International Journal of Advanced Multidisciplinary Research and Studies

Current Status of Vietnam's Tourism Industry in the Context of Digital Technology Application

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Abstract

In recent decades, the development of the Internet and the transition to a digital economy have had a profound impact, changing many aspects of social life, including tourism. Besides the traditional way of operating, the tourism industry has made changes to keep up with modern trends, such as using technology to promote its image, find customers and provide utility services. Starting from the above mentioned practice, in this article, the authors will research the current state of the tourism industry in the context of digital technology application, from there, we propose some recommendations to improve the quality of current tourism.

1. Introduction

For more than two decades, the global travel industry has been at the forefront of digital innovation and it is also leading the evolution of the business ecosystem, becoming one of the fastest growing sectors in the world (UNWTO, 2018) [1], making an important contribution to socio-economic development. In Vietnam, the Prime Minister's decision to approve the strategy to develop Vietnam's tourism until 2030 has raised solutions for applying science and technology in the tourism industry, including accelerating the transformation of tourism and applying digital technology in the tourism industry to connect and increase experiences for tourists; expand service provision combining physical and digital tourism channels; Maximize use of electronic transactions in tourism activities; At the same time, develop a smart tourism ecosystem; promotion, advertising, branding; Managing tourists and tourism activities, tourism resources based on the application of science, modern technology and digital technology platforms [2]. Technology applications in the field of tourism such as cloud computing, Blockchain, Big data, 3D technology, virtual reality technology and augmented reality, Internet of Things, social networking sites... are increasingly popular.

Currently, Vietnam's tourism industry has been achieving certain achievements, with growth prospects in the number of international visitors, competing with Singapore, Malaysia and even Thailand. It can be seen that Resolution 08-NQ/QD of the Politburo [5] on considering tourism as a key economic sector is a guideline to help localities proactively upgrade telecommunications infrastructure, Technical facilities; diversify products and access many markets. Moreover, state tourism management agencies, management boards of tourist attractions, tourism businesses, and tourists have applied digital technology in tourism management, business, and tourism experiences to keeping up with the trends of the times, going from digitalization to digital transformation and digital invention and has brought about some positive changes. On the one hand, technology contributes to building destination image in many diverse and impressive ways; On the other hand, technology helps businesses increase sales, demonstrating the added value of businesses in satisfying tourists. Therefore, the tourism industry needs to promote the application of digital technology for stability and development.

Applying digital technology in tourism is a topic of interest from state management levels to businesses as well as tourists because of the benefits digital technology brings. Currently, there are a number of studies on the application of digital technology in the field of tourism as follows: Le Trung Cang, Tran Ba Tho (2021) [4] with the study "Digital transformation for tourism industry development Vietnam: Role and policy solutions". The study has highlighted the advantages of digital transformation in economic development, including tourism. Digital transformation plays an important role and the development trends of digital transformation for Vietnam's tourism industry serve as a basis for providing solutions in digital

transformation of the tourism industry. Nguyen Minh Chau (2023) [6], "Tourism development in the context of digital transformation in Vietnam". The study has highlighted some of Vietnam's potential and favorable conditions for tourism development as well as some contributions to the economic development of Vietnam's tourism industry; Raises opinions and policies to develop Vietnam's tourism industry in the digital transformation period. The above studies only discuss the potential, advantages, and trends of Vietnamese tourism in the digital transformation period, with highlights being tourism development perspectives and policies. The authors have not mentioned changes in the tourism industry in the context of digital transformation. Therefore, the article aims to understand the current situation of Vietnam's tourism industry in the application of digital transformation. In addition, the author group also offers a number of solutions to optimally utilize the achievements of digital technology in management, business as well as use of tourism services in Vietnam.

2. Research methods
The article uses secondary sources of documents from different agencies and organizations, focusing mainly on: (1) Reporting system and data of the General Department of Tourism on the tourism situation at destinations tourism; (2) Website and other reference documents related to the application of digital technology in the field of tourism in Vietnam.
In addition, the author group used traditional analytical and statistical research methods to clarify the current status of digital transformation applications in the tourism sector as well as the necessary solutions for the tourism industry to optimally apply the achievements of digital technology to develop in the current period.

3. Current status of Vietnam's tourism industry in the context of digital technology application
In recent years, the application of digital technology in the tourism industry has received attention in investment and implementation. In 2022, this is the period of promoting digital transformation in the direction of being people- and business-centered, all-people and comprehensive. Accordingly, the Program to promote the national digital platform strategy to provide full information and online experiences for tourists is also taking place drastically in many localities. This is the motivation for every tourism business to strive to develop into an enterprise applying modern, digital technology. The wave of technology businesses investing in the tourism industry is spreading strongly to develop digital platforms, connecting supply and demand. At the same time, training on smart tourism and digital transformation in the tourism industry has also become an attractive and trendy major in the digital era.
According to the report of the Ministry of Information and Communications on the readiness index for the development and application of information and communication technology, ranked by the Ministry of Culture, Sports and Tourism, in the period from 2016-2020 has increased at a fairly good level in a total of 17 ministries and branches. In particular, the index of human infrastructure has ranked at the top for 2 consecutive years.

Table 1: Ranking of the Ministry of Culture, Sports and Tourism on the readiness index for ICT development and application

Rating index	2016	2017	2018	2019	2020
Technical infrastructure index	4	11	8	8	5
Human infrastructure index	3	6	4	1	1
Information technology application index	9	10	5	3	3
Overall ranking index	4	6	5	3	3

Source: Ministry of Information and Communications, Vietnam Information Technology Association 2020

The General Department of Tourism promotes its pioneering role in implementing effective digital transformation in destination management and promotion. In applications serving state management, the General Department of Tourism has effectively deployed public service software; complete industry database with updated national tour guide background data; information on travel businesses, accommodation service businesses, tourist areas and destinations in cities; List of qualified tourism service establishments. Applying digital technology in communication and tourism promotion activities and achieving significant results, such as: Building and deploying a tourism brand identity and tourism information portal in many languages; Develop communication activities on social networking sites Facebook, Instagram, Youtube, Twitter, Tiktok,... and market-specific pages Weibo (China) and Naver (Korea).
The highlight is that the Vietnam.travel website is methodically invested, with quality, diverse and creative content; Vivid images, 360-degree technology applications, bringing interesting experiences to visitors to Vietnam, aiming to develop smart tourism. The General Department has cooperated with Kloock (a platform for independent travel) to build a communication campaign to promote tourism to tourist markets; implementing English language QR codes on tourism publications to post information; piloting 3D scanning technology at the Museum,... Through these online platforms, outstanding images of Vietnam tourism with landscapes and cultural heritages are widely and vividly introduced. with domestic and international tourists. In addition, the General Department also coordinated with relevant ministries and branches to develop "Vietnam Card - One National Card" integrating diverse functions of tourism, health, trade, transportation and education.
On the mobile platform, the Vietnam National Administration of Tourism has promoted the deployment of applications, contributing to bringing more convenience and interaction to users. The highlight is the Safe Vietnam Travel application http://safe. Tourism.com.vn/, an effective tool to help protect tourists' rights. Besides the utility of providing specific information about destinations such as preferential policies, promotions, etc., a useful feature of the application is that tourists can access digital maps to look up safety levels of the destination, thereby building a safe and convenient travel itinerary.
Besides the tourist support application, the General Department of Tourism also invested in an application to manage information for tour guides (http://www.huongdan vien.vn/) with many diverse features to help guide tourists. Tour guides synchronously connect with travel companies to

manage tour schedules, number of guests, and quickly interact with customers for timely support.

In most localities, the Department of Culture, Sports and Tourism has been actively coordinating with telecommunications corporations to deploy smart tourism projects and produce smart software and utilities for tourists. tourism industry such as map utilities, route finding, bus stops, tourist information guides... At destinations in Hanoi, many monuments and craft villages have applied technology to build products. Smart travel. Among them, we can mention the Temple of Literature - Quoc Tu Giam Relics, Thang Long Imperial Citadel, Hoa Lo Prison, Bat Trang Ceramics Village,... which have successfully applied the automatic interpretation system, launched a website to look up destination information. The Center for Cultural and Scientific Activities of Van Mieu - Quoc Tu Giam built a 3D library, allowing visitors to use many languages to search for information. In tourist destinations such as Bat Trang, Van Phuc, areas around Hoan Kiem Lake, old quarters, flower streets, flower markets, parks, bus stations, bus routes... free wifi stations are also installed. In addition, the Hanoi Department of Tourism has completed the Capital's tourism map in digital form, to help tourism businesses and tourists easily look up destinations. At the same time, the data system of more than 300 tourist attractions on the table has been unified and linked together. On the portal, tourists can smartly access multimedia while watching, listening, and reading to fully exploit the potential and strengths of Hanoi's cultural heritage.

In Ho Chi Minh City, the tourism industry has made great strides when applying smart travel software on both Android and IOS platforms; Deploy the application of 3D technology in information and tourism promotion in 2022 to vividly recreate the city space on high ground, giving visitors interesting experiences in a visual and vivid way. In addition, the city also updated tourism resources on the Google Earth and Google Map platforms and brought tourism products to the e-commerce trading floors Shopee and Traveloka, making it easier to reach current tourists. grand. In public areas, industrial parks and export processing zones in the area, more than 1,000 free wifi hotspots have also been deployed [6].

Da Nang city is also actively transforming the tourism industry since 2012, a project to cover wifi coverage on main streets, tourist attractions, shopping centers, administrative centers and community spots has begun. The city also deployed software systems and utilities to support tourists such as "Da Nang Tourism", "inDaNang", "Go! Da Nang", "Da Nang Bus", in addition to regularly using digital marketing methods to promote tourism. In 2018, Da Nang introduced the chatbot application "da Nang Fantasticity", this is the first technology used in Vietnam and Southeast Asia (along with Singapore). By the end of 2021, the VR360 virtual reality application "One touch to Da Nang" will be deployed. Through the application, visitors can experience and explore famous landmarks in Da Nang with automatic voice-overs in both English and Vietnamese languages, 360-degree images,... and many other digital conversion applications to enhance High quality service for tourists from many parts of the world.

Hue has recently built many digital tourism products such as: Building automatic explanations in 12 languages and virtual tour assistants at attractions in the Hue heritage system; build 3D maps of cultural heritage and tourism resources; smart and shared bicycle project; At the same time, we are researching nightlife experience services based on the application of 4.0 technology at Ho Quyen relics, Hue Citadel and Perfume River; VR360 digitization of Hue Ao Dai. These products have created many positive signals in accessing and experiencing cultural tourism.

The General Department of Tourism is supporting Thanh Hoa province in digital transformation and smart tourism development, including the application of AR tourism products - augmented reality experiences and VR 360 tours [8].

Tourism businesses must also transform their marketing, consulting, sales and customer care methods through online and digital platforms. To adapt to reality, most large travel companies such as Saigontourist, Vietravel, Hanoitourist, Vietrantour, Goldentour,... have implemented digital transformation in management, building new products, and promoting tours.; exploit the tourism market, promote online marketing; Use technology applications to serve customers, online website applications, booking to provide, sell and advertise products and services; Focusing on service trade channels, social networking sites, online travel product sales sites, looking for new technology access solutions to introduce business products, (Minh, 2023) [3]. A number of online platforms deployed by Vietnamese tourism have appeared such as: Google Arts & Culture (a platform through which the public can view high-resolution images and videos of works of art and cultural artifacts of many countries around the world), YouTube with the media program "Vietnam: Go for love!", Facebook, Pinterest, Tiktok platforms with the campaign "Live fully in Vietnam", includes information about Vietnam tourism modeled in the form of a vivid, eye-catching infographic (information graphic). Another important highlight, showing the ability of Vietnamese tourism to transform to approach and adapt to smart tourism, is the appearance of an online travel exchange (Tripi) that allows trading of tours. packages, hotels, air tickets, bringing positive experiences to users.

According to a survey by the General Department of Tourism, nearly 100% of Vietnamese businesses in the tourism sector use websites to introduce products to customers, more than 50% of domestic businesses successfully apply sales and payment methods. online. It can be seen that many businesses are reinventing themselves to become smart businesses with business activities mostly conducted online. The results show that 71% of international tourists to Vietnam in 2017 used online sources to determine travel destinations. Additionally, 64% of international tourists book their trips to Vietnam online.

In addition to the achievements in digital transformation applications, the tourism industry still faces a number of obstacles and difficulties such as: Lack of specific mechanisms, policies, and specific and clear guidance documents in the field of digital transformation. Tourism; The ICT readiness index in tourism is still low compared to the world; Financial resources for the digital transformation process are lacking; Technical facilities and quality of human resources are still limited; The online travel market is slow to develop. In general, the online travel market in Vietnam is currently being swallowed by big fish, foreign companies. Many domestic online travel companies that have just been formed cannot continue to compete because of insufficient purchasing power. Statistics from the

Vietnam E-commerce Association show that foreign businesses such as Agoda and Booking.com account for 80% of this total sales, while Vietnamese businesses such as gotadi.com, ivvu.com, chudu24.com and vntrip.vn only account for a modest part of this market. Domestic tourism electronic trading floors can only handle about 20% of transaction needs with the majority being domestic tourists (Trang *et al.*, 2020) [7]. In the coming time, the online travel market will be more competitive, domestic trading floors will have more obstacles, if they do not have synchronous digital transformation from operations to sales and remote management.

4. Solutions for developing digital technology applications in Vietnam's tourism industry

Applying digital technology to develop smart tourism and promote tourism to become a key economic sector is necessary and suitable for the current context. However, the application of digital technology in Vietnam's tourism industry also faces certain difficulties. Therefore, in order for Vietnam's tourism to have more positive changes and bring greater efficiency, the author team propose the following solutions:

- Firstly, continue to improve policy formulation for modern tourism development applying digital technology. The Ministry of Culture, Sports and Tourism needs to advise the Government to have specific mechanisms and policies and issue specific documents, regulations and detailed instructions on modern tourism development to guide the Tourism industry and localities in implementation. Tourism management agencies at all levels need to develop strategies, planning, and plans for smart tourism development, with appropriate roadmaps and steps. Build and perfect the tourism information system on tourism portals and tourism applications to homogenize and interlink information. The task set for the period 2023 - 2025 is to develop regulations and regulations to develop smart tourism and expand the tourism industry database system, promoting the application of online tourism business models. gland; Upgrade and develop the national tourism website. Continue to propagate and disseminate to raise awareness about technology application and smart tourism development. In the period 2026 - 2030, state management agencies will coordinate with ministries, branches and affiliated agencies to maintain, update information and synchronously develop the smart tourism ecosystem, promoting applications. artificial intelligence, grasping technology trends in the world and applying new technology to serve tourism development in Vietnam (Minh, 2023) [3].

- Second, focus on developing science and technology, especially information and communication technology towards applications for the tourism industry, creating a technological foundation for modern tourism. The Government needs to have mechanisms and policies to prioritize and encourage scientific and technological research and application activities for the tourism industry, and need to identify and prioritize investment in important technology items to support development. Developing smart tourism, including: Building an industry database; investment in technology infrastructure development; Invest in the production of software, systems, programs, applications, and smart utilities for the tourism industry; Research and apply advanced technologies to produce modern tourism products and services; Research and apply advanced technologies for destination management and development; applying technology for tourism statistics; Applying technology to preserve and restore heritage values and relics for tourism.

- Third, develop human resources with technological qualifications and promote international cooperation in science and technology. The Ministry of Culture, Sports and Tourism needs to continue to promote international cooperation in science and technology with developed countries to learn from experience, improve research capacity and apply science and technology to development. modern tourism; cooperation, technology transfer and investment cooperation in technology development for Vietnam. In addition, the Tourism industry needs to focus on training, fostering and developing human resources, ensuring that human resources have both professional qualifications in tourism and the ability to meet the requirements of use and tourism. operate technology, be ready to access and adapt to smart tourism. Accordingly, there needs to be a policy to attract highly qualified technological talent to work in the tourism industry.

- Fourth, tourism businesses need to proactively participate in digital transformation forums to help businesses better understand the application of technology in their operations and innovate experiences for customers.

- Fifth, for training institutions, it is necessary to build an online practice platform for specialized students to improve the quality of human resources with digital technology skills. Coordinate with network operators and technology businesses to design and integrate work simulation platforms; Coordinate with tourism businesses to build a team of professional guides. Applying virtual assistant technology to support students in finding information sources during the learning process.

5. Conclusion

Vietnam is a country with tourism potential. However, the application of digital technology in this field has not yet met socio-economic and integration needs. In the near future, with the gradual increase of foreign investors and open-door policies, modern technologies will gradually be available in our country. To adapt to the digital economy, Vietnam needs timely, synchronous and effective solutions to take advantage of opportunities and develop sustainable tourism along with economic, cultural and social development. and protect the environment, while avoiding risks of backwardness, infrastructure, policies as well as tourism human resources that do not meet actual requirements.

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