

Co-Creating Value through IoT Technologies: The influence of information-sharing processes on consumer behaviour change

Following developments in integrated computing and networking that have led to the emergence of Internet of Things (IoT) technologies (Coughlan et al., 2012), the relationship between such devices and human behaviour has recently become a prominent research topic in the fields of social sciences and marketing. This is not surprising given that the IoT market is estimated to exceed \$7 trillion in value by 2020 (Pennington, 2015) and IoT technologies are increasingly developed for consumer applications (e.g. smart home). Given that IoT devices will continue to play an important role in individuals' lives, the need to achieve a better understanding of how consumers interact with, and are influenced by them, becomes imperative.

Indeed, while IoT technologies have recently received substantial scholarly attention, in marketing such research remains in embryonic stages. Existing work has primarily focused on exploring how IoT can create value to firms by improving their business performance, particularly in industries such as retail (e.g. Balaji and Roy, 2017) and tourism (e.g. Gretzel et al., 2015). On the consumer side, research has been mostly restricted to exploring adoption barriers (e.g. Canhoto and Arp, 2017). There are, therefore, lots of unanswered questions relating to consumer-IoT interactions at the post-adoption stage, especially considering their potential to act as enablers of value creation for consumers: consumers receive constant streams of information from IoT devices, but marketing research has failed to investigate how this information is being used and leads to behaviour changes.

Drawing from service-dominant logic and value co-creation theory, this study addresses this research gap by exploring how different information-sharing processes via IoT technologies lead to positive behaviour change (in cognitive, affective, behavioural aspects). In particular, this research employs insight from theories relating to behavioural change and choice architecture to: i) examine which types of information-sharing in the form of nudges (financial, social, motivational) are most influential in stimulating behaviour change, and ii) investigate the moderating role of different characteristics relating to the individual and the environment on this relationship.

To achieve this, a mixed-method empirical study was designed, using smart energy meter technologies as the context. This setting is particularly interesting given the intense efforts of the UK Government to install millions of such devices within residential premises in order to promote positive energy consumption behaviour change.

Preliminary findings from the exploratory phase indicated that consumers' personality, perceptions of technology and personal motivations have a significant influence on their experience with smart meter in-home display use and residential energy consumption behaviour change. The second phase assesses quantitatively the effectiveness of different information-sharing nudges on different behaviour change outcomes.

Overall, the study contributes by shedding light on consumer-IoT technology interactions at the post-adoption stage. Practically, the research provides valuable recommendations to energy providers/policy makers about optimal choice architecture designs that can enhance consumer integration in the overall value co-creation experience.