



A valued agent: How ECAs affect website customers' satisfaction and behaviors



Mohammed Slim Ben Mimoun^{a,*}, Ingrid Poncin^b

^a SKEMA Business School – Université de Lille, Avenue W. Brandt, 59777 Euralille, France

^b Université Catholique de Louvain, UCL 151 Chaussée de Binche, 7000 Mons, France

ARTICLE INFO

Article history:

Received 8 October 2013

Received in revised form

18 May 2015

Accepted 18 May 2015

Available online 6 June 2015

Keywords:

Virtual agent

ECA

Shopping value

PLS

ABSTRACT

Building on literature related to selling and embodied conversational agents (ECA), this research seeks to determine how the use of an ECA might improve users' perceptions of shopping value (hedonic and utilitarian) and the consequences for their purchase intentions and satisfaction with the website. This analysis focuses specifically on three ECA usage consequences: playfulness, decision quality, and social presence. Hedonic value mediates the effects of playfulness and social presence on satisfaction and behavioral intentions; utilitarian shopping value mediates the effects of decision quality. The results highlight the importance of accounting for both utilitarian and hedonic features to understand ECA outputs in e-commerce sites.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

According to Childers et al. (2001), consumers seek benefits from interactive shopping, such as interactivity, flexibility, control over product information, and greater access and convenience achieved through constant availability in multiple locations (Hoffman and Novak, 2009). Although it supports convenient contacts with retailers, e-commerce also seems cold, distant, and impersonal. Unlike traditional shopping channels, it cannot offer the actual experience of visiting a store and physically examining a product prior to purchase (Alba et al., 1997). Thus, it lacks pleasurable experiences, social interaction, and personal consultation with a company representative (Barlow et al., 2004; Cyr et al., 2006; Ogonowski et al., 2014).

Yet the technology underlying intelligent agents seemingly could address this absence in e-commerce (Hostler et al., 2005). For example, Holzwarth et al. (2006) propose using avatars or virtual agents to inform consumers about online products, which might mitigate the impersonal nature of online purchases. Research shows that the presence of embodied virtual agents has positive effects in terms of relationships, trust, satisfaction, and perceived value (Keeling and McGoldrick, 2008; Qiu and Benbasat, 2009; Wood et al., 2005); we seek to extend this research by investigating the consequences of a consumer interaction with an

embodied conversational agent (ECA) on a commercial website, as manifested in perceived shopping value, behavioral intentions, and satisfaction.

Perceived shopping value (hedonic and utilitarian) is a central component of customer satisfaction with and loyalty toward a website (Kim et al., 2012; To et al., 2007). We predict that it thus serves as a mediator between the consequences of an interaction with the ECA (e.g., decision quality, playfulness, social presence) and behavioral intentions or satisfaction related to the use of the site. Therefore, we begin by reviewing literature and clarifying the notions of both ECAs and shopping value.

2. Theoretical background

2.1. ECA definitions and consequences

As research devoted to virtual agents has expanded, various terms have emerged, including intelligent, interactive, recommendation, interface, or embodied interactive agent, as well as avatar. Although they appear to describe similar concepts, in reality they refer to different elements (Chang, 2010; McGoldrick et al., 2008). An agent is someone authorized to provide advice to or execute tasks for another (Chang, 2008; Qiu and Benbasat, 2009); an online agent refers to a program that "can pursue agenda independently of its user" (Foner, 1993, p. 35). According to Papadopoulou et al. (2000), virtual agents act for users. Unlike conventional information technology programs, this software can

* Corresponding author.

E-mail addresses: m.slim_benmimoun@skema.edu (M.S. Ben Mimoun), ingrid.poncin@uclouvain-mons.be (I. Poncin).

be autonomous of users, who do not have to enter a separate command or click a button to complete each task (Chang, 2010; Dehn and VanMulken, 2000). Virtual agents also are proactive: They pursue precise, adaptive goals by identifying changes in the environment and acting accordingly (Papadopoulou et al., 2000). Such simultaneous consideration of the context and the user constitutes artificial intelligence (Dehn and VanMulken, 2000; Diesbach and Midgley, 2007), defined as “the capacity of the agent interpret, learn and argue during its interactions” (Paraschiv, 2002, p. 102). This definition implies several possible levels of intelligence, depending on the agent’s role. Finally, intelligent agents can be embodied, or not; Groom et al. (2009, p. 842) define embodied agents as “a visual digital representation of an interface taking a human form”.

With regard to ECAs in particular, two alternative terms are common. First, “avatar” derives from Sanskrit and refers to the embodiment of a deity on earth (Galaxhi and Nah, 2007). Holzwarth et al. (2006, p. 20) define the modern versions of avatars as “general graphic representations that are personified by means of computer technology”. These two- or three-dimensional graphic representations on electronic platforms can represent a real person (Bailey et al., 2008) or not (Holzwarth et al., 2006) and might have the capacity to engage in discussions with the users, though this capability is not necessary. Second, a “chatterbot” inherently possesses conversational capacities but is not necessarily embodied. It serves as a sort of spokesperson of an artificial intelligence system that uses management rules to determine the dialogue and handle user input (Semeraro et al., 2008). An ECA combines the characteristics of an avatar and a chatterbot, in the sense that it is a “graphic character designed on computer, possessing the capacity to dialogue with a user, by using not only the speech but the other nonverbal capacities such as the gesture, the glance, the intonation and the physical posture” (Diesbach and Galan, 2006, p. 10). We focus specifically on such ECAs.

Starting with Cassell et al. (2000), several studies have addressed the impact of ECAs for e-commerce. Notebaert (2005) considers the strategic use of an embodied agent on a retail website as a means to improve trust, intentions to recommend the site, and satisfaction. Lemoine and Notebaert (2011) suggest that an ECA on commercial websites can attract new customers through positive word of mouth. In addition, Holzwarth et al. (2006) parallel salespeople’s presence in stores with sales agents’ presence on commercial websites, such that an ECA should improve attitudes toward the products proposed by the retailer, as well as increase customer satisfaction and purchase intentions. Similarly, referring to research into human sellers (Baron et al., 1996; Beatty et al., 1996), McGoldrick et al. (2008) identify three possible roles of online virtual sales agents: friend (social role), personal buyer (recommendation agent), or help (assistant). Punj and Moore (2009) specify that satisfaction results from the agent’s capacity to facilitate the search for information and identify products that correspond to users’ needs. For example, in line with McGoldrick et al. (2008), Qiu and Benbasat (2010) present three effects of the use of an ECA: social presence (resulting from the social role of the agent), perceived usefulness (resulting from the recommendation and assistant role), and perceived enjoyment (resulting from the interaction with the agent). Building on these studies and in line with the intrinsic roles of ECA, this research therefore considers three main consequences of an interaction with an ECA on an e-commerce website: recommendation/decision quality, social presence, and perceived playfulness.

2.1.1. Decision and recommendation quality

Intelligent agents should improve a user’s decision quality (Swaminathan, 2003; Wang and Benbasat, 2005; Punj and Moore, 2009). The use of an ECA improves decision quality by supporting

a more detailed analysis of fewer alternatives (Xiao and Benbasat, 2007). Chang (2010) observes that using intelligent agents to search for information reduces search time and costs, and it helps consumers make faster decisions. Hostler et al. (2005) affirm that their use reduces consumers’ cognitive effort and improves decision quality, which is “the objective or subjective quality of a consumer’s purchase decision” (Xiao and Benbasat, 2007, p. 150).

In their assessment of different measures of decision quality, Aksoy et al. (2006) indicate that subjective measures are particularly useful for determining consumer evaluations of the choice process and their postpurchase feelings. They identify three subjective measures that relate well to virtual and recommendation agents: perceived fit with preferences (i.e., extent to which consumers believe that they have chosen an alternative that fits their preferences), choice confidence (depending on individual characteristics and choice set size), and choice satisfaction (assessment of overall happiness with the choice, independent of consumers’ preferences). Building on the technology acceptance model, Baier and Stüber (2010) introduce two different subjective measures of decision quality: “output quality”, which refers to the quality of recommendations and the extent to which recommended products fit the wants and desires of consumers, and “shopping relevance”, or the ease of use of the virtual agent.

Because our research centers on perceptions of the outputs from using a virtual agent, we adopted a subjective approach to measuring decision quality. Specifically, building on work by Xiao and Benbasat (2007), Aksoy et al. (2006), and Baier and Stüber (2010), we anticipate that decision quality corresponds to the quality of recommendations and the extent to which the recommended products fit the wants and desires of consumers.

2.1.2. Social presence

The concept of “social presence” has been well developed in research dealing with computer-mediated behavior and is a key construct in studies of computer-mediated communication (Biocca et al., 1995; Ogara et al., 2014). That is, in computer-mediated environments, social presence is necessary to enhance and foster social interactions (Tu, 2000; Traphagan et al., 2010) and to enable a sense of connection between the website and its visitors (Hassanein and Head, 2006; Qiu and Benbasat, 2010). The idea stems from the wider concept of presence, which has evolved over time to include different presence-related terms with overlapping definitions (Davis et al., 2009). For example, Lee (2004, p. 45) defines social presence as “a psychological state in which virtual (para-authentic or artificial) social actors are experienced as actual social actors in either sensory or nonsensory ways”. Presence initially served to describe the extent to which people felt present in a mediated environment (Steuer, 1992). However, with technological advances, attention focused more on the social aspects of presence (Davis et al., 2009).

According to Hudson and Cairn (2014), presence can be divided, into spatial components or the sense of being in a virtual space versus social components or social presence. From this perspective, social presence is not about experiencing a virtual environment but about perceiving a virtual other (Felnhofer et al., 2014). Perhaps surprisingly though, “social presence” preceded the concept of telepresence (Steuer, 1992), appearing first in Short et al. (1976) work and originally designed to measure subjective perceptions of other human beings in a technology-mediated environment (Chattaraman et al., 2012). Although social presence research thus has focused primarily on people’s connections to other human beings, mediated by technology, the construct can encompass social perceptions of other technological artifacts too, such as computers, websites, robots, and virtual agents (Biocca, 1997; Gefen and Straub, 2003; Qiu and Benbasat, 2009, 2010; Chattaraman et al., 2012). This extension reflects social response

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات