

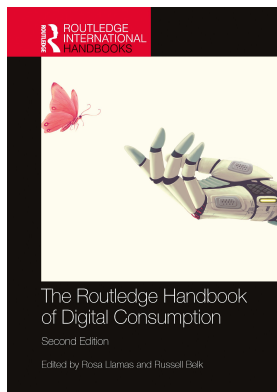
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5

RESEARCHING THE BLACK BOX

A Call for Methodological Diversity, Transdisciplinarity, and Creativity in Research on Smart Digital Consumption

Jonas Foehr and Claas Christian Germelmann

Introduction

Today, we meet the first generation of undergraduate students for which life without smartphones is unknown. In fact, many have developed unheard-of close relationships with their devices (Melumad and Tuan Pham 2020). And yet, what we are observing here may just be harbingers of a more substantial transformation: Digital consumption experiences today increasingly incorporate, depend on, and even are made by smart devices – and thus affect digital consumption as we know it. So far, however, how smart technologies impact on digital consumption experiences largely remains a black box.

This chapter sets out to investigate and map the conceptual nature and characteristics of smart digital consumption (SDC) as a new form of consumption experience. Thereby, it will propose a systematic lens on SDC literature by sketching the topics' status quo in marketing and consumer research, and by curating selected works that the authors consider seminal to understanding SDC as a phenomenon. Then, possible paths for future research will be identified and attention will be raised for why SDC research should adopt transdisciplinarity as its core premise but remain critical when incorporating theories and findings from other technical disciplines. Ultimately, this chapter aims at establishing a preliminary understanding of SDC as a multifarious research phenomenon and wants to encourage researchers to leave their epistemological comfort zones to generate interesting and creative findings.

Mapping the Conceptual Field: The Facets of SDC

In recent years, affordable, easy-to-use smart technologies have surged the market, leading consumers to embedding these devices in multiple new contexts of their lives (e.g., their homes), and thus to initiating a plethora of new consumption experiences (Puntoni et al. 2021). Accordingly, digital consumption as a phenomenon has gained a variety of new experiential facets, for consumers and researchers alike.

Smart technologies represent consumer technology devices which are connected to the internet and interconnected to other smart devices (Hoffman and Novak 2018). Their

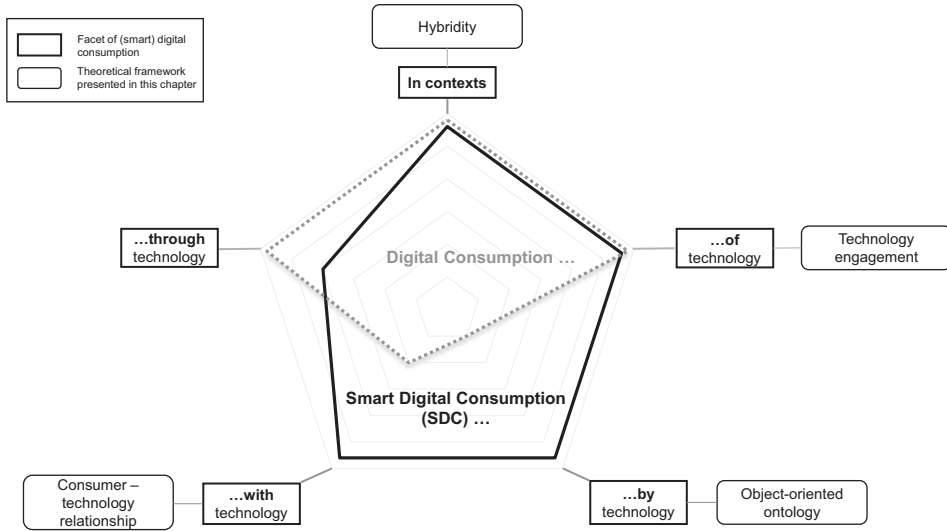


Figure 5.1 Smart digital consumption as a research phenomenon and curated theoretical frameworks in this chapter

Source: Own elaboration

smartness, among others, results from the possession of varying levels of agency, authority, and autonomy (Hoffman and Novak 2018; Novak and Hoffman 2019), meaning that smart devices can respond to consumers’ behaviors, can act without explicit consumer command (i.e., in response to sensor data), and can control other smart devices connected to them. Often, this is made possible through the inclusion of artificial intelligence (AI) (Davenport et al. 2020). Some smart devices enable new consumer–technology interaction modalities: Smart voice–interaction technologies (SVIT), like Amazon’s Alexa or Google’s Assistant, for instance allow for vocal interaction between consumers and smart technologies (Foehr and Germelmann 2020). Additionally, a devices’ smartness is not to be understood as a purely digital characteristic; instead, it is dependent on the technology’s use context. What may be considered smart by consumers in one physical context may be un-smart (or even stupid) in another (Alter 2020).

For the notion of SDC, this means that it manifests itself as an unprecedented close interrelation of consumers and technological artifacts, enabling innovative and rich consumption experiences that are shared between consumer and technology or that are made by technology alone (Hoffman and Novak 2018; Kozinets 2019). SDC thus incorporates active as well as passive (i.e., technology-initiated) consumption experiences for human consumers.

In what follows, we propose that SDC as a phenomenal extension of “traditional” digital consumption consists of five overarching experiential facets or research lenses, of which some, more than others, have been explored in marketing and consumer research (see Figure 5.1). As we aim to provide a brief (and by no means exhaustive) overview of the status quo of knowledge in the field, we will additionally present selected works that we consider particularly conducive to establishing an experiential interaction–focused understanding of SDC from a consumer behavior perspective.

SDC in Contexts

The centrality of smart devices in SDC experiences can suggest that SDC is mainly a digital phenomenon (Strong 2013). Services marketing research has underlined this view by investigating the impact of smart technologies on retail contexts (Chérif and Lemoine 2019; Kim, Schmitt, and Thalmann 2019; Davenport et al. 2020; Yadav and Pavlou 2020), while mostly considering online and offline contexts in SDC as conceptually separate entities which are connected via smart devices. Although literature in humanities has long refuted this techno-centric perspective (Spigel 1992; Venkatesh 1996), such findings have been slow to pass through to the marketing discipline. An analysis of how exactly this online/offline connection manifests itself and how it, in turn, affects SDC experiences is thus still in its infancy.

Smart technologies and the ways in which services are provided through them initiate a merging of online and offline contexts. Consumers thus do not enter “virtual locations of consumption” anymore, as they did with social media, for instance (Boellstorff 2013, 416). Instead, SDC extends and dissolves contextual boundaries that have previously coined digital consumption (Šimůnková 2019). Consumption experiences in SDC may thus be situated in a certain physical locus (e.g., consumers’ homes) but the experience as such may be hybrid, both digital and analog, real and virtual at the same time. Among extant work, exploring this blurring of contextual boundaries, we consider few as elaborate (and as radical) as Šimůnková’s (2019) article on consumer hybridity.

Šimůnková (2019) departs from the features and skills of smart technology and consumers’ use of it, to challenge established epistemological distinctions between online and offline spheres. She argues that technological devices have become ubiquitous and miniaturized to such extent that they have become invisible to consumers during the interaction. These technological features, Šimůnková (2019) claims, have often been ignored by authors in marketing and consumer research so far, thus obviating a fuller understanding of the contextual influences of SDC experiences. Resulting from the invisibility and ubiquity of smart technologies, their interaction with them for consumers has become habitual and unconscious, leading to a blurring of boundaries between online and offline spheres with consumers automatically and unknowingly switching between them. Hence, what was once a digital *or* physical space has transformed into a hybrid space “in which the virtual is part of reality and reality is part of the virtual” (Šimůnková 2019, 50). Technology in this constellation holds a paradoxical role: It becomes invisible to consumers during the interaction, yet its presence is required for hybrid spaces to come into being (Šimůnková 2019). We imagine that future research focusing on the contextual facet of SDC may profit from integrating findings from consumer-technology relationships to better understand how consumers intentionally construct their (contextual) SDC experiences.

Experiencing SDC with Smart Technologies

Because of smart technology’s social presence (van Doorn et al. 2016), as well as its interconnection with other smart devices (Hoffman and Novak 2018), consumers experience SDC as consumption shared *with* technology, usually in response to active consumer command. By virtue of their interaction modality (e.g., voice), many smart technologies induce social responses from consumers (Nass and Moon 2000; Epley, Waytz, and Cacioppo 2007). Hence, consumers frequently perceive of such devices to possess a distinct personality or include them in their social system (Purinton et al. 2017). SDC thus incorporates consumption

experiences in which the formerly tacit technology transcends its function as a medium and instead participates in consumption experiences with its user.

Consumer research has only recently begun to show increased interest in this participatory facet of SDC. Among the contributions published this far, we consider those of Novak and Hoffman (2019) and Schweitzer et al. (2019) as seminal. Both works reject the assumption that consumers utilize technology merely as an anonymous problem-solving tool (Orlikowski and Iacono 2001). Instead, consumers build interpersonal and dynamic relationships with the (voice) interfaces of their smart devices. Both works depart from similar theorizing, that is, consumers' tendency to anthropomorphize technological devices and an assemblage theory approach yet differ slightly in their perspectives.

As a result of their studies, Schweitzer et al. (2019) present three overarching forms of consumer-smart technology relationship types that follow from consumers' continuous interaction with their devices: First, some consumers were found to consider their device as servant-like, meaning that they regard the technology as subservient entity that aids in fulfilling certain tasks. Second, consumers engaged in relationships that resembled partnerships, ranging from those of a digital child that wants to be educated, to partnerships of a romantic nature. Third, Schweitzer et al. (2019) identified that some consumers feel intimidated by their devices and consider them as dominant within a master-servant relationship.

While Schweitzer et al. (2019) adopted a static, snapshot-like perspective, Novak and Hoffman (2019) illustrated how consumer-smart technology relationships developed over time and changed in their nature. By employing Kiesler's circumplex model, the authors mapped consumers' continuous relationship journeys with their smart devices, based on the allocation of different roles (agentic vs. communal) of consumers and technologies within the overall (infrastructural and functional) setting of consumers and smart objects. Building on that, Novak and Hoffman (2019) were able to offer a more granular understanding of consumers' relationships with their technologies on a meso level, while on a macro level, they substantiated the importance of understanding how humans experience digital consumption together with smart technologies.

Follow-up research has extended on the works of Schweitzer et al. (2019) and Novak and Hoffman (2019) and has looked at contextual influences on consumer-smart technology relationships or the impact of relationship types on other consumer-related variables such as trust (Foehr and Germelmann 2020; Pitardi and Marriott 2021) or consumer well-being (Henkens, Verleye, and Larivière 2020). Future research on this SDC facet could aim at understanding in more detail what roles consumers attribute to their devices and how this attribution affects shared SDC experiences.

SDC Experience by Smart Technologies

Research has suggested that smart technologies can have basic SDC experiences themselves (Hoffman and Novak 2018; Novak and Hoffman 2019): That is, smart technologies can adopt an agentic role within an overall network of smart devices and hence are able to initiate consumption experiences for the consumer – SDC in this view is a passive experience for the consumer, in which s/he occupies the role of an observer or bystander. This perspective on SDC requires that researchers adopt an object-oriented stance: a view in which the non-human object is granted equal experiential capacities as the human consumer (Hoffman and Novak 2018). To explore this SDC facet consumer researchers need to deviate from their focus on the (human) consumer as epicenter of consumption experiences. Thus, smart technologies and their capacity to autonomously initiate and

experience basic forms of consumption themselves could be a “game-changer” for consumer research (Kozinets 2019, 623).

Here, again, Hoffman and Novak (2018) provided one of the most elaborate theoretical accounts on the topic. In their article, they depart from the idea that consumption practices involving humans and smart objects can be thought of as multi-level assemblages, or dependent and independent networks that can be human centric (e.g., consumers actively interacting with their SVIT) or non-human centric (e.g., smart thermostats reacting to the presence of persons in a room based on sensor data) (Hoffman and Novak 2018). In these assemblages, every human and non-human participant is considered ontologically equal (Hoffman and Novak 2018). Smart devices in these constellations – possessing agency, authority, and autonomy – are able to interact with other smart devices and to initiate interaction with human consumers (Hoffman and Novak 2018). Building on current customer experience literature, the authors show that customer experiences come into being through interaction and can be considered multi-level (Hoffman and Novak 2018). Based on their technical abilities and their inclusion in different assemblages, Hoffman and Novak (2018) argue that smart objects currently can have at least basic (consumption) experiences (i.e., they are able to detect and react to patterns) and aware experiences (i.e., they are able to filter, categorize, and process stimuli and in doing so can direct their attention).

While still in its early stages, Hoffman and Novak (2018) have initiated an important dialogue that has consequences for SDC research in particular and marketing in general. Research on (human) consumption experience in smart contexts cannot establish a full understanding of the phenomenon if it excludes non-human technological parts of the smart technology assemblage from its research focus. As Hoffman and Novak (2018, 1198) conclude, “we have arrived at [a] place where our usual human-centric perspective may be limiting our opportunities to address these important questions about the future of consumer behavior and the object consumers we are creating.”

For marketing practice, the question arises to whom future marketing efforts should be directed, bearing in mind that SDC involves multiple human and non-human actors that can act independently while simultaneously influencing each other (Davenport et al. 2020). Here, SDC research could provide helpful insights.

SDC of Technology

Additionally, SDC involves an element of consumption *of* the technology itself, meaning that in the experience of SDC, consumers use the devices itself. To distinguish between this SDC facet and the facet of “SDC through technology” (see below), consider a consumption experience of a SVIT like the Amazon Echo smart speaker. Imagine consumers sitting in their living room commanding the voice interface of their device to play their favorite song via a music application (like *Spotify*). Research on SDC *through* technology would for instance investigate perceived customer satisfaction *with the provided service* (here: playing music). SDC research *of* technology rather considers the technology as a product or service in its own right, which is consumed by its user, therefore rather investigating consumers’ *overall satisfaction with the technology use* (Schweitzer and Van den Hende 2016; Brill, Munoz, and Miller 2019).

Inspired by Human-Computer-Interaction research, marketing and consumer behavior literature has tended to equate consumers’ active use of smart technologies with factors like technology acceptance. Such works have not only tended to underestimate the complexity of consumers’ technology use (Baron, Patterson, and Harris 2006), but also insufficiently

reflected on the implicit understanding of technology underlying their research projects (Orlikowski and Iacono 2001). We observe that more seminal works have focused not so much on how consumers *perceive* of a technology (as technology acceptance does), but instead have looked at what consumers *do* with smart devices and how their actions impact on technology adoption, for instance in terms of privacy concerns (Mani and Chouk 2019) or craft consumption (Harvey et al. 2020).

We consider the work by Woodall, Rosborough, and Harvey (2018) as particularly helpful in terms of understanding consumers' use (i.e., consumption) of smart devices in the context of SDC. Extending on theories from diffusion and appropriation studies and service dominant logic, the authors conceptualize consumers' adoption and use of smart devices as manifested in their technology engagement, that is, the degree of which the devices are embedded in consumers' minds. Thereby, the authors point out that smart technologies and their use are contextually embedded: That is, physically (e.g., in consumers' homes), socially, and psychologically in consumers lives, and informationally in a "computer-mediated network of distributed intelligence" (Woodall et al. 2018, 59). As a result, consumers go through a succession of stages in which they carefully decide about the appropriation of the technology, based on their active use of it (Woodall et al. 2018): Initially, consumers become aware of the existence of the smart device – through marketers' proposal (e.g., TV commercials) – and reflect on its affordances and constraints, as well as on the social effects its adoption might include. Engagement at this stage is mainly behavioral as consumers evaluate the technology in terms of its location and possible use. In the follow-up "project" stage, consumers begin to better understand how they can co-operate with the smart device and adjust the device individually to its use environment and socio-cultural context. The third, "practice" stage marks the point at which consumers and technological devices have united to such extent that they blend together and become ontologically alike. Consumers' cognitive, affective, and behavioral engagement with the technology now is potentially absolute, with the technology being fully embedded in consumers' day-to-day routines. However, the authors also suggest that the practice stage is neither a necessary outcome of consumers' technology possession, nor the end of consumers' smart technology adoption. Rather, consumers' use of their devices may become habitual and unconscious, introducing a fourth "pause" stage in which consumers' engagement with the technology is disrupted, suspended, or terminated, depending on consumers' perceived personal advantage that they associate with the smart device and all its socio-material consequences (Woodall et al. 2018).

The work by Woodall et al. (2018) work represents a particularly valuable starting point for further research addressing the use of technology as a facet of SDC, because (1) through its conceptual subdivision of the smart technology adoption process, it has introduced auxiliary levels of analysis that enable more granular follow-up research, (2) it has offered an alternative to the dominant technology acceptance frameworks, which conceptually puts consumers and technology and their interaction on equal terms in researchers' focus, and (3) it raises awareness for the fact that despite the ostensible dominance of digital factors in consumers' use of smart technologies, the devices, the consumers, and consumers' engagement with their devices are situated in a variety of different (physical and social) contexts that need to be taken into researchers' account if we aim to fully understand SDC.

SDC through Technology

Finally, several works in consumer research have considered digital consumption experiences that involve smart technologies as just another form of consumption which is mediated

by a digital device. SDC here is understood as consumption *through* technology. Smart technology in this view serves as a setting for other factors of interest in marketing research, for instance attitude formation (Wang et al. 2020) or decision-making (Hilken et al. 2020), and is primarily considered as a medium through which services are provided (Wunderlich, von Wangenheim, and Bitner 2012; Dekimpe, Geyskens, and Gielens 2020; Henkel et al. 2020; Hollebeek, Sprott, and Brady 2021).

We thus observe among this literature that research projects here predominantly consider smart technologies or AI either as a stimulus that influences other consumer-related variables, usually set into comparison to other media forms (Belanche et al. 2020; Choi, Mattila, and Bolton 2020; Melumad and Meyer 2020), or merely as experimental context (van Pinxteren et al. 2019). Therefore, it is difficult to highlight one outstanding contribution, as we did for the other SDC facets. Most of the work on SDC *through* technology tends to adopt a narrow, functional perspective on smart technologies. In so doing, researchers try to capture and analyze intricate, often paradox, human technology use behavior (Mick and Fournier 1998) in terms of a computational logic (Strong 2013); that is, complex behavior is reduced to its presence versus absence, acceptance versus rejection, or 0 versus 1. Essentially, as Strong (2013, 339) argues, quantitative research on (smart) technologies and big data often steps into the pitfall “in which the paradigm of technology is being applied to humans.” The reason for such simplification, we assume, is rooted in marketing researchers adopting methods and technology theories from other technical and computer-related disciplines without questioning their underlying technology paradigms.

So far, this chapter has characterized and mapped the different facets of SDC. Thereby, we have attempted to stress the double role of the SDC facets, which function (1) as a tool to fragment SDC experiences as a phenomenon, and (2) as a classification of research objects for SDC research. Although conceptually the SDC facets may appear selective, in both consumption and research practices, it is likely that experiences simultaneously overlap facets. While such overlaps emphasize the richness of SDC experiences, we hope to have raised researchers’ awareness for the underlying theoretical paradigms of each SDC facet, which need to be considered and disclosed in research projects. Additionally, we have pointed at opportunities for future research which generally might be most promising when it combines multiple SDC facets in its projects. Because of the multidisciplinary nature of SDC, in the remainder of this chapter, we want to encourage researchers to enter new research territories.

The Way to Generating Novel Findings and Unique Contributions

The tight (inter-)relationship between marketing and technology has been stressed repeatedly in the literature as a “magic mix” (Kiel 1984, 7). On the one hand, this nimbus has often led marketing researchers to underestimate potential problems and challenges consumers could face with technology (Kozinets and Gretzel 2021), and, on the other hand, to view technology as a self-explanatory, monolithic entity, thereby accepting the prerogative of interpretation that technical disciplines claim on the subject (Orlikowski and Iacono 2001). As a result, researchers tend to adopt a view on technology that could prevent the development of an original research paradigm of consumer-smart technology interaction in marketing and consumer research.

Fortunately, there have been attempts by marketing and consumer researchers to emancipate from the technology push perspectives of the computational disciplines (Solaimani, Keijzer-Broers, and Bouwman 2015) and to conceptualize and investigate consumers’

adoption and inclusion of smart technology in SDC from a new direction (Nysveen, Peder- sen, and Skard 2020). We believe that developing an original stance toward consumers' in- teraction with smart technologies, their negotiation of technology uses in everyday practices, but also their abandonment of technological devices (Belk, Weijo, and Kozinets 2020), will enable marketing and consumer research on smart technologies to generate unique contri- butions that differ from those in computer-related disciplines (such as Human-Computer- Interaction). One key to theoretical emancipation may be found in the choice of research topics in marketing and consumer behavior, which we recon should not only be theoretically and methodologically rigorous, but first and foremost interesting and creative.

Interesting works, as Davis (1971) proposes, are those that defy implicit assumptions held in the research community. Hence, interesting research on SDC may aim at countering a reductionist technology push perspective on smart technologies by focusing on a contrarian consumer or market pull. Creative works originate from SDC researchers being motivated to identify an important research topic; put differently: "It is not about putting familiar pieces together in new ways but about finding new phenomena or looking at phenomena in a new way" (Stewart 2020, 66). For SDC research, this may require crossing disciplinary boundar- ies while maintaining awareness for discipline-specific paradigms and perspectives.

To aid SDC researchers in identifying interesting topics, choosing creative methods, and generating novel results, we propose three guidelines that we consider particularly helpful and which we will present below, together with selected works that either adhered to a single one or a combination of guidelines.

Go to Where the Party Is

SDC experiences are bound to a physical space and (hybrid) context. Yet, contextual aspects are mostly neglected in extant (quantitative) research designs on SDC phenomena. To fully understand the contextual complexities of SDC however, we believe that researchers need to leave their ivory towers and go to where SDC experiences are made. For guidance, SDC researchers may want to study the work by Porcheron et al. (2018) which investigated how consumers incorporate smart technology use in their daily routines. To generate data in the original technology use context, the authors adopted an ethnomethodological approach and equipped their study participants' homes with recorders that tracked their vocal interactions with their SVIT over a month-long period. The results of their analysis of consumers' con- versations with their SVIT contributed to the ongoing research discussion of how consumers embed technology in their domestic routines, and how social contexts impact on technology use. Some studies in marketing and consumer research have been inspired by Porcheron et al.'s (2018) and have equally been able to generate helpful findings by researching consum- ers in their domestic contexts (Foehr and Germelmann 2020).

Use Novel Methods

New research contexts, new technologies, and new ways of consumer-technology interac- tion urge researchers to rethink their use of research methods to investigate SDC phenom- ena. This also implies incorporating new measures and indicators of consumers' behavior in research designs, like consumers' vocal utterances which have been successfully uti- lized to balance consumers' self-reports (Waber et al. 2015). For instance, Hildebrand et al. (2020) have developed a conceptual framework that links consumers' vocal features to their emotional states and traits, and which may not only serve as a helpful point of

departure for research on SDC, but also gives detailed guidance on the technicalities of voice analysis.

It should be noted, however, that these novel methods do not necessarily need to be digital in nature or need to employ digital tools for data analysis; given the intertwined nature of digital and analog contexts of SDC, often a combination of different methods might work best.

Look at the Collective

In close connection to the point above, we believe that relevant and inspiring SDC research may want to expand its focus by considering SDC experiences not as individual phenomena but as collective and participatory consumption experiences. Here, researchers could be inspired by Pauser and Wagner (2019) who applied sociometric badges (i.e., wearable electronic devices that capture consumers' interaction including their non-verbal signals) to a retail context to analyze consumer-sales assistant interaction. We believe that the analysis of consumers' individual non-verbal behavior and their non-verbal exchanges, particularly in collective SDC experiences, could help researchers to draw a fuller picture of, for instance, how consumers perceive of technology failures and how SDC experiences gain value and meaning to consumers outside of technology performance.

Conclusion

Digital consumption experiences have changed immensely in the past few years and will continue to do so in the future. In this chapter, we have attempted to account for the changes evoked on digital consumption by smart technology and have elaborated on the phenomenon of SDC that accounts for the multiple new and occasionally overlapping facets of smart consumption experiences. Thereby, we hope to have raised awareness for the fact that in SDC experiences, the technological artifact and its characteristics, as well as their effects on consumers, gain centrality for marketing and consumer research. While it may be helpful for researchers to look at theories and findings from other (technical) disciplines for links, we advocate for the necessity of challenging the implicit underlying paradigms in research on smart technologies stemming from technical and computational disciplines. Therefore, we want to encourage researchers to leave their comfort zone to try out unfamiliar, creative research methods and to explore new ways to generate interesting contributions that not only combine the multiple facets of SDC, but that also help in emancipating SDC research from those in the extant tech disciplines.

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