Developing Smart Tourism in 4.0 Industrial Age: The Case of Vietnam

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Abstract: Smart travel is a result of 4.0 Era. In Vietnam, the applications of modern technology in the field of tourism industry are being applied by many traveling businesses. Although new in this field, smart travel has achieved certain achievements. Nowadays, the use of smart devices such as smartphones, Ipads, laptops to use online websites, smart apps on CHplay app - Android and App store - Apple to follow, book services, plan a self-sufficient tour are being chosen by more tourists for their convenience and time savings. The fourth industrial revolution has had a strong impact on the tourism industry on a global scale in general, and Vietnam in particular. Currently, the tourism industry is orientating and developing smart tourism models to provide the best services to tourists, travelers, tourism businesses and tourism authorities. This research points out the benefits of smart tourism applied in the context of Vietnam country, then, the paper aslo offers a few solutions to develop this type of tourism in the 4.0 era.

1 INTRODUCTION

Industrial Revolution 4.0 creates a new face for Vietnam's tourism. Not only introduce to foreign visitors an image of Vietnam silver sea gold forest but also connecting cultures around the world, developing the country's economy. Currently, most of the countries in the world are using tourism for economic development (Huang et al., 2017). In Vietnam, tourism is considered the most optimal solution in the problem of international economic integration in the industrial revolution 4.0. The new era has brought a huge source of income for the country's economy. However, the development path of our country's tourism industry still faces many difficulties and challenges. With the advantages of geographical, economic and political location, Vietnam is considered a potential land for tourism development (Ozdemir et al., 2019).

2 RESEARCH CONTENTS

2.1 Definition of Smart Tourism in the 4.0 Era

Smart Travel is considered as a new tourist trend, it differs from traditional tours. Smart travel focuses on your personal interests (Pencarelli, 2020). Not just about convenience. Smart travel in the 4.0 era as the most optimal solution for travel costs. Smart travel here is means that tourists are more active in calculating and planning specifically for self-sufficient travel in a smart way and achieve the maximum experience while the costs are minimal. Tourism has a combination of technology elements of travel-enabled applications such as intelligent management software (Oztemel and Gursev, 2020). For example, automatic explanation utility, online tour guide management software, online booking software, hotel navigation and search software, entertainment area, and smart tourism is a new tourism product in Vietnam developed on the basis of applying achievements of advanced science and technology and modern technology Ozdemir et al., 2019).

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2.2 Research History

Smart tourism is developed based on the application of modern science and technology achievements, especially multimedia communication technology, to meet the diverse needs of tourists create the best value, benefits, and services for travel businesses together with tourism and community authorities (Huang et al., 2017). The term "smart tourism" has only appeared in Vietnam in the past few years, but is mentioned a lot in the fourth industrial revolution (Oztemel and Gursev, 2020). Based on the achievements that smart tourism has brought to the home country, the Party, State and Government of Vietnam are very interested in and issued many legal documents with the aim of meeting socio-economic development and applying modern technology to develop tourism (Pencarelli, 2020). The application of prerequisite policies to clear and pave the way creates conditions for a solid legal foundation for innovation and development of smart tourism (Huang et al., 2017).

It can be said that smart travel consists of three main components (Hoi, 2020). The first is a smart destination. It is an innovative tourism destination, built on advanced technology infrastructure, ensuring the sustainable development of tourism areas, accessible to everyone, and facilitating the future. visitor interaction and integration into the surroundings, increase the quality of the experience in the destination, improve the quality of life of the people (Pencarelli, 2020). The second is the experience of intelligence. These are seen as technology-mediated travel experiences and enhanced information exchange through personalization, contextual awareness and real-time tracking. The third is business intelligence ecosystem. That is a complex business ecosystem that creates and supports the exchange of tourism resources combined with tourism experience (Ye et al., 2020).

Participants of this model are also smart travellers. They not only consume, but also share and create experiences, and take on a managerial and supervisory role to ensure the perfection of their next journey and other travellers Ozdemir et al., 2019).

2.3 The Advantages and Disadvantages of Smart Travel in 4.0 Era

2.3.1 Advantages

There are many advantages and benefits that smart travel brings with the nature of a "smoke-free industry", the first benefit tourists are most interested

in when traveling is travel cost. The e-commerce industry is helping the tourism industry have more opportunities to effectively promote and expand the market, creating more attractive new tourism products Ozdemir et al., 2019). Tourists will easily grasp promotions for travel companies, hotels, airlines, ships, and cars when there are special discounts during holidays or summer, tourist companies will regularly post on websites, fan pages of forums such as Facebook, Instagram, etc. helping tourists save 10% - 20% of the cost (Oztemel and Gursev, 2020).

Figure 1: Ha Long Bay in the North of Vietnam.

In each tourist destination, there is an ideal time for services, natural scenery like Ha Long Bay (Figure 1), weather, etc. Tourists just need to have smart applications like Skyscanner to help find flights or find hotels via booking.com by comparing airlines, hotels and giving suitable suggestions for tourists such as tourists choosing Sapa highland as the destination (Figure 2), the best time for the natural scenery will be at the end of the year. However, with the above time considered the peak season of tourism, ticket prices and room rates will increase and the application of the above methods will be used by tourists and make they feel more satisfied and confident with their trip Ozdemir et al., 2019).

Figure 2: Sapa Highland of Vietnam.

Secondly, for travel agencies in charge of travel, technology applications will increase efficiency for management to create a form of "smart travel management", businesses apply. Applying technology, increasing the value of business activities to create a "smart travel business", tourists apply modern technology to support tourism activities to create "smart tourists", a tourist destination applying advanced technology creates" smart travel destination to form "smart tourist city", "smart resort", here the level of "smart" will depend on the scale, nature and level of technology applied (Hoi, 2020).

2.3.2 Disadvantages

In addition to the positive aspects, the advantages that the smart travel industry brings, there are still minor shortcomings as there are now too many businesses selling self-sufficient tours or informal travel applications blooming day by day (Ye et al., 2020). Advertising tricks to promote the truth. It has a significant impact on the tourism industry, especially travel businesses and reputable tourism applications causing a current situation of distrust from tourists. On the other hand, when travellers subscribe to a travel app, they force travellers to share their location. It will lead to travellers feeling like they are being watched and personal information easily exposed (Sari, 2018).

3 RESEARCH METHOD AND RESULTS

The research method is done through data used in the topic collected from the statistical reports of Vietnamese organizations such as the General Department of Tourism, the General Statistics Office, the Ministry of Culture and Sports - tourism and other prestigious newspaper sites named Internet.

Based on the total tourism revenue statistics of the organization of the Ministry of Culture, Sports and Tourism, the Vietnam National Administration of Tourism gave the following results (Table 1):

Table 1: Total revenue from tourists for the period of 2016 – 2018.

Year	Total revenue from tourists (Vietnam trillion dongs)	Growth (%)
2018	637.000	17,7
2017	541.000	29,7
2016	417.27	17,5

Compared to 2016 with the total revenue from tourists was 417.27 trillion VND, by 2018 the total revenue from tourists was 637,000 trillion VND, increasing to 219.27 trillion VN.

But in terms of the number of international visitors to Vietnam in March 2020 wet reached 449,923 arrivals, a decrease of 63.8% compared to February 2020 and a decrease of 68.1% compared to the same period in 2019 according to statistics (table 2):

Table 2: International arrivals to Vietnam in the first 3 months of 2020.

Target	Estimated March 2020 (arrivals)	3 months of 2020(arrivals)	March compared to the previous month (%)	March 2020 compared to March 2019 (%)	3 months 2020 over the same period last year (%)
Total	449.923	3.686.779	36,2	31,9	81,9

Generally, in the first 3 months of 2020, it is estimated at 3,686,779 arrivals, down 18.1% compared to the same period in 2019 due to the influence of Covid19 (Table 2).

4 DISCUSSION

4.1 Approach for Developing Smart Tourism in Vietnam

In the field of tourism promotion and marketing, we expand the space, time and travel market. The development of the Internet makes space and time much more closer, creating a flat world, people all over the world, only needs an internet connection to be able to access and explore all the history monuments, famous tourist attractions around the world. This is an important push that has generated travel demand for all people and is a golden opportunity to expand the tourism market.

What we should do is to reduce advertising and marketing costs if in the past, to promote and develop destinations, it took a lot of time and had to pay a large amount of money for advertising on television, newspapers and radio; distributing leaflets, brochures, maps, tour descriptions and prices per tour are now through the application of smart websites (such as Web30s, Smart Live Chart, Smart Marketing

Tool) and virtual switchboards (all these software are all running in the cloud environment) the cost of advertising, marketing and time spent on it has been greatly reduced. This is a great advantage brought by Industry 4.0 (Nagy et al.,2018).

4.2 The impact of Industry 4.0 on Tourism Development

Digitalization of tourism databases digitization of tourism databases such as introduction of human and natural tourism resources, tourist destination maps, restaurants, hotels and systems The transportation system of each locality, each country is being widely deployed, bringing benefits to the managers, tourism businesses and tourists all over the world (Sari, 2018).

Regarding the business of travel services, online sales and online payment, e-commerce, online business, including travel business, is now a trend of the times. Industry 4.0 helps travel businesses to deploy travel services to all people in need around the world with the least cost, most time saving and highest revenue (Huang et al., 2017).

Next is reducing labour force, time, costs, reducing tourism service costs. The application of modern technology has significantly reduced the workforce, shortened the working time, sharply reduced costs, and led to a decrease in the cost of tourism services (Chung et al., 2017). Thanks to online buying and selling, travel businesses can associate, cooperate, share difficulties and profits, sell goods to large numbers of customers, with little cost and time so they can be much better relating to pricing, discount, and even "shock" discounts on travel services. The Internet has made it easy for travel businesses to connect tours, destinations, increase the number of tourists and increase tourism business efficiency, turning tourism into an industry with a continuously operating machine at full capacity (Nagy et al., 2018).

Developing new tourism products with the current status of industry 4.0 creates more and more new, diversified and attractive tourism products. Industry 4.0, especially virtual technology allows the reproduction of historical events, ancient cultural spaces, majestic natural landscapes so that visitors can experience and immerse in it, creating feeling like real tourist spots (Yoo et al., 2017). Visitors who have the opportunity to visit the Hollywood movie capital can see all the virtual technology effects, irresistible attraction of this famous tourist destination.

Improving service quality when applying Industry 4.0 with outstanding technological advantages, it allows visitors to feel with all senses (hearing, taste,

smell, touch, perception, etc.); the visitors' satisfaction will greatly increase. Therefore, Industry 4.0 not only reduces costs but also increases the quality of tourism services in the field of training of human resources in industrial tourism 4.0 which is being widely applied in all areas of life, including the tourism industry (Hoi, 2020). Therefore, tourism training institutions - the machine of the tourism industry also need to undergo drastic transformations to adapt to the development of technology. Issues that need to be renewed are to renew training programs and textbooks, increase the duration of practice, practical internships in enterprises. Improving and updating the qualifications and technology of teachers. Apply new technology in teaching theory and practice. Students need to be trained in soft skills, new technology application skills, communication skills and foreign language skills in business activities (Sari, 2018).

4.3 Current Smart Travel Application

Technology has become an indispensable part of life in any way, and travel is no exception (Oztemel and Gursev, 2020). In particular, smart devices and applications will be tools to support tourism activities such as navigation software (Google maps, Here maps, etc.), hotel search through websites such as (Agoda, trivago, etc.), online booking software such as bus ticket, plane, train, etc. (vexere.com, elines.vn, dsvn.vn) (Figure 3). We can easily find related information such as where to go, what to do, what to eat, what to play through websites such as Facebook, Qzone, Tumblr, Instagram, Twitter (Hoi, 2020).
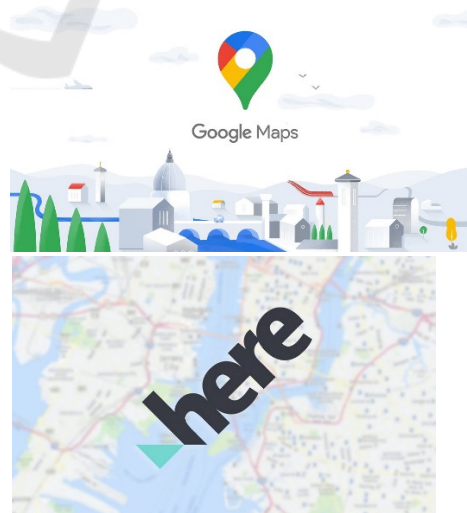

Figure 3: Smart navigation application.

Today, there are also many companies applying smart travel to travel business to help diversify customers. Tourists do not need to go to companies to book tours directly, do not need to go in groups or groups with limited time (Chung et al., 2017). Only just by one click, tourists have had their own personal preference travel, self-sufficient but it does not take too much time to think and can plan the cost of the journey by themselves, for example, triphunter.vn, Rome2Rio, Google Trips, and TripAdvisor.

5 SOME SOLUTIONS TO PROMOTE SMART TOURISM DEVELOPMENT IN VIETNAM

Currently, Vietnam is promoting the development of smart tourism to make it a key economic sector by taking a variety of ways. In particular, the promotion of technology application, implementation of measures to stimulate tourism demand, training human resources are the policies that are gradually being implemented (Hoi, 2020). Investment in information technology development can create opportunities for travel businesses to develop applications. Building smart tourism helps promote tourism areas, increase visitor access and interaction, and convenient payment to diversify types, products and services to attract domestic and foreign tourist's country (Ye et al., 2020).

In order to develop tourism into a spearhead economic sector, it is necessary to synchronously implement many solutions, of which there must be solutions to promote the application of modern science and technology Ozdemir et al., 2019). The State has a policy to encourage and support the application of modern science and technology to tourism management and development.

6 CONCLUSION

Smart tourism development in the 4.0 era creates important knowledge in the operation and management of smart travel, and provides deeper insights into how information and communication technology can be used to reforming strategies, enhancing travel experiences and co-creating new modern tourism experiences. In the future, along with new technologies and digital transformation that impact the dynamic transformation of processes in society, new opportunities in smart travel strategy development. Therefore, information and communication technology infrastructure plays a decisive role in the success of tourism businesses and applications as well as increasing the competitiveness of travel businesses. With the traditional tourism industry dependent on services (travel agencies, restaurants, and hotels), instead it is the smart tourist experience empowered by technology, in which technology plays an important role in all stages of the travel process. Besides, modern technology is also a medium to co-create travel experiences. The development of smart applications for smart travel is also a strategy and dynamic cooperation among stakeholders to ensure innovation and sustainability of smart tourism development in Great 4.0.

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