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Mobile App Usage and Its Implications for Service Management – Empirical Findings from German Public Transport

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Abstract

By drawing on self-service technology literature, the technology acceptance model (TAM), and on results of qualitative research, a model is presented to explain consumers' intentions to use mobile apps of service companies. Additionally, the research identified outcomes of actual mobile app usage. The model was tested by collecting data from 197 public transport app users in Germany. Results indicate that information fit to task, convenience value, and speed of transaction affect perceived usefulness of mobile apps. Moreover, ease of understanding, intuitive handling, and reliability were found to drive perceived ease of use. The research also identified perceptions of overall service quality, firm innovativeness, and subjective firm knowledge as three outcomes of app usage. These findings emphasize the benefits of developing company owned mobile apps and have important implications for encouraging customers to use such programs.

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Keywords: mobile apps; self-service technologies; technology acceptance model; service quality

1. Introduction

The rise of smartphones and mobile apps is changing the way we live, communicate, and do business. An increasing number of firms introduce company-owned apps as a way to create better individual experiences on the "Internet of Me". For service companies, there is a long tradition of technology infusion to overcome issues with special characteristics of services and to enable customers to participate in the service delivery process (Dabholkar, 1996). Hence, many service businesses have shifted from high-touch, low-tech to high-tech, low-touch (Bitner,

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Brown & Meuter, 2000; Giebelhausen et al., 2014). Despite various empirical research on self-service technologies (for a review see Wang, Harris, & Patterson, 2013), there is generally a lack of service research on the usage of mobile apps.

In comparison to classic self-service technologies, mobile apps offer new smart features that service managers can use to enrich their service offering. At the same time, consumers increasingly spend time on using their smartphone and specifically mobile apps at the expense of other media. In fact, smartphone penetration in the U.S. has risen to 56% of the population in 2013 and 83% of these users do not leave home without their smartphones. Consumers use their mobile devices for a multitude of different activities, such as looking for local information, searching the web, research products and services, or making actual purchases (Google, 2013). Interestingly, most of these activities are performed by mobile apps. Smartphone owners spend 86% of the time using their smartphone on mobile apps emphasizing the enormous potential of these programs (Nielsen, 2013).

2. Mobile apps and self-service technologies

Smartphone apps have been defined as "end-user software applications that are designed for a cell phone operating system and which extend the phone's capabilities by enabling users to perform particular tasks" (Purcell, Entner, & Henderson, 2010). This definition clearly reflects the relationship of the smartphone as a platform on the one hand and mobile apps as the software that makes the device valuable to consumers by providing content on the other. In fact, "smartphones aren't very "smart" without the software apps that give them their usability and versatility"(Voas, Michael, & van Genuchten, 2012). When it comes to company owned apps, managers are very much interested in developing mobile apps that incorporate the company's brand. These branded apps are defined as "software downloadable to a mobile device which prominently displays a brand identity, often via the name of the app and the appearance of a brand logo or icon, throughout the user experience" (Bellman et al., 2011). As this research focuses on mobile apps that are owned by service companies, there will be an emphasis on branded apps as defined above.

Academic research on mobile apps is scarce given that the penetration of smartphones is a very recent phenomenon. Although there are some studies with regard to smartphones and smartphone usage (Verkasalo et al., 2010; Park & Chen, 2007; Jung, 2014; Andrews, Drennan, & Russell-Bennett, 2012; Kim, Lin, & Sung, 2013), there is generally a lack of research on the implementation of smartphone apps in the service delivery process. One area of research that seems promising is the literature on self-service technologies (SST) that have been defined as "technological interfaces that enable customers to produce a service independent of direct service employee involvement" (Meuter et al., 2000). Generally, based on literature, SST have been categorized according to specific interfaces serving different purposes from the customer perspective (Forbes, 2008; Meuter et al., 2000). Thereby, the differentiation of internet and non-internet SST seems most appropriate for classifying mobile apps. In particular, many of the purposes of online based interfaces identified by Meuter et al. are nowadays served by mobile apps (package tracking, financial transactions, health information, self-training etc.). Compared to non-internet SST, empirical research on online based SST is less elaborated (van Beuningen et al., 2009; Collier & Kimes, 2013; Curran, Meuter, & Surprenant, 2003). As aforementioned, studies on mobile apps as technological interfaces that are included in the process of service delivery are completely absent.

However, before addressing the described research gap, it is important to clarify the differences between classic self-service technologies and mobile apps. According to literature and qualitative research conducted for the underlying studies, there are three major coherent differences:

- Bidirectional access to real-time data: similar to the practice of contextual marketing, companies can provide personalized information to customers via the app in real-time (Xueming & Seyedian, 2003; Kenny & Marshall, 2000). Conversely, customers provide real-time data to companies (e.g. their location). Hence, smartphone apps enable an exchange of data to serve the customer's needs as required. Advancing standards for wireless communication of high-speed data and rising availability of wireless local area networks additionally favor the access to real-time data.
- Ubiquity at all times: mobile apps fulfill the customer need of accessing information and services at any time and from anywhere (Andreassen, Lervik-Olsen, & Calabretta, 2015). As smartphones are always with