Value co-creation and open innovation in urban smart tourism ecosystem development: A lens from service-dominant logic

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Introduction

With the development of information and communication technologies (ICTs), as well as innovation groundwork and a technological orientation in industry, tourism has experienced a logical progression from traditional to smart tourism (Gretzel, Sigala et al., 2015). The concept of smart destinations is one component of smart tourism (Gretzel, Sigala et al., 2015), and is built on an infrastructure of state-of-the-art technology (Gretzel, Werthner et al., 2015). Besides integrating ICTs into physical infrastructure, governments have carried out numerous related policies to achieve the goal of being a smart destination (Park et al., 2016), and destination marketing organizations (DMOs) have promoted two-way communication between destinations and tourists (Wang et al., 2013).

Regarding how to build smart destinations, most studies have been conducted in the domain of technological foundations (Tribe & Mkono, 2017), driven by governments, DMOs, or business entities. Such studies have, however, overlooked the importance of value co-creation among stakeholders. Moreover, although a smart tourism destination has been conceptualized as a business ecosystem (Gretzel, Werthner et al., 2015), few studies have explored a business model suitable for smart tourism from the perspective of cooperation, knowledge sharing, and open innovation (Gretzel, Sigala et al., 2015). Particularly for urban destinations where various stakeholders, such as local governments, DMOs, different types of business entities, residents, and tourists coexist, it is crucial to build a healthy and sustainable destination that satisfies the needs of all stakeholders.

Smart destinations require substantial institutional and financial support from governments, which has resulted in heavy subsidization for smart tourism initiatives (Gretzel, Sigala et al., 2015). However, the necessity for support has prevented the self-development of smart destinations in the private sector. To build a business model for enhancing value co-creation, it is necessary to find low-cost and highly efficient methods that help business players develop smart destinations themselves rather than to rely heavily on financial investment from governments.

The authors of this paper, therefore, aim to explore the value co-creation and open innovation-based business model in urban smart ecosystems as part of a research project titled "Smart tourism destination development and value co-creation through big data," funded by the Japan

Society for the Promotion of Science's (JSPS) KAKENHI Grant. Cities, as popular tourist destinations, play an essential role in providing visitors with highly satisfying and enjoyable experiences, while also serving as places where tourists and local residents frequently come into contact (Supak et al., 2015). Cities also include the most complex systems constructed by various stakeholders in the tourism industry, such as local government, DMOs, restaurants, hotels, public transportation, travel agents, and businesses at tourist spots. Accordingly, this project employs service dominant logic (SDL) as the theoretical foundation to understand urban smart tourism ecosystems and explore a value co-creation and cooperation business model that sustains competitive advantage in urban destinations.

Service-dominant logic (SDL) as a foundation of smart tourism destinations

As opposed to the implicit promotion of exchange value in goods-dominant logic (GDL), SDL suggests that value is co-created through resource integration and service-for-service exchange, and highlights value-in-use (Lusch & Vargo, 2014). Lusch and Vargo (2014) identify ten foundational premises (FPs) of SDL, the four following of which capture its essence: "(1) Service is the fundamental basis of exchange; (2) The customer is always a cocreator of value; (3) All economic and social actors are resource integrators; (4) Value is always uniquely and phenomenologically determined by the beneficiary" (p. 15). In the service-centered view of marketing, it is necessary to collaborate with and learn from customers and tailor marketing strategies to customers' individual and dynamic needs (Lusch & Vargo, 2014).

Wang et al. (2013) suggest that SDL may be taken as an alternative perspective to understand the context, necessity, and future directions of smart tourism because its customer-defined, co-created value and operant resources suit smart tourism's characteristics and goals. Through the lens of SDL, value creation is an interactional process between business entities and customers as value co-creators who are always involved in the

production of value (Lusch & Vargo, 2014). As Parhalad and Ramaswamy (2000) point out, the market is a venue for proactive customer involvement and value creation. In terms of smart tourism destinations, government-driven marketing strategies through state-of-the-art technology are not enough. Since the beginning of smart tourism, most studies on the subject have examined how to integrate technology support systems, such as end-user internet service, the internet of things (IoT), and cloud services (Wang et al., 2013), into physical environments to make everything "smart." However, this tendency may have resulted in a misunderstanding of smart tourism destinations. According to Gretzel, Sigala et al. (2015), a smart destination is not built on an ICT infrastructure alone; it should also facilitate the tourist's interaction with their surroundings. In this regard, there is an urgent need for tourism practitioners and researchers to recognize that customers are primarily an operant resource (i.e., co-producers) instead of an operand resource (i.e., targets), and that they can be positively involved in the entire value creation process (Lusch & Vargo, 2014). Using this logic, tourists and tourism practitioners in smart tourism should be regarded as co-producers of value where ICTs integrated into the physical environment enhance their interactions.

As discussed above, current smart tourism development has been heavily subsidized by governments, whereas the business models suitable for smart tourism have not been clearly articulated (Gretzel, Sigala et al., 2015). Based on the theoretical underpinnings of SDL, all actors should be resource integrators (Vargo & Lusch, 2016). Thus, business models for smart tourism destinations should be redefined (Schmidt-Rauch & Schwabe, 2014) and built to promote value co-creation among all the integrators. The topic of value co-creation in smart tourism has been discussed from the perspective of how to construct a healthy network between destinations and tourists. For example, Del Chiappa and Baggio (2015) applied a network analytic approach to analyze the network structure of three selected tourism destinations and suggested that both virtual and real components and their connections be considered to understand knowledge transfer in smart tourism. The network concept, however, highlights connections, rather than flows and

exchanges, between actors (Lusch & Vargo, 2014). Thus, this study instead applies the concept of business ecosystems in SDL thinking because the concept is more amenable to describing dynamic service exchanges than the network perspective (Lusch & Vargo, 2014).

Gretzel, Werthner et al. (2015), who have applied the concept of the business ecosystem to smart tourism, define smart tourism as "a tourism system that takes advantage of smart technology in creating, managing and delivering intelligent touristic services/experiences and is characterized by intensive information sharing and value co-creation" (p. 560). Based on this definition, the smart tourism ecosystem can be understood in relation to two aspects: value co-creation and cooperation. As social media is a two-way communication tool that provides user-generated content, it can function as a pillar in the smart tourism ecosystem (Gretzel, Sigala et al., 2015; Sigala et al., 2012). Consistent with past studies, Buhalis and Foerste (2015) have noted that the social context of mobile marketing can serve as a new framework to enable value co-creation at tourism destinations. Regarding cooperation, it is necessary for all destination stakeholders (e.g. governments, business entities, DMOs, tourists, and residents) to understand how to cooperate with each other to maximize the value gained from the destination resources, as suggested by FP 9 of SDL, which outlines that "all economic and social actors are resource integrators" (Lusch & Vargo, 2014, p. 75). In SDL thinking, an assumed premise of cooperation is open innovation, which emphasizes that different organizations should recognize that their individual resources for innovation are insufficient and, consequently, engage in innovation together (Dahlander & Gann, 2010). Therefore, a smart tourism ecosystem requires tourism businesses to collaborate with stakeholders across their organizational borders (Gretzel, Sigala et al., 2015) rather than to work independently. However, although ecosystem construction is critical to building a smart tourism destination, how to practice value co-creation and cooperation remains obscure.

Conclusion

As Gretzel, Sigala et al. (2015) suggest, the fact that current smart destinations rely heavily on significant financial support from governments prevents the development of smart destinations. It is important, therefore, to find a low-cost but highly efficient way to build smart tourism destinations. The big data generated by tourists, such as data collected from global positioning system- (GPS)enabled cellular phone applications or geo-tagged social media, serve as an essential operant resource, which can assist DMOs and local governments in better understanding tourists' preferences. More importantly, an ideal smart tourism ecosystem should be premised on open innovation that is not government-driven (Park et al., 2016). In other words, smart tourism ecosystems require the interactional process between tourism practitioners and tourists to achieve value co-creation (Vargo & Lusch, 2016), and the role of tourism practitioners is to involve tourists in the value-creation process rather than to force tourists to accept government-driven tourism strategies (see Figure 1 below).
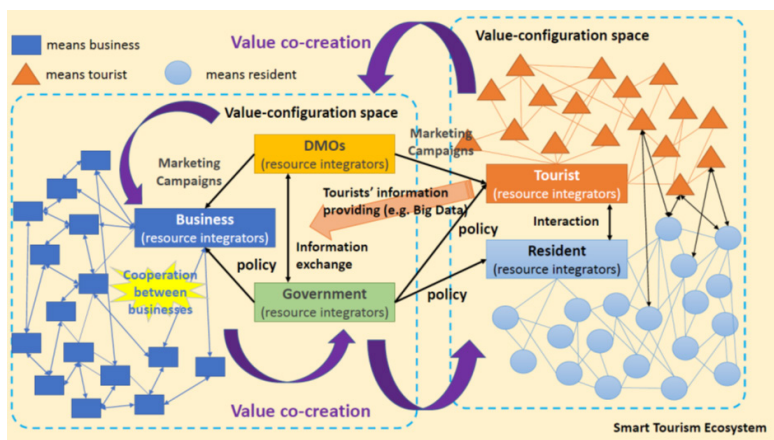

Figure 1. The contextual nature of value co-creation and cooperation in a smart tourism ecosystem
Note: This model was developed by the authors based on models proposed by Vargo (2009) and Lush and Vargo (2014).

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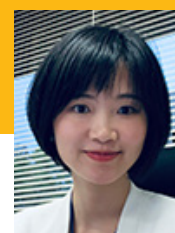
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