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# **From cyber to cyborg: The influence of motivation and personality traits on the merging of consumer and technology**

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## **Abstract**

As technology extends further into consumer daily lives, consumers develop significant relationships with their technology, particularly mobile devices. This conceptual paper aims to investigate the merging of consumers and their technology, termed the cyborg consumer, which has been previously overlooked in the marketing literature. More specifically, this investigation extends the marketing theories of consumer psychological motivation and personality traits in examining the influence of these elements on cyborg consumer behaviour, such as intensive consumption of technology and construction of an important part of the self on the Internet. A conceptual framework of the cyborg consumer is presented, which will help marketers to better understand how consumers' relationships with technology are changing and how marketing practices can be better targeted to the cyborg consumers.

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## **Introduction**

Consumer researchers suggest that the relationship between humans and technology has become more significant than ever before (Campbell, O'Driscoll, and Saren, 2010; Giesler and Venkatesh, 2005; Gray, 2001; Venkatesh and Meamber, 2006; Wolfe, 2010). It is argued that the significance of human's relationship with technology perpetuates the merging of human and technology, or human as cyborg (Buchanan-Oliver, Cruz, and Schroeder, 2010; Graham, 2003; Haraway, 1991). For example, Haraway (1991) and Giesler and Venkatesh (2005) postulate that humans have become cyborgs in the society intimately structured by technology where technologies are prostheses of human existence. For the purpose of this paper, we specify the merging of human and technology in terms of consumers who intensively consume internet enabled mobile devices and have psychological attachments toward their selves created online or on the digital environment and their mobile devices, such as mobile phones, tablets, or laptops (Giesler, 2004; Giesler and Venkatesh, 2005).

From a marketing perspective, studies in consumption of technology has involved topics such as consumer's self expression on the Internet (Kozinets *et al.*, 2010), value co-creation (Fuller *et al.*, 2009), online shopping activities (Childers *et al.*, 2001), and the proliferation of mobile applications and social network marketing (Stephen and Toubia, 2010). Nevertheless, the notion that consumers are merging with technology to achieve certain psychological benefits have received little attention in the marketing literature. This conceptual paper examines the reasons behind the perpetuation of the cyborg consumer, by looking at the influence of motivation and personality traits from the individual consumer's point of view. This study is important to develop marketing practitioner and scholars' understanding of the psychological elements that influence consumers to move beyond the cyber (e.g. active and regular users of the Internet or cyberspace) to the cyborg (e.g. consumers continually tethered to the Internet). The understanding of consumers' current involvement with technology will assist marketers in the construction of more effective, meaningful relationships with consumers, particularly as consumers are becoming continually connected through the Internet through their mobile devices.

The remainder of this paper is structured as follows. First, the key constructs of the cyborg consumer are identified. Second, motivation and personality traits in relation to the cyborg consumer and a conceptual framework are discussed. Finally, the paper's contribution and direction for future research are specified.

### **The cyborg consumer**

The conception of the cyborg consumer portrays the merging of consumer and technology involving creation of the sense of self on the Internet (Hemetsberger, 2005; Turkle, 1995). Turkle (2008, p. 121) suggests that cyborgs are always on the Internet or the virtual environment; in their relationship with technology, "they were learning to inhabit their own bodies all over again, and yet in a way they are fading away, bleeding out onto the Net. Their experiment was both a re-embodiment – a prosthetic consummation – and a disembodiment: a disappearance of their bodies into still-nascent computational spaces." Thus, the concept of the cyborg embodies and focuses on the psychological union between an individual and his/her technologically enhanced self. An individual may perceive him/herself as a better person or more in control through the activities conducted on the Internet or digital environment (Agger, 2004; Turkle, 2004), for example, the enhanced sense of self through

the creation of a YouTube channel, an involvement in online or mobile games, or keeping up to date with online news. Consequently, such individual is attached to his/her technology (e.g. an individual's attachment with his mobile phone). The cyborg consumer conceptualisation poses the question of what consumers are becoming as they develop increasingly crucial relationships with their technology (Arnould, 2007; Turkle, 2008). Based on this cyborg consumer conceptualisation, there are three behavioural aspects central to the cyborg consumer, namely (1) intensive consumption of technology, (2) integration of the self to the virtual environment, and (3) fostering of an important part of the self in the virtual environment (e.g. online presence) (Buchanan-Oliver, Cruz, and Schroeder, 2010; Giesler and Venkatesh, 2005). Intensive consumption of technology could be described as personal/leisure consumption of technology for four to six hours per day and ownership of more than one technology. Furthermore, a virtual environment can be described as an environment on the Internet (online) and on electronic platforms that are accessible through personal, internet-enabled mobile devices (offline electronic spaces include offline mobile applications, computing softwares, or short text messaging services).

It is important to note that the concept of the cyborg consumer does not refer to the physical human-machine hybridisation, for instance humanoid robots that were created to emulate human functions (Chaminade *et al.*, 2010); individuals who extend and implant their physical bodies with robotic technologies, such as experiments by Stelarc and Orlan (Zylinska, 2002) and Warwick (Warwick, 2002); humans with wearable technologies (i.e. technology that is worn in the bodies or as fashion accessories) (Thomas *et al.*, 1998); or humans with technological aids for medical purposes (e.g. heart pacemakers, cochlea implants, or bionic implants). Although the list is not conclusive, viewing the cyborg consumer in its literal meaning overlooks consumer's deep connection with technology and is limited to the technological hardware. Therefore, this paper focuses on the cyborg consumer concept which signifies consumers' significant relationships with technology beyond technology use-value (Campbell, O'Driscoll, and Saren, 2010). The following section discusses the main marketing theories which underpin this paper, namely the individual psychological motivation and personality traits.

### **Motivation and personality traits**

Prior studies suggest the interrelation between motivation and personality trait in consumer behaviour (e.g. Maslow, 1987; Mowen, 2000) and the combination of the two factors has been implicated in consumer behaviour studies (e.g. Fang and Mowen, 2009), also in the online environment (e.g. Cullen and Morse, 2011). Research investigations of consumer motivation and personality traits have used numerous combinations of motivation and trait concepts. As a result, a valid framework of consumer motivation and personality traits is still vague. A theory of needs and personality traits, Mowen's (2000) 3M model of motivation and personality, is considered. Mowen's model consists of four hierarchical personality traits in varying degrees: broad elemental traits, compound traits (the needs for cognition, evaluate, and arousal), situational traits (affective and cognitive involvement), and surface traits (determinant of behaviour). However, the 3M model is not suitable for this study because the model focuses on the flow of personality traits rather than both traits and motivation (Harris and Lee, 2004). As such, the 3M model explicates the merging of consumer and technology only through personality traits rather than investigates how traits could explain behaviour.

Key theories that are more applicable for this thesis are based on the concept of needs in motivation (e.g. Deci and Ryan, 1985, 2000) and personality traits (e.g. Costa and McCrae, 1985). The concept of needs and trait theories provide an appropriate framework as firstly, the concept of needs is essential in studying the why aspect of behaviour from the consumer's perspective (Deci and Ryan, 1985, 2000), that is, the intrinsic factors of consumers' union with technology. Secondly, the concept in needs offers a broad but apt theoretical framework in investigating consumer needs compared to established set constructs in frameworks such as the 3M model. Thirdly, as traits are often antecedents of motivation, personality trait theory presents an additional viewpoint in explicating why consumer needs occur (Schiffman *et al.*, 2008). In this vein, the mixture of the concept of needs and personality traits uses a logical and comprehensive perspective in investigating the intrinsic factors of why consumers are becoming cyborg consumers. Moreover, an understanding of various needs and personality traits could lead into a construction of different categories of the cyborg consumer. Prior investigation using the combination of motivation and personality traits theories in relation to consumer merging with technology, to our knowledge, has not been accounted. Therefore, this paper aims to contribute to and extend motivation and personality trait theories in the investigation of the cyborg consumer phenomenon.

### **Needs in motivation**

The concept of needs have been eminent in investigating the reasons influencing consumer behaviour (e.g. Luyckx *et al.*, 2009; Zhao *et al.*, 2011; Zinkhan *et al.*, 1999). To investigate the factors influencing the cyborg consumer, this paper asks what motivation elements or needs influence consumers to become the cyborg consumer. Deci and Ryan (2000) suggest that the psychological needs of autonomy (the need for control), connectedness (the need to be connected to others), and competence (the need for achievement) influence consumers to engage in activities that move them towards optimal psychological health. According to Deci and Ryan (2000, p.229) needs specify intrinsic psychological factors that drive an individual to behave as needs are "essential for ongoing psychological growth, integrity, and well being." The cyborg consumer's intensive consumption of technology and high engagement with technology may be influenced by his/her unsuccessful search for the sense of self in the physical world. Nevertheless, the needs for autonomy, connectedness, and competence may not provide a comprehensive explanation of the cyborg consumer as other needs are also identified in studies within technology mediated context. These additional needs include the needs for: uniqueness, the need to be unique and different from others (Zinkhan *et al.*, 1999), entertainment (Childers *et al.*, 2001) and escapism (from the problems in physical world) (Kozinets, 2001).

Although the identified needs have received considerable inquiry independent of each other, an investigation involving combination of all six needs is not apparent in the literature. This paper extends the literature by investigating the needs for autonomy, connectedness, competence, uniqueness, entertainment, and escapism in influencing consumer merging with technology. It is argued that the needs for autonomy and competence form the basis of an individual's sense of self (Luyckx *et al.*, 2009). Moreover, the needs for entertainment and escapism have been recognised in studies of online gamers' intrinsic needs in playing a massively multiplayer online game (Zakhariasson, 2010). Therefore, it will be argued that the needs for autonomy, competence, entertainment, and escapism are key significant needs that influence an individual to become a cyborg consumer.

## **Personality traits**

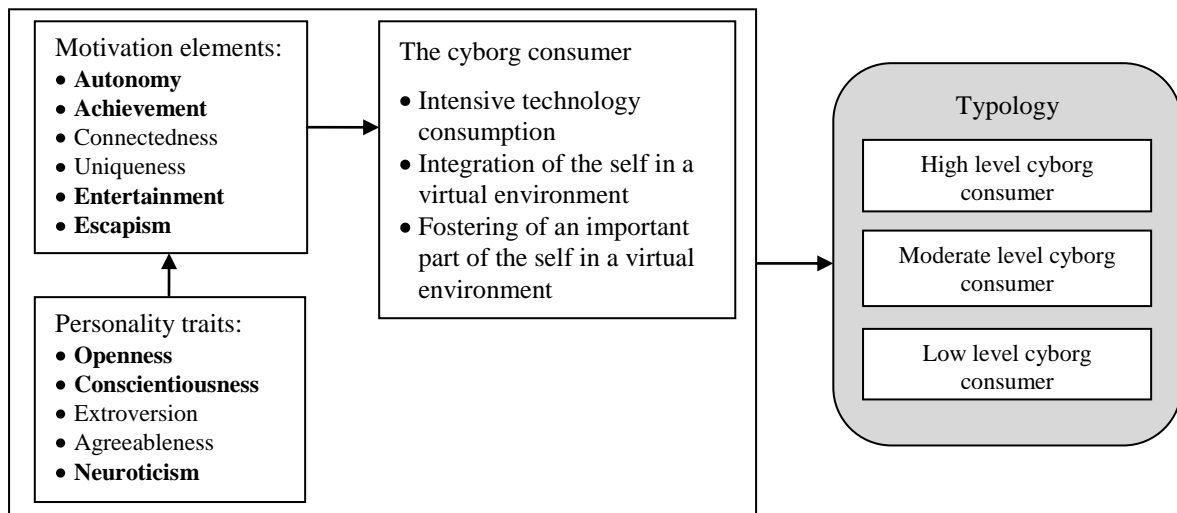
Personality trait theory focuses on the identification and measurement of specific psychological characteristics based on a set of adjectives (Arnould, Price, and Zinkhan, 2004). The trait theory is appropriate for this paper as such theory has been used as an empirical measurement of individual characteristics and tested across different cultures (McCrae and Costa, 1997). Therefore, this paper asks what personality traits influence consumers to become the cyborg consumer. However, due to the traits' weak capacity in solely explaining behaviour, it is crucial to use trait theory to assist the explanation of consumer behaviour rather than as a focus of the investigation (Arnould, Price, and Zinkhan, 2004). For this paper, personality traits act as one of important intrinsic factors that influence consumer needs; therefore, the inclusion of personality trait in our conceptual framework will assist in developing a framework of the cyborg consumer (Fuller, 2010). Moreover, although studies in personality traits have explored consumer consumption of technology or the Internet, previous studies rarely applied personality traits in examining consumer merging with technology. It can be argued that personality traits may not only provide further explanation of consumer needs, but also influence consumer to become the cyborg consumer.

The identified five personality traits that may influence the cyborg consumer are openness (the tendency to seek variety of experiences), conscientiousness (the tendency to control impulse and pursue goals), extroversion (the tendency to interact with the world and to enjoy excitement and stimulation), agreeableness (the tendency to move towards people and to help others), and neuroticism (the tendency to experience negative effects such as sadness and vulnerability) (Schiffman *et al.*, 2008). Openness, conscientiousness, and neuroticism traits have been found as key personality traits influencing consumer intensive consumption of technology (Cullen and Morse, 2011). Therefore, it will be argued that the traits of openness, conscientiousness, and neuroticism are key personality traits influencing an individual to become a cyborg consumer. The following section presents the conceptual framework of this paper.

## **Conceptual framework**

A conceptual framework for this paper has been developed and can be seen in Figure 1. The conceptual framework suggests that consumer personality traits (openness, conscientiousness, extroversion, agreeableness, neuroticism) influence consumer motivation (consumer needs for autonomy, connectedness, competence, uniqueness, entertainment, escapism). Consumer needs influence the cyborg consumer's behavioural aspects of an intensive consumption of technology, an integration of the self in the virtual environment, and a fostering of an important part of the self in a virtual environment. Furthermore, the conceptual framework postulates that the intensity in certain consumer needs influence consumers to become cyborg consumers; thus, based on the different intensity levels of consumer need and behaviour aspects, it could be anticipated that the cyborg consumer can be categorised into a typology, such as high, moderate, or low level cyborg consumer.

**Figure 1. Conceptual framework**



Source: developed for this research

## Conclusion

This conceptual paper's purpose was to address an area that has received little attention in consumer behaviour studies, namely the merging of consumer and technology (Arnould, 2007; Campbell, O'Driscoll, and Saren, 2010). We proposed a conceptual framework of the cyborg consumer, involving the role of motivation (specifically the needs for autonomy, achievement, entertainment, and escapism) and personality traits (specifically openness, conscientiousness, and neuroticism) in intrinsically influencing the behavioural aspects of the cyborg consumers. Moreover, based on our conceptual framework, a typology of the cyborg consumer could be developed through future empirical findings. Future research can investigate and test the interrelationships between the constructs of motivation, personality traits, and the cyborg consumer's behaviour. For instance, qualitative in-depth interviews with consumers who exhibit cyborg consumer behaviour could be conducted to explore what motivation and personality traits that are significant in influencing their behaviour.

The strength of this paper contributes to a gap in the literature where an identification of consumer intrinsic motivation and personality traits in influencing consumer merging with technology has been overlooked. Furthermore, this paper extends the marketing theories through establishing the linkage between motivation, personality traits, and the cyborg consumer's behaviour. In addition, the concept of the cyborg consumer is crucial for marketing practitioners to better understand consumers' selves and current characteristics as mobile technology enables consumers to be constantly tethered to the virtual environment. For example, more meaningful relationships could be built with the cyborg consumers through mobile marketing activities addressing the identified psychological motivation. It is important for marketing practitioners and scholars to understand who the cyborg consumers are and in turn, who consumers are becoming as they develop more important relationship with their technology (Buchanan-Oliver, Cruz, and Schroeder, 2010; Giesler and Venkatesh, 2005).

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