The dark side of consumer-smart object relationship: A non-user perspective

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Abstract

Smart Objects promise to become an essential presence in consumer life and routines. Due to their abilities, these devices can be perceived as a social entity and also able to play different kinds of social roles. However, the diffusion of Smart Objects is not meeting the expectation. Pivoting on Smart Object social roles, the relational approach, already used in the marketing literature, can be an appropriate tool to understand the non-user resistance toward these innovative devices with anthropomorphic features. Thirty-three non-users participated in ZMET interviews. Four types of fears emerged from the coding of the interviews. Each fear is associated with a specific social role played by the Smart Object: Fear of Being Controlled (the Smart Object as a Stalker); Fear of Being Dominated (the Smart Object as a Captor); Fear of Being Subordinated (the Smart Object as a Master); Fear of Losing Self-Control (the Smart Object as a Seducer).

Keywords: Barriers, Internet of Things, Consumer-Smart Object Relationship.

Track: Innovation Management & New Product Development

1. Introduction and Theoretical Framework

In contemporary society, technology is a stable presence in individuals' everyday life. The development of technologies such as the Internet of Things (IoT), Machine Learning, and Artificial Intelligence (AI) is laying the groundwork for previously unknown realities, new challenges and experiences both for the marketing world and the consumers. Smart Objects (SO) are an example of a new class of products connected to these new technologies (Kaplan & Haenlein, 2019). Consumers, during the experience of use, can face both positive and negative sides of these new devices (Lopatovska, Velazquez, Richardson, and Lai, 2019), the use of which can elicit a lot of different emotions, such as happiness, amusement, disappointment, or unease (Shank et al., 2019).

The unique features of SO entail an interesting aspect about how the consumer uses the device. The adoption of these devices cannot be defined as mere "use": The consumer does not "use" Amazon Echo, but interacts with it (Hoffman & Novak, 2017). Therefore, the social aspect of SO must be taken into account. The possibility to anthropomorphise the object can have an important role in this process. The tendency to assign human features to an inanimate object is not attached to AI in an exclusive way: At the end of the last century, technological literature has already observed that people treated computers and technological devices like human beings (Reeves & Nass, 1996). AI and IoT devices are close to the consumer, can talk to the user, and understand his/her habits through the collection and use of his/her data. In this scenario, anthropomorphism is certainly a concrete and relevant topic. It is not a coincidence that Belk and Kniazeva (2018) explain that vocal devices such as Amazon Echo or Google Home contribute to a new "arena of anthropomorphism." Anthropomorphism, indeed, can lead the user to consider the AI devices as a social entity, and this can have positive effects on use and satisfaction (McLean & Osei-Frimpong, 2019; Purington, Taft, Sannon, Bazarova, and Taylor, 2017). Given these aspects, the consumer can eventually assign to AI devices different kinds of social roles, as they do with brands. The marketing literature already investigated the relationships between consumers and brand (Fournier, 1998). Studies about the consumer-smart object relationships borrow from this approach. According to Hoffman and Novak (2017), users and SO are members of the same assemblage and they all perform different expressive roles that lead to different kinds of experiences, positive or negative, lived by both humans and objects. Moreover, the literature has hypothesized and identified different types of relationships between the user and SO, such as "master-servant" or "partner" (Novak & Hoffman, 2019; Schweitzer, Belk, Jordan, and Ortner, 2019).

Despite the emerging attention that the literature and the consumer world have payed to these devices due to their fascinating features and functions, the diffusion of SO is still limited. Indeed, 2011 predictions about the number of IoT devices in 2020 seem to fall short today: In 2020 the number of IoT devices will be just around 20 billion instead of the 50 billion forecasted (Kranz, 2019). The marketing literature has identified several antecedents of consumers' resistance to the adoption of innovation in general (Laukkanen, Sinkkonen, Kivijärvi, and Laukkanen, 2007; Ram & Sheth, 1989), as well as that of SO and IoT services (Laukkanen, 2016; Mani & Chouk, 2017, 2018). However, the consumer resistance to innovation model (Ram & Sheth, 1989), even when applied to the IoT context (Mani & Chouk, 2017, 2018), identifies barriers always limited to an individual perspective: Even the psychological barriers do not consider the involvement of other actors. In other words, the theories neglect the idea that the object of the resistance can be seen as a partner. This perspective, in a scenario in which the devices have anthropomorphic abilities and social roles, and in which objects and consumers are part of the same assemblage (Hoffman & Novak, 2017), can lead to a partial vision of the resistance phenomenon. Additionally, a relational point of view allows to a more accurate analysis since it sheds light on the social and psychological factors that have not been investigated yet from a Marketing-IoT perspective: The resistance to enter into a relationship.

In the sociological and psychological literature, the relationships, mainly the intimate ones, are characterized by a self-disclosure process (Reis & Shaver, 1988). The resistance to enjoying a new relationship can be connected to things that involve the perception that an individual has about himself and others (Bartholomew, 1990). From the different types of fear that can feed this process, the literature identifies the fear of exposure or abandonment, the fear of loss of control, or loss of individuality (Hatfield, 1984). It is possible to suppose that these factors can be relevant in the resistance to the Smart Objects process. An overlap to the IoT system, indeed, seems to emerge yet: The exchange of valuable information characterizes both interpersonal relationships and user-SO interactions. Is it most likely not a coincidence that self-disclosure, which is important in an intimate relationship (Reis and Shaver, 1988; Descutner & Thelen, 1991), can also lead to a closer connection between the user and a conversational agent (Li & Rau, 2019).

So, focusing on non-users permits, on the one hand, to enrich IoT literature that adopts the relational approach exploring the possibility of the negative roles that are less present in the previous literature. On the other hand, the non-user approach gives an even more precious contribution to the literature that focuses on the resistance to innovations: The relational

nature of the IoT scenario extends the factors and dynamics that can hinder the consumer from the adoption. This approach allows the researchers to refer also to psychological and sociological literature in order to explore a new kind of barrier: The relational one.

In this context, the research question of this work consists of examining the relational roles, played by SO, that consumers imagine and anticipate and that can cause fears that can represent barriers to the adoption.

2. Methodology

To answer this research question we adopted a qualitative approach, using the "Zaltman Metaphor Elicitation Technique" (Zmet) (Zaltman, 1997). Thirty-three SO non-users were interviewed (18 men, 15 women; M_{age} = 29.08). The transcribed interviews have been collected in a document of about 300 pages, and the total number of pictures used by respondents is 402. The analysis was conducted using the open-coding technique of the grounded theory (Corbin & Strauss, 1990). The analysis process started with an individual coding of the responses and proceded with a cross-analysis. This method permitted the identification of the reluctance toward the SO and similar patterns and trends among the respondents: 134 stories of resistance have been identified.

This process has been combined with an analysis of sociological and psychological literature to understand if the emerging results of the study tended to overlap with the existing scientific production.

3. Results

Although the participants were aware of the benefits of SO, they found that these products present also some dark sides that make them a threat. This threat leads to different kinds of fears. In this study, four fears have been identified. Each fear is associated to a respective social role interpreted by the user or the object: Fear of being controlled; fear of being dominated; fear of being subordinated; fear of losing self-control.

3.1 Fear of being controlled: The smart object as a stalker

In this category, the respondent sees the SO as an entity provided with agency, which expresses an imbalanced and asymmetrical power towards the user. The SO, indeed, is not only seen as agentic but also more powerful than the user. Furthermore, the object is seen as a

mysterious entity: The respondent, mainly through the use of pictures representing cagey and obscure images (such as a malicious shadow or Big Brother of *1984*), explained a lack of transparency about how the object works and what there is behind it. Lastly, the respondent sees the SO as an intrusive entity: The device is, indeed, imagined as "always-on" and active "24h."

Based on these features of the SO, the respondent imagines the user-smart object relationship as founded on an imbalance: The device intrudes on the life of the user. This invasion itself does not bother the user so much. Nevertheless, the capacity of the object to collect data and "see" every aspect of the consumer's life is found to be a threat for the respondent: In a lot of pictures, he sees the SO as eyes, cameras, or lenses. This in-depth knowledge about the consumer gives a position of privilege to the SO in respect to the user who, on the other hand, is exposed to different kinds of risks, such as being brainwashed or receiving attacks on personal and home security that can eventually lead to a change of behavioral and relational patterns: The user, feeling always observed, changes the way he behaves both when he is alone and when he interacts with another person, especially from an intimate point of view. The resulting consumer-smart object relationship is unbalanced, sabotaging and making the user feel powerless, uncertain, exploited, and deprived of his identity, dignity, and freedom. This scenario can lead the user to feel fear, anxiety, apprehension, and paranoia. The SO, on the other hand, has the power to evoke these emotional and cognitive states and also to influence user's behavior.

The respondents anticipate many elements which overlap with the literature that talks about Stalking. For example, the Stalker identity is not necessarily clear (Finkelhor, Mitchell, and Wolak, 2000), and his behaviors have an intrusive and harassing nature (Mullen, Pathé, and Purcell, 2000; Spitzberg, 2002; Ybarra, Langhinrichsen-Rohling, and Mitchell, 2017) that can lead the victim to change his behavioral patterns and to suffer loss of freedom (Korkodeilou, 2017), lack of privacy, isolation, anxiety, paranoia (Spitzberg, 2002; Spitzberg & Cupach, 2007).

Therefore, given these anticipated features and behavior of the SO, the respondent assigns to the SO the social role of the Stalker. The possibility to introduce a Stalker at home is a threat for the potential user that can eventually elicit a particular fear: The fear of being controlled. This kind of fear is mainly connected to privacy issues and involves two moments. The first refers to the collection of data, on which the respondent does not feel in control. The second refers to the use of these data: The respondent thinks that the sensitive information

collected by the SO can be used by the device, or by other entities, against the user in order to pursue goals that are not the same as the consumer.

3.2 Fear of being dominated: The smart object as a captor

In this category, the respondent sees the SO as a superior entity that can be out of control. In the respondent's mind, the device appears as something ineluctable and unstoppable that has power and that consumers cannot stop nor control. The respondent imagines it as a pair of enormous hands that can "*oppress our lives.*" If in the *Fear of Being Controlled* the power of the object is attributable to the data collected, here the respondent does not identify a precise factor that gives power to the object: It is dominant by default. Furthermore, the respondent sees the SO as something dangerous and threatening.

Based on these features of the SO, the respondent imagines the user-smart object relationship as something extremely negative and harmful for the user. Once the devices enter the home of the user, the capacity of the object to control different aspects of consumer life makes the user lose his freedom and also contact with other people: The respondent anticipates different modalities of physical and social isolation. This process can also lead to a loss of identity: Since it executes many different tasks, the object deprives the user of his autonomy, dignity, social roles, and activities (such as motherhood ones) that contribute to the user's self-identity (Leung, Paolacci, and Puntoni, 2018). However, the harm is not only psychological and intellectual. The respondent imagines the relationships mainly as something that can also hurt the user physically.

This results in a violent relationship which is characterized by threats that involve the psychological, existential, and physical side of the user. The SO takes control of the consumer's life, and the user cannot do anything to avoid it despite the harmful consequences.

All of these aspects anticipated by the respondent find a correspondence in kidnapping literature. For example, the hostage-taker (or captor) has control over the hostages (McMains & Mullins, 2001) and can express his power through violent behavior (Hillman, 1981; Wesselius & DeSarno, 1983). On the other hand, the victims, like the user, feel powerless and helpless (Giebels, Noelanders, and Vervaeke, 2005; Hillman, 1981), and have to face isolation (Giebels, Noelanders, and Vervaeke, 2005), fear (Hillman, 1981), lack of autonomy and freedom (Wesselius & DeSarno, 1983). Interestingly, the respondent also imagines the possibility to remain locked in a smart home due to a blackout.

So, given these anticipated features and behavior about the object (in particular the capacity to isolate and physically harm the user), the respondent assigns to the SO the social

role of the Captor. The possibility of introducing a Captor at home is a threat for the potential user that can eventually elicit a particular fear: The fear of being dominated. This kind of fear is mainly connected to the sense of powerlessness of the user, who has no control over the relationship, and becomes a passive entity ready to face health damages, as well as loss of dignity, freedom, and autonomy.

3.3 Fear of being subordinated: The smart object as a master

In this category, the respondent sees the object as something extremely close. The fact that the respondent refers to mobile devices most of the time, such as a smartwatch, is not a coincidence. This proximity is the critical aspect of the object, and this feature influences the user-object relationship that the respondent imagines.

This relationship, indeed, is based on the fact that the object is always present in the user's life, wherever he goes. This closeness allows the SO to know a lot of information about the user's activities and routines. This pattern seems similar to the *Fear of Being Controlled*, but in this case, the controlling aspect of the object does not lead to exposure of risks. In the respondent's mind, this bulk of information is used by the object to give him orders and tasks that he has to accomplish. Also, the proximity permits the SO to deliver directives and deadlines at every moment. The respondent sees, indeed, the object like a ball and chain: It is heavy and tightly bounded to the individual.

The resulting relationship is a close and imbalanced one, in which the user is subordinate to the object. He has to face frustration and can suffer the loss of privacy, autonomy, and eventually freedom.

These findings have some similarities with the features emerging from the master-servant literature. The master-servant relationship is characterized by extreme closeness and the imbalance of power between the agents (Coser, 1973), as well as the loss of freedom and privacy that the servant has to face (Coser, 1973).

Due to these anticipated features and behavior about the object (in particular the proximity and the capacity to gives orders), the respondent assigns to the SO the social role of the Master. The possibility to introduce a Master into his life is a threat for the potential user that can eventually elicit a particular fear: The fear of being subordinated. This kind of fear is mainly connected to the fact that the user is always reachable and that he cannot build limits to the stimuli (most of the time in forms of tasks and deadlines) that the object can always deliver.

3.4 Fear of losing self-control: The object as a seducer

In this category, the respondent sees the SO as fascinating, useful, and also captivating. The respondent sees something dangerous in the SO, but it is not about the device itself: The SO does not take control with coercion nor own the user by default. In this case, indeed, the respondent attributes most of the agency to the user. The useful aspect of the device makes the user give the object a central place in his life. In this way, the user gives over his power to the SO, losing agency, autonomy, and control. In other words, in this case, the user has the power to control the object, but the fascinating side of the SO makes him unable to manage this power.

According to the respondent, the relationship that can develop is a pathological one. The user indeed cannot imagine himself without it: In a picture, the respondent sees a world without technology as a desert. In this scenario, the user loses most of his abilities, from the most practical ones to the intellectual ones, such as the ability to think with his own mind. The respondent thinks that the user can enter into an insane symbiosis with the SO, as represented in multiple pictures used by the respondent, in which men who are becoming part of technological devices are refigured. This process can lead to other critical effects that can occur during the consumer's life and can make the user isolate himself from others, lose contact with the real world, feel confused or lost. The result is the image of a user that is nothing without the SO.

These findings overlap with some elements reported in the literature about seduction. The seducer, like the SO, is fascinating and attractive to the individual (Greene, 2001) and can lead the latter to deviate his behavior (Hoch, 2002) even with adverse consequences. From our data, however, it does not result in the role of a manipulative seducer, rather the SO is anticipated as a passive partner in seduction. This specific kind of seducer is already present in the seduction-consumer literature (Hoch, 2002): The victim can, indeed, have an active and conspiratorial role in the process. Lastly, seduction is a process connected with addiction (Nixon et al., 2013), which is a topic that the respondent explicitly reported several times.

Therefore, given this anticipated feature of the device and the relationship, the respondent assigns to the SO the role of the seducer. The possibility to introduce into his life a seducer is a threat to the user that can elicit a particular fear: The fear of losing self-control. This kind of fear is about the fact that the user, fascinated by the characteristics of the object, cannot manage the relationship with the SO, making it too salient to his life: As a result the user cannot live or achieve even simple tasks without the SO causing him a loss of autonomy, relational bonds, and capacities.

4. Theoretical and Managerial Implications

This work contributes to the literature on barriers toward the adoption of smart objects. Ram and Sheth's (1989) theoretical framework about resistance to innovation identifies two types of barriers: Functional and psychological. The first one is more focused on the object, the second one more on the user. Mani and Chouk (2018) applied this model in the IoT scenario. Their work resulted in an integration of the former framework, with the extension of the psychological barriers through the introduction of the "individual barrier." The present study further expands the work of Mani and Chouk (2018) claiming the possibility of another kind of barrier connected either with the object or with the individual only, but a barrier that deals with the anticipated interaction between them: The relational barrier. In our study, the social roles interpreted by the SO are the threat that elicits the fears, and that can eventually build the barrier.

This work also gives an interesting contribution to the Smart Object-Consumer research, especially for the literature that follows a relational approach. Focusing on non-user and anticipated relationships, the study identifies new social roles, all negative ones. With few exceptions (Schweitzer, Belk, Jordan, and Ortner, 2019), the negative relationships between Smart Object and user are not particularly present in literature. Furthermore, a parallel analysis with the psychological and sociological literature gives an additional validation to these social roles.

During this study, a lot of different fears emerged. Privacy is a significant issue in AI and IoT, but also other aspects emerged, such as fears about control, identity, autonomy, or the possibility of being replaced. In this scenario, the companies should be aware of these fears and try to overcome them, not only with new product designs, but also with communication. Instead of showing a perfect product with no risks, companies should, in the most transparent way possible, explain what the risks are and how the product reduces those risks in order to also encourage the consumer to use the object correctly.

Many companies represent Smart Objects as an anthropomorphic or social entity in their advertising campaigns. People tend to use an anthropomorphic perspective to try to understand the nature of non-human entities (Epley, Waytz, and Cacioppo, 2007), however the result of this act of anthropomorphizing may backfire. As we have shown in this study, consumers did not imagine the Smart Object as a beneficial relationship such as mother or

partner, rather they saw it as a stalker, a master, a captor, and a seducer. Companies should be aware of this pitfall and be mindful when anthropomorphising the objects in advertisements.

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