

# DEVELOPING SMART TOURISM IN VIETNAM: OPPORTUNITIES AND THREATS

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**Abstract:** *Developing smart tourism is an inevitable trend in the context of the industrial revolution 4.0, which is affecting more and more deeply all aspects of socio-economic life. With the requirements set out from the change in tourism trends of tourists, the achievement of building digital infrastructure, the participation of tourism businesses and tourism technology enterprises and a system of supporting policies to promote the application of technology in the field of tourism, all stakeholders have opportunities to work together to build and develop smart tourism in Vietnam in the coming time. However, besides the opportunities, the challenges for the development of smart tourism are identified as stemming from three main factors: the limitation in both the quality and quantity of smart tourism human resources, the lack of synchronization in the information system of stakeholders and the limited resources of tourism businesses when participating in the digital transformation process.*

**Keywords:** *smart tourism, tourism digital transformation, opportunities, threats*

## **I. Introduction:**

The 4th industrial revolution has had a profound impact on all aspects of socio-economic life, including tourism. The application of information technology in tourism to develop smart tourism has been oriented by the Party and Government and is currently being implemented by many localities across the country. However, developing smart tourism is not a simple task. With the continuous development of science and technology, especially information and communication technology, along with priority policies of the State, there are many opportunities to

develop smart tourism. However, besides the opportunities, there are also certain challenges that the tourism industry has to face during the process of developing smart tourism in Vietnam.

## **II. Overview of smart tourism**

Smart tourism is tourism developed on the basis of applying the achievements of modern science and technology, especially information and communication technology to create the best values, benefits and services meeting the diverse needs of tourists, tourism businesses, tourism management organizations and local communities (L. Q. Dang,

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2019). This is considered an inevitable development trend to help improve the competitiveness of tourism destinations (Koo et al, 2016; Cimbalević, 2019).

Developing smart tourism will help create a tourism ecosystem in which the development of science and technology plays a decisive role. It creates mutual benefits between groups of subjects participating in tourism activities, including tourists, tourism businesses, tourism destination organizations and local communities:

- For the tourism destination organizations: smart tourism helps increase the efficiency of tourism destination management, enhance the tourism destination's security and safety, comprehensively operate the tourism activities by collecting tourism data and then making accurate forecasts and decisions.

- For the tourism businesses: the implementation of business activities based on the technology platform not only makes it easier for the tourism organizations to approach their customers but also helps improve the quality of tourists' experiences. This will help tourism organizations improve the competitiveness for their businesses in particular and the competitiveness of the whole tourism industry in general.

- For the tourists: smart tourism helps enhance the tourists' travel experiences by saving time of looking up, receiving and collecting tourism information during the customers' travel journey. That helps tourists save their costs and enhance the quality of their travel experiences.

- For the local community: smart tourism gives local communities more opportunities to directly involve in tourism activities as suppliers or parts of tourism resources by using different kinds of information and communication technology applications. This will help bring economic and social cultural benefits for the local community during the process of serving and communicating with tourists from different geographies.

### **III. Opportunities**

The development of science and technology is considered as a driving factor for the development of smart tourism. It is the achievements of science and technology that are the core foundation for the formation of smart tourism products to help meet the diverse travel needs of tourists, and at the same time help to improve the quality of tourists' experiences at tourism destinations. In Vietnam, there are also certain prerequisites to develop smart tourism.

#### ***3.1. The change in the trend of tourists' experiencing and searching for tourism information***

The tourism needs of tourists are diverse, rich and ever-changing. According to statistics in Vietnam's Search for Tomorrow Report - Year in search 2020 - released by Google, 83% of consumers research products on online channels before making a purchase. In which, for tourism products and services, up to 78% of tourists research information on online channels. In addition, the on-demand economy is also growing through digital applications that meet the specific needs of consumers.

Summary also from Google's report (2020) shows that consumers tend to increasingly concretize and personalize search content to better meet information needs about products. Not only looking for basic information of a trip such as accommodation or transportation, tourists also want to find more detailed information about other services (such as: specific hotel amenities, facilities) which are appropriate with their needs or information about other tourists' experiences at the destination. This is even more evident in the context of the Covid-19 epidemic when the trend of traveling and searching for tourist information has changed a lot. Accordingly, in order to prevent the epidemic, many countries and tourist destinations have had to close or set conditions to limit tourists. Therefore, to meet tourism needs in that context, tourists tend to experience tourist destinations, tourist attractions... in different forms based on technology applications, such as: virtual reality tourism, online travel...

With this changing trend of travel experience and travel information search, only information and communication technology applications can help satisfy their needs.

### ***3.2. The policy system creates favorable conditions for the development of smart tourism***

The improvement of capacity to approach the 4.0 technology revolution has always interested the State so that there are many legal documents to implement the application of information and communication technology in socio-economic development (including

tourism development) have been issued. In particular, on January 16, 2017, the Politburo issued Resolution 08-NQ/TW affirming "Developing tourism into a spearhead economic sector is an important strategic orientation for the development of the country". In order to develop tourism into a spearhead economic sector, it is necessary to implement synchronously many solutions in which it is necessary to have solutions to promote the application of modern science and technology. The Resolution also outlines three aspects of applying science and technology to tourism activities, including tourism promotion, tourism human resource training and tourism destination management.

In Decision No. 1671/QĐ-TTg of the Prime Minister dated November 30, 2018 - Approving the "Master plan on application of information technology in tourism in the period of 2018 - 2020, orientation to 2025", it has been clearly defined that the application of information technology is a requirement and a breakthrough solution to facilitate and attract tourists, improve competitiveness and international integration, and contribute to the realization of the target of making tourism development become a spearhead economic sector of the country. To do that, it is necessary to mobilize the broad participation of stakeholders to develop a smart tourism ecosystem, which is appropriate with the trend of the 4th Industrial Revolution. At the same time, the State is committed to creating favorable mechanisms to encourage businesses, organizations and individuals to contribute, share and exploit common

information systems, databases, and develop information technology applications for tourism development. This has also been clearly grasped in the Document of the 13th Party Congress (2021), which identifies developing science, technology, innovation and digital transformation as one of the development perspectives as well as the strategic breakthrough of the next 10 years to make Vietnam break out to be one of the middle-income countries by 2030 and high-income industrialized countries by 2045.

It can be said that Vietnam's institutions and policies are now relatively favorable, acting as a solid legal basis for the development of smart tourism in the upcoming time.

### ***3.3. The improvement of digital infrastructure in Vietnam has many achievements***

Digital infrastructure is a fundamental factor of building a digital government and developing the digital economy, including tourism. Therefore, telecommunications infrastructure needs to be transformed into digital infrastructure. Vietnam's immediate important goal is to develop 5G networks and equipment, master the cloud computing infrastructure with technology - the "Make in Viet Nam" so that the digital transformation process will take place quickly, comprehensively, and help ensure network safety (). With the priority and development policies of the Party and Government, digital technology infrastructure in Vietnam has been invested and initially achieved certain achievements. In mid-January 2021,

Vietnam completely converted its internet address from the 4th generation internet protocol (IPv4) to the 6th generation (IPv6). By mid-June 2021, 44 provinces and cities had issued IPv6 transition plans, accounting for about 70% of localities across the country (Vietnam Internet Center - VNNIC, 2021). With outstanding technology and safety advantages, IPv6 is the default protocol in 5G networks and the internet of things (IoT). It is a digital resource to help develop the internet, infrastructure and digital services. Currently, Vietnam has 34 million IPv6 users, reaching 46%. As of March 2021, Vietnam ranked 2nd in ASEAN region, 4th in Asia and 10th in the world in terms of IPv6 transition (announced by APNIC).

Vietnam is one of the pioneer countries in the world that has successfully tested 5G - a technology allowing strong data transmission, many times faster than 3G-4G. According to Minister of Information and Communications Nguyen Manh Hung, by 2020, Vietnam will become the fifth country in the world to master 5G technology, produce 5G infrastructure equipment, and produce 5G phones. In addition, along with 5G technology, services provided on the cloud computing platform are considered a fundamental element in the digital transformation process because all data needs to be brought to the cloud to store and connect. The utility of the cloud helps individual users and businesses to reduce usage costs and easily get a huge amount of data. Therefore, with investment and development efforts, up to now, Vietnam's cloud computing market has reached about 3,200 billion VND (equivalent to

133 million USD). Currently, Vietnam has about 27 cloud computing data centers invested by 11 domestic enterprises with over 270,000 servers connected throughout the country (E-Government Portal, 2021).

This is a favorable condition to help promote the development of the digital economy in general and the development of smart tourism in particular in the coming time.

### ***3.4. More tourism organizations and tourism technology organizations participate in the digital transformation process***

The application of science and technology also helps tourism organizations easily approach all customers around the world and boost sales activities. It not only helps tourism organizations save costs, time and human resources while still helping maximize revenue for the business. Because of the awareness of the benefits that science and technology bring to business activities, many tourism organizations have been actively researching and applying scientific and technological achievements into their business to create new and outstanding values for customers. This helps improve the service quality and the efficiency of business activities for the tourism organizations. Besides, the start-up and innovation movement based on new technologies is developing strongly in Vietnam, focusing on solving problems arising in the development process. Therefore, more and more information technology enterprises have also focused on researching and launching applications

for tourism activities. These are definitely the favorable opportunities for smart tourism to develop in Vietnam.

Thus, it can be seen that, with the participation of both the political system and all of the stakeholders, along with favorable conditions from the macro environment, smart tourism has many opportunities to develop in Vietnam in the near future.

## **IV. Threats**

Besides the opportunities, the development of smart tourism in Vietnam also faces certain challenges in the development process:

### ***4.1. Lack of qualified smart tourism human resources***

According to the WEF report in 2019 on travel and tourism competitiveness ranking, Vietnam's competitiveness increased four ranks from 67th position in 2017 to 63/140 in 2019. However, the competitiveness index in human resources and labor markets are still low, ranked 47/140 with 4.8 points; lower than 2017, ranking only above Laos, Cambodia, and Brunei among ASEAN countries. WEF's rating assessment accurately reflects the labor limitations of Vietnam's tourism in the context of the rapidly developing 4.0 technology. Accordingly, the current proportion of tourism expertised employees accounts for about 42% of the total number of tourism employees in Vietnam, 38% are trained from other industries and about 20% are untrained. Out of a total of 42% of employees trained, only 10% have university and postgraduate degrees (accounting for 3.5%); 50% of employees have elementary, intermediate

and college degrees (accounting for 20%); the remaining 40% is labor trained through short-term classes. About 60% of tourism employees are capable of using foreign languages (Tuan N.A, Dang L.Q, 2020, citing sources from the National Administration of Tourism).

In addition, according to the General Report of Vietnam Information and Communication Technology Development Readiness Index 2018 (VN ICT Index 2018), out of the total number of middle-level tourism management personnel, there are 9,3% officers have specialized qualifications in information technology (100% have university degrees or higher), 4.0% of officers have specialized qualifications in information security, 48.1% of officers officially trained about information security, 100% of officers and staffs are trained about open source software, 100% of staffs use email at work. Actually, the highly qualified and technological qualified workforce is concentrated mainly in middle-level tourism management organizations and tourism agencies in big cities (Tuan N.A, Dang LQ, 2020).

It can be seen that the development of tourism human resources in Vietnam has made positive changes, reflected in a steady increase in both quantity and quality. However, human resources for tourism in Vietnam still reveal many limitations. Although the number of trained tourism human resources has increased compared to previous years (42%), it still accounts for a smaller number of unofficially trained human resources (58%). Quality human resources are also mainly concentrated in big cities or developed tourist cities,

greatly affecting the overall service quality of the industry. This is a big challenge in the process of tourism development in general and smart tourism development in particular in Vietnam.

#### ***4.2. Lack of synchronization in the information system of stakeholders in tourism activities***

In the context of the 4.0 technology revolution, information plays an important role in the development of the tourism industry, because information is the basis for tourism management organizations to make policies on tourism development, is the bridge between the tourism destinations and tourists, and is an effective propaganda and promotion tool to harmonize the benefits of tourism enterprises and tourists (Phan Thi Hue, 2013). Therefore, a requirement for the development of smart tourism is a close and synchronous connection on a digital platform between stakeholders in the tourism industry (Anh N.T, 2020). To do that, it is necessary to have a shared information system that is regularly updated so that all stakeholders can use and exploit for their activities. According to Mr. Le Hoai Nam, Deputy Director of Viettel IDC, currently, Vietnamese cloud computing businesses only account for 20% of the market share, 80% are from abroad. But in order to link and store information, including a part of tourism information related to state management activities, it is mandatory to use a cloud platform provided by data centers with domestic servers. This is also a big challenge that requires Vietnam to make more efforts to master cloud computing technology, facilitating comprehensive

digital transformation in all fields, including tourism.

#### ***4.3. Tourism organizations' limited resources***

Another challenge in the development of smart tourism is that the resources of tourism enterprises in Vietnam are limited as most tourism enterprises in Vietnam are small and medium sized. While digital transformation in business operations also requires certain investments. Hence, it is the limitation of financial, material and intellectual resources that has become a big challenge for tourism businesses in the process of digital transformation. Therefore, it is necessary to have priority and support policies from the states to foster the development of smart tourism in Vietnam in the next coming years.

### **V. Some initial suggestions on the direction of smart tourism development in Vietnam up to 2025**

#### ***5.1. Developing high-quality smart tourism resources***

The basic difference between ordinary tourism human resources and smart tourism human resources is the ability to apply information technology in work. Therefore, in order to develop high-quality smart tourism human resources in the context of the industrial revolution 4.0, besides expanding the scale and quality of tourism training, training institutions need to pay attention to raise the awareness of technology and the ability to apply information technology for learners in the training process. This will contribute to the improvement of the readiness of human infrastructure in smart tourism development.

#### ***5.2. Continue developing cloud computing technology***

Cloud computing technology is the foundation for storing a shared data system for the development of smart tourism. Therefore, developing cloud computing technology is the current top priority task to synchronize the data information system of all stakeholders in smart tourism activities. Only when Vietnam has a cloud computing system provided by data centers with servers located in the country, the storage and synchronization of the tourism data system can be done actively and safely.

#### ***5.3. Creating a favorable mechanism for tourism businesses to participate in digital transformation***

Most of today's tourism businesses in Vietnam are small and medium sized. Therefore, expenses for digital transformation and application of information and communication technology achievements to develop tourism products and services is a big challenge. However, this can be solved if the cost of technology applications is within the affordability of tourism businesses. And the cost of these applications will tend to decrease when there is a mechanism to encourage and invest in the development of scientific and technological applications in the field of tourism. In addition, in order to expand the scale of tourism business enterprises, it is necessary to have mechanisms and policies to encourage, create conditions and create a favorable environment for the development of business activities of tourism enterprises in general.

## **VI. Conclusion**

Developing smart tourism is an inevitable trend in the development context of the 4.0 technology revolution all over the world. In the process of the development, besides opportunities, the Vietnam tourism industry must try to make efforts to overcome different challenges. However, with the orientation of the Party and State, along with favorable conditions, smart tourism will certainly be developed if the whole industry all makes efforts and determination to reach the common goals.

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