

# Mobile apps as nature-based tourism experience facilitator: A conceptual approach

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Outdoor recreationists increasingly interact with nature via technology. Especially the use of mobile applications enables tourists to consume, create and share content in order to enhance nature-based tourism (NBT) experience (Dickinson, Hibbert, and Filimonau, 2016). This conceptual paper aims at understanding the development of usage habits of mobile technologies in the NBT context. The primary focus of the paper is on the value-creation potential of both content and the various elements of mobile apps functionalities. We argue that mobile applications show the capacity to enhance major aspects of the NBT experience, such as emotional, social and epistemic value, as well as excellence, efficiency and safety (Chekalina, Fuchs, and Lexhagen, 2018).

Electronic marketing postulates significant implications for building customer relationships and opportunities for exploring new service offerings and markets. Especially for information intensive and sense making services, like tourism, electronic customer relationship management (e-CRM) is considered as essential for facilitating and mediating touristic experiences (Wang, Xiang, and Fesenmaier, 2014). E-CRM typically applies ubiquitous (mobile) technologies, which directly respond to travelers' communication and service needs, thereby serving the purpose of building, maintaining and improving customer relationships between destination suppliers, their customers and between customer-peers (Kolas et al., 2015).

Typical elements of mobile apps functionalities, which are already available to various NBT segments, include map-based information, weather/avalanche warnings, augmented reality and 360 images, QR-code tags and geocaching, location-based services, near field communication (NFC) and mobile payments, as well as social media integration (Buhalis and Foerste, 2014; Kolas et al., 2015). At the same time, in the context of NBT, the use of mobile devices, especially smartphones, represents a dilemma, as particularly revealed by Dickinson, Hibbert, and Filimonau (2016) for the case of campsite tourism experience. Specifically, as the desire to 'escape' is one of the main push motivation factors, at least 50% of tourists in the NBT domain view mobile devices as a potential distractor and, therefore, demonstrate a need for mobile 'disconnection' (Dickinson, Hibbert, and Filimonau, 2016).

Indeed, the barriers to use technologies are more prominent in the NBT context compared with the use of mobile devices when travelling to populated (urban) areas. Dickinson, Hibbert, and Filimonau (2016) address various hardware considerations, such as availability of the signal, mobile charges, as well as concerns about possible damage or loss of an expensive device, that all constitute to the factors of 'forced disconnection' (p. 197). Battery time limitations are yet other technological barriers on the way of using mobile devices when being outdoors for an extended period. Moreover, in the tourism context, consumers' concerns of privacy and security are particularly important, especially in relation to responsive e-CRM applications mediated by personal attitudes towards mobile marketing (Buhalis and Foerste, 2014).

Nevertheless, the growing use of mobile technology solutions in everyday life converts into an increased importance of smartphones as part of tourists' travel process (Neuhofer, Buhalis, and Ladkin, 2014; Wang, Xiang, and Fesenmaier, 2014). Indeed, frequency and patterns of smartphone usage in daily life determines the use of mobile apps in the tourism domain (Wang, Xiang, and Fesenmaier 2014). Again, Dickinson et al (2016) reveal that among campsite tourists, the active smartphone users were more inclined to both staying connected and using their mobile devices, thus, anticipating that smartphone usage in a NBT context will further evolve.

Figure 1 conceptually outlines our proposed framework for a better understanding of the process of value enhancement of the NBT experience by using mobile applications at different stages of the travel phases. An experience hierarchy (Neuhofer, Buhalis, and Ladkin 2014) distinguishes between different levels of technology impact on pre-travel, on-site and post-travel stages of the tourism experience. Particularly, non-interactive Web 1.0 technologies assist the experience process as tourists can access websites, use booking systems and send e-mails. Smartphone users can consume various multimedia content via their devices, such as text, music and movies, and download mobile applications, such as digital travel guides, directories of tourism service providers, maps, or relevant reference literature (e.g., glossaries of birds, plants, mushrooms, fish species, etc.).

Second, the advantages of Web 2.0 with a focus on social media, interaction and consumers' active involvement into content creation constitute the technology-enhanced level of travel experience (Neuhofer, Buhalis, and Ladkin, 2014). This stage implies an active role of tourists in shaping their experience through networking as well as experience-based content generation and exchange. Moreover, marketers can combine the benefits of mobile technologies with social media-based, contextual and location-based information about the customer to offer 'SoLoMo' marketing solutions, such as route-guidance, check-ins and NFC (Buhalis and Foerste, 2014).

Finally, technology-empowered experience represents the highest level of impact, as mobile technology becomes an integral part of the tourist experience (Neuhofer, Buhalis, and Ladkin, 2014). Here, for instance, mobile game applications based on QR-code tags and geocaching, as well as augmented reality applications have already found its technological implementation in the context of NBT (Kolas et al., 2015).

Hence, tourists use smartphones before, during and after the trip for multiple purposes, including information search, communication, facilitation (e.g., navigation, weather information, itinerary management, purchases, etc.), and entertainment, which includes both consumption and creation of multimedia content. These functionalities contribute to various aspects of the travel process, from anticipation and planning to sharing and re-experiencing, and, therefore, facilitate the value creation out of the travel experience (Wang, Xiang, and Fesenmaier, 2014).

The paper concludes by outlining follow-up research activities and related methods that empirically assess the use of mobile apps for facilitating the value of tourism product packages in a nature-based tourism context for various tourism segments. More specifically, the consequent stages of project implementation include (1) the evaluation of segment-specific experience needs and sensation potentials in the NBT context; (2) the conceptualization and prototypical implementation of mock-up-based mobile applications (Kolas et al. 2015); and (3) usage and acceptance tests of NBT mobile application prototypes in laboratory settings. Through its potential to validate and further develop the conceptual framework proposed in this paper, the expected outcome will provide valuable theoretical and applied insights into NBT experience facilitation via mobile technology.

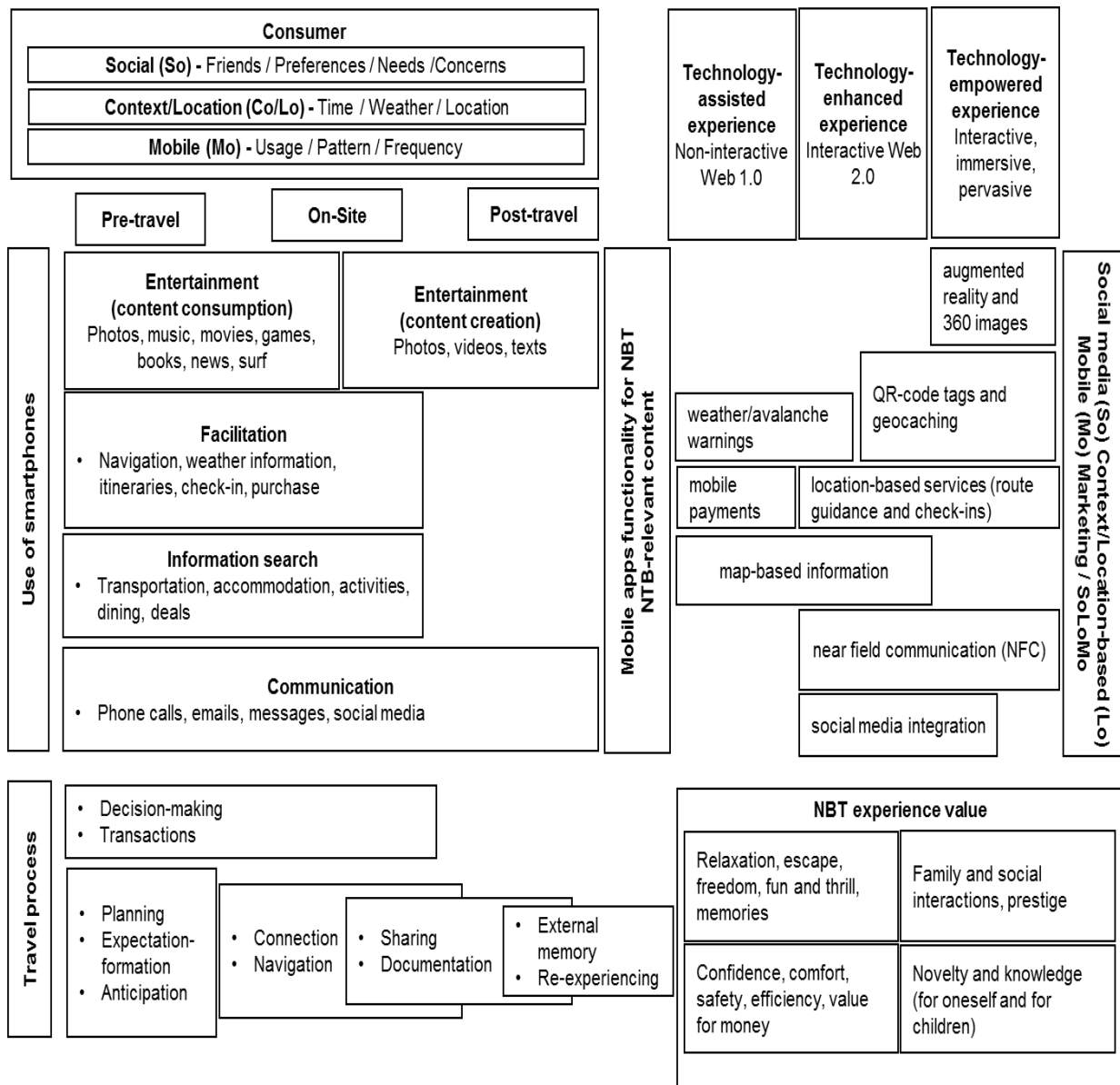


Figure 1. Conceptual map of NTB experience value enhancement by using mobile applications (adapted from Neuhofer, Buhalis, and Ladkin, 2014; Wang, Xiang, and Fesenmaier, 2014; Buhalis and Foerste, 2015)

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