Chapter 12 How to Design a Smart Tourism Destination: The Case of Granada



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Abstract Despite the ever-increasing growth of tourism in Granada (Spain), its city council plans to boost this growth even more in 2021 by making improvements to the tourist experience. The city council entrusted a team led by Rocio Sainz to develop a smart city project called "e-Granada" aiming to enhance the tourist experience by implementing a series of solutions along the lines of technology, sustainability and accessibility. Although her team comprises experts from a wide variety of fields, it does not fully grasp the most useful technological platforms and services or the potential advantages and disadvantages of Smart Tourism Destinations (STDs) for businesses and consumers. This is due to the lack of knowledge of these types of projects in Spain as well as the characteristics of STDs. Based on secondary sources and on an empirical analysis carried out in Spain, the current case study offers students of political science, hospitality, business and tourism professionals the possibility (i) to acquire advanced knowledge on the definition and characteristics of STDs, (ii) achieve a deeper understanding of the most useful technological platforms and services to convert a city into a smarter tourism destination, and (iii) evaluate the potential pros and cons for businesses and consumers of a city evolving into an STD.

Keywords Smart tourism destination (STD) \cdot Smart city \cdot Sustainability \cdot Innovation \cdot Technology \cdot Government

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Introduction

Granada is a city in southern Spain with almost 250,000 inhabitants. Some of its must-visit sites are the Palace of the Alhambra, the Generalife Gardens, the San Nicolás lookout, the Albaicín (old Moorish quarter), and the Cathedral with its Royal Chapel where the Catholic Monarchs are buried. These sites attracted more than three million visitors in 2018, an increase of 6.1% compared to 2017. This translated into 6,265,559 overnight stays representing a growth of 5.8% (El Independiente, 2018). Most of the tourists are from France, the United Kingdom, Germany, the United States, Italy and Japan (Granadatur, 2018). Despite these positive figures, Granada's city council desires to attract even more tourists in 2021 and for this reason plans to launch a series of measures, notably a project to convert Granada into a smarter city. In other words, it aims to make Granada more accessible, sustainable, technological and communicative.

This case study aims to delve deeper into the origin, application and initiatives of Smart Tourism Destinations (henceforth STD) in order to help students grasp the definition of a smart city and help the city council of Granada identify the most useful technological platforms and services required to become one. It likewise serves to evaluate the potential pros and cons of becoming an STD for businesses and consumers.

Background: e-GRANADA, a Smart Tourism Destination Program

The team led by Sainz was charged in January 2020 with implementing an STD program in Granada called "e-Granada" to offer technological, sustainable and accessibility solutions to tourists and businesses. The team includes experts in marketing, technology, tourism, geography and ecommerce. Despite their high level of expertise, they do not have a clear understanding of the characteristics of STDs, the most useful technological platforms and services, or the potential advantages and disadvantages of STDs for businesses and consumers.

The e-Granada team sought out information, programs and initiatives from other Spanish cities already considered STDs. Specifically, the team consulted The White Paper on Smart Tourist Destinations in Spain (Segittur, 2019). This is an official platform that offers an in-depth explanation of (i) the definition of STDs and their main characteristics, (ii) which smart applications and services are put in place in Spain's STDs, and (iii) the perception of STDs by companies and potential tourists.

Based on data gleaned from this report, students should clarify the main initiatives of STDs applicable to the e-Granada project, as well as identify possible reactions of tourists and companies to smart environments. The following sections, besides advancing elements serving for this case study, aim for the student to (i) acquire advanced knowledge as to the definition and characteristics of STDs, (ii) gain a deeper grasp of the most useful technological platforms and services required by a city to become an STD and (iii) evaluate the potential pros and cons of creating a smarter city for businesses and consumers.

Theoretical Background: Smart Cities and Smart Tourism Destinations (STDs)

The World Tourism Organization recorded 1400 million worldwide tourists for 2018 (UNWTO, 2019). The tourism sector accounts for 10% of the global gross domestic product and 7% of world exports. Moreover, one in ten jobs worldwide is linked to tourism which directly or indirectly generates even more employment (UNWTO, 2019).

The exponential increase in tourism has nonetheless generated serious problems: (i) climate change due to the substantial increase of urban waste (Amelung & Viner, 2006), (ii) massification of urban and natural destinations (Capocchi et al., 2019), (iii) seasonality leading to precarious employment and a concentration of economic activity limited to a few months of the year (Pou, 2012), (iv) inflation due to an increase in demand over that of supply (González & Ruiz, 2006), and (v) a surge in noise and pollution due to increased vehicle use (Castro, 2003).

Smart Cities

Governmental and academic institutions have in recent years attempted to design sustainable, technological and efficient cities to counter many of these issues (Gretzel et al., 2015), actions that have giving rise to the notion of smart cities. According to Manville et al. (2014), a smart city has to adhere to the following requirements: (i) invest heavily in human and social capital, (ii) incorporate both traditional and modern communication infrastructures, (iii) apply sustainable energy sources, (iv) bolster economic growth and a high quality of life, (v) develop a smart management of natural resources, and (vi) implement a participatory type of governance.

The main benefits of creating smart cities are the following:

- Medium- and long-term savings. An efficient use of resources reduces costs (energy, administrative, etc.).
- Better services. Improvement of quality and a more efficient governance are fundamental to all facets of smart cities to enhance services.
- Better quality of life. Upgrading public, welfare, and environmental services leads to greater satisfaction among residents.
- Opportunity for industrial development. Establishing new technology-based and environmentally sustainable companies pave the way to create new industries.

Smart Tourism Destinations (STDs)

Large cities are themselves tourist centers that constantly attract visitors and therefore must adapt to the needs of tourism. Tourists are considered temporary residents, that is, citizens who make use of the public resources of the place they visit. They are external agents characterized by intense consumption. The role of tourists in the development of smart cities has given rise to the so-called Smart Tourist Destinations (Gretzel et al., 2015). According to García and Jiménez (2014), STDs are innovative spaces founded on state-of-the-art technological infrastructures that take advantage of the surge of Information and Communication Technologies (ICTs) to offer efficient services. Their objective is to guarantee a sustainable development of a territory rendering it accessible to all, and facilitate interaction and integration of the visitor with the environment.

Giffinger et al. (2007) and Kaur and Kaur (2016) conclude that actions to develop STDs must be carried out based on the following six pillars:

- **Mobility** concerns the development of a safe, accessible, sustainable and efficient transport infrastructure as traffic congestion, besides provoking accidents and deaths, leads to acoustic and environmental pollution.
- **E-Government** represents the relationship of the municipal government with its citizens based on transparency and participatory decision-making. STDs require management of online procedures that facilitate bureaucratic procedures, time, travel and cost savings (eadministration, e-participation, open government and open data, analytical applications). As a result, Giffinger et al. (2007) and Kaur and Kaur (2016) propose improvements to managing public buildings, public infrastructure and urban equipment.
- Economy for smart destinations. It is crucial to develop new models of funding based on public-private contributions (open data, space for entrepreneurs, co-working, etc.). This encourages the development of an innovation-based economy capable of attracting emerging companies applying low carbon emissions. Hence, smart cities offer steps to (i) encourage innovation and entrepreneurship to both residents and future visitors by creating, for example, business incubators and collaborative work spaces, (ii) link the brand of the city with innovation, creativity and knowledge and, (iii) support tourism as a sector that generates urban economic development.
- Society. It is essential that the authorities of cities and smart destinations bear in mind the concepts of education, human capital and culture put in place by e-learning and teleworking, tourism and cultural information services, levels of qualification and citizen participation. It is likewise of utmost value to offer open Wi-Fi networks in city halls and public buildings. Finally, universal accessibility, essential to smart cities and destinations, can be attained by eliminating architectural barriers, improving lighting and access to the web for the visual and/or auditory disabled.
- Lifestyle. Smart cities and destinations reflect a technological and efficient commitment to public safety. This includes management of emergency public

services and civil protection, video surveillance and citizen security, as well as fire protection and detection. Also of essence is an efficient health management involving the participation of municipalities to offer primary health care through telemonitoring and telemedicine, telecare and social services, and public health. Thus emerges the concept of "smart living" which refers to a safe life devoid of instability and risk to physical integrity in the same territory and access to housing.

• Energy efficiency and the environment are focal points of smart destinations. They encompass a rational distribution of energy, collection and treatment of urban waste, management of parks and public gardens and real-time monitoring of environmental parameters so as to guarantee energy without service cuts. The commitment to renewable energy (photovoltaic, geothermal, aeolian, biomass, etc.) is key to achieving these objectives.

STDs in Practice: The White Paper on Smart Tourist Destinations in Spain

The team charged with implementing e-Granada must carry out an in-depth study of *The White Paper on Smart Tourist Destinations in Spain* (Segittur, 2019) so as to (i) come a general understanding of the solutions and applications adopted by STDs, (ii) explore the current initiatives and programs implemented by Spain's STDs, and (iii) identify the perceptions of STDs by tourists and companies. These are key to the development of a comprehensible and realistic e-Granada project intended to bolster tourism in 2021.

Technological Solutions for STDs

The White Paper on Smart Tourist Destinations in Spain (Segittur, 2019) offers smart technological solutions differing from those of traditional destinations (Fig. 12.1). Table 12.1 lists their differences.

The notions that can be gleaned from Table 12.1 confirm the advances of STDs: (i) pre-trip: a boom in online travel agencies, chatbots, social networks and online ticketing, (ii) in-trip: virtual traveler communities (e.g., Tripadvisor), collaborative tourism, geolocation and accessibility and sustainability in cities, and (iii) post-trip: social networks and commentary traveler platforms.



Fig. 12.1 (a) Example of augmented reality typical of a smart tourism destinations. (b) Example of the hazards of noninclusive paving typical of traditional tourism destinations. (Source: (a) Pixabay (9 February 2020) at https://n9.cl/ztx5; (b) Adapted from Moravia (9 February 2020) at https://n9.cl/ztx5; (b) Adapted from Moravia (9 February 2020) at https://n9.cl/ave2)

Service	Traditional destination	Smart destination
Tourism office	On site, with physical promotional material (maps, brochures, tourist guides, etc.)	Open 24 h Audiovisual material Audio guides Free WIFI at destination
Pre-trip information search	Physical travel agencies Magazines, books, brochures Recommendations from friends and family	Online travel agencies Virtual communities of travelers Chatbots virtual reality Social networks
Searching for information during the trip	Tourist office reception of accommodation	Apps Virtual tourist office (online assistants) traveller communities: tripadvisor
Post-travel	Discuss the trip with family or friends	Travel comments on in social networks and virtual communities (greater impact)
Localization	Physical maps	Geolocation GPS
Purchasing tickets	Queues at ticket offices for the main tourist resources	Buy online download mobile tickets mobile payments
Accessible tourism	Difficulty of physical access to places (lack of access or scarcity of ramps)	Adapting resources to different disabilities Inclusive tourism Universal accessibility
Administrative procedures	Excessive bureaucracy (on-site)	Online procedures
Pollution	Greenhouse gases light/sound pollution	Greenhouse gas reduction light reduction through smart sensors

 Table 12.1
 Features of traditional and smart tourist destinations

Adapted from Segittur (2019)

Examples of STDs in Spain

Barcelona

The smart city initiative adopted by Barcelona was crucial to alleviate the deficiencies of its housing, environment, transport, water, energy and waste problems. ICT was crucial in achieving changes in these areas. The Barcelona Smart city project resorted to technology to allow its residents and elements (buses, metro, stoplights) to be connected leading to a more sustainable, green, competitive and innovative atmosphere.

The project "Barcelona city of people" inaugurated in 2010 resorted to new technologies to promote economic development which led Barcelona, four years later, to receive the European Capital of Innovation award. The project, based on growth and well-being of its inhabitants, was founded on the following five pillars: (i) open data, (ii) sustainable growth (promotion of electric vehicles, smart lighting), (iii) social innovation, (iv) alliances between research centers, universities, private partners and the public and, (v) smart ICT-based services.

Seven years later, the Barcelona Digital city 2017–2021 project aims to create a type of design leaning toward more openness and efficiency. The goal is to promote digitalization and innovation, opening areas that assist citizens in the use of technology to improve public services. The more outstanding actions characterizing a smart city are the following:

- · LED lights that measure pollution with real-time sensors
- Monitoring of waste collection points
- Free internet points
- · Information on the best places to park and free parking places
- · Promotion of electric vehicles and bicycles
- · Improvement of water management in parks and public places

Malaga

The city of Malaga has evolved from a "sun and beach"type of tourism to a new model based on cultural and smart tourism (e.g., Picasso, Thyssen, Pompidou museums). Among its objectives in 2018, apart from its normal sun and beach offer, is the "Malaga, smart city" project marked by the following initiatives.

- **Sustainable mobility** which prioritizes quality public transport and electric vehicles to decease private gasoline or diesel car use.
- **Energy efficiency** uses smart green sustainable technologies by installing smart and efficient points and a smart subway (its greatest initiative).
- Universal accessibility for both residents and visitors to adapt the city to the mobility of anybody in any circumstance.

- Active citizen participation to offer applications to communicate and update incidents (such as traffic problems) through smartphones to facilitate universal accessibility.
- **Commitment to ICT** entrepreneurship through technology to promote business projects.

Malaga was selected as the European Capital of Smart Tourism for 2021 in a competition initiated by the European Parliament and implemented by the European Commission. The competition other candidates including as Nice (France), Ravenna (Italy), Ljubljana (Slovenia), Karlsruhe (Germany), Gothenburg (Sweden), Bremerhaven (Germany), Breda (Holland), Turin (Italy) and Bratislava (Slovakia). The goal of the competition is to recognize achievements in the tourism offer along the lines of accessibility, sustainability, creativity, cultural heritage and digitalization.

Santander

Santander is one of Spain's first smart cities. The "SmartSantander project" adopted in 2011 placed more than 15,000 sensors (connected by 1200 nodes) throughout the city over an area of approximately 13.4 square miles to offer real-time data on different environmental parameters (light, temperature, noise, CO_2). The sensors also serve other concerns such as availability of parking spaces in certain areas of its center. These static sensors are hidden in white boxes of street lamps, buildings and utility poles, while others serving for parking information are buried under the asphalt. Other portable sensors are placed in the city's public transport system (buses, taxis and police vehicles).

Benidorm

The city of Benidorm is particularly interesting to e-Granada as it is Spain's first certified STD. It was awarded the rating of Q by the Institute of Spanish Tourism Quality as it passed the UNE 178501 Management System Smart Tourist Destination certification by AENOR. Table 12.2 lists some of Benidorm's STD strategies.

The Perception of Academics and Experts of the Benefits of Using Technology in Tourism Destination

The findings of the study of Reverté et al. (2018) in combination with those of The White Paper on Smart Tourist Destinations in Spain (Segittur, 2019) shed light on the perceptions of academics and experts on the questions of STD competitiveness, tourism experience, markets and satisfaction, security, privacy, and technology

"Smart city of Benidorm" plan		
Strategy	Description	
Smart beaches	Beaches with free Wi-Fi. This aims to improve tourism management and offer users demographic data.	
"Beacons" system	This bluetooth system facilitates information as to the offers of the city to tourists through customized messages. The system also improves communications with tourists.	
Citizen co-creation	Residents actively participate on the Benidorm Tourism Agency by creating new STD rules.	
Mobile app "visit Benidorm"	App that facilitates and dynamizes visitor information.	
Big data study on tourism spending	Identifies where (and in which markets) tourists spend their money.	

Table 12.2 Examples of smart applications and services adopted by Benidorm

acceptance. The different authors of these papers also explore the notions of technology use and acceptance of risk, and the expectations of potential tourists to the STD experience.

The following points relate specifically to the perception of tourism experts and tourists.

Tourism experts

- Most consider that the inclusion of technological elements is key to the development of STDs (3.94 out 5) and that the inclusions lead to improvements of strategic and technological business models (3.35 of 5).
- Most (81%; 4.06 of 5) report that inclusion of smart elements in tourist destinations improves the tourist experience.
- Experts on the whole do not consider that there is a significant reduction in the privacy and security of tourists as a result of including smart elements (2.24 of 5).
- Expert nonetheless express doubts as to the extent to which tourists apply the technology (3.18 of 5).

Tourists

- Tourists in general consider themselves prepared to use technology during their trip (4.2 of 5).
- Most (85%; 4.21 of 5) feel that geolocation and hyperconnected devices are useful to their tourism experience.
- Most do not mind that their information is used by third parties for personalized services, but they dislike being geolocated (3 of 5).

Business Problems and Questions

The city council of Granada aims to put in place a smart tourism plan for 2021 to bolster visits to the city. Its mayor commissioned a team led by Sainz made up of experts in marketing, technology, tourism, geography and e-commerce to develop the e-Granada project to implement technological, sustainable and accessibility services for tourists. Despite their high level of expertise, the team does not reveal a clear understanding of STD characteristics, the most useful technological platforms and services or their potential advantages and disadvantages for businesses and consumers.

Aiming to develop a comprehensible and realistic e-Granada project, Sainz and her team closely examined the findings of *The White Paper on Smart Tourist Destinations in Spain* (Segittur, 2019), an official platform offering in-depth observations as to (i) the definition of STDs and their main characteristics, (ii) which smart applications and services are used by Spanish cities already considered as smart destinations, and (iii) the perception of companies and potential tourists of STDs.

The results of this study point to several issues that require consideration in order to promote Granada as a smart destination. As members of Sainz's team, the students are asked to review the results of the exploratory study and submit an evaluation of the most useful technological platforms and services to incorporate and their potential pros and cons for businesses and consumers.

Technological platforms and services of STDs

- What types of platforms should Granada adopt in order to evolve from a traditional to a smart tourist destination?
- What specific services help make the pre-trip experience smart?
- What smart initiatives should be adopted to improve the tourism experience during and after the trip?
- Include two potential examples of sustainability, citizenship and mobile apps initiatives that should be adopted by a city to make it smart.

The pros and cons of STDs

- **Business**: What are the potential benefits for companies from Granada after it becomes a smart city? Will they be harmed? What types of companies will experience a greatest boom? Why?
- **Tourists**: To what extent are tourists prepared to make use of the technologies offered by a tourist destination? What are the main advantages of smart destinations for tourists? And the main disadvantages?

Conclusions

Despite the continued growth of tourism in the city of Granada, its city council is attempting to increase their number and improve the experience further in 2021. It therefore entrusted a team led by Sainz to develop a smart city project called "e-Granada" intended to enhance technological, sustainable and accessibility services for tourism. Despite the efforts of the team made up of experts from different fields, it does not fully grasp the characteristics of STDs, their most useful technological platforms and services, and their potential advantages and disadvantages for businesses and consumers.

Aiming to develop a comprehensible and realistic e-Granada project, the team mandated by the city council consulted *The White Paper on Smart Tourist Destinations in Spain* (Segittur, 2019), an official platform which offers an in depth definition of STDs, their main characteristics, the smart applications and services developed by Spanish cities considered STDs, and the perception of STDs by companies and potential tourists. The data advanced by the official report confirms the following notions:

- Granada can incorporate technological initiatives and platforms at various stages of the tourism experience. For the (i) pre-trip these include online travel agencies, chatbots, social networks and online ticketing. For the (ii) in-trip there are virtual traveler communities (e.g., Tripadvisor), collaborative tourism, geolocation, accessibility and sustainability, whereas for the (iii) post-trip there are comments on social networks and travel platforms.
- Despite the fact that most tourism professionals report that inclusion of smart elements into tourist destinations will improve the tourist experience, they none-theless express doubts as to the extent to which tourists are turning to technology.
- Tourists are generally prepared for the use of technology during their tourist experience. They nonetheless show concern about the monitoring of their location.

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Teaching Note

Case Summary

The recent growth of smart tourism destinations around the world characterized by technological, sustainability and accessibility services is highlighted through a case study of the implementation of an STD in Granada, Spain. Despite the continued

growth of tourism in Granada, its city council desires to increase tourism figures in 2021 by means of a smart city project called e-Granada entrusted to a team led by Rocio Sainz. Although the team comprises experts from a number of different fields, there is evidence that they do not fully grasp the characteristics of STDs, their most useful technological platforms and services or their potential advantages and disadvantages for Granada's businesses and consumers. This case study requires the students to help Sainz's team develop the smart city project. More specifically, based on the data gleaned from the White Paper on Smart Tourist Destinations in Spain, students should clarify the main initiatives of STDs applicable to Granada, as well as explore the potential reactions of tourists and companies to smart environments.

By the end of this case study, students will (i) be in a position to make use of the existing data to offer an updated definition of STDs and their main characteristics, (ii) have gained a better grasp of the nature and functioning of STDs, (iii) be able to describe the most useful technological platforms and services that a city needs to incorporate in order to become an STD, and (iv) be able to identify the potential pros and cons of STD implementation for businesses and consumers.

Teaching and Learning Objectives

Based on secondary sources and on an empirical study developed in Spain, the teaching objectives of this case study are the following:

- 1. Use existing data to offer an updated definition and characterization of STDs. The case study offers an in-depth explanation of the findings of the research carried out Reverté et al. (2018) and The White Paper on Smart Tourist Destinations in Spain (Segittur, 2019) which delve deeper into the definition, main foundations and characteristics (mobility, e-government, economy for smart destinations, society, lifestyle, energy efficiency and environment) of STDs.
- 2. Familiarize students with the nature and function of STDs.

Through a specific analysis of the benefits of smart cities and smart tourism destinations, students will identify the utility of implementing these initiatives.

- 3. Describe the most useful technological platforms and services that a city needs to incorporate in order to become an STD.
 - 3.1. List examples of technological services and elements of typical smart versus traditional destinations.
 - 3.2. Delve deeper into the main initiatives of sustainability, citizenship, technology and tourism experience of the Spanish destinations considered smart.
- 4. Identify the potential pros and cons for business of creating a smarter city.
- 5. Offer insight into the perception among tourists of the ease, acceptance, benefits and drawbacks of STDs.

Target Audience

The current case study targets undergraduate and graduate (master's degree) students of political science, hospitality, business, management, tourism, ICT, marketing and engineering as it covers a series of strategies to be implemented by public and business institutions such as governments, cities, hotels, recreation sites, tourist destinations, market researchers, psychological analysts and market learning. The intention of this case study is to develop an understanding of the nature and functioning of STDs, as well as to identify their most useful technological platforms and services. These are topics that are appropriate for graduate or undergraduate students as they may be entrusted in the future as professionals with the design of STDs. Issues emerging in planning for an STD project, as well as the understanding of the economic and social benefits and disadvantages for consumers and destinations, are themes of research suitable for a master's degree class.

Teaching Approach

The class structure and discussion should heed to the following recommendations:

- 1. The teacher creates groups of 4–5 students and assigns one of the following set of questions to each group:
 - What types of platforms should Granada incorporate to become an STD?
 - What specific services are needed to make the pre-trip experience smart?
 - What smart initiatives must be incorporated to improve the tourism experience during and after the trip?
 - Include two potential examples of sustainability, citizenship and mobile apps initiatives required to make a city smarter.
 - What are the potential benefits for companies from Granada after it becomes a smart city? Will local businesses could be harmed? What types will experience a great boom? Why?
 - To what extent are tourists prepared to resort to tourist destination technology? What are the main advantages offered by smart destinations to the tourist experience? And the main disadvantages?
- 2. The teacher then explains the length of the teamwork (about 3 contact hours).
- 3. Then, the academic staff advises students to familiarize themselves with the other members of the group. If they have not previously met, they should spend time to acquaint themselves and share background, interests and exchange contact details.
- 4. This can be followed by a general group discussion about the questions cited above, as well as to the challenges of STDs.
- 5. Then, the teacher proposes a role-playing activity in which two of the team members delve deeper into the advantages of STDs for businesses and consumers,

and the other two comment on the potential drawbacks for companies and customers.

- 6. After analyzing the great potential of STDs, each group member then stands and offers convincing reasons and observations supporting the utility of Granada becoming an STD.
- 7. The project concludes with a general discussion and a drawing up of a list of the tips to bear in mind on the part of the academic staff.

We hereby include some expected responses to the previous questions which aim to boost discussion among the students:

- What types of platforms should Granada incorporate in order to become an STD? What specific services are useful to render the pre-trip experience smart? What smart initiatives should be incorporated to improve the tourism experience during and after the trip?
- Granada can incorporate technological initiatives and platforms at various stages of the tourism experience. For the (i) pre-trip these include online travel agencies, chatbots, social networks and online ticketing. For the (ii) in-trip there are virtual traveler communities (e.g., Tripadvisor), collaborative tourism, geolocation, accessibility and sustainability. Finally for the (iii) post-trip there are social networks and commentaries on travel platforms.
- What are the potential benefits for companies in Granada after it becomes an STD? Will they suffer in any way? What types will experience a boom? Why?
- Despite the fact that most tourism professionals report that the inclusion of smart elements at tourist destinations improves the tourist experience and behavior, they express doubts as to the extent to which tourists actually use the technology during their trip. Therefore, companies should encourage the use of technological apps to experience greater enjoyment during their visit.
- To what extent are tourists prepared to use technology at a tourist destination? What are their main advantages for the tourist experience? And the main disadvantages?
- Tourists are generally prepared to resort to technology. In fact, 85% (4.21 of 5) consider that geolocation and hyperconnected devices can be useful. Although they do not mind that their data serves third parties to offer them personalized services, they dislike being geolocated.

References

Amelung, B., & Viner, D. (2006). Mediterranean tourism: Exploring the future with the tourism climatic index. *Journal of Sustainable Tourism*, 14(4), 349–366.

Capocchi, A., Vallone, C., Amaduzzi, A., & Pierotti, M. (2019). Is 'overtourism' a new issue in tourism development or just a new term for an already known phenomenon? *Current Issues in Tourism*, 1–5.

- Castro, H. A. (2003). Contradicciones entre turismo, economía y ecología. *Revista Economía y Desarrollo (Impresa)*, 69–88.
- El Independiente. (2018). Granada bate un nuevo récord de turistas en 2018 y supera los 3 millones de visitantes y 6,2 millones de pernoctaciones. *El Independiente de Granada*. https:// www.elindependientedegranada.es/economia/granada-bate-nuevo-record-turistas-2018supera-3millones-visitantes-62-millones. Accessed 22 Feb 2020.
- Giffinger, R., Fertner, C., Kramar, H., et al. (2007). *Smart cities ranking of European medium-sized cities*. Vienna University of Technology.
- González, M. d. I. O. B., & Ruiz, D. F. (2006). La competitividad internacional de los destinos turísticos: del enfoque macroeconómico al enfoque estratégico. *Cuadernos de Turismo*, 17, 7–24.
- GranadaTur. (2018). Datos turísticos de Granada | Turismo de Granada. *GranadaTur*. http://www.granadatur.com/page/310-datos-turisticos-de-granada/. Accessed 22 Feb 2020.
- Gretzel, U., Sigala, M., Xiang, Z., et al. (2015). Smart tourism: Foundations and developments. *Electronic Markets*, 25(3), 179–188.
- Kaur, K., & Kaur, R. (2016). Internet of things to promote tourism: An insight into smart tourism. International Journal of Recent Trends in Engineering and Research, 2(4), 357–261.
- Manville, C., Cochrane, G., Cave, J., et al. (2014). *Mapping smart cities in the EU*. https://www.rand.org/pubs/external_publications/EP50486. Accessed 22 Feb 2020.
- Pou, L. (2012). Turismo y empleo: Una mirada realista. *Journal of Public Policies and Territory*, 1(3), 3944.
- Reverté, F. G., Luque, P. D., López, J. M. G., et al. (2018). Reflexiones sobre la percepción de los Destinos Turísticos Inteligentes españoles por parte de los actores turísticos. ARA: Revista de Investigación en Turismo, 8(1), 21–35.
- Segittur, Secretaría de Estado de Turismo de España. (2019). Seggitur y planificación. https:// www.segittur.es/en/inicio/index.html. Accessed 22 Feb 2020.
- World Tourism Organization, UNWTO. (2019) World Tourism Barometer http://marketintelligence.unwto.org/content/unwto-world-tourism-barometer. Accessed 25 Feb 2020.

Additional Reading

Smart Cities and Smart Tourism Destinations: Definitions and Applications

- Baidal, J. A. I., Monzonís, F. J. S., & Sánchez, D. G. (2016). Gestión turística y tecnologías de la información y la comunicación (TIC): El nuevo enfoque de los destinos inteligentes. *Documents d'Anàlisi Geogràfica*, 62(2), 327–346.
- Buhalis, D. (2003). *ETourism: Information technology for strategic tourism management*. Pearson Education.
- Del Chiappa, G., & Baggio, R. (2015). Knowledge transfer in smart tourism destinations: Analyzing the effects of a network structure. *Journal of Destination Marketing & Management*, 4(3), 145–150.
- Hollands, R. G. (2008). Will the real smart city please stand up? City, 12(3), 303-320.
- Li, Y., Hu, C., Huang, C., et al. (2017). The concept of smart tourism in the context of tourism information services. *Tourism Management*, 58, 293–300.

- Liberato, P., Alen, E., & Liberato, D. (2018). Smart tourism destination triggers consumer experience: The case of Porto. *European Journal of Management and Business Economics*, 27(1), 6–25.
- Meijer, A., & Bolívar, M. P. R. (2015). Governing the smart city: A review of the literature on smart urban governance. *International Review of Administrative Sciences*.
- Pradhan, M. K., Oh, J., & Lee, H. (2018). Understanding travelers' behavior for sustainable smart tourism: A technology readiness perspective. *Sustainability*, 10(11), 4259.
- Wang, D., Xiang, Z., & Fesenmaier, D. R. (2014). Adapting to the mobile world: A model of smartphone use. Annals of Tourism Research, 48, 11–26.

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- Andreu, L., Aldás, J., Bigné, J. E., et al. (2010). An analysis of e-business adoption and its impact on relational quality in travel agency–supplier relationships. *Tourism Management*, 31(6), 777–787.
- Babu, S. R., & Subramoniam, S. (2016). Tourism management in Internet of things era. Journal of Information Technology and Economic Development; Beverly Hills, 7(1), 1–14.
- Baidal, J. A. I., Monzonís, F. J. S., & Sánchez, D. G. (2016). Gestión turística y tecnologías de la información y la comunicación (TIC): El nuevo enfoque de los destinos inteligentes. *Documents d'Anàlisi Geogràfica*, 62(2), 327–346.
- Benítez, V. A., López, M. T., & Gutiérrez, I. M. (2018). Turista 2.0, comportamiento y uso de los medios sociales', Chasqui. *Revista Latinoamericana de Comunicación*, 137, 209–225.
- Buhalis, D. (1998). Strategic use of information technologies in the tourism industry. *Tourism Management*, 19(5), 409–421.
- Gallego, C., & De Pablos Heredero, C. (2016). El impacto de un nuevo paradigma tecnológicosocial: El Internet de las cosas y la capacidad de innovación. *Harvard Deusto Business Research*, 5(2).
- García, M. del C. M., & Jiménez, P. R. (2014). Los Destinos Turísticos Inteligentes en España: ¿un proyecto institucional o el futuro del sector? Espacios turísticos e inteligencia territorial: respuestas ante la crisis : actas del coloquio, 2014, ISBN 978-84-942296-4-0, págs. 65–78. https://dialnet.unirioja.es/servlet/articulo?codigo=6289187
- Hjalager, A.-M. (2010). A review of innovation research in tourism. *Tourism Management*, 31(1), 1–12.
- Kusumasondjaja, S., Shanka, T., & Marchegiani, C. (2012). Credibility of online reviews and initial trust: The roles of reviewer's identity and review valence. *Journal of Vacation Marketing*.
- Medina, A. C., & Plaza, A. G. (2015). El papel estratégico de las tecnologías de la información y las comunicaciones en el turismo. *International Journal of Information Systems and Software Engineering for Big Companies (IJISEBC)*, 2(2), 52–69.
- Miorandi, D., Sicari, S., De Pellegrini, F., et al. (2012). Internet of things: Vision, applications and research challenges. Ad Hoc Networks, 10(7), 1497–1516.
- Tussyadiah, I. P. (2013). Toward a theoretical foundation for experience design in tourism. *Journal* of Travel Research.

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Agag, G., & El-Masry, A. A. (2016). Understanding consumer intention to participate in online travel community and effects on consumer intention to purchase travel online and WOM: An integration of innovation diffusion theory and TAM with trust. *Computers in Human Behavior*, 60, 97–111.

- Alcañiz, J. E. B., & Simó, L. A. (2004). Modelo cognitivo-afectivo de la satisfacción en servicios de ocio y turismo. *Cuadernos de economía y dirección de la empresa*, 21, 89–120.
- Anderson, E., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, 12(2), 125–143.
- Byun, H., Chiu, W., & Bae, J. (2018). Exploring the adoption of sports brand apps: An application of the modified technology acceptance model. *International Journal of Asian Business and Information Management (IJABIM)*, 9(1), 52–65.
- Cassiman, B., Golovko, E., & Martínez-Ros, E. (2010). Innovation, exports and productivity. International Journal of Industrial Organization, 28(4), 372–376.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Femenia-Serra, F., Perles-Ribes, J. F., & Ivars-Baidal, J. A. (2019). Smart destinations and techsavvy millennial tourists: Hype versus reality. *Tourism Review*, 74(1), 63–81.
- Gefen, D., & Straub, D. W. (1997). Gender differences in the perception and use of E-mail: An extension to the technology acceptance model. *MIS Quarterly*, 21(4), 389–400.
- Igor, F., Radovan, B., & Beata, G. (2018). Technology acceptance model in e-commerce segment. Management & Marketing, 13(4), 1242–1256.
- Jain, G., Rakesh, S., & Kamalun, Nabi. M, et al. (2018). Hyper-personalization Fashion sustainability through digital clienteling. *Research Journal of Textile and Apparel*, 22(4), 320–334.
- Lalicic, L., & Dickinger, A. (2019). An assessment of user-driven innovativeness in a mobile computing travel platform. *Technological Forecasting and Social Change*, 144, 233–241.
- Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40(3), 191–204.
- Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3), 101–134.
- See-To, E. W. K., & Ngai, E. W. T. (2019). An empirical study of payment technologies, the psychology of consumption, and spending behavior in a retailing context. *Information & Management*, 56(3), 329–342.
- Wang, W. (2019). The influence of perceived technological congruence of smartphone application and air travel experience on consumers' attitudes toward price change and adoption. *Journal of Hospitality and Tourism Technology*, 10(2), 122–135.

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