Chapter 4
The Design of an Advanced Virtual Shopping Assistant for Improving Consumer Experience

Vincenzo Corvello
University of Calabria, Italy

Eleonora Pantano
University of Calabria, Italy

Assunta Tavernise
University of Calabria, Italy

ABSTRACT

The aim of this chapter is to propose the design of an anthropomorphic Virtual Shopping Assistant (VSA), endowed with an advanced system, to be used in the context of an innovative technologically based in-store service. The VSA is able to provide information based on a knowledge management system. It is based on the perceived best human typical seller's characteristics, as well as on the results of psychological studies on consumers' perception of virtual characters. In particular, its interface is anthropomorphic, and thus capable of displaying emotions. This VSA can be used as a mobile application or installed in stores.

INTRODUCTION

In recent years, the demand for new appealing factors capable of improving consumers shopping experience has increased (Diep & Sweeney, 2008; Kim & Niehm, 2009; Pantano, 2010). In fact, these factors influence consumers' satisfaction and loyalty by adding value to goods and services, and improving the interaction with retailers through constant feedback on the products/services provided, as well as consumers preferences (Roussos et al., 2003; Kim et al., 2007; Söderlund & Julander, 2009; Newsom et al., 2009). Technologically advanced devices have been introduced in traditional

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shops in order both to provide a more enjoyable in-store experience (Michon et al., 2006; Chang & Burke, 2007; Pantano & Naccarato, 2010) and to collect information about consumer behaviour (Pantano & Naccarato 2010). Several studies have revealed that consumers show a positive response to the use of new interactive technologies in traditional stores, perceiving the usefulness of advanced technology (Chang & Burke, 2007; Newsom et al., 2009; Kulviwat et al., 2009; Pantano, 2010).

Especially in the e-commerce, the research focused on the development of innovative shopping assistant systems. There are mainly based on the use of virtual agents capable of providing recommendations during consumers' exploration of the e-commerce sites (Ahn, 2010). In fact, many e-retailers have already exploited the opportunities offered by interactive technologies using 3D models (Jin, 2009; Lee & Chung, 2008). In some case, the anthropomorphized interfaces involved are endowed with a wide array of human characteristics, in order to send messages very similar to those transmitted by "real" salesperson (Jin, 2009). The traditional characteristics of the human shopping assistant should therefore be integrated in the virtual one for affecting consumer shopping behavior in the real context of a store, realizing an interface very different from an online virtual seller or a web tool for retailing (Hausman et al., 2009). Despite the volume of research on this topic, the current studies highlight a lack of interactions between the consumer and the virtual seller, as well as a reduced range of service possibilities that the virtual shopper can offer. Moreover, the interfaces utilized are not integrated with a knowledge management system based on consumer preferences, even if information storage is a critical factor in retailing (Pantano, 2010), because the capacity to effectively manage and manipulate information provides a competitive advantage.

For the design of a virtual seller, it is fundamental to take into account some essential parameters related both to technological and psychological factors. In fact, on one hand, the new systems have to be a powerful computational tool capable of providing information based on a knowledge management system; on the other hand, the Virtual Shopping Assistant (VSA) has inevitably to be based on the perceived typical human seller's best characteristics as well as on the results of psychological studies on consumers' perception of virtual characters. This chapter advances the design of a technologically advanced sales system based on virtual agents, proposing the development of a new shopping assistant to be used in the context of an advanced in-store service. In particular, this proposal has an interdisciplinary basis, combining both innovative technological and psychological features. The chapter focuses on some current applications of advanced technologies in retailing, and on the subsequent development of a new technology, which consists of a Virtual Shopping Assistant (VSA) built by using a practice base. In conclusion, the chapter outlines important implications for both marketers and consumers.

THEORETICAL BACKGROUND

Shopping Assistant Systems

A meaningful example of systems created for supporting and influencing of consumers shopping experience are interactive kiosks and shopping assistant systems. The i-PrOS™, created by Charamel GmbH is an interactive kiosk based on a virtual assistant projected onto a screen, capable of catching consumers' attention in a traditional store by delivering multimedia content (Pantano, 2010). The system consists of an interactive screen and a projection foil: consumers interact with the multimedia contents by touch screen sensors, which recognize the finger touch on the surface as a computer mouse-click, getting more information on the products present in the store (e.g. colours, prices, sizes, location, etc.). Despite the quick i-PrOS™ reply to different queries, the system does not have a memory of the users' past