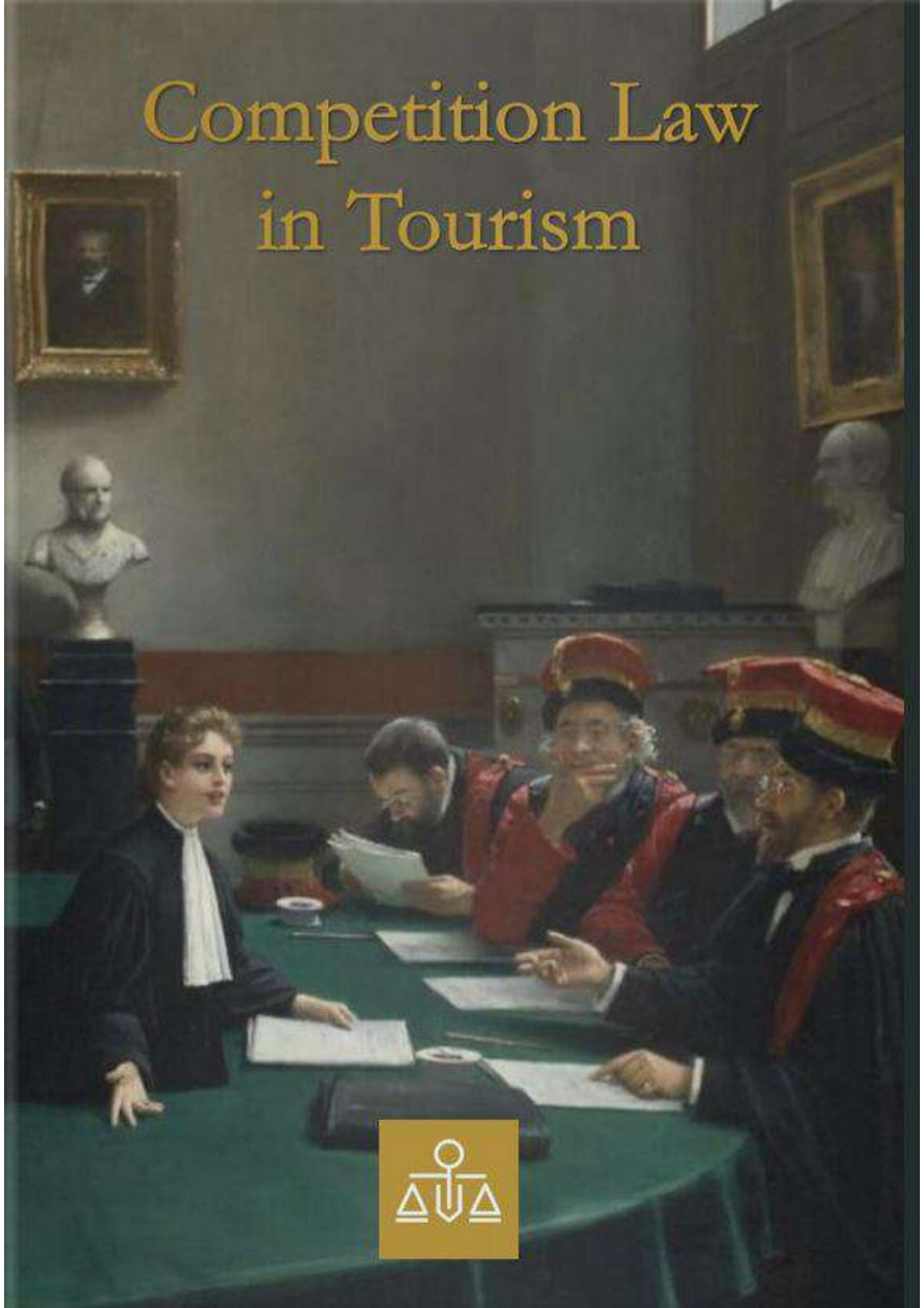


# Competition Law in Tourism



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# ICT as an Instrument for more Efficient Administrative Control of Tourism Activities: Towards Smart Tourism<sup>1</sup>

*Alejandro Corral Sastre<sup>2</sup>*

*Abstract; 1. Introduction; 2. Tourism in Spain: A Strategic Sector for the Economy; 3. Intelligent Tourism: Making a More Sustainable Tourism; 3.1. The development of Smart Cities as a necessary preliminary step to the development of smart tourism; 3.2. Smart tourist destinations; 3.2.1. Big data and the reuse of tourist information; 3.2.2. The Internet of Things and connectivity; 3.2.3. Cloud computing; 3.2.4. Blockchain; 3.3. The use of ICT to reach higher levels of sustainability and tourist quality; 3.3.1. Destination's support capacity; 3.3.2. The residents' participation in the decision making; 3.3.3. Improvement in mobility and energy efficiency in cities; 3.3.4. Increase in the quality of tourism services and economic profitability; 4. The Main Challenges before Smart Tourism; 4.1. Data protection and privacy: the importance of privacy in the design and by default; 4.2. Inclusive technological development; 4.3. Digital tourism detox; 4.4. The collaborative economy in tourism; 5. The Control Activity of Public Administrations in the Digital Ambit; 6. Conclusion; 7. Bibliography.*

## **Abstract**

This paper analyses the use of Information and Communication Technologies (hereinafter, ICT) as a means to achieve sustainable tourism development. In this sense, the concept of intelligent tourism must go beyond the mere use of this technology to increase economic returns, which should help to maintain the carrying capacity, respect the environment and the social and cultural environment of the destination. For this, technologies such as big data, cloud

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<sup>1</sup>This work is part of the Research Project on Data Protection, Security and Innovation: Challenges in a global world after the European Data Protection Regulation, Ref. DER2016-79819-R, of the Ministry's R+D+i program of Economics and Competitiveness, of which Ph.D. Mr. José Luis PIÑAR MAÑAS is the principal investigator: [www.privacidadyacceso.com](http://www.privacidadyacceso.com).

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computing, blockchain, the Internet of Things and Artificial Intelligence, among other technological advances, can become a tourist destination in “smart”, so as to increase the quality of tourist services provided to visitors and the quality of life of the residents. However, the development of these technologies in the tourism sector, as in others, must face important tasks related to respect for the privacy of citizens, social inclusion or the right not to be connected to the collaborative economy, to give some examples.

## 1. INTRODUCTION

This paper aims to highlight the importance of implementing a tourism model based on ICT, in order to move towards a more sustainable model of tourism<sup>3</sup>, focused on increasing not only the demand but also the quality of tourism, the services provided and, therefore, the sector’s profitability, without the destinations being subjected to excessive environmental or social stress.

It should not be forgotten that tourism is an economic sector that is particularly well-paid for the development of ICT and the digital economy. In fact, the adoption of the Internet and the growth of electronic commerce have been faster in the tourism sector<sup>4</sup>. Thus, 2.0 technologies, social networks and the use of mobile devices have had a meaningful impact on tourism in recent years. But we should not stay there; if we want to maintain the levels of tourism competitiveness we must satisfy the requirements of new users of tourist services, much more informed and demanding, that is, what has come to be called the digital traveller (or tourist).

In this sense, the transformation of the tourism model – the conversion of tourist destinations into the so-called “smart destinations” – should not be based exclusively on the use of advanced technologies that allow greater connectivity between companies and users. The transformation should be more profound – more cultural even –, also involving other agents, such as residents in those destinations or competent public administrations. Only then, with the

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<sup>3</sup> FULLANA, P. & AYUSO, S., *Turismo sostenible*, Ed. Rubes, Barcelona, 2002, p. 30, “the development of sustainable tourism that meets the needs of tourists and host regions present while protecting and improving future opportunities. It is focused on the management of all resources in a way that satisfies all economic, social and aesthetic needs while respecting cultural integrity, essential ecological processes, biological diversity and support systems for life”.

<sup>4</sup> SEGITTUR, *Smart Destination*, 2015, p. 19.

participation of everyone in the process, can we talk about sustainable tourism. This is one of the main objectives of the intervention of Law and Administration in the sector, reach a level of tourism development appropriate, i.e. profitable, without forgetting that uncontrolled growth can cause significant damage to the environment and society, which, in the end, has a very negative effect on the sector itself<sup>5</sup>.

## 2. TOURISM IN SPAIN: A STRATEGIC SECTOR FOR THE ECONOMY

That tourism is a very relevant sector, essential rather, for the economy of our country is nothing new. On the contrary, we have become accustomed to economic information, pointing to the importance of this sector for the excellent progress of the economy. The published data do nothing but confirm this idea. On the one hand, according to the Tourism Satellite Account in Spain (CSTE, in Spanish)<sup>6</sup>, published by the National Institute of Statistics, the sector contributes 11.2% of the Gross Domestic Product (GDP), which translates into 125,529 million euros, a figure nothing despicable. On the other, the contribution to employment accounts for 13% of the total, that is, 2.56 million jobs<sup>7</sup>.

Therefore, in view of the data above, as well as Spain's position as a world tourist destination, we must maintain this high level of competitiveness that happens, without a doubt, by betting on a change in the tourist management

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<sup>5</sup>This paradox seems to refer to FERNÁNDEZ RODRÍGUEZ, C., in "El valor de lo intangible y armonizado en la calidad turística europea", *Revista de Derecho de la Unión Europea*, no. 24, 2013, p. 343, when he states that "when talking about tourism and sustainable development are relating two phenomena that, in themselves, can be at first sight, contradictory: a phenomenon that from the numerical point of view and quality can be deteriorating environmental in which it develops and another phenomenon that precisely pursues the reverse effect: that the development and the environment be maintained at such a point of equilibrium that there is a perfect interaction sustained over time and for the enjoyment of future generations".

<sup>6</sup>The Tourism Satellite Account of Spain (CSTE) is a summary statistic composed of a set of accounts and tables, based on the methodological principles of national accounting, and which presents the different parameters of tourism in Spain, for a reference date Dadaist. The current base is the year 2010, and it basically comprises three types of elements:

- Accounts and offer tables, in which it is a question of characterising the production structure and the costs of tourism companies;
- Demand tables, in which the aim is to characterise, from the economic point of view, the different types of tourists, national tourism, the type of goods and services demanded, etc; and
- Tables that interrelate the supply with the demand, which allow obtaining integrated measurements of the contribution of tourism to the economy through macro variables such as GDP, production or employment.

<sup>7</sup> 2016 data, published on [www.ine.es](http://www.ine.es) on 18 December 2017.

formulas that allow facing the new challenges more effectively. In this sense, the use of ICTs becomes a strategic element to achieve this goal.

However, we must not only bear in mind this economic dimension – which is very important –, and the global adoption of ICT should not only be used to increase the supply and, therefore, the number of visitors. On the contrary, it can allow, for example, to know, in realtime, the number of tourists to know if the carrying capacity<sup>8</sup> of the destination has been exceeded and, therefore, adopt necessary measures to protect the environment. In short, it can help achieve the sustainability of the sector.

The concept of intelligent tourism that is going to be used in this work has this idea in mind, that is, the use of ICT in the sector not only to increase the supply but to globally manage the tourist destination, improve the quality of the product and grow in a sustainable way.

### 3. INTELLIGENT TOURISM: MAKING A MORE SUSTAINABLE TOURISM

When we use the intelligent adjective to refer to a noun as a city or tourism, we should try to clarify what we are referring to. Of course, it seems that we can talk about the use of ICT, there is no doubt, but, for this, we have already used another adjective that seemed to refer clearly to these technologies – *digital*, a word that has been used for “digital tourism” or “digital economy”. What has changed, then, to now use the adjective “intelligent”? Well, it seems that, currently, by referring to tourism or a city as “smart”, we are indicating that it is something more than the mere use of ICT<sup>9</sup>, they provide a value that implies a total transformation of the noun, a structural change, which is precisely what is happening in tourism.

As already indicated, the tourism sector has taken advantage, with exceptional performance, of the use of these technologies. Tourism companies have been

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<sup>8</sup> On the concept of carrying capacity, see O'REILLY, A. M., “Tourism carrying capacity: concept and issues”, *Tourist Management*, vol. 7, 1986, pp. 254-258; SALOM PARETS, A., “The limitations to the population and spatial growth established by the territorial and urban regulations”, INAP, 2011, pp. 309 *et seq.*; & GARCÍA SAURA, P. J., *Desarrollo sostenible y Turismo. Análisis del régimen jurídico medioambiental de la legislación turística española*, Aranzadi, 2007, p. 140, “It is necessary to establish the carrying capacity to determine the limit of tourists compatible with a sustainable offer and undertake tourism management based on this variable”.

<sup>9</sup> We must bear in mind, in this sense, that these technologies are constantly evolving and transforming. Think in this sense, in the Internet of Things or Artificial Intelligence itself, which have a potential that, as the author estimates, we are not able to intuit.

environment to people”<sup>11</sup>. Likewise, the Technical Standardisation Group 128 of AENOR (AEN/CTN 178/SC2/GT1 N 003) defines it as “(...) the holistic vision of a city that applies ICT to improve the quality of its life and the accessibility of its inhabitants and ensures a sustainable economic, social and environmental development in permanent improvement. A smart city, allows citizens to interact with it in a multidisciplinary way and adapts in real time to their needs, efficiently in quality and costs, offering open data, solutions and services aimed at citizens as people, to solve the effects of the growth of cities, in public and private spheres, through the innovative integration of infrastructures with intelligent management systems”.

From these definitions, it is worth highlighting an idea that seems essential to the author: the use of ICT and technological advances to improve the quality of life of citizens and achieve sustainable development of cities. Of course, a city needs an adequate business and economic fabric to achieve these objectives, but the focus is mainly on citizens<sup>12</sup>. This is a good starting point for what will later be defined as *intelligent tourist destination*. The idea that supports this concept, in the author’s opinion, should be the same, which is to say, the use technological advances to achieve a sustainable tourism development, focused on the quality of services provided to tourists, but without forgetting other interests that are essential for the development of tourism itself, such as the protection of the environment and respect for local culture and identity and its residents, among others<sup>13</sup>.

However, it should be noted that the fact that smart tourist destinations are based on the development of smart cities does not imply that they have to be

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<sup>11</sup> PIÑAR MAÑAS, J. L., “Law, technique and innovation in the so-called smart cities”, in *Smart Cities. Derecho y técnica para una ciudad más habitable*, PIÑAR MAÑAS, J. L. (Dir.), SUÁREZ OJEDA, M. (Coord.), Reus, 2017, p. 18.

<sup>12</sup> CANTÓ LÓPEZ, M.ª T., “Public Administration and active participation of the citizen in the management of the city”, in *Smart Cities. Derecho y técnica para una ciudad más habitable*, *op. cit.*, p. 39.

<sup>13</sup> On the importance of people in the development of smart cities and intelligent tourist destinations, see GÓMEZ OLIVA A., SERVER GÓMEZ, M., JARA, A. J., & PARRA-MEROÑO, M.ª C., “Turismo inteligente y patrimonio cultural: un sector a explorar en el desarrollo de las Smart Cities”, *International Journal of Scientific Management and Tourism*, no. 3, 2017, p. 394: “Cities increase their population progressively and therefore the pace of life in them accelerates. The need for interaction between people and different sectors of the city grows and with this increases the social and intellectual capital of the population. This means that a Smart City, making use of pioneering technologies, needs a nucleus based on the people in which education, culture and commerce interact. This factor has been the least developed despite the fact that any change or improvement in the infrastructure of a city must be based on communities and people. The transformation of a city into an intelligent city should aim to improve the quality of life of the individuals who make use of it”.

implemented in the same spaces or share objectives<sup>14</sup>. A smart city involves the use of technologies to increase the living standards of its residents, while an intelligent tourist destination, for its part, focuses its objectives on tourists (without forgetting the residents, of course), but with a different purpose. In this sense they are close concepts but with different defining lines<sup>15</sup>.

### 3.2. Smart tourist destinations

Taking into account what was stated in the previous section, the concept of intelligent tourist destination is based on the advances of ICT applied to a specific territory and the tourism sector, but in a way that facilitates decision-making or, even, applying systems of artificial intelligence, be able to take them by yourself. Thus, one of the main characteristics of an intelligent tourist destination is the ability to generate intelligence, that is: “that its managing entities (which can be, artificial intelligence systems) must be able to obtain data in real time, analyse them and make decisions that allow them to be more efficient in the overall management of the destination: in its promotion and commercialisation, in the creation of unique and personalised experiences for the tourist, in attention to residents, in the promotion of a sustainability environment, etc.”<sup>16</sup>.

In this sense, the intelligent tourist destination means going beyond the mere acquisition and application of the most advanced technologies, it implies a change at all levels and the intervening agents, that is, “it is not about doing the same with new applications, technological if not to revolutionise tourism management according to the technological possibilities and the capacity for local action”<sup>17</sup>, and this with the aim of achieving a sustainable tourism development based on quality.

In the following sections, we will try to show how the most avant-garde technological advances can help achieve the objective of an intelligent tourist

<sup>14</sup> This idea is deduced from AGENCIA VALENCIANA DEL TURISMO, *Big Data, challenges and opportunities for tourism*, Valencian Institute of Tourism Technologies, 2015, pp. 1719.

<sup>15</sup> In this sense, see AGENCIA VALENCIANA DEL TURISMO, *Destinos Turísticos Inteligentes. Manual Operativo para la configuración de Destinos Turísticos Inteligentes*, 2015, p. 11, which states that “The origin of an intelligent tourist destination can’t be associated exclusively with the application of the Smart City paradigm to tourist destinations. A series of structural changes in the tourism sector justify the need for new approaches in the management of tourist destinations, a need that comes together with the consolidation of the Smart City paradigm and which turns the intelligent tourist destination into a reference for tourism management”.

<sup>16</sup> *Smart Destination*, *op. cit.*, pp. 204205.

<sup>17</sup> *Destinos Turísticos Inteligentes. Manual Operativo para la configuración de Destinos Turísticos Inteligentes*, *op. cit.*, p. 12.

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<sup>16</sup> *Smart Destination*, *op. cit.*, pp. 204205.

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destination based on reasonable growth. Thus, advances such as big data, the Internet of Things, cloud computing, Artificial Intelligence or blockchain, just to point out the most important ones, have a determining role in the configuration of intelligent tourist destinations.

### 3.2.1. *BIG DATA AND THE REUSE OF TOURIST INFORMATION*

We are no longer, in reality, before a novelty, because, for several years, the concept of big data has been used to refer to the phenomenon by means of which enormous amounts of digital information, practically unattainable by the human mind, is captured, managed and treated by automated information systems. The main characteristic of this system, however, lies in the potential capacity to “discover or infer facts and trends hidden in these data”<sup>18</sup>. Therefore, it becomes an ideal tool to better understand the behaviour of citizens before certain services offered in the market and, in addition, to try to deduce future behaviours, so that we can anticipate possible trends.

This is, precisely, the main use that can be given to big data in the tourism sector, that is, to better understand the behaviour of consumers and deduce possible changes in attitude. In short, perform a predictive market analysis and adopt a proactive position in the face of possible changes<sup>19</sup>. Additionally, taking into account the current state of the art, this possibility is not reserved for large companies and operators in the sector, but it is within reach, at a reasonable price, of any small, medium or micro enterprise, increasing the competitiveness of the same. However, the fact that the data on which these tools act comes from the tourists themselves and the residents of a certain tourist destination, so that, to a large extent, they should obtain some information or advantage from those companies that take advantage of the data and information inferred. Only by reflecting the benefit of that information on the residents and visitors of the tourist destinations, we will be moving towards a sustainable tourism development based on technology. This is an idea that, for now, can only be pointed out, but that can be, without doubt, very interesting.

Another intriguing question that arises about big data refers to the use that companies and individuals can make of the data generated by the public administrations with competence in tourism. According to the provisions of Law 19/2013, of 19 November, Transparency, Access to Information and Good

<sup>18</sup> GIL, E., *Big data, privacidad y protección de datos*, Agencia Española de Protección de Datos, 2016, p. 16.

<sup>19</sup> *Big Data, challenges and opportunities for tourism, op. cit.*, p. 12.

Governance (hereinafter, LTAIBG), such information must be public (active advertising, Articles 5 through 11) and, besides, can be reused by individuals and legal entities of the private sector, for commercial and non-commercial purposes, in the terms established by Article 3.1 of Law 37/2007, of 16 November, on the reuse of information of the public sector<sup>20</sup>.

Conversely, the potential of these technologies to predict possible negative impacts on the environment or on the destinations' social and cultural settings must also be taken into account. They can jeopardise the sustainability of the sector in the medium or long term. In this sense, these large-scale data analysis tools could be used by the competent public administrations (essentially the autonomous communities) as prevention instruments. Thus, they could anticipate the damage and, therefore, minimise or, even, avoid its consequences. Logically, the necessary legal coverage should be given to this administrative action, which would be related to police activity, restricting certain activities of individuals in certain threatened areas<sup>21</sup>.

Finally, we cannot fail to mention that the analysis and treatment of this enormous amount of data, together with the use of advanced artificial intelligence systems, can represent a real revolution in the sector, given that decision-making would no longer be hands of the tourist managers, but of "machines", with all the ethical and legal controversies that can arise, but without neglecting, as is logical, the advances and benefits that, also, it can bring.

### 3.2.2. *THE INTERNET OF THINGS AND CONNECTIVITY*

One of the essential characteristics of intelligent tourist destinations is its high level of connectivity for the development of the Internet of Things and M2M (machine to machine) systems. This connectivity allows both companies and visitors to be connected to the Internet at all times, benefiting from multiple services accessed through the network. In this sense, we no longer only talk about the Internet of Things, that is, the connection of different physical elements in a wider network, but the Internet of Services and Internet of People<sup>22</sup>.

<sup>20</sup> BAUZÁ MARTORELL, F. J., "Big data y open data en la administración turística: acceso y reutilización de la información", *Revista Vasca de Administración Pública*, no. 108, 2017, p. 24.

<sup>21</sup> *Ibidem*, p. 23: "(...) we must admit the possibility of individuals accessing the data held by the Tourist Administration for commercial or non-commercial purposes, as well as the option that assists the Tourist Administration in intercepting the data of users and service providers that circulate in social networks, this being an ideal means to deploy the inspection activity and consequently the sanctioning power".

<sup>22</sup> *Destinos Turísticos Inteligentes. Manual Operativo para la configuración de Destinos Turísticos Inteligentes*, op. cit., p. 14.

This connectivity is specifically based, among others, on the following elements: free WiFi (one of the services most demanded by tourists); mobile applications (as a result of the widespread use of these devices), QR codes (which facilitate access to certain web services), geolocation systems (allowing visitors to know where they are at all times, as well as what to visit) and augmented reality systems or holography (which can be applied to museums, historical or cultural heritage)<sup>23</sup>. It is also essential in order to achieve an adequate level of data that allows their intelligent use based on big data, as indicated in the previous section.

Moreover, this connectivity is present throughout the cycle of tourist travel: from the preparation, that is, what has been called “assisted inspiration”, in which a large amount of information about the tourist destination is offered to potential visitors; during the trip itself, through ICT the experience lived by tourists becomes much more intense, it facilitates their mobility and interaction with operators or other travellers, in short, it allows more accurate decisions to be made; finally, the after, that is, the possibility of measuring with great efficiency the degree of satisfaction of the tourists, increasing the reputation of the businessmen and professionals and allowing, also, to improve in those aspects that have not been liked by the users of tourist services<sup>24</sup>.

### 3.2.3. CLOUD COMPUTING

Cloud computing, on the one hand, is a technology that allows, essentially, to increase the effectiveness and efficiency in the use of ICT. In short, it allows any person, company, professional or other, regardless of the economic sector in which they operate, to access, without geographical or temporal restriction, and using the device that is deemed most appropriate (mobile, tablet, etc.), to computer resources such as softwares and platforms, depending on the needs of each moment, and all this without the need to invest large sums in resources and technological infrastructures<sup>25</sup>. On the other hand, it facilitates the possibility of developing new products and technological services. We are, therefore, before “a model of technological services that allows access on demand and through the network to a set of shared and configurable resources (such as networks, servers, storage capacity, applications and services) that can be quickly assigned and released with minimal management by the service provider”<sup>26</sup>.

<sup>23</sup> *Smart Destination, op. cit.*, pp. 3738.

<sup>24</sup> *Ibidem*, p. 20.

<sup>25</sup> CASASOLA, M., MOLINA, M., & RECIO GAYO, M., “La nube: nuevos paradigmas de privacidad y seguridad para un entorno innovador y competitivo”, CIDE, 2014.

<sup>26</sup> Joint report of the General Council of Spanish Lawyers and the Spanish Agency for Data Protection on the *Use of Cloud Computing by law firms and the right to protection of personal data*, 2012.

It is a technology that, as in other areas, can bring great benefits in the tourism sector, since it allows improving services and reducing corresponding costs. Thus, in the hotel subsector, increasing the power and flexibility of the management; in the catering sector, allowing to manage from the food supply to the occupation of the premises or the intermediation, with purchase of tickets online or virtual agencies, by put only some relevant examples<sup>27</sup>.

#### 3.2.4. BLOCKCHAIN

In the author's opinion, the effects that this technology can have on the tourism sector have not been, for the moment, properly studied. It is an innovation that can mean a revolutionary change, not only in the economy but also in culture and the way of thinking<sup>28</sup>. One of the essential characteristics of the blockchain is the disappearance of intermediaries or trusted third parties, which dramatically reduces transaction costs and increases the transparency and integrity of the information<sup>29</sup>. This circumstance makes the developments that can occur in the economy, in general, and in tourism, in particular, very interesting. Thus, the use of "contracts or intelligent agents", with "self-executing" capacity, without the need for intermediaries, the use of decentralised applications (Dapps) that use open codes, the possibility of taking advantage of the system as a platform to improve the management of smart cities and smart tourist destinations, to the extent that information becomes neutral, non-hierarchical, accessible and safe<sup>30</sup> and, therefore, allows increasing the participation of citizens in management.

Likewise, this technology can be very appropriate to improve the control that the competent public administrations must perform on the activity of companies and professionals that provide tourism services, guaranteeing quality and respect for the environment and the social environment, through, for example, the creation of records of tour operators in a given territory<sup>31</sup>.

<sup>27</sup> GUASCH PORTAS, V., & SOLER FUENSANTA J. R., "Cloud computing, turismo y protección de datos", *Revista de Análisis Turístico*, no. 17, 2014, pp. 63-64.

<sup>28</sup> On this new technology, see TAPSCOTT, D., & TAPSCOTT, A., *The blockchain revolution*, Deusto, 2017; or CERVIGNI, L. S., *The blockchain in practice*, BIDIT, 2016.

<sup>29</sup> GARCÍA GONZÁLEZ, L. C., POLO TOLÓN, M., & MOLERO MANGLANO, I., "Tecnologías Blockchain", in PREUKSCHAT, A., (Coord.), *Blockchain: La revolución industrial de internet*, Gestión 2000, 2017, p. 236.

<sup>30</sup> JUNESTRAND, S., "Smart Cities in the blockchain era", in PREUKSCHAT, A., (Coord.), *Blockchain: La revolución industrial de internet*, *op. cit.*, p. 107.

<sup>31</sup> FERNÁNDEZ HERGUETA, R., "The public sector and the use of the blockchain" in PREUKSCHAT, A., (Coord.), *Blockchain: La revolución industrial de internet*, *op. cit.*, p. 94.

### 3.3. The use of ICT to reach higher levels of sustainability and tourist quality

The importance of the use of ICT to improve tourism management by companies and the tourist's experience in the destination has already been highlighted, but we cannot stay there. The use of these technologies should be presided over by a broader objective: to achieve a tourism development in which the fundamental idea is quality and tourism sustainability. In this sense, the use by smart tourist destinations of all the technologies mentioned above allows more effectively control tourism growth and, therefore, increase the quality and sustainability of tourism. Below are mentioned, without intending to be exhaustive, the main benefits that we can obtain from these technologies in order to increase the levels of sustainability.

#### 3.3.1. DESTINATION'S SUPPORT CAPACITY

One of the essential concepts regarding sustainable tourism is the destination's support capacity, that is, the maximum number of visitors that a given territory can sustain without damaging the natural environment or social environment. That being the case, an increase of the tourist demand without the corresponding administrative control corresponding can be, in the medium or long term, counterproductive, because, in the first place, it will be subjecting the corresponding territories to very high levels of environmental stress and/or social and, secondly, because the quality of the destination perceived by the client will decrease, which may put the survival of that territory as a tourist destination at risk. Of course, trying to increase the number of tourists at any price without taking into account other considerations can not be considered a sustainable tourism development.

In this sense, ICT applied to tourist destinations can serve as a tool to reduce these risks. Thus, it can help competent public administrations to determine, with a lower margin of error, which is the number of visitors that a given destination can assume without negatively affecting other goods susceptible to protection. Also, these same public administrations can be provided, always respecting the principle of legality, of course, instruments and control tools that improve the effectiveness of administrative intervention without increasing, or even decreasing, the administrative burdens that companies must endure and professionals of the sector<sup>32</sup>.

<sup>32</sup> BAUZÁ MARTORELL, F. J., "Big data y open data en la administración turística: acceso y reutilización de la información", *op. cit.*, p. 26: "Being that the reality of the tourism sector is drifting towards the digital world, administrative intervention cannot remain anchored in the inspection visits and the documentation requirement, because in that case it does not reach the fullness of the legal-administrative relationship. The analysis of the networks becomes essential to ensure compliance with tourism regulations and macro data analysis of course allows for massive and automated verification of compliance or non-compliance (fraud). Otherwise, we find the paradox that the applicable regulations are not required of a large number of obligors, because they simply do not exist for the tourism administration, because there is no evidence of their involvement in the market as tour operators, and control over they are given exclusively in case of an eventual complaint".

### 3.3.2. *THE RESIDENTS' PARTICIPATION IN THE DECISION MAKING*

A sustainable tourism development, as already stated above, requires the residents' adequate participation in public decision-making in tourism<sup>33</sup>. In this sense, the use of ICT can facilitate this task, given that it allows such participation through, for instance, mechanisms for consultation or public information in the electronic office or an Internet portal of the corresponding administration. As is easily understandable, the residents of a particular tourist destination are especially sensitive regarding the development of tourism policies that have as their sole objective the increase in tourist demand and, therefore, the number of visitors<sup>34</sup>. It is, therefore, especially relevant, in the tourism field, to facilitate the participation of citizens in making administrative decisions that will affect them<sup>35</sup>.

### 3.3.3. *IMPROVEMENT IN MOBILITY AND ENERGY EFFICIENCY IN CITIES*

Other aspects that can be positively affected by the use of ICT in smart tourist destinations are those that refer to mobility within the cities themselves<sup>36</sup>. In this sense, when talking about smart cities and smart tourism destinations, we also refer to an improvement in mobility within the corresponding territories, so that, among other aspects, the traffic flow is optimised, the efficiency of public transport services is increased, avoiding traffic jams, or so-called "peak hours", saving fuel, reducing pollution<sup>37</sup>. This improvement in mobility, as is logical, results in a higher quality of services and a lower environmental and social impact, which is why it is crucial to achieve sustainable tourism development.

<sup>33</sup> FULLANA, P., & AYUSO, S., *Turismo sostenible*, *op. cit.*

<sup>34</sup> In recent months outbreaks of "turismophobia" have emerged as a result of the increase of tourists in certain Spanish cities, such as Barcelona or Madrid. See *El País*, 28 May 2017, available at: [https://elpais.com/economia/2017/05/27/actualidad/1495908161\\_850351.html](https://elpais.com/economia/2017/05/27/actualidad/1495908161_850351.html).

<sup>35</sup> On the importance of citizen participation in the planning of territorial planning, see BOUAZZA ARINO, O., "La participación ciudadana en el proceso planificador: fundamento constitucional y legal", *WPS Review International on Sustainable Housing and Urban Renewal*, no. 4, 2016, p. 40, "This will seek to find the legal tools that allow the configuration of a territorial planning model that respects the definition of the concept of social justice, going beyond strictly economic concerns. An elaborated planning taking into account the opinion of the population in relation to urban development allowing, in this way, the right of the resident population to their involvement in the democratic decision procedures. Thus, they will be able to express their position on the scheme that they plan to carry out and that will affect their lives or, using a fashion concept, their quality of life".

<sup>36</sup> *Destinos Turísticos Inteligentes. Manual Operativo para la configuración de Destinos Turísticos Inteligentes*, *op. cit.*, p. 22.

<sup>37</sup> MARTÍNEZ GUTIERREZ, R., "El impacto de las Smart Cities en la tutela ambiental y en la planificación urbana", in *Smart Cities, Derecho y técnica para una ciudad más habitable*, *op. cit.*, p. 64.

### 3.3.4. *INCREASE IN THE QUALITY OF TOURISM SERVICES AND ECONOMIC PROFITABILITY*

One of the elements that contribute to tourism sustainability is quality – only if a high level of quality is reached can we talk about sustainability, since it will also increase the economic profitability of tourism. Quality tourism is economically profitable because it requires fewer consumers to achieve the same returns. Moreover, a saturated and crowded tourist destination cannot be considered quality, as it generates discomfort for residents and bad image of destination for users.

However, quality tourism should not be mistaken for expensive or elite tourism, because it could not be considered socially sustainable either. Quality tourism is, as the World Tourism Organization itself has shown, “the result of a process that implies the satisfaction of all the legitimate needs and expectations of the consumer with respect to the products and services demanded, at a price acceptable, in accordance with the underlying determinants of quality, such as health and safety, hygiene, accessibility, transparency, authenticity and harmony of the tourism activity considered with its human and natural environment”; in other words, the total satisfaction of the client with the services received. In fulfilling this objective, ICTs have an essential mission, since they allow, to mention just a few examples, to have access to the Internet from anywhere, to know the peak hours to avoid crowding (occupation status of restaurants, museums, means of transport), access information about cultural news, among others. In short, the use of technologies improves the quality of life of the tourist (and, also, the leisure of the resident, which results in an improvement in the perception of tourism).

## 4. THE MAIN CHALLENGES BEFORE SMART TOURISM

### 4.1. **Data protection and privacy: the importance of privacy in the design and by default**

As is easily understandable, one of the essential challenges facing the development of smart tourism is precisely the risk it poses to privacy<sup>38</sup>. Thus, the extensive use of data that is carried out through big data, cloud computing, the Internet of Things, etc., implies that it is increasingly difficult to guarantee the citizens total

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<sup>38</sup> See PIÑAR MAÑAS, J. L., “Derecho, Técnica e Innovación en las Llamadas Ciudades Inteligentes. Privacidad y Gobierno Abierto”, in *Smart Cities. Law and technique for a more livable city*, *op. cit.*, p. 21; and VALERO TORRIJOS, J., “Ciudades inteligentes y datos abiertos: implicaciones jurídicas para la protección de los datos de carácter personal”, *Istituzioni del Federalismo, Rivista di Studi Giuridici e Politici*, no. 4, 2015, pp. 1025 *et seq.*

control over their personal data, so that other tools must be devised to ensure a scrupulous respect for this fundamental right. In this regard, the principles of data protection by default and in the design<sup>39</sup> that have been included in Article 25 of Regulation (EU) 2016/679 of the European Parliament and of the Council, of 27 April 2016, on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC, also known as General Data Protection Regulation (hereinafter, GDPR). These principles are going to be essential in the creation of intelligent tourist destinations, because the development of technology and the necessary applications by companies and public administrations, as well as their use by tourists, must always take into account the users' privacy, as well as the need imposed in the new GDPR to always use no more than the minimum essential data for the provision of a specific service (minimisation). However, this tension between technological advances and law is not new<sup>40</sup>; hence it can be affirmed that, in some way, if the expression is allowed, they are condemned to be understood<sup>41</sup>.

#### 4.2. Inclusive technological development

When talking about technological development applied to tourist destinations, we must take into account all those people who, for different reasons, do not have or do not want to have access to ICT. One might think, above all, of the elderly, disabled or people without sufficient resources, but also of those who have voluntarily opted to exclude themselves from technological development<sup>42</sup>. Well, these people cannot be left out of the benefit of these advances, but, logically, should be included. In this regard, it should be noted that any technological innovation, including digital tourism, must be inclusive, not exclusive<sup>43</sup>.

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<sup>39</sup> A detailed study on these two essential principles can be found in DUASO CALES, R., "Los Principios de Protección de Datos desde el Diseño y Protección de Datos por Defecto" in PIÑAR MAÑAS, J. L. (Dir.), ÁLVAREZ CARO, M., & RECIO GAYO, M., (Coords.) *Reglamento General de Protección de Datos. Hacia un modelo europeo de privacidad*, Reus, 2016, pp. 295 et seq.

<sup>40</sup> PIÑAR MAÑAS, J. L., *Derecho e innovación tecnológica. Retos de presente y futuro*, CEU Ediciones, 2018, p. 9.

<sup>41</sup> RECIO GAYO, M., *Protección de datos personales e innovación: ¿(In)compatibles?*, Reus, 2016.

<sup>42</sup> The right not to be digital, which is not always respected, as shown in PIÑAR MAÑAS, J. L., *Derecho e innovación tecnológica. Retos de presente y futuro*, op. cit., p. 22.

<sup>43</sup> *Ibidem*, p. 23.

### 4.3. Digital tourism detox

A prominent tourist claim (although not exempt from certain snobbery) in these times of total digitalisation may be, precisely, the absence of connection, that is, the possibility of evading you for a few days or, in the best of cases, weeks, of all the technological devices that keep us in permanent contact with the digital world. In this sense, and contrary to what has been developed throughout this work, it is not unreasonable to think that this type of tourist destinations can be successful. We can talk about disconnected tourism, or as already mentioned in some guides and specialised tourist blogs, “*Déttox digital tourism*”<sup>44</sup>, that is, for digital detoxification. These destinations are characterised by their lack of connection and the absence of technology.

The most interesting of these destinations without technology is that they must be considered tourist destinations of the highest quality, despite their disconnection from ICT. A brief reflection on this circumstance may lead to the conclusion that citizens sometimes need to disconnect. It could thus raise the extension of the right to the disconnection that labour doctrine<sup>45</sup> speaks to other areas of law. A reflection that the author only aims to exceed the object of the present work. In any case, it should be mentioned that since the entry into force of Organic Law 3/2018, of 5 December, on Data Protection and Guarantee Of Digital Rights, that right to digital disconnection is recognised, and other similar, both in the workplace and in social relationships.

### 4.4. The collaborative economy in tourism

The use of ICT has allowed new economic models that question the traditional one to emerge in the tourist sector. Thus, they have made it possible for private citizens – not companies or professionals in the sector – to provide certain tourism

<sup>44</sup> See the article “¿WiFi? No, gracias. Viajes para desconectar”, which poses as an alternative to digital or intelligent tourism, the return to analogue tourism, in destinations that are characterised by being “tech-free paradises”. It is pointed out that “Some Caribbean islands such as San Vincent or the Grenadines offered themselves as digital detoxification holidays (*Digital Derox*). It is their main attraction besides some magnificent beaches, transparent waters and good hotels, that is: without a computer, without a telephone, without Wi-Fi, as was done before. The disconnection is total. (...) It is a new trend that will grow in the coming years. Travellers have already tried the experience of travelling completely connected, but there are many who want to go back to the old days when travelling was leaving many things behind”; available at: <https://www.lonelyplanet.es/blog/wifi-no-gracias-viajes-para-desconectar>. In the same sense, see “the traveler” section in *El País*, published on 6 April 2016, in which there is a talk of “Hotels where to disconnect from the world”. For its part, the state company *Paradores de Turismo* offers its detox program.

<sup>45</sup> See, among others, ALEMÁN PÁEZ, E., “El derecho de desconexión digital: una aproximación conceptual, crítica y contextualizadora al hilo de la *Loi Travail* N.º 2016-1088”, *Trabajo y derecho: nueva revista de actualidad y relaciones laborales*, no. 30, 2017, pp. 12 *et seq.*

services in what has come to be called, with greater or lesser fortune, a collaborative economy. Without going into an exhaustive analysis of this economic phenomenon, it must be stated that it represents an important challenge for the tourism sector, especially in terms of regulation, as it is not entirely clear if they must submit to the same rules as the rest of companies and professionals or not<sup>46</sup>. There are doubts, therefore, of whether we are facing services rendered in unfair competition<sup>47</sup>. In any case, what is clear, in my opinion, is that this new model was born at the mercy of the development of ICT.

## 5. THE CONTROL ACTIVITY OF PUBLIC ADMINISTRATIONS IN THE DIGITAL AMBIT

It is worth mentioning the possibilities offered by ICTs to public administrations for the fulfilment of their mission of control and supervision of tourist activities. We have already referred to the fact that the development of ICT by companies and operators in the tourism market, together with the extensive liberalisation that the sector has undergone in the last ten years, have contributed to the administrative activity control is more and more difficult for competent administrations. Thus, the systematic substitution of prior authorisations by subsequent control systems (responsible declarations and previous communications) have placed the administrations in a difficult position<sup>48</sup>.

However, the decisive impulse to the development of e-Government from Laws 39 and 40 of 2015, both of 1 October (of Common Administrative Procedure of Public Administrations and of Legal Regime of the Public Sector, respectively), and the possibility to use, after legal authorisation, new control systems beyond the traditional ones, can help to fulfil this mission of supervision of the tourist market.

In this sense, Public Administrations, through the use of technologies such as big data, blockchain or cloud computing, can significantly improve their effectiveness when it comes to verifying compliance with the requirements

<sup>46</sup> LAGUNA DE PAZ, J. C., "The role of regulation in the so-called collaborative economy", *Journal of European Studies*, no. 70, 2017, p. 159.

<sup>47</sup> MIRANDA SERRANO, L. M., "Economía colaborativa y competencia desleal: ¿deslealtad por violación de normas a través de la prestación de servicios facilitados por plataformas digitales?", *Revista de Estudios Europeos*, no. 70, 2017, p. 197.

<sup>48</sup> CORRAL SASTRE, A., *op. cit.*

by operators in the tourism sector. However, the risks generated to citizens in their fundamental rights must also be taken into account, essentially the protection of their personal data<sup>49</sup>. In this line, BAUZÁ MARTORELL proposes that “the option that assists the Tourist Administration in intercepting the data of users and providers of tourist services that circulate in social networks, being this an ideal means to display the activity Inspector and consequently the sanctioning power (...) Being that the reality of the tourism sector derives towards the digital world, the administrative intervention cannot remain anchored in the inspection visits and the documentation requirement, because, in that case, it does not reach the fullness of the legal-administrative relationship. The analysis of the networks becomes essential to ensure compliance with tourism regulations and macro data analysis, of course, allows for massive and automated verification of compliance or non-compliance (fraud)”<sup>50</sup>. This possibility will undoubtedly have to be recognised by the competent administrations, taking into account, in any case, the RGPD to which we have referred above, and, in particular, with full respect for Article 6, which refers to the cases in which it may require Legal treatment of personal data is considered lawful<sup>51</sup>.

## 6. CONCLUSION

Considering all of the above, it can be concluded that tourism has especially taken advantage of the use of ICT to improve economic returns, something that is legitimate but also has a negative side. Furthermore, the fact is that the proliferation of its use has allowed us to increase very significantly the number of tourists that visit us, especially in some destinations, which generates situations of environmental and social stress that can lead to unsustainable tourism development in the medium and long term.

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<sup>49</sup> VALERO TORRIJOS, J., “El *Big Data* en las Administraciones Públicas: El Difícil Equilibrio Entre Eficacia de la Actividad Administrativa y Garantía de los Derechos de los Ciudadanos”, in AAVV: *Big data. Retos y oportunidades*. Actas del IX Congreso Internacional Internet, Derecho y Política. Universitat Oberta de Catalunya, 25 and 26 June 2013, pp. 127-137.

<sup>50</sup> BAUZÁ MARTORELL, F. J., “Big data y open data en la administración turística: acceso y reutilización de la información”, *op. cit.*, p. 26.

<sup>51</sup> Public administrations may treat data lawfully, according to Article 6.1.e RGPD when the “treatment is necessary for the fulfilment of a mission carried out in the public interest or in the exercise of public powers conferred on the controller”.

The use of these ICTs, therefore, should not focus exclusively on the increase in supply and demand, but on the increase in the quality of services, which will result in the sustainable economic development of the sector. The concept of intelligent tourism or intelligent tourist destination implies, logically, the use of these technologies, but with a broader vision than the mere increase of economic benefits: improving the quality of life of tourists and residents, respecting the carrying capacity of destinations, reducing environmental and social stress, reducing pollution and making energy consumption and mobility more efficient, among others.

In this sense, development and technological innovation can help achieve a model of sustainable tourism development if they are used properly, not only from an economic perspective. In short, we must find the “right path of development”<sup>52</sup> tourism.

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<sup>52</sup> SCHUMACHER, E. F., *Lo pequeño es hermoso*, Orbis, 1983, p. 64.

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