

The BTG Homeinns Hotel Group, formed through the merger of the former BTG Hotel Group and Homeinns Hotel Group, owns some 20 accommodation brands, and provides a complete range of mid – to high-end hotel products including business hotels, resort hotels and alliance hotels. As of September 2020, the group had more than 4,000 hotels in China, covering over 400 cities. In the spirit of openness, inclusiveness and cross-border innovation, the BTG Homeinns Hotel Group has successfully updated its accommodation-based product line through organizational innovation and integration of products, members, information, value and other resources in the process of digital transformation, delivering value-for-money services, products and brand values for partners and guests.

8.6.2.1 Effectively enhancing organizational functions

The basic function of hotel enterprise organization is to provide efficient guest services through effective division of labor and cooperation. In the digital age, the traditional service process and organizational structure can no longer adapt to the rapidly changing market environment, and even pose obstacles. The digital transformation of the organization is to reconstruct the business process and organizational structure driven by demand, expand the content of services, and strengthen the organizational function.

The intelligent hotel IOT master control platform (PIOS, also known as Wenshu intelligent platform) is a hotel management platform launched by BTG Homeinns. Overcoming the deficiencies in the efficiency-centered business process of the original PMS management system, PIOS takes guest demand as its guide. Empowered by the platform's data collection and analysis feedback capabilities, the whole process of guest accommodation and hotel operation gets digitized. The digitized full-stack model makes it possible to explore and establish the correlation between various business units and reconstruct the business process for maximum guest experience. PIOS has fully optimized and enhanced BTG Homeinns' decision-making, management and execution functions. Through data analysis, the senior executives can gain a deeper understanding of market trends and customer needs, and make scientific decisions, which increases the organization's decision-making efficiency. In operation management, a new pathway for transmitting information between various departments has been established. The real-time

sharing of business data between the production, procurement, marketing and inventory departments establishes real-time communication between various departments and notably improves the speed of service response; at the same time, through the analysis of the hotel's business data, the advantages of bulk purchasing in the same region can be better utilized, which reduces the hotel's purchasing costs and guarantees the quality of purchased products; cost control also becomes more effective. With real-time update on the gap between the actual cost and the budget, timely measures can be adopted to improve the situation. The profiling of hotel guests based on the platform's customer management data also keeps front-line staff informed about the unique demands of the core customer groups in key regions, so that they can properly grasp the personalized demands of the guests and provide customized and tailored services.

8.6.2.2 Comprehensively improving organizational capabilities

First, strengthening the organization's ability to integrate and allocate resources. By reorganizing the intelligent systems running in separate locations, PIOS has served as the intelligent brain of the hotel group. The data model of PIOS is calibrated and operated based on the hotel's geographic location and surrounding environment, the maintenance conditions of the hotel equipment, the daily consumption pattern of the guests and the objectives of hotel management, which makes the platform more intelligent. The practice of problem-solving management, centralized control and intelligent operation reduces the amount of management work at the backstage, and brings hotel facilities and service management in line with market demands and the hotel's operational goals.

Second, enhancing the organization's service capacity. Through digital management, BTG Homeinns has enhanced the efficiency of hotel operation, including 24/7 real-time feedback on customer complaints, processing of resumption-from-leave declaration within 5 minutes, and activation of hotel promotion within 1 hour. There has also been notable improvement in the hotels' occupancy time, cost control for room supplies, average number of monthly price adjustments, effective date of adjusted prices, response speed to customer reviews, time gap between the application and activation of promotion campaigns and employee-hotel room ratio. In November 2020, the BTG Homeinns launched a one-stop check-in system on the theme of "Courtesy", under which hotel guests could experience speedy check-in and check-out services with the guidance of M.A.G.I.C. butlers; the hotel group has also launched a "Local Life" function on its App, creating a digital portal of one-stop consumer

services by sending information about food, travel, tourism, shopping and entertainment in the hotel's vicinity to meet the complex and diverse leisure needs of travelers.

Third, improving the organization's rapid response capability. Based on data analysis, BTG Homeinns monitors changes in data traffic within the business district in real time, and pre-sells hotel products. When market prices fluctuate, the one-click price adjustment function is activated to make timely and direct modification of product prices, and publishes them across the network in lightening speed. With the price warning function, BTG Homeinns is able to receive information about changes in prices and inventory of competing hotels within 15 minutes, and make corresponding adjustments to increase the competitiveness of its products.

8.6.2.3 Building an open organization system through innovation

Hotel is an open organization influenced by both internal and external environments. In the context of the digital economy, an open organization system brings hotel companies closer to their customers, employees, guests as well as governments and industries to jointly create the values of the organization. Through digitization, BTG Homeinns has been able to provide a more open working environment for employees. They can arrange tasks based on data rather than instructions from their superiors, and fully utilize their own judgment and wisdom in guest services, which makes it easier for them to bring their creativity into play; because of digitization, the investors, shareholders and suppliers of BTG Homeinns are now better informed of the hotel's operation. They can access information and make judgement about the hotel's operation conditions in a timely fashion, and take proactive measures and adjust the business models accordingly; also during the digitization process, BTG Homeinns has gradually established the criteria for building smart supply chain, and launched the index of smart hotels, playing an exemplary role in leading the industry's development. Through the digital management system, the brand owner has gained multiplied values, the suppliers have achieved growth based on service quota, the investors have made profits out of their investment, the employees have gained a stronger sense of fulfillment through more autonomous actions, and the customers have also benefited from the sharing of experience. All the stakeholders exchange information, knowledge and technology in the open organization, and create values and share benefits together.

8.6.2.4 Fully demonstrating the flexibility of the organization

Most of the guests of BTG Homeinns belong to the 1980s and 1990s generations. They aspire fashion, trend, personality and change, and like shopping online. BTG Homeinns

maintains frequent interaction with its users from the angles of emotional association, consumer privileges and after-sales services through channels such as WeChat mini-program and App to secure the average daily user activity as well as the activity of 40% of annual members. Building on its huge membership, BTG Homeinns records and shares the memorable stories of hotel customers, and uses emotions as a bond to maintain customer relations and translate the interest expressed by the customers online into physical experience offline; the membership privilege system has been redesigned based on the distinctive features of hotel products, with a focus on five privileges, i.e. “leisure privilege, parent-child privilege, growth privilege, basic rights and benefits, and business travel privilege”. Hotel members are now provided with more suitable product designs, and the composition of membership points and the scenes in which the points can be redeemed have both been expanded; measures such as shorter advance period for hotel booking, self-service real-time refund, and online+offline room selection have reduced the waiting time of guests during order placement, room selection and check-out.

In order to respond to consumer demand more flexibly and quickly, and increase the transparency of product and service information, BTG Homeinns has freed itself from the dependence on offline intermediaries and established a central reservation system (CRS), which is directly connected to travel distribution systems such as Fliggy, Tongcheng-Elong, Ctrip, Lvmama, Qunar and Agoda and uses the database of the central management center to unify the room pricing, price promotions, room availability and other information of its branded hotels and ensure real-time control of the information on room prices and availability displayed on various distribution channels. The complete report produced based on data analysis assists hotels in analyzing and managing booking activities, and achieving seamless connection between various service systems. Individual guests and members can log on to the website of the hotel group to book rooms in each hotel and check the membership points they have acquired, redeemed or used. The hotels will strive to make sure that both their products and services stay online at all times.

8.6.3 Reflections and outlook

8.6.3.1 A “management + empowerment” organization is taking shape

In the digital era, data is an important productivity, a strategic and fundamental resource for enterprises, and a major engine for organizational innovation. Digital transformation of tourism enterprises is not only conducive to the improvement of management efficiency, but also contributes to the metamorphosis of organizational capabilities.

Enterprise organization in the digital era uses data that records phenomena, describes facts and predicts the future to facilitate decision-making, management and execution, which changes the organizational structure and management model of the hierarchy system. With data becoming a core asset of enterprises, data flow determines logistic flow and capital flow. Empowered by technology, it is able to locate the deeper customer value contained in data and apply it to the process of product development, marketing and operation, thus enhancing the organization’s ability to integrate and allocate resources and pursuing more efficient management.

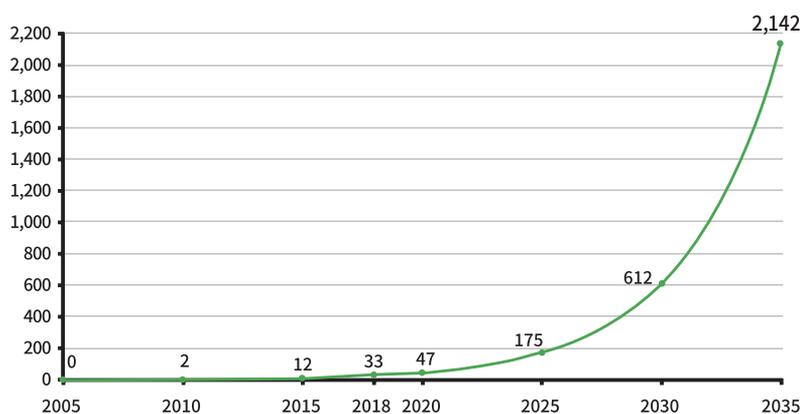


Figure 8.11 Data generated globally year-by-year (zettabytes)
 Source: Digital Economy Compass 2019, Statista, July 2019

Sharing digital information is the basis of organizational empowerment. The digital transformation of hotel enterprises makes it easier to share information within the organization, allowing each member of the organization to obtain fuller information, thus clarifying their respective responsibilities and facilitating smarter decisions. It will improve the efficiency of the organization, and increase the dynamism of the enterprise. In the meantime, digital transformation also facilitates the sharing of external market information, and promotes the building of learning organizations. The members of the organization will become more creative, more responsive to the external environment, and better able to make the right decisions. The motivation in value creation also increases the competitiveness of the organization.

8.6.3.2 Organizational update and iteration picks up speed

In the digital era, consumers’ personal expression has become a reality, and consumers’ right to choose products and services has further increased. Hotel companies are facing a consumption pattern driven by personal demands, and confronted with greater pressure

and challenges than before. As customer operators, hotel enterprises need to follow the principles of “timely observation, real-time response and all-time satisfaction”, and quickly switch from a business model based on the “product logic” to one based on the “customer-centric logic”. The transformation from large-scale production to personalized customization will also become inevitable.

Attribute	Traditional scenario planning	New scenario envisioning
 Change focus	Possible future changes	Lasting and secondary/ downstream impacts of existing shock-induced step changes
 Mindset	Extrapolation based on anticipated trends	Non-linear/reordering based on known shocks
 Key inputs	Insights from historical trends and industry dynamics	Insights from past crisis, forward regions in existing crisis, and current situational awareness
 Required situational awareness	Periodic, low-frequency	Real-time, high-frequency
 Methods	Traditional analysis and ideation	Experience enhance, including storyboarding

Figure 8.12 Traditional scenario planning vs. New scenario envisioning
Source: IBM Institute for Business Value, *Resilience in the New Age of Risk*, August 2020

Digital technology has changed consumer behavior, shortened business operation cycles, and placed companies in an environment of high-frequency competition. Faced with personalized demands and diversified choices, hotel enterprises have to quicken the decision-making cycle and speed up the launch of new products, improve the timeliness of services, and increase the efficiency of financial settlement to cope with a market of high uncertainties. They are forced to improve their resource integration capabilities and operation process through organizational iteration, and build their core competitiveness in the data environment.

8.6.3.3 Customers participate in co-creation of values

In the digital era, the connotation and driving force of the “external engagement and internal integration” organizational model of tourism enterprises have gone through fundamental changes. With the evolution of the enterprise-led single-wheel model into a two-wheel model involving both enterprises and users, the product innovation of hotel enterprises has also become a process of enterprise-customer cooperation in value

creation. In the process of digital transformation, the roles of enterprises and consumers have changed. They have moved beyond a simple buyer-seller relationship and forged a mutually beneficial partnership. The opinions of the consumers have become an important driving force for product innovation. By acquiring timely information on consumer needs and accessing authentic customer reviews in real time, the enterprises can improve their products accordingly, and speed up the iteration of products.

Openness, borderlessness, interactivity and other features of hotel's organization activities have amplified the innovation values of enterprise organization, yet in essence, it is still aimed at generating maximum values for the enterprise and consumers. In an open organization, hotel enterprises can keep track of the value demands of customers in real time. By improving the service process and business model, they can enhance the value of their services and present their own values, and effectively deliver these values to the target users by way of sharing, so as to serve the target users' pursuit of value and generate a satisfactory user experience.

Notes:

26. Sensor Tower Mobile App Data Analysis: <https://sensortower-china.com/?locale=zh-CN>

27. <https://cloud.tencent.com/developer/news/838095>

28. Piper Sandler: Suvey of US Teens Fall 2020 <http://www.199it.com/archives/1138371.html>

29. <https://www.amz123.com/thread-398480.htm>

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