

When digital government matters for tourism: a stakeholder analysis

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When digital government matters for tourism: a stakeholder analysis

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Abstract Despite the importance of governance processes for destination management and the impact of digital technology on such processes, surprisingly little academic research has explored the use of digital technology to transform public governance in the tourism sector. This conceptual paper fills this gap by conducting a digital government stakeholder analysis for the tourism sector using the digital government evolution model as its theoretical foundation. The analysis identifies six relevant stakeholder groups: governments, businesses, non-profits, citizens, visitors and employees. It examines six types of technology-enabled interactions between government and other stakeholders: government-to-government, government-to-business, government-to-non-profit, government-to-citizen, government-to-visitor

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and government-to-employee. These interactions are illustrated with real-life examples. The analysis contributes to identifying pressures on tourism authorities and determining how the authorities respond to such pressures, how they innovate their operations and policies with digital technologies, and how these innovations are institutionalized over time. The results contribute to building the theoretical foundations for sector-specific digital government and enable strategic discussion on the use of commercially viable and socially responsible digital innovation to advance the tourism sector.

Keywords Tourism · e-Tourism · Tourism governance · Digital government

1 Introduction

Accounting for an important part of the national gross domestic product (GDP) and for employment worldwide, the tourism sector is among the most relevant export sectors for many developing and transition countries. Moreover, it is one of the largest and fastest-growing business sectors of the world economy. According to the World Tourism Organization, the number of travellers crossing national borders for touristic reasons reached 1.1 billion in 2014. Tourists that cross borders not only spread economic resources globally but also spread knowledge and ideas and create opportunities for meaningful encounters and peaceful dialogue.

Digital technology is affecting how citizens, companies and governments operate, interact and co-exist. It is changing the operational and strategic practices of public and private sector organizations and altering the competitiveness of companies and regions globally. The tourism sector is not an exception. Digital technology facilitates visitor experiences before, during and after a trip; enhances marketing, sales and distribution processes; and generally transforms the tourism enterprise. Simultaneously, the advancement and spread of new technological developments within the tourism sector result in a new economic model of a “sharing economy” (also known as a collaborative or peer-to-peer economy), represented by the prominent examples of Uber (<http://www.uber.com>) or Airbnb (<http://www.airbnb.com>). This model raises a number of currently unresolved challenges, such as comparable global regulations concerning taxation, service quality, safety, security, and waste management. In addition, the model raises critical concerns with regard to data privacy, especially given the vast amounts of sensitive data collected by hotel chains, transportation and telecommunication companies, and online travel agencies.

Given the scale and impact of tourism development on communities, countries and the world (and given how digital technology amplifies this impact), the tourism sector faces major governance challenges. The first challenge is the development of new business models, particularly those implemented through digital technology, which must be regulated through existing, updated (to the digital world) or entirely new regulations. Second, while jurisdictional boundaries define the space for public authorities to exercise their mandate and power, digital technology and the Internet

in particular are not constrained by such boundaries (Kulesza 2015). Third, many private companies that operate within the tourism sector actively use the public goods in both physical and digital forms, which raises transparency and accountability issues. Fourth, the increasing use of digital technology by destination management organizations (DMOs), public authorities, and travel and tourism enterprises changes not only how such organizations operate internally but also how they interact with visitors, citizens and each other, as well as how they impact the larger social, economic, and cultural environment. These changes are consistent with the transformation, engagement and contextualization stages of the digital government evolution model (Janowski 2015b).

Clear policy decisions and regulatory frameworks are needed to enable the sustainable and harmonious development of the sector based upon a mature body of research and analysed cases. However, the scarcity of research concerning the impact of digital technology on public governance in the tourism sector is well acknowledged (Gretzel et al. 2006; Sigala 2011; Spyriadis et al. 2011). Researchers are also well aware of the challenge of transferring digital government research findings from earlier stages of the digital government evolution to the contextualization stage (Janowski 2015a).

Given this motivation and the United Nations' designation of 2017 as the International Year of Sustainable Tourism for Development, this paper examines the usage of digital technology by public authorities and other stakeholders as part of governance processes within the tourism sector. In line with the digital government evolution model (Janowski 2015b), the purpose is to identify pressures on tourism authorities, to determine how the authorities respond to such pressures using digital technologies including how they innovate their operations and policies using such technologies, and how these innovations are institutionalized over time. To this end, this paper identifies the main stakeholder groups for digital government in the tourism sector, determines how technology mediates interactions between these groups and provides examples of such technology-mediated interactions. The ultimate objective is to contribute to the development of conceptual and methodological foundations for technology-enabled governance in the tourism sector.

2 Related work: digital government in the tourism sector

The tourism industry accounts for an important part of the national GDP. The industry comprises public and private sector stakeholders that are administratively isolated from one another and that sometimes have different or even partially conflicting goals. While tourism-related entities in the private sector pursue commercial objectives, mainly to increase tourist volume and generate profits, they also exploit green areas, water resources, cultural heritage, and other public goods.

Due to the dynamics of different stakeholders' interests, tourism destinations are challenging entities to manage. Although various stakeholders have numerous linkages and interdependencies, cooperation between them is extremely difficult, as the stakeholders typically have different interests and diverging visions for

development (Beritelli et al. 2007; Padurean 2010). In addition, the sustainability of tourism development is both sensitive and critical (Ali and Frew 2010). In both respects—cooperation and sustainability—sectoral governance entails joint decision and action among public authorities, policymakers, the tourism industry and local communities to define and pursue common goals.

Tourism represents a major context for the application of digital government. Already in 2005, a survey conducted with US citizens to evaluate citizen interactions and phases of e-government adoption (Reddick 2005) showed that obtaining tourism and recreational information was the most common service requested by visitors to government websites (77.3%), followed by research for work or school (69.8%).

However, the shortage of research and understanding needed to develop digital government practices in the tourism sector has been recognized by several researchers (Gretzel et al. 2006; Sigala 2011; Spyriadis et al. 2011). In addition, despite the enormous potential of digital government to improve and advance interactions among citizens, business and government, the full potential of digital government in the tourism sector has yet to be determined (Patelis et al. 2005).

This article aims to assess the state of research on digital government in the tourism sector. To this end, the researchers explored the content of the Scopus and Google Scholar databases in October 2016 using the keywords “e-government and tourism” and “digital government and tourism” to search within the titles, abstracts and keywords of all documents. From the results obtained, several publications were excluded since they referred to entire conference proceedings or mentioned the tourism sector but did not present any distinct contribution to it. Three additional articles were also excluded because their contribution was lacking compared to the contributions of other papers by the same authors.

The resulting 26 publications were categorized into four problem areas: (1) digital government services in the tourism sector—12 publications; (2) digital strategies promoting tourism—4 publications; (3) assessment of digital government initiatives in the tourism sector—7 publications; and (4) data integration and interoperability in the tourism sector—3 publications. The publications are summarized in Table 1.

While the existing research outlined in Table 1 presents sporadic cases of digital government applications in the tourism sector, a holistic approach to the evaluation of digital government initiatives in the tourism sector has not yet emerged. Recognizing this need, the editorial board of the *Journal of Information Technology and Tourism* recently included “government and policy” as a strategic category for conducting future research to advance the e-tourism domain (Werthner et al. 2015). Within this category, the board identified five sub-categories as critical for future research in the area: sustainability of the tourism ecosystem, data privacy issues, freedom of movement and personal safety for travellers and tourists, self-governance of public tourism bodies, and fairness for all tourism stakeholders involved.

This article attempts to contribute to such research by conducting a digital government stakeholder analysis for the tourism sector and by interpreting the findings through the digital government evolution model (Janowski 2015b). The

Table 1 Related research on digital government and tourism

Areas	Contributions	References
Digital government services in the tourism sector	A destination management organization website as a collaboration platform for public and private sector actors	Go and Trunfio (2011) Yang (2010)
	A framework for delivering personalized tourism services based on a recommendation system and an ontology	Al-Hassan et al. (2011) Al-Hassan et al. (2010)
	A hybrid recommender system tested on tourism services delivered by the Australian government	Al-Hassan et al. (2015)
	A mobile intelligent service system for hotel recommendations for tourists	Zhuang et al. (2010)
	Best digital government experiences in the European Union, including examples from the tourism sector	Millard (2002)
	Case-based reasoning for delivering e-tourism services	Safapour (2007) Niknafs et al. (2003)
	Innovative service for tourism based on geo-referenced information	Benelli et al. (2005)
	Review of recommender systems in eight application domains including e-tourism	Lu et al. (2015)
	The contribution of digital maps to building digital communities and delivering digital services for tourism	Lin and Liu (2012)
	The experience of the Qatari government highlighting the importance of delivering online informational services to tourists	Alja'am et al. (2008)
	The use of ontology for detecting inconsistencies in modelling goals for building digital government applications for the tourism sector using software product lines	Fajar and Shofi (2016)
	The use of single-sign-on to facilitate access to services, e.g., in tourism	Niemiec and Kolucka-Szypula (2015)
Digital strategies promoting tourism	Critical success factors for implementing digital government initiatives in a tourist city	de Juana-Espinosa and Tarí (2012)
	Digital government project promoting tourism activities in China	Gao and Feng (2009)
	Digital government and e-strategies promoting trade and tourism in support of development	Budden (2006)
	The use of technology to achieve community objectives through promoting development in different government sectors, e.g., tourism	Gooneratne (2002)

Table 1 continued

Areas	Contributions	References
Assessment of digital government initiatives in the tourism sector	Assessing digital government in Malaysia considering the services provided by the Ministry of Tourism	Bakar (2011)
	Assessing how ministries of tourism deliver visa services to tourists	Adukaite et al. (2014)
	Assessing web 2.0 tools as e-democracy initiatives in the tourism sector	Sigala and Marinidis (2010)
	Assessing user satisfaction based on the tourism services in Malaysia	Marzoughi et al. (2010)
	Assessing SMS services and the relevance of the SMS channel for tourism-related informational services	Ho et al. (2010)
	Evaluation of the provision of public Internet access by municipal administration in a Swiss city	Picco-Schwendener and Cantoni (2015)
	Governance as a catalyst for sustainable tourism development	Alipour et al. (2011)
Data integration and interoperability in the tourism sector	Data sharing platform for delivering tourism services	Tao et al. (2006)
	Interoperability integration framework for delivering public services, including issuing of tourism licenses	Al-Husban and Adams (2014)
	Statistical data usage by the national government for forecasting tourism demand	Patelis et al. (2005)

model is presented in Sect. 3, the stakeholder analysis is outlined in Sect. 4, and the findings are discussed and interpreted through the model in Sect. 5.

3 Theoretical foundations: digital government evolution

The theoretical underpinning for the analysis conducted in this article is the digital government evolution model (Janowski 2015b). This model was selected as the only conceptualization of digital government that explicitly considers sectoral applications.

According to the model, the concept and practice of digital government evolve through four distinctive phases: (1) digitization, which aims to modernize the internal working of government organizations by digitizing and automating them; (2) transformation, which aims to transform government organizations through digital technology in order to increase their efficiency, effectiveness and other relevant attributes; (3) engagement, which aims to transform relationships between government and citizens through the use of digital channels in order to build trust; and (4) contextualization, which aims to create better conditions within sectors, territories and communities through digital technology to implement public policies and enable self-

Table 2 Digital government evolution model (Janowski 2015b, p. 225)

No	Stage	Variables		
		Internal government transformation	Transformation affects external relationships	Transformation is sensitive to the context
1	Digitization	No	No	No
2	Transformation	Yes	No	No
3	Engagement	Yes	Yes	No
4	Contextualization	Yes	Yes	Yes

development. The four stages of the digital government evolution model and their logical characterization using three binary variables concerning the presence of internal transformation in government, whether such transformation affects relationships between government and citizens and businesses, and whether such transformation is sensitive to the local or sectoral context are depicted in Table 2.

The latest contextualization phase of the digital government evolution is focused not only on improving the internal workings of government organizations or the relationships between such organizations and their constituencies but also on improving the conditions for these constituencies to develop themselves. In this phase, digital government is tailored to the circumstances of the territorial or sectoral context in terms of “the choice of locally-relevant and/or sector-specific goals, locally-acceptable and sectorially-feasible ways of pursuing such goals, and managing the impact on the local environment and sector involved” (Janowski 2015a, p. 429).

According to Janowski (2015b, pp. 227–228), the contextualization-stage digital government has been applied to different sectorial contexts: agriculture, e.g., the deployment of mobile governance services (Ntaliani et al. 2008); customs, e.g., the adoption of e-customs platforms (Urciuoli et al. 2013); healthcare, e.g., the impact of social media use in Danish health care (Andersen et al. 2012); insurance, e.g., the implementation and impact of the Florida Public Hurricane Loss Model (Chen et al. 2009); and taxation, e.g., a tax information system and its usage in Greece (Terpsiadou and Economides 2009). The current article focuses on another application sector—tourism.

Part of the digital government evolution model is the cause-effect framework, which will be used in this article to evaluate whether such a model can also be used in the tourism domain. At each phase of the evolution, the framework identifies how government organizations are subject to pressure from various social, economic, environmental, political and other factors; how they respond to such pressures by utilizing existing digital technologies to innovate their services, processes, structures and policies; and how digital innovations are institutionalized in government practice over time.

4 Digital government stakeholder analysis in the tourism sector

Six major stakeholder groups were identified as relevant to the tourism sector: governments, businesses, non-profits, citizens, employees and visitors.

The first category includes public authorities within tourism and related sectors—e.g., culture, economy, transport, security, foreign affairs—operating on the national or sub-national level as well as outside the country. The public authority has a certain jurisdiction that covers all remaining stakeholder groups. The second category comprises for-profit tourism-related businesses including transportation, hospitality, catering, entertainment and other service providers. The third category involves non-profit and non-government organizations (NGOs) with interests in tourism-related development and its impact at the national and sub-national levels. The fourth category involves citizens or residents living in the country or territory under the jurisdiction of the public authority. The fifth category includes civil servants and other employees of the public authority. The sixth and final category involves non-residents in a given country or territory, particularly national or international travellers.

The stakeholder analysis covers six types of interactions between stakeholders, particularly interactions originating from the public authority and targeting other stakeholder groups, including the public authority itself. These interactions are government-to-government (G2G), government-to-business (G2B), government-to-non-profit (G2N), government-to-citizen (G2C), government-to-visitor (G2V) and government-to-employee (G2E). The interactions are summarized in Table 3 and detailed in subsequent sections.

The six types of interactions explained in the following sections include illustrations of digital government strategies and applications that deliver tourism-related information and services to the target stakeholder groups. The main objective was to populate the cause-effect framework introduced by Janowski (2015b). All applications and cases referred to in this section were identified by visiting related tourism websites on 15 June 2016.

Table 3 Digital government interactions in the tourism sector

No	Interactions	Description
1	G2G	Includes interactions between two or more tourism-related public authorities operating within one or different sectors, on the same or different territorial levels, in the same country or outside the country
2	G2B	Involves interactions between the public authority and transportation, hospitality, catering, entertainment and other for-profit tourism-related service providers functioning within the jurisdiction of this authority
3	G2N	Involves interactions between the public authority and non-profit organizations with interests in the impact of tourism on the national or sub-national level within the jurisdiction of this authority
4	G2C	Includes interactions between the public authority and citizens or residents who live in the country or territory under the jurisdiction of this authority and who are affected by tourism development
5	G2V	Involves relationships between the public authority and individuals visiting the country or territory under its jurisdiction, particularly national and international travellers and non-residents
6	G2E	Involves relationships between the public authority and civil servants and other employees of this or another authority

4.1 Government-to-government interactions

The goal of G2G interactions is to realize collaboration between government agencies, mainly to deliver seamless, one-stop services, and to make efficient use of whole-of-government resources. Interactions between government organizations can occur at different government levels—national, provincial or local—and between different departments and authorities. When collaborating, government and policy agencies share information (Estevez et al. 2011) and provide each other with services such as transactional services (Hiller and Belanger 2001, p. 15). These transactions can include new forms of record keeping that help governments become more interactive or deliver better services. Such interactions can occur within one country or between countries. Notable examples are the sharing of open data collected by local governments with national agencies to enhance policymaking, the sharing of data between countries to support border regulation enforcement, or the sharing of data on travellers at international airports to improve safety globally. All interactions that include communication and collaboration between government and other public entities can benefit from technological advancement.

Within the tourism sector, one case of technology-enabled G2G interaction is the statistical dashboard provided by the European Travel Commission, a consortium of 33 national tourism offices from Europe, available at <http://www.etc-dashboard.org>. This online tool provides statistics about tourism and other information relevant to monitoring tourism development across Europe and in selected source markets. The dashboard allows national and regional tourism authorities across Europe to obtain an overview of current trends on travellers' behaviour through constantly updated statistical charts and to use these data within decision-making processes to develop accurate forecasts of tourism demand on the national and European levels.

Another example is G2G interactions within a DMO, an institution that manages all stakeholders within tourism development. Digital technology can be used by the national tourism offices to provide destination management systems (DMSs) for use by local tourism offices within the DMOs. Such systems provide a centralized approach to the collection, provision and dissemination of tourism-related information. A concrete example is the DMS provided by the Switzerland National Tourism Board (Inversini et al. 2012).

The final example of G2G interaction in the tourism sector is the provision of statistical informational services to member states' tourism authorities by the United Nations World Tourism Organization at <http://www2.unwto.org/facts/eng/vision.htm>.

4.2 Government-to-business interactions

G2B interactions concern relationships between the public authority and for-profit tourism-related businesses including transportation, hospitality, catering, entertainment and other service providers that operate within the jurisdiction of this authority. Businesses can benefit from many services offered by the public authority delivered through electronic and non-electronic means. The goal is to reduce obstacles and increase the convenience for businesses to interact with the

authority—e.g., for registering new companies, paying taxes, and becoming a government service provider—while providing them with immediate, authoritative information and enabling digital communication. Ultimately, the objective is to stimulate sustainable development of the tourism sector in a given territory or country.

According to Hiller and Belanger (2001, p. 14), efficiencies in technology-supported G2B interactions “can be achieved by reducing paperwork, mailings, and time delays, to name a few. Agencies could also group together (like consumer buying groups) to negotiate better prices”. Important online services that are offered by public authorities to businesses include paying taxes online; providing business-relevant information and statistics, e.g., statistics about tourism demand forecasting; and publishing government regulations through websites, mobile applications and other electronic channels. In addition, e-tendering and e-procurement are becoming the fastest-growing areas of G2B interactions because they can save time and financial resources for both actors. Another promising area for G2B interactions is related to the government’s role as a platform provider through which businesses and other actors can contribute to the co-creation of public services and public value (Janssen and Estevez 2011).

Within the tourism sector, digital technology is used by public authorities mainly to provide online information and services to tourism-related providers, including licensing, taxation, and authorization services. At the same time, public tourism authorities offer shared e-commerce platforms—for instance, for online sales of hotel rooms in the country. This offering is exemplified by portals operated by the Switzerland National Tourism Board (<http://www.myswitzerland.com>) and the Japan National Tourism Organization (<http://www.jnto.go.jp/eng/arrange/accomodations>). Meanwhile, public authorities are taking responsibility for providing online education and training to businesses working in the tourism sector through DMOs. This education includes online training on how to sell a country or region as a tourism destination (<http://www.elearning4tourism.com>), currently provided by more than 70 national DMOs (Kalbaska 2012). These educational offerings also include providing hospitality businesses with online training on how to boost accessible tourism, exemplified by the Scottish Tourism Office (<http://www.visitscotland.org>), or how to support sustainable tourism, exemplified by the Seychelles Tourism Board (<http://www.sustainabletourismalliance.net>).

This section should also note the provision of open statistical data, mentioned under the previous category, according to which businesses can forecast tourism demand and plan and implement real-time tourism strategies to respond to such forecasts.

4.3 Government-to-non-profit interactions

Interactions between public authorities and non-profit organizations include the provision of information, regulations and financial support to such organizations, including industry associations, social organizations, charities, and political parties. These interactions include also collaboration between public authorities on one side

and non-profits and NGOs on the other to jointly address problems related to the impact of tourism development on countries, territories and communities.

Within the tourism domain, the role of national science agencies, which support tourism-related research and development, should be mentioned. An example is the Swiss National Science Foundation (<http://www.snf.ch>), which provides research funding within the tourism domain. In addition, development agencies such as USAID (<http://www.usaid.gov>) provide support to non-profits that focus on utilizing tourism-related projects in the service of development. In particular, several projects, including the Information and Communication Technology for Development (ICT4D) project, have been supported by governments in recent years to foster sustainable tourism and to provide new employment and social opportunities in emerging regions (Rega and Inversini 2016; Salomao and Cantoni 2015). For instance, successful ICT4D projects were recently conducted in Malaysia (Gan et al. 2016) and in the slums of Brazil (Inversini et al. 2015).

4.4 Government-to-citizen interactions

The goal of interactions between public authorities and citizens is to “establish or maintain a direct relationship with citizens” (Hiller and Belanger 2001, p. 14) while offering a variety of technology-enhanced services efficiently and economically. Another goal is to strengthen the relationships between public authorities and citizens through digital technology. This type of technology-mediated or technology-enhanced relationships presents a communication link between a public authority and citizens or residents living under the jurisdiction of this authority.

G2C interactions include the exchange of instant messages directly with public administrators, electronic voting, declaration of taxes online, payment of city utilities online, electronic signatures, change of residential address, and driving license renewal. For example, the United States’ portal on housing and community provides information and services that help citizens find and keep a home (<http://www.usa.gov/housing>).

In relation to the tourism domain, governments are working on the provision of information and support to their own citizens while they are travelling abroad. For instance, the Italian Ministry of Foreign Affairs and International Cooperation provides two services for its citizens. The first service, *Viaggiare Sicuri*, presents information on health, security and safety in tourism destinations around the world, enabling Italian citizens to access relevant and trusted information before travelling abroad (<http://www.viaggiariesicuri.it>). The second service, *Dove Siamo Nel Mondo*, requires citizens to inform public authorities about their travel plans before they travel to potentially risky destinations, allowing concerned embassies to be more effective in assisting citizens in case of a crisis (<http://www.dovesiamonelmundo.it>). The US version of a similar service to help US citizens be informed, connected and safe while travelling abroad is the Smart Traveler Enrollment Program (<https://step.state.gov/step>).

Governments can also crowdsource opinions from their citizens on new tourism development ideas for cities or entire countries, as in Vancouver, Canada (<http://www.vancouver.ca/green-vancouver/greenest-city-action-plan.aspx>).

4.5 Government-to-visitor interactions

G2V interactions capture relationships between public authorities and visitors or non-residents to the country or territory under its jurisdiction; such visitors may, for example, be national or international visitors. G2V services include informational services that explain to visitors how to move around in a country or territory and provide information on visa application and issuing, online booking of entrance to national parks or cultural events, and other topics.

Technological innovations have been used extensively in this domain, especially through the provision of online information and digital marketing to prospective tourists. National, regional and local tourism portals are used, along with mobile apps and online campaigns. Examples of online destination campaigns are Your Singapore (<http://www.yoursingapore.com>) or Experience Catalunya in Spain (<http://www.experience.catalunya.com>).

In addition, public authorities use digital technology to enhance the experience of visitors to the country or territory through the provision of visa information and e-visa programmes, e.g., in India (<http://www.indianvisaonline.gov.in/visa/tvoa.html>) or in the USA (<http://www.esta.cbp.dhs.gov/esta>). In the latter case, the interface is provided in 23 languages; this service could not be easily offered at a physical border.

As part of the G2V interactions, we might include all communication activities intended to promote the tourism reputation of a country or territory online (Go and Govers 2009; Marchiori and Cantoni 2012) and to obtain feedback from tourists (Hu et al. 2014). G2C interactions also include different forms of cultural e-diplomacy activities. An example is “Web Japan” (<http://www.web-japan.org>), a website sponsored by the Japanese Ministry of Foreign Affairs (MOFA) and operated by a Japanese NGO. The aim of the website (<http://www.web-japan.org/plaza/about.html>), which is available in English and partly available in some other languages, is to promote the country across different genres, including culture, sightseeing, society, history and nature.

4.6 Government-to-employee interactions

Interactions between public authorities and their employees through digital technology are similar to the ways that businesses interact with their employees. The goal is to offer a range of tools, documents and data that help employees maintain communication and coordinate work with their offices. For instance, “government agencies can use an intranet to provide information to their employees and can typically allow some online transactions with their employees if they have the proper technological architectures” (Hiller and Belanger 2001, p. 14). Public administrations can maintain online records of personal information of their employees or create shared platforms for internal documentation to promote paperless interactions. Travel reimbursement forms or new working regulations can also be implemented online.

The tourism sector is not an exception. Public authorities employ intranets, online communication tools, online records of personal employee information, and

other digital instruments. Two illustrative cases can be considered. The first involves corporate e-learning courses (Cantoni et al. 2009) used by national or local tourism authorities to provide online training and education to their employees, for example, training on new regulations. The second case is an online training platform offered by the Defense Language Institute Foreign Language Center in the US (<http://fieldsupport.dliflc.edu>). The platform was launched to prepare government officers for intercultural encounters, with such preparation including promoting cultural awareness, improving the understanding of people and social customs inherent to various nations, and providing language support for government employees travelling abroad.

5 Discussion

Various types of stakeholders—public authorities in the tourism and related sectors; businesses operating transportation, hospitality, catering, entertainment and other services for tourists; non-profit organizations acting on behalf of local communities affected by tourism development; citizens; civil servants; and tourists themselves—all play a role in the tourism sector. Sometimes the interactions among stakeholders present conflicts of interests or need to be tightly regulated to ensure fair play and the protection of rights and obligations between parties. Managing the impact of tourism development on countries and communities sometimes requires policy-level decisions and coordination among stakeholders. These decisions involve typical tasks for sector-specific public governance. However, such interactions and generally the performance of public governance in the tourism sector have changed considerably in recent years due to the broad adoption of digital technologies. As a result, digital government has become an important tool in the governance of the tourism sector.

As presented in the previous section, the digital government stakeholder analysis for the tourism sector may contribute to addressing the challenges identified in the introductory section. For example, new business models facilitated by digital technologies, such as the “sharing economy”, must be regulated, while the development of such regulations requires the clear identification of various stakeholders and analysis of their interactions. Blurred jurisdictional boundaries in the digital world, which are convenient for tourists in planning and conducting their trips, require that tourism service providers ensure transparency in their operations and decision-making processes to enable public authorities to exercise their role and mandate effectively. Likewise, regulation and transparency are required to ensure that tourism businesses exercise proper care with respect to the usage of public goods and a focus on the social, environmental and other impacts of tourism development. In addition, through clear governance principles, stakeholder participation and transparency, the entire tourism enterprise and its participants must ensure that visitors’ data and privacy are protected.

As shown in Sect. 2, current research in the area includes primarily technology-driven innovations in service delivery, such as the use of recommender systems, case-based reasoning, artificial intelligence, ontologies, and other semantic tools for

enhancing the quality of public service provision. As a result of the adoption of such technologies, the tourism sector is at the forefront of innovation in electronic public service delivery. According to a recent study (Bertot et al. 2016), electronic public service innovations include personalized, anticipatory, context-aware and context-smart services. In addition, e-strategy development for the tourism sector, impact assessment on the sector of technology initiatives, assurance of data integration and interoperability to deliver complex services, among other things, all need research attention. Such problems can be framed within the contextualization stage of the digital government evolution (Janowski 2015b).

However, the divisions among governance relationships within the tourism domain might not be distinct. For instance, the emerging concepts of a smart city or smart destination could be seen as a form of integration of all involved stakeholders, who collaboratively contribute to the development of smart city initiatives guided by a common vision and operationalized through various governance mechanisms. In recent years, several proposals have examined the smart city (Nam and Pardo 2011; Paskaleva 2009) and smart destination (Boes et al. 2015; Wang et al. 2013) concepts. The development of smart cities is consistent with the contextualization phase of the digital government evolution; as such initiatives enable intelligent responses to the various needs of citizens or residents to enhance their quality of life through city-level public or commercial services (Su et al. 2011). Smart cities also affect tourism activities. In particular, smart tourism destinations are facilitated by “massive tourism resource data centre, supported by Internet of Things and Cloud Computing, focused on enhancing tourism experience through intelligent identification and monitoring” (Buhalis and Amaranggana 2014, p. 564). The related smart destination services can be used by citizens, businesses or visitors to a city or territory. Even the public authority’s own employees might participate, for instance, through an online carpooling service/system.

Figure 1 depicts the digital government evolution cause-effect framework, introduced in Sect. 3 following Janowski (2015b). The framework is populated with pressures on public authorities responsible for the management of the tourism sector, a delineation of what digital technologies exist and how the authorities respond to such pressures using digital innovations, and the ways that these innovations are institutionalized in the daily practice of tourism authorities and their partners. The different elements of the framework were obtained from related work on digital government and tourism (Sect. 2) and from the digital government stakeholder analysis for the tourism sector (Sect. 4).

6 Conclusions, limitations and future research

While new technological developments are constantly providing new business opportunities for the tourism industry, such developments and their impact on countries and communities might create complex situations, conflicting goals and socially undesirable side effects that need to be regulated and managed. Public governance in the tourism sector includes interactions between tourism authorities and various non-state actors that participate in the tourism ecosystem, as well as

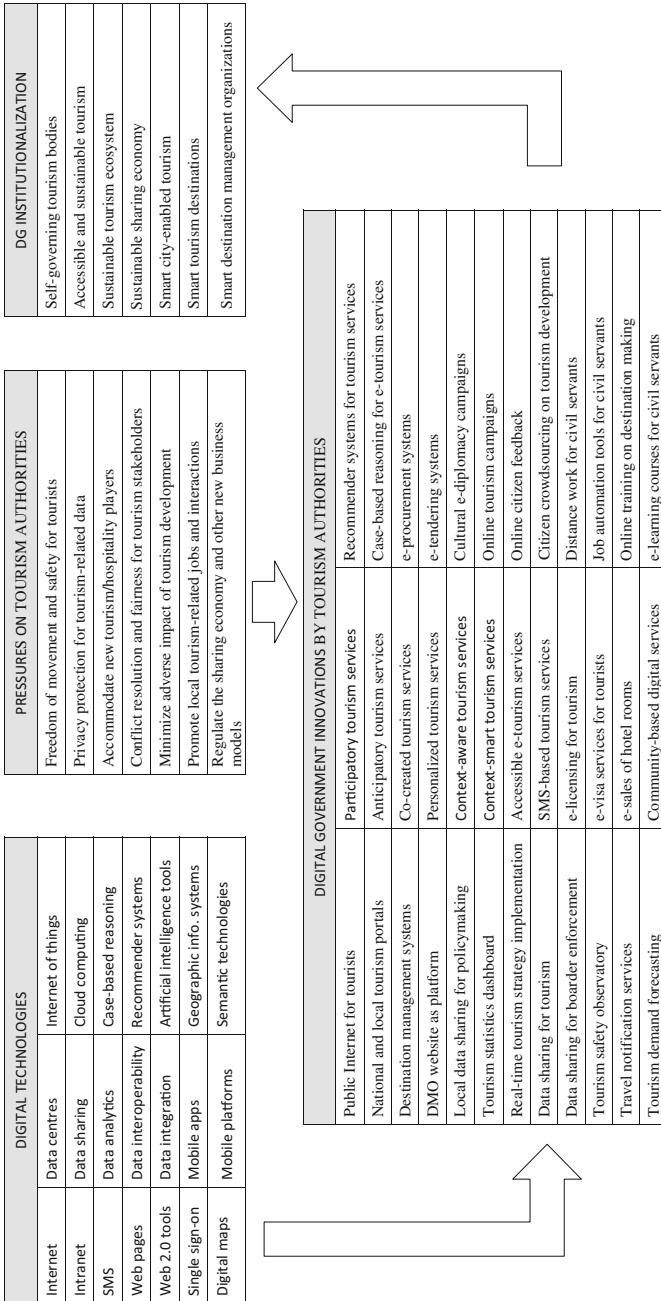


Fig. 1 Digital government innovation cause-effect framework (Janowski 2015b) adapted for the tourism sector

policy-level decisions concerning the development of the tourism sector. The governance of the tourism sector must be further examined concerning the impact of digital technology, particularly on tourism authorities and their partners, i.e., digital government in the tourism sector.

This research analysed existing literature at the intersection of digital government and the tourism sector and conducted digital government stakeholder analysis in the sector by considering six types of stakeholders and corresponding interactions between them: government-to-government (G2G), government-to-business (G2B), government-to-non-profit (G2N), government-to-citizen (G2C), government-to-visitor (G2V) and government-to-employee (G2E). The interactions were illustrated with concrete cases. The related work and cases were synthesised through the digital government evolution model (Janowski 2015b) and used to populate a related digital government cause-effect framework that identified pressures on tourism authorities; determined how the authorities respond to such pressures by using existing digital technologies to innovate their policies, processes, services and structures; and explored how such digital innovations are institutionalized in the daily practice of tourism authorities and their partners over time.

The framework could raise awareness and inform decision-making concerning the development and use of digital technologies and digital innovation to perform governance functions in the tourism sector. The framework could also help anticipate how the governance function is transformed in the process. Decision-makers could also use the cases to identify what stakeholders are involved, what services should be provided to them, and how to plan tourism-related policies and programmes.

Given the initial stages of the digital government research in the tourism sector, future research opportunities across several disciplines abound. Future research should go beyond the mapping of existing interactions and examine how such interactions occur, how they increase or decelerate the performance of organizations in different national and institutional contexts, and how technology can enhance the performance of such organizations and the governance mechanisms that place them together. Further empirical studies may evaluate additional aspects of digital government in the tourism sector, such as the security and privacy of tourism-related data and digital technology for green tourism. Such research could also inform decisions by government actors responsible for formulating tourism policies and for establishing and maintaining tourism eco-systems to enable co-creation of tourism services and promote socially responsible innovation in the sector.

This research was initially published at the ENTER2016 e-Tourism conference. The paper was substantially extended in its literature review, in the contextualization and interpretation of the study, and in the number of cases analysed. Furthermore, the digital government evolution model (Janowski 2015b) was applied as a theoretical framework with the prospect of its extension to the tourism sector.

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