Why Do Customers Use Smartphones for Shopping in Omnichannel Environments? A Conceptual Extension of a Special Relationship Between Customers and Devices

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Abstract

The proliferation of smartphones, tablet computers and mobile internet is influencing the evolution of customer behaviour. Retail and industry are increasingly catering for customers who use more and more technologies within their demand journey. Some suppliers distribute their goods and services, and communicate, in omnichannel systems. Technologies such as quick-response code, near-field communication, augmented reality and beacons provide new opportunities for the incorporation of various phases of the demand process. The internet complements and enables a functional networking of different marketing channels. Technological-trend monitoring is now an important management task, as is the design of omnichannel systems that allow buyers a problem-free shopping experience across multiple marketing channels. Numerous papers and studies focus on customers' acceptance of – and willingness to use – smartphones. But how can different levels of acceptance and willingness be explained? Why do customers see smartphones as playing such an important role in their everyday lives?

The purpose of this conceptual paper is to broaden and deepen the understanding of customer behaviour with regard to smartphones in an omnichannel environment. This paper develops a framework that focusses on the relationship between customers and smartphones in the context of omnichannel systems. Several theoretical approaches – such as the extended self, the extended mind, the digital doppelgänger, actor–network theory and the cyborg assemblage are used to derive hypothetical constructs providing implications for future empirical studies.

We suggest five active roles for smartphones within the relationships with customers: (1) parts of the customers' selves; (2) drivers of cognitive processes; (3) supporters of digital doppelgängers; (4) agents for active impulses; and (5) partners in fusions. We assume that these five roles of smartphones have a positive effect on customers' willingness to use smartphones as shopping companions in bricks-and-mortar retail stores.

Keywords: Omnichannel, Smartphones, Customer Behaviour.

JEL classification: M31.

1. Introduction

The penetration of bricks-and-mortar retail stores with internet options provides omnichannel retailers with important chances to distinguish themselves from competitors. The marketing channels merge into one simultaneous, overall process for customers, meaning that customers can use channels and touchpoints at the same time for different functions alongside the shopping process (e.g., Brynjolfsson et al. 2013; Piotrowicz and Cuthbertson, 2014; Rigby, 2011; Verhoef et al., 2015). Smartphones in particular can facilitate the establishment of new marketing channels (e.g., apps) or link up existing marketing channels (e.g., bricks-and-mortar and web retail stores). Nowadays, many customers have mobile-internet access anywhere and any time. With the proliferation of available apps, the possibilities of smartphone usage also increase. Websites have to be optimised for mobile devices. Apps and mobile websites complement shopping processes. For example, customers use smartphones to make purchases

or to prepare the bricks-and-mortar shopping. They may search for product information, special offers and prices, or local stores. Many suppliers respond to this by developing their own apps or mobile web stores, so introducing new marketing channels into their omnichannel systems. For this reason, omnichannel suppliers wish to understand customers' smartphone-related needs and behaviours. This is particularly relevant to the simultaneous usage of smartphones in bricks-and-mortar retail situations. In this conceptual paper, we focus only on this new and challenging phenomenon for omnichannel retailers. Numerous papers and studies examine customers' acceptance of smartphones (e.g., Agrebi, 2015; Bruner and Kumar, 2005; Jung et al., 2015) or willingness to use smartphones in bricks-and-mortar contexts (e.g., Deloitte Consulting LLP, 2012; Samat, 2014). While the '*if*' of smartphone usage has already been examined, there seems to be an academic gap on the question of '*why*' in omnichannel-related science: that is, the explanation of why customers use their smartphones as often and intensively as they do. This is a matter of fundamental relationship between customer and smartphone, in which the smartphone is much more than simply a passive device. The smartphone becomes an activating partner: social networks can be asked for advice, mobile couponing can stimulate buying desire, and monitored body-data can provide the basis for buying decisions. On all these issues, we look for conceptual frameworks and scientific descriptions of the influence of technology on humans. This conceptual paper adopts sociological descriptions of this relationship in order to derive implications for following empirical studies in customer research. These implications are applied to customers using smartphones in physical stores of omnichannel retailers. Therefore, we create an extended view of the device becoming an activating partner within the relationship towards humans: the impact of smartphones on the shopping process can be regarded as its acting as a shopping companion. If customers shop together with friends or relatives, they feel like shopping companions who give advice on what to buy, and where to buy it. We suggest that this shopping support can also be provided by the smartphone as a kind of technical-but-intimate partner. In order to distinguish the relationship between customers and smartphones, we follow Lupton (2015, p. 7), who argues that it is not necessary to differentiate between hardware and software. Instead, we consider the benefits of smartphones for customers, because we regard software and hardware as service bundles.

This paper discusses several concepts with a focus on the relationship amongst human and things. This can be an extended view of technology inclusion, or a description of technology as an activator of human behaviour. All concepts have to be transferable in order to describe the smartphone as a shopping companion for customers. To enrich this role, Section 2 considers extended-self concept, in the context of creating a smartphone-extended self. According to extended-mind concept, the smartphone can be seen as a driver for cognitive processes. The smartphone-extended mind is addressed in Section 3. Section 4 describes the smartphone as supporter for the digital doppelgänger, while Section 5 examines a customer-smartphone network utilising actor–network theory (ANT). A possible customer-smartphone cyborg is discussed in Section 6. Each section first characterises the theoretical concept and then proceeds to emphasise the implications for the relationship between customers and smartphones. Section 7 shows the results in the form of a framework with five roles of smartphones. The paper ends with a discussion and two main conclusions for customer behaviour (Section 8). From the academic viewpoint, we suggest a broadened view (from passive to activating device) and a deepened understanding (via five different roles) of smartphones in the context of omnichannel retailing. And from the managerial point of view, these considerations may help to design smartphone options that are customer-oriented.

2. The smartphone-extended self

The extended-self concept (Belk, 1988, 2013) is one theoretical explanation clarifying the important role of smartphones in everyday life (Belk, 2014a; Clark, 2011; Clayton et al., 2015). Belk (1988) states that 'knowingly or unknowingly, intentionally or unintentionally, we regard our possessions as parts of ourselves' (p. 1). According to James (1890), he then defines possessions as things we call ours, and says that we are the sums of our possessions. In addition, Belk (1988) reasons that 'the more we believe we possess or are possessed by an object, the more a part of self it becomes' (p. 3). Belk (2013) modifies his concept due to the world's digitalisation, considering five digital dimensions: dematerialisation (becoming attached to digital content), re-embodiment (creating a digital extended self), sharing (interacting socially online at third places), co-construction of self (letting other people influence the extending of individual sense of self) and distributed memory (online communities sharing digital artefacts and developing collective memories around them).

Extending the self with a smartphone could be understood as regarding the device itself – the tangible object – as part of the self. This could be the case, for instance, if a user personalises a smartphone (e.g., with an individual menu, background design or phone case). With the smartphone-extended self, however, we mean being possessed not only by the object itself, but also by the possibilities it offers us: that is, the five digital dimensions developed by Belk (2013).

It could be said that the more that customers become possessed by smartphones in general, the more that they are willing to use specific smartphone options. As a result, our hypothesis is formulated as follows:

> H1: The more closely allied that smartphones become with customers' selves, the more customers are willing to use smartphones as shopping companions in bricks-and-mortar retail stores.

3. The smartphone-extended mind

Clark and Chalmers (1998) advocate the idea of *active externalism* 'based on the active role of the environment in driving cognitive processes' (p. 7). They argue that there is not only a process of problem-solving in human minds: external objects can also function as part of the mind. So human mental states and beliefs may be partly realised 'by structures and processes located outside the human head' (Clark, 2011, p. 76). Furthermore, a distinction between mind and environment is unreasonable, because 'the human organism is linked with an external entity in a two-way interaction, creating a *coupled system* that can be seen as a cognitive system in its own right' (Clark and Chalmers, 1998, p. 9).

Following Clark and Chalmers (1998), smartphones could in some cases be active drivers for customers' cognitive processes. Knowledge can be outsourced into the (mobile) internet, and always available if needed. Translations, calculations or reminders can be carried out in a two-way interaction between smartphones and customers. Sometimes, customers rely on the advice of technological devices unquestioningly. For example, people often follow the instructions given by GPS (e.g., satnavs) without really engaging their cognition. Customers who are used to extending their minds with smartphones are probably more willing to try using their devices in new ways. Transferring these arguments into the context of shopping, we can postulate that within omnichannel environments, all technological devices in general – and smartphones in particular – may drive customers' shopping-related cognitive processes. Therefore, the following research hypothesis is formulated:

> H2: The more that customers' cognitive processes incorporate with smartphones, the more that customers are willing to use smartphones as shopping companions in bricks-and-mortar retail stores.

4. The smartphone as supporter for the digital doppelgänger

Bode and Kristensen (2016) describe quantified self-movement, in which members track their individual physiological data (e.g., heart-rate and weight), personal performance (e.g., running, walking and sleeping) and mental state (e.g., happiness and creativity) in combination with situational and social conditions (e.g., date and weather) (p. 120). The tracking is mostly carried out by smartphones. The more data the device has collected, the more complete the overall picture of a person becomes; the device can provide so many details and so much combined knowledge about a person's body that it knows more about the person than the person does themselves. Haggerty and Ericson (2000) address this phenomenon by providing the concept of a digital double as a disconnected passive and detailed virtual double of a person. Bode and Kristensen (2016), however, describe the *digital doppelgänger*, which is seen as an imaginary potential activating part of the person's self-construct. This concept contains an interrelationship between tracking and self-modification as an ongoing process to enhance quality of life (pp. 122–123).

Customers who let smartphones track personal data in order to create digital doppelgängers of themselves can then access data-based individual purchase recommendations or even advice from smartphones. The smartphone could for instance, become a personal diet consultant. For this reason, we formulate the following hypothesis:

> H3: The more that customers use smartphones for tracking personal shopping-related data, the more they are willing to use smartphones as shopping companions in bricks-and-mortar retail stores.

5. The customer–smartphone network

Bruno Latour (2005) is a main contributor to ANT, which states that within a network, actions are caused not only by human subjects (actors), but also by non-human objects (referred to as 'actants') (p. 71). Latour describes this assumption using the analogy of hotel keys that have bulky and heavy key fobs. He claims that these key fobs (actants) tell the hotel guests to give back the keys before leaving. In other words, the hotel manager loads the message into the key fob (Latour, 1991, p. 105). In general, all actors and actants that are involved in this translation process are combined into a worknet or a network (Latour, 2005, p. 132). Latour's networks exist not as stable systems, but simply as connecting, enduring entities. Instead, these networks are 'rather a metaphor that helps us trace and understand action' (Bajde, 2013, pp. 228–229).

ANT can be used to analyse the interactions inside bricks-and-mortar outlets in a generic way. Inside the store, there are lots of material actants, such as shelves, goods and shopping trolleys. All these actants interact within a network of diverse digital components, such as monitors, scanner tills and even smartphones. These non-human objects again interact with humans (actors), such as sales staff, customers and smartphone users. Thus, this network has many actors and actants. However, we focus on just one actor–actant relationship: that between customers and smartphones embedded in a wider network. Customers may respond to active impulses from smartphones by changing their behaviour. In this process, we exclude the fact that the smartphones' impulses may have been programmed or triggered by humans. First, it matters that the smartphone interfaces with the shopping process actively and appropriately. Special offers or other commercially relevant information could, for instance, be sent to customers' smartphones within stores by beacon technology. We assume that customers who are familiar with reacting to active impulses from smartphones are also more willing to respond to smartphones in other situations. This discussion leads to the following hypothesis:

> H4: The more frequently that customers respond to active impulses from smartphones, the more they are willing to use smartphones as shopping companions in bricks-and-mortar retail stores.

6. The customer–smartphone cyborg

The term '*cyborg*' is derived from '*cyb*ernetic' and '*org*anism', and was created by two medical scientists to describe self-regulating human-machine systems (Clynes and Kline, 1960). While the term was first used in the context of medicine, Haraway (1985) transferred the metaphor to a sociological context, describing the relationship between humans and non-humans. Lupton (2015) then develops the *digital cyborg assemblage* and characterises it as 'the body that is enhanced, augmented or in other ways configured by its use of digital technologies that are worn, carried upon or inserted into the body, continually interacting with these technologies in dynamic ways' (p. 165). Lupton distinguishes her concept as a metaphorical, complex and fluid approach that negates a separation of real and virtual self respectively of people and things (Lupton, 2015, p. 165).

Even Lupton uses the example of bricks-and-mortar retail stores to describe the digital cyborg assemblage as a combination of bodies (e.g., sales staff and customers), technologies (e.g., tills and enterprise resource planning) and identified spaces (e.g., sales areas) (Lupton, 2015, p. 169). But again, we focus on a fusion between customers and smartphones, as Lupton (2015) also points out: 'We are more cyborgs than ever before, with our mobile and wearable technology' (p. 165). Smartphones can be seen as an intermediate step on the way to an actual combination of cybernetics into the body. We assume an emotional and/or functional fusion between customers and smartphones. It could be said that the more closely this fusion evolves, the more that customers are willing to use specific smartphone options. We therefore formulate the following hypothesis:

> H5: The more intensive that smartphone–customer fusions become, the more that customers are willing to use smartphones as shopping companions in bricks-and-mortar retail stores.

7. Results

It could be argued that smartphones are just passive objects that are controlled by humans, and that the relevance of smartphones in everyday life is based on their increasing functional potentialities. However, we point out that humans are involved in smartphone interactions that go beyond a functional and controlled tool-based use and beyond a simple means–end relation for problem-solving tasks. In order to do this, we attribute five active roles to the human–smartphone relationship. Smartphones can be: (1) parts of the customers' selves; (2) drivers of cognitive processes; (3) supporters of digital doppelgängers; (4) agents for active impulses; and (5) partners in fusions. We assume that these five roles have a positive effect on customers' willingness to use smartphones as shopping companions in bricks-and-mortar retail stores. Based on this, we derive the framework shown in Figure 1.

The five roles of smartphones can be illustrated by smartphone apps for weight loss (e.g., Weight Watchers). Chen et al. (2015) have examined the most popular of these, in particular evaluating the different functions of the apps, which we use to illustrate our five roles of smartphones. The hope of losing weight (Beruchashvili et al., 2015) and being part of diet communities can cause emotional attachment to diet programmes in general, and therefore to weight-loss apps; accordingly, these apps can become part of the customer's self (role 1). Furthermore, these apps calculate weight-loss progress and energy intake; in this sense, the smartphone acts as a driver for cognitive processes (role 2). These apps can also track physical activity, flag lapses in dietary-goal adherence and monitor negative thoughts and stress, meaning that the smartphone can also be a supporter of a digital doppelgänger (role 3). Weight-loss apps can remind the user to log meals, and they can recommend servings and ideal levels of specific nutrients (e.g., fat, salt and sugar); thus, the smartphone is an agent for active impulses in order to manage the weight-loss process (role 4). As a result, the smartphone and

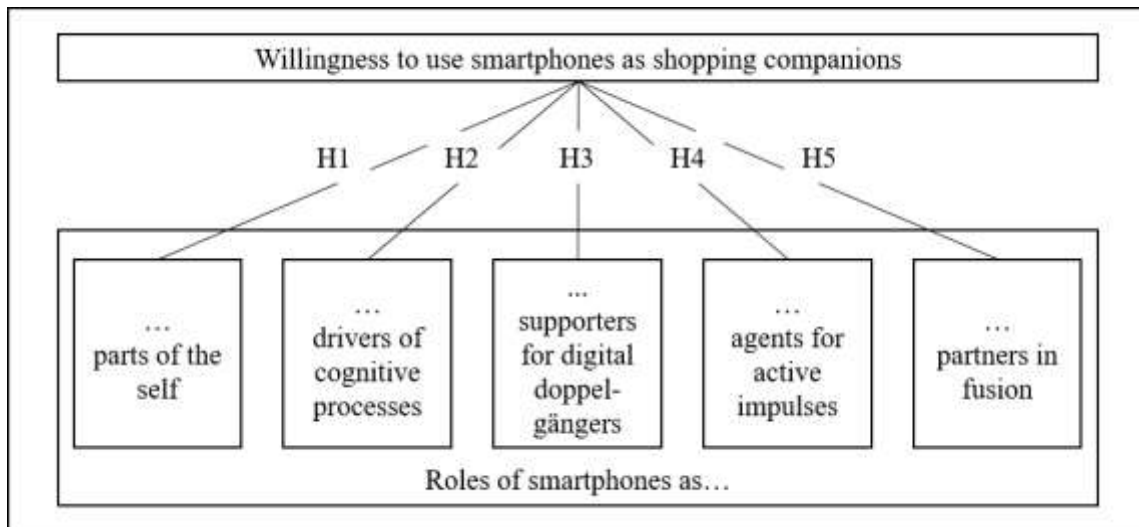the customer become fusion partners in the quest for weight loss (role 5).

Figure 1. Five roles of smartphones affecting their usage as shopping companions
Source: Own work

These five roles of smartphones, based on theoretical approaches, have similarities and differences. While the extended self and the extended mind are related to only one individual, the digital doppelgänger, the ANT and the cyborg assemblage also relate to multiple individuals. Smartphone integration into the self is emotional, while using smartphones within cognitive processes is more functional. The extended mind and the digital doppelgänger both process data – but, while extending the mind means adding processing power, the digital doppelgänger can be seen more as a collection of personal data. Table 1 summarises these and more detailed differences.

	Extended self	Extended mind	Digital doppelgänger	ANT	Cyborg assemblage
Person focus	Individual self	Individual mind	Individual, multiple individuals	Individual, multiple individuals	Individual, multiple individuals
Relationship to smartphones	Emotional	Functional	Functional/ emotional	Functional/ emotional	Functional/ emotional
Relationship of smartphones to humans	Extension	Cognitive incorporation	Quantified self	Behavioural interaction	Fusion
Role of smartphones	Part of self	Driver for cognitive processes	Supporter	Impulse agent	Partner for fusion

Table 1. Summary of differences in theoretical approaches
Source: Own table, based on Belk, 2014b, p. 253

8. Discussion and conclusion

So far, we have deliberately avoided criticising theoretical approaches in order to develop our thoughts as coherently and clearly as possible. We are aware of criticism of each concept, especially ANT. One such example is the work of Bettany (2016), who criticises ANT from a customer-oriented perspective.

Whether objects can be not only impulse-generators, but also dictators of humans' freedom of action, is not answered. Then again it could be argued that objects cannot act or send impulses

to humans at all – and that every action by objects takes place simply because humans have previously arranged this. In this view, smartphones are therefore only apparently autonomous, and any action requires previous human commands. Also, we do not distinguish between different cultural imprints of smartphones. The impact of the extended self, for instance, could be stronger in South Korea, where people have more affinity with smartphones than do those in other nations.

However, our framework could – after empirical examination – contribute to the understanding of the relationship between customers and smartphones. We therefore present arguments to explain why customers attribute such an importance to smartphones in everyday life. The approaches outlined above have scarcely been discussed by practitioners – or are only now being applied to smartphones (e.g., Proner, 2015). Omnichannel retailers can consider the five roles of smartphones as new dimensions in incorporating the demand process within their omnichannel systems. There are cases that cover all five roles, as shown in the example above. But it is also conceivable to establish cases that cover just one or several roles. In this paper, we look only at customers who use smartphones as shopping companions in bricks-and-mortar retail stores. But smartphones can be chosen as companions in other omnichannel situations too. The usage of smartphones can, for instance, accompany the use of catalogues or TV-retailing. Thus, the roles of smartphones that we have introduced here may also be applicable to other channel combinations, as well as explaining other phenomena too.

This conceptual paper is part of a theoretical and empirical project to examine the influence of smartphone usage on customers' overall satisfaction with their shopping experience. In order to examine the different roles of smartphones in future empirical studies, we would consider reducing the research scope in terms of focusing on a specific industry or national market.

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