Chapter 4
Near Field Communication (NFC) Applications in the Tourism Industry

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ABSTRACT

The use of near field communication (NFC), a type of wireless technology that allows data transfer by bringing two devices closer together, has been increasing very rapidly. NFC offers great ease to its users through its contactless operation and provides the optimum environment for wireless communication with other technologies. Users with NFC-enabled mobile phones can share websites, contact information, phone numbers, music files, videos, and photos and can also unlock doors and can use their phones as mobile wallets to make purchases safely and easily. In recent years, with the increasing use of technology, it is clear that NFC technology is promising for the tourism industry. This chapter provides background on NFC technology. The features of NFC technology and its advantages and disadvantages for the tourism industry are evaluated. NFC technology applications (data sharing, payments, tickets, keys, etc.) for the tourism industry are explained. Finally, examples of NFC applications in the tourism industry are discussed for both tourists and sector stakeholders.

INTRODUCTION

Technological developments show their effects in a wide range of areas from manufacturing to the service sector. Along with the technological innovations that are of interest to all sectors and the widespread use of information communication technologies, in the tourism sector, which follows technological developments closely, the use of new technologies has become almost mandatory. Technological developments are changing our thought processes while simultaneously introducing new concepts in all areas of life.

Near field communication (NFC) has recently become very popular in the field of technology. In today’s increasingly interconnected world, this fast and innovative technology allows you to safe interaction with
the world around you with a simple touch. NFC is a contactless processing technology that is found in billions of smartphones, tablets, and other electronic devices and is being added to new devices almost every day. NFC is a technology standard that allows two NFC-compatible devices that are close to each other to communicate over wireless technology at close range but without contact. Founded by Nokia, Sony, and NXP, the NFC Forum is working on the development and dissemination of this technology.

NFC is seen as an ideal technology to strengthen short-distance connections between two devices due to the rapid expansion of devices in line with the technology in question (Hardy et al., 2010). Considering that the tourism sector is based on cooperation between a wide range of services and products, the benefits of technological developments are quite high in this sector (Neuhofer et al., 2015). For this reason, mobile technologies are considered as one of the most interesting developments affecting the tourism industry. In particular, NFC is perceived as a major technological development that has significant impact on both tourism businesses and tourism research (Buhalis & Law, 2008). NFC technology provides great opportunities for destinations, hotels, and tourism businesses to improve the efficiency and quality of existing services (Vitezić et al., 2015). The concept of smart tourism together with the emergence of smart tourists demands more technology. NFC, as one of the smart tourism tools, is especially able to meet the expectations of tourists because of its easy usage and safety.

The use of NFC in tourism is relatively new compared to other technologies, but it offers new applications for tourists, such as E-ticketing, data exchange, E-wallets, boarding passes, and ratings. Once a smartphone is placed close to an NFC tag, information such as text, imagery, or soundtracks will automatically appear. No app downloads are necessary for NFC tags to be activated by smartphones. For example, tourists can use their mobile phones to get information about transportation schedules, waiting times for arrivals, ticket purchases, and so on from panels placed at bus stops. When a tourist brings his/her phone closer to a historical artifact exhibited in a museum, he/she can learn everything about it, or he/she can pay by phone in a restaurant where he/she eats.

The aim of this study is to examine NFC technology and to give information about its current usage in the tourism sector. In this context, information is given about NFC technology compared with other wireless technologies, as well as NFC operating modes, NFC communication modes, and the advantages and disadvantages of NFC. The importance of the use of NFC technology in tourism and its current usage areas are illustrated with examples.

BACKGROUND

Near Field Communication (NFC)

With the expansion of mobile devices, innovative developments of technologies are emerging rapidly (Canadi et al., 2010). One of them, Near Field Communication (NFC), is a growing technology among automatic identification technologies. NFC, a new generation of wireless communication technology, developed in late 2002 in partnership with Sony and Philips and was adopted by ISO / IEC as standard on 8 December 2003. NFC technology provides close-range communication between electronic devices that comply with NFC standards (Coskun et al., 2011).

Due to the NFC technology is composed of an interface and protocol developed on RFID, it is compatible with RFID technology (Bilginer and Ljunggren, 2011). NFC is short-range, high frequency, low-bandwidth and wireless technology between two NFC-enabled devices (Coskun et al., 2011). NFC