The Smart DMO: A new step in the digital transformation of destination management organizations

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Abstract
Smart tourism development has been adopted by destinations around the world to strengthen their long-term competitiveness in light of rapid technological, societal and environmental change. Destination management organizations (DMOs) are generally endowed with smart tourism governance at the destination-level and typically see it as a great opportunity to prove their relevance. However, these organizations also face enormous challenges and often lack the capacities and competencies needed to successfully govern smart destinations. While recent literature highlights the importance of smart destination governance, it does not provide much guidance in terms of the functions and roles of smart DMOs. This paper presents a preliminary conceptualization of six smart DMO functions that support smart governance roles, namely mobilizing, match-making, managing, sensing, shapeshifting and stewardship. As such, it presents practical guidance for DMOs trying to implement smart destination governance and outlines the need for research on smart DMOs.

Key words: smart tourism; destination marketing organization; digital transformation; tourism marketing; destination governance

Introduction

Smart tourism refers to efforts aimed at integrating advanced technologies into the fabric of destinations in order to enhance their innovation capacity, generate value creation opportunities, and mitigate the negative effects of tourism while providing tourists with superior experiences (Gretzel *et al.*, 2015a). Destinations around the world have eagerly adopted the notion of smart tourism: China's smart destination initiative was one of the first attempts to strategically implement smart tourism in destinations to address issues faced in the light of new waves of mass tourism (Wang *et al.*, 2013). South Korea's tourism destinations were quick to adopt the concept of smart tourism to leverage the highly developed technological infrastructure of the country and promote international tourism (Koo *et al.*, 2013). Other countries in Asia followed suit, with Vietnam's National Administration of Tourism organization in partnership with the national telecommunications group rolling out smart tourism projects in multiple localities across the country since 2017 (Vietnamplus, 2019). Another example is Thailand, where smart tourism development so far includes equipping airports with advanced technologies and building data platforms that allow for visitor monitoring at destinations like Phuket (Phocuswire, 2019).

Similar efforts to drive smart tourism agendas forward are undertaken in Europe. In Spain, smart tourism was included in the National Integrated Tourism Plan 2012-2015 to boost innovation in tourism and increase Spain's competitiveness as a world-class tourism destination (De Avila Muñoz & Sánchez, 2015). In Europe overall, smart tourism was firmly anchored in the Europe 2014-2020 strategy for smart, sustainable and inclusive growth. Initiatives like the European Capital of Smart Tourism (https://smarttourismcapital.eu/) provide evidence that this has led to implementation of specific efforts in various cities, with Helsinki and Lyon winning in 2019 and Ljubljana, Málaga, Copenhagen and Linz receiving awards for projects that increase the sustainability, accessibility, digitalization and creativity of their destinations. In 2020, Gothenburg, Málaga, Breda, Ljubljana and Karlsruhe were recognized for their smart tourism development efforts. Smart tourism development has even reached the farthest corners of Europe, with the Azores developing a number of smart tourism initiatives mostly focused on mobilizing tourism stakeholders and enabling knowledge transfer (see smarttourismhub.com).

But smart tourism has also spurred development in other regions of the world, for example the Middle East. Tel Aviv, winner of the Best Smart City in the World title in 2014, initiated smart tourism to foster collaboration between technology start-ups and tourism providers at the destination (Destinationthink.com, 2016). In Africa, the Moroccan Agency for Tourism Development (https://smit.gov.ma/en/) held an international conference called "Smart Tourism Africa" in conjunction with COP22 in November 2016, mostly discussing barriers to smart tourism development in the region. Smart development is specifically incentivized on Mauritius (Dabeedooal *et al.*, 2019). Smart tourism initiatives can also be found in South America, most notably in Brazil. The Brazilian province of Paraná, for instance, has a strategic tourism plan that aims at achieving substantial progress towards smart tourism development by 2026 (http://www.turismo.pr.gov.br/). Thus, while approaches, motivations and levels of development might differ, it is clear that smart tourism development is a global phenomenon that is not just a utopian vision of tourism destinations promoted by academia, but is in fact already firmly rooted in the practices of many destinations around the world.

What these initiatives also illustrate is that smart tourism involves strong private-government partnerships, as discussed by Gretzel *et al.* (2015a) and Jovicic (2019). Further, they emphasize the role of smart tourism governance as highlighted by Ivars-Baidal *et al.* (2019). Similarly, Boes *et al.* (2016) identify leadership at the destination level as a main driver of smart tourism competitiveness. Oates

(2016) suggests that smart destinations require more wide-reaching destination management than traditional destinations and therefore also strong destination management organizations (DMOs). Similar arguments were brought forward by Gretzel and Scarpino-Johns (2018), who depicted smart tourism as a wide-reaching opportunity for DMOs to strengthen their position within the tourism ecosystem. However, what specifically such a smart DMO needs to be or do to realize smart tourism development at their destination has not been holistically discussed in the current literature. Consequently, this paper aims to conceptualize the characteristics and strategic priorities of the smart DMO.

Literature Review
Smart tourism
Smart tourism describes a form of tourism development that takes advantage of advanced technologies (notably sensors, wireless communication networks and big data analytics) to achieve sustainable development goals. Recent reviews of the smart tourism literature illustrate its importance but also hint at some definitional unclarity (Ye *et al.*, 2020; Johnson & Samakovlis, 2019; Mehraliyev *et al.*, 2020; 2019), and they demonstrate a lack of uniform focus on sustainability outcomes (Shafiee *et al.*, 2019). Technological agendas dominate the smart tourism discourse in research and in practice (Kontogianni & Alepis, 2020; Dorcic *et al.*, 2019; Gretzel & Collier de Mendonça, 2019). While technology is a significant driver of smart tourism development, it is not sufficient for smartness to be achieved at a destination. Boes *et al.* (2016) distinguish between hard (technological infrastructure) and soft (innovation, social capital, human capital and leadership) smartness factors that need to work together to facilitate smart destination development. Similarly, Buhalis (2020) stresses that because of the immense disruptive potential of smart tourism, strong leadership is required. Nam and Pardo (2011) suggest that smartness has three dimensions, namely a technological, a human and an institutional one. While smart tourism literature has mainly focused on the first two, the latter is currently widely neglected, with some exceptions such as Jovicic (2019), Ivars-Baidal *et al.* (2019), Gretzel and Scarpino Johns (2018), Gretzel and Jamal (2020), and the aforementioned paper by Boes *et al.* (2016).

Smartness at the tourism destination level continues to be mostly defined by the offerings provided that might attract tourists, such as amenities and attractions (Huertas *et al.*, 2019). Gretzel *et al.* (2018) identify smart (aka technology-supported and data-fueled) tourism experiences as the top layer of the smart tourism system. Similarly, Gretzel *et al.* (2015a) establish tourist experience enhancement as the primary goal of all smart tourism efforts. Femenia-Serra *et al.* (2019) conceptualize the smart tourist as the ultimate consumer of smart tourism. Personalization of touristic or hospitality experiences is seen as a core aspect of smart tourism (Neuhofer, Buhalis, Ladkin, 2015), as is touristic mobility (Lamsfus *et al.*, 2015). In accordance with this focus on smart tourist experiences, Buonincontri and Micera (2016) stress increased levels of experience co-creation as an important outcome of smart tourism initiatives, and Cimbaljević, Stankov and Pavluković (2018) see smart experience co-creation as the central driver of smart destination competitiveness.

In contrast, Lalicic and Önder (2018) adopt a multi-stakeholder view and state that smart tourism encompasses a range of tourism stakeholders with diverse interests and involves the welfare of tourists and residents alike. This notion of a multitude of agents and beneficiaries is further reflected in Gretzel *et al.*'s (2015b) conceptualization of smart tourism from an ecosystem perspective and in Del Chiappa and Baggio's (2015) understanding of the networked nature of smart destinations. Similarly, Eichelberger *et al.* (2020) highlight the importance of encouraging an entrepreneurship-focused climate in smart destinations to foster value creation activities within the destination's entrepreneurial ecosystem. Gretzel (2018) also suggests that smart tourism is a much more comprehensive framework

than what the literature on smart tourism experiences implies; it is not just consumption-focused but has a broad range of goals that require careful governance. Ivars-Baidal *et al.* (2019) emphasize smart tourism's role in creating new opportunities and challenges for destination management, and Gretzel (2020) discusses smart tourism as an important driver of and approach towards tourism development.

Indeed, smart tourism does not necessarily need smart tourists (as in tourists equipped with smart phones that intentionally tap into the smart offerings at a destination or attraction to enhance their experiences). Smart tourism can be integrated in the fabric of the smart destination or smart tourism organization and remain invisible to those who consume tourism. For example, sensors or CCTV cameras can measure tourist flows and inform policies as well as management strategies to counteract overtourism in particular areas. No active input from tourists is needed and not only will tourists have a better experience, residents will be less exposed to the negative effects of tourism, benefits and impacts of tourism will be more equally spread across a destination, and the DMO can exploit the situation for marketing purposes. Consequently, while delivering smart tourism experiences is an important goal for smart destinations, developing smart tourism infrastructure and enabling smart tourism business ecosystems form the fundamental drivers of smart tourism development. Both require planning, coordination and implementation beyond individual tourism provider levels.

From a smart city perspective, Yigitcanlar *et al.* (2018) establish the following eight areas that smart development seeks to improve: 1) Governance; 2) Planning; 3) Productivity; 4) Innovation; 5) Liveability; 6) Wellbeing; 7) Sustainability; and, 8) Accessibility. The goals formulated for smart tourism are unfortunately more technology-centric and less holistic. SEGGITUR (2018) lists the following as crucial areas of smart tourism development in Spain: 1) Technology; 2) Sustainability; 3) Innovation; and, 4) Accessibility. The EU Capital of Smart Tourism initiative (European Commission, 2018) provides awards for achievements related to technology, sustainability, accessibility, digitalization and cultural heritage/creativity. However, smart tourism development should also not be seen as entirely outcome-focused. Yigitcanlar *et al.* (2018) suggest that goals aiming at better governance, planning and functioning imply that a main priority for smart tourism is the improvement of processes. In line with this idea, Cimbaljević *et al.* (2019) acknowledge that destination policy, planning, development and management are critical in supporting smart tourism efforts.

Smart destination governance
Smartness at the destination level emerges from the flexible interplay of different value creating entities. Gretzel *et al.* (2015b) emphasize that these can be traditional tourism providers but also residents, technology start-ups/platforms, media companies or government agencies. They can be physically or just virtually linked to the destination. Their connectedness and resulting value (co-)creation activities emerge from the technological infrastructure and data capabilities available in relation to the destination. This is what Boes *et al.* (2016) refer to as "hard smartness". As such, destinations become smart when smart technologies are embedded in their physical and virtual infrastructures and data is harnessed in smart ways to achieve smart tourism goals (Gomes *et al.*, 2017). However, as mentioned above, Boes *et al.* (2016) stress that such "hard smartness" needs to be complemented with "soft smartness" in order to be effective. They describe "soft smartness" as requiring investments in innovation, human capital (knowledge and skills) and social capital (collaboration). Most importantly, they recognize that smart destination development requires a different kind of governance to facilitate smart capacity building. Specifically, they define the leadership component of soft smartness as developing an innovation-friendly environment through participatory governance, establishing and communicating smart development-focused roles and regulations (so-called institutional logics), and actively managing the transition towards smartness (change management).

Destination governance per se is defined by Volgger *et al.* (2017:19) as the "coordination of collective action in tourist destinations, encompassing domains such as strategic management, marketing and planning/policy". Beritelli *et al.* (2007) describe it as setting and developing rules and mechanisms, as well as business strategies. Similarly, Gomes *et al.* (2017) describe destination governance as encompassing strategy, planning and management. In terms of objectives, destination governance aims at balancing the interests of different stakeholders (Dredge & Jamal, 2013) through shaping the structural, strategic and motivational aspects of collective agency at the destination (Volgger *et al.*, 2017). While these overall goals remain relevant, smart development calls for a transformation of traditional destination governance in terms of advanced use of technologies to facilitate governance processes, as well as the adoption of more sustainable approaches, such as participatory governance (Bolívar, 2018a; Lalicic & Önder, 2018).

La Rocca (2014) describes a number of smart destination governance elements, ranging from technology implementation to infrastructure provision, activation of stakeholders and coordination of efforts. Ivars-Baidal *et al.* (2019) present a multi-level model of smart destinations that places governance firmly at the strategic-relational level. In practice, smart destination governance often involves championing and communicating smart tourism ideas (Molinillo *et al.*, 2019). This is typically done with the help of smart destination brands; however, smart destination branding is not enough. Gretzel and Collier de Mendonça (2019) draw attention to the often empty rhetoric of smart tourism initiatives and emphasize the importance of mobilizing stakeholders through clear and expressive brands that approach smart tourism development from a holistic rather than a narrow technological point of view. Beyond activating the buy-in of stakeholders, there is also a great need to increase the "smartness" of stakeholders through capacity building (Basbeth *et al.*, 2018). This requires strong leadership (Boes *et al.*, 2016), which is assumed to be taken on by the DMO (Femenia-Serra & Ivars-Baidal, 2019; Gretzel *et al.*, 2018; Oates, 2016; Vargas-Sánchez, 2016).

Destination management organizations (DMOs)
DMOs are organizations that develop tourism-related strategies for destinations. Indeed, they are typically seen as critical for the destination's tourism system and have been astonishingly resilient as institutions over the years (Hall & Veer, 2016), despite the tremendous changes tourism has undergone. Dredge (2016) describes DMOs as policy tools that serve tourism industry interests by organizing and coordinating tourism activity at the destination and by building industry capacity. While DMO mandates can differ based on how they are organized/funded, they are traditionally in charge of increasing visitor spend and attracting business development to the area. Bornhorst *et al.* (2010) highlight their leadership and advocacy roles, while Pechlaner *et al.* (2012) emphasize their coordination, communication, and networking functions. Čorak and Živoder (2017) describe DMOs as facilitators of collaboration and catalysts for tourism development. More recent conceptualizations also stress their role as destination stewards, drivers of community alignment, promoters of a shared vision for the destination, and champions of digital conversion (Destinations International Foundation, 2019).

DMOs have experienced many challenges over the last decades and some have argued that they may have outlived their usefulness (Dredge, 2016). Especially big waves of technological change have challenged their modus operandi and have also exposed their lack of capacity to change (Gretzel *et al.*, 2006). Sheehan *et al.* (2016) point out that changes in the technological environment of the destination and the resulting new stakeholder groups demand that the DMO becomes a boundary spanner and an "intelligent agent" that facilitates knowledge management and strategic decision-making. Gretzel *et al.* (2006) describe the required changes in DMOs in response to technological change as 1) increasing the

capacity to identify and reflect on technological change and its implications; 2) adopting knowledge network management aimed at creating new partnerships for knowledge creation and sharing; and, 3) subscribing to master developer thinking that sees tourism as embedded in broader contexts.

Smart tourism constitutes a new technological tidal wave for DMOs, and because it directly calls for new governance philosophies and mechanisms, it requires substantial change in DMOs. Femenia-Serra and Ivars-Baidal (2019) report that DMOs see smart tourism development as both an opportunity and a great challenge and recognize the need for new destination management approaches and capabilities. While earlier work on smart tourism has hinted at the need for strategic reorientation (e.g. Gretzel *et al.*, 2015a highlight the shift toward public-private-consumer partnerships, a focus on technology-mediated co-creation and the adoption of an ecosystem perspective while Gretzel and Scarpino-Johns, 2018 stress the importance of a "smart tourism mindset"), there has been little discussion on how DMOs need to change in order to successfully govern and manage smart tourism development efforts at their destinations and across larger regional areas (Gretzel, 2018).

Conceptual Framework

The conceptualization of the destination influences the destination management needed (Pearce, 2014), suggesting that smart destinations not only require new technological capabilities but call for a shift in the destination management paradigm. Even papers that specifically deal with smart tourism development (e.g. Cavalheiro *et al.*, 2020) remain very vague about the role of DMOs in this process. Smart city literature is much more focused on envisioning new forms of governance to propel smart development (Yigitcanlar *et al.*, 2018). Transparency, openness, accountability, collaboration, innovation and efficiency are common keywords used when smart governance is described (Bolívar, 2018b). Importantly, Meijer and Bolívar (2016) highlight that smart governance is not just about good administration but involves a transformation of governing bodies and governance processes. This section explores what such a transformation would require of DMOs.

Some hints can be found in the existing smart tourism literature. Jovicic (2019) very generally implies that smart destinations require strong governance to facilitate the partnerships that form the core of flexible value creation activities within the smart tourism ecosystem (Gretzel *et al.*, 2015b). Ivars-Baidal *et al.* (2019) conclude that smart destination management involves heightening those DMO capacities that allow them to exploit data, embrace technology and elevate innovation pursuits. Del Chiappa & Baggio (2015) stress networking capabilities to create and maintain knowledge flows among the various stakeholders within a smart destination. Indeed, promoting the networking capability of a DMO increases its authority and therefore its ability to successfully govern (Volgger & Pechlaner, 2014). Koo *et al.* (2016) define the pillars of smart destination competitiveness as involving the implementation of smart technologies and intelligent systems that support resource stewardship, effective marketing, efficient organization, and superior service. Gretzel and Scarpino-Johns (2018) describe the kind of governance needed to realize smart destination resilience as agile and permeable. Vargas-Sánchez (2016) points to monitoring and coordination functions as essential aspects of DMOs in charge of smart destinations. Della Corte *et al.* (2017) picture DMOs' role within smart destinations as smart hubs; tasked with supporting data openness, regulating data privacy and establishing private-public partnerships.

Summarizing many of the aspects mentioned in relation to smart destination governance, Gretzel *et al.* (2018) define the roles of smart DMOs as:

"to lobby and maybe even partly sponsor the development of smart tourism infrastructure, to curate and manage smart tourism data, to facilitate development and uptake of smart tourism-related applications within the digital business ecosystem, to support tourists in learning about and consuming smart tourism experiences, and, finally, to link smart tourism with overall quality of life and sustainability development goals" (p. 201).

Therefore, current understandings of smart destination governance firmly place the DMO at the center of smart tourism development, recognizing that someone must establish and maintain the conditions under which the smart tourism ecosystem can strive. From this position within the smart tourism ecosystem, six fundamental functions of smart DMOs can be derived: 1) Mobilizing; 2) Match-making; 3) Managing; 4) Sensing; 5) Shape-shifting; and, 6) Stewardship (Figure 1).
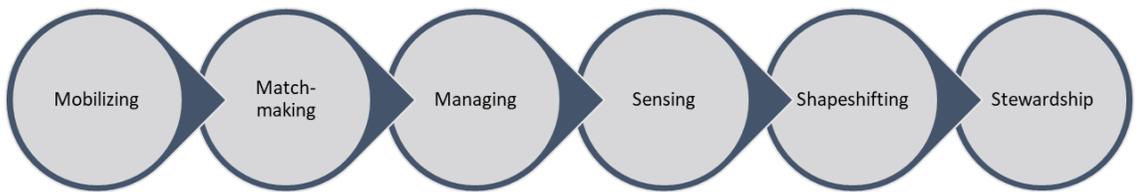
Figure 1. *Smart DMO Functions*

Mobilizing refers to resources, capacities and buy-in of internal and external stakeholders. It requires lobbying as well as smart destination branding. Mobilizing also involves envisioning the smart tourism ecosystem and the resulting smart destination to be created by various actors and consumed by residents and tourists. Mobilizing further requires the identification and realization of critical smart tourism infrastructure, such as destination data observatories. As mobilizers, smart DMOs need to engage in master developer thinking (Gretzel *et al.*, 2006) and explore new forms of fund-raising such as crowdfunding or venture capital. Creating a strong smart destination brand is also part of the mobilizing function (Gretzel & Collier de Mendonça, 2019; Molinillo *et al.*, 2019).

Match-making describes DMO activities aimed at facilitating connections among the multitude of actors within and beyond the permeable smart tourism ecosystem. DMOs as match-makers are boundary-spanners and relationship brokers. They take advantage of new models of collaboration and open innovation (Egger *et al.*, 2016). Match-making in smart tourism specifically refers to creating new opportunities for tourism to influence the "travel tech" sector and therefore the applications that drive the digital transformation fostered by the smart development paradigm. Match-making also involves matching smart tourism players with the data they need and matching data with data to create insights that foster innovation. Match-making can also be broadly understood as facilitating the resource integrations that lead to value co-creation.

Managing refers to facilitating and coordinating smart tourism activities at the destination and therefore most closely matches what DMOs already do. However, given the convergence of residential and touristic spaces within smart tourism, the smart DMO manages on a much grander scale, beyond narrow tourism agendas. As such, management expands and becomes destination governance. This requires new management capabilities, competencies and relationships that most DMOs have yet to establish. The leap from managing the interests of a well-defined group of tourism industry stakeholders to governing a destination seems to be especially drastic for DMOs that are currently not endowed with

political powers. They need to find ways to insert themselves into existing governance processes and increase their political lobbying activities.

To support these basic functions, the smart DMO needs to become a sensing organization. In contrast to the passive role as observers that many DMOs take, smart DMOs need to engage in extended, active, and real-time monitoring of their internal processes and of the smart tourism ecosystem. They need predictive capacities and authority to take corrective actions to keep smart tourism development on track and to create a resilient smart destination (Gretzel & Scarpino-Johns, 2018). Sensing allows DMOs to become stakeholder-centric and adopt a real-time service mentality (Buhalis & Sinarta, 2019). Achieving this requires sensing in many directions and agility to identify and engage with emergent smart tourism stakeholders. It also challenges the ways in which DMOs think about data and its use(s).

As shapeshifters, smart DMOs introduce liquidity into the smart tourism ecosystem. They need to ensure that data and human capital flow freely and that partnerships can be formed easily so that the smart tourism ecosystem remains agile as well as permeable. It also means that DMOs themselves need to become liquid organizations. Sharma (2020) points out that liquid organizations deploy resources fast, have needs-based infrastructure, have a highly flexible workforce assembled in project-based teams, and use technology to operate anytime and from anywhere. As shapeshifters, smart DMOs can plug themselves into specific positions in the smart tourism ecosystem when and where needed. They play with notions of liquid governance, which is characterized by high levels of dynamism and is typically driven by informality and institutional multiplicity (Krisch, 2017).

Last but not least, smart DMOs are stewards. Dredge (2016) argues that DMOs have lost credibility and relevance because they mostly subscribe to neoliberal notions of destination governance that only serves industry needs. This is especially dangerous in the smart tourism context that has explicit sustainability goals and subscribes to value (co-)creation at multiple levels rather than traditional notions of economic growth. Similarly, Coca-Stefaniak (2020) outlines the need for wise destinations that adopt wider sustainability goals and understand their embeddedness in larger regions. Gretzel and Jamal (2020) outline specific ethics and social justice principles that smart DMOs need to adopt to serve as stewards for their destinations, including greater awareness of problems that emerge from the design and implementation of technologies, greater accountability and greater care exercised in decision-making. Destination stewardship also facilitates trust-building and therefore directly feeds back into the smart DMO's ability to mobilize smart tourism development efforts.

Conclusion

Smart tourism development requires smart governance. DMOs are uniquely positioned to take on this governance role because they already operate across public-private boundaries and are versed in stakeholder management. In many places, they also have regulatory functions or are at least actively involved in policy-making. In addition, DMOs are eager to adopt smart tourism development agendas because they recognize it as an opportunity to regain some of the relevance they have lost through previous waves of digital transformations (Femenia-Serra & Ivars-Baidal, 2019; Dredge, 2016). However, the smart tourism paradigm will also challenge their current approaches and require significant shifts in destination management and governance practices. This paper identified six critical smart DMO functions to realize smart tourism development at the destination level. These are meant to provide initial guidance to DMOs and to spur research on necessary DMO capacities and strategies to not only survive but to master this latest digital transformation of tourism.

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