

Chapter 2

Virtual Advisors in the Virtual World

Virtual environments such as immersive 3D virtual worlds often contain human-like embodied agents with different levels of intelligence. These agents draw on innovative technologies such as artificial intelligence to interact intelligently with the environment and with other user avatars (Herrero and de Antonio 2002). In this study, *virtual advisor* refers to a virtual representation or embodiment of a real-world advisor in a media interface (Jin 2009). Virtual advisors serve the purpose of assisting users with their tasks, giving users guidance and/or giving them knowledge.

The extant literature describes virtual advisors from multiple perspectives (Dawson et al. 2010; Gerhard et al. 2004). A virtual advisor can either be autonomous (i.e. pre-programmed) or human controlled (i.e. controlled by an administrator etc.) (Fig. 2.1). Virtual-world users may also have the option of customising the virtual advisors based on personal preferences in terms of characteristics, voice or physical appearance. The mappings between the virtual advisor and the user can be one-to-one or one-to-many. The mode of service of the virtual advisor can be *private* or *public*. Virtual advisors can take up various roles: (1) to give guidance, (2) to make introductions, (3) to facilitate social interactions, or (4) to act as a point of visual attraction for users.

Advisors in the virtual world can serve different purposes including education, health, travel, gambling and academic advisories. These advisors interact with the user avatars and some have data requirements that must be satisfied to ensure their effectiveness and success. The application domain is one of the most critical determinants of whether the provision of a virtual advisor is appropriate, and if appropriate, how it should be provided to customers.

Virtual advisors have the potential to fill a significant gap in traditional e-commerce; that is, the social experiences when customers visit a brick-and-mortar store. One recent research study empirically demonstrated the importance of having avatar advisors as a channel to create a sense of social presence, which in turn results in a better evaluation of the advertisement message and higher purchasing intentions (Jin 2009). Consequently, in examining the value of providing virtual advisors in the virtual

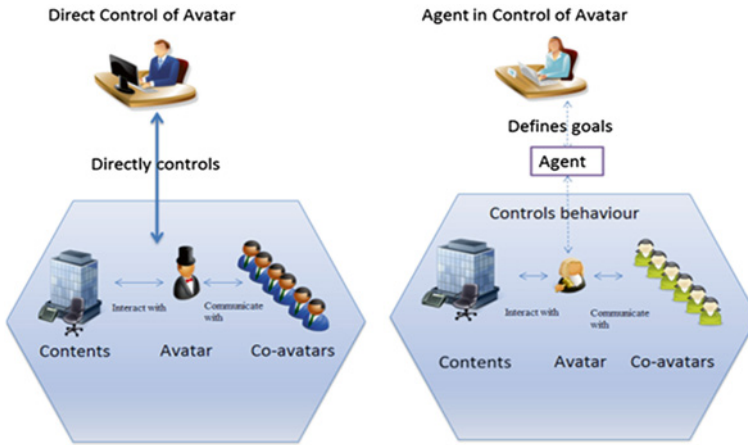


Fig. 2.1 Human-controlled v. automated virtual advisors Image based on (Gerhard et al. 2004)

world, *social presence* is one of the key concepts for us to focus on. Another important concern is the level of *trust* towards the business that provides the virtual advisor. This is because trust directly relates to a customer's purchase intentions, e-loyalty and revenue generation for any e-commerce site (Jin 2009).

2.1 Virtual Advisors and Social Presence

Social presence refers to the psychological tie with the user, who perceives the website as *warm, personal, sociable, thus creating a feeling of human contact*. Prior studies show that the use of virtual advisors greatly enhances customers' experiences with e-commerce sites. With human or human-like elements appearing in virtual environments, participants have a higher sense of involvement and community (Guttentag 2010). Cyr et al. (2009) empirically verified that on an e-commerce site, *perceived social presence* is highest when human features are present, in contrast to when limited or no human pictures are provided. In another study, Gerhard and colleagues conducted an experiment in a virtual art gallery. They found that participants experience a higher sense of *presence* in the virtual environment when the virtual advisor is also present in the environment (Gerhard et al. 2004). These studies prove the importance of having virtual advisors in the virtual world to create a *warm, personal and sociable atmosphere*.

Social presence research highlights how different forms of media have varying capabilities in terms of transmitting information richness to make the user experience others as socially present (Cyr et al. 2009; Jin 2009). *Personalised greetings, socially rich text content* (Gefen and Straub 2003), *human audio* (Lombard and

Ditton 1997) or *video* (Kumar and Benbasat 2006) can enhance the sense of social presence. Virtual advisors in virtual worlds are ideal tools to fulfil these aforementioned needs of the users. Consequently, to establish a sense of social presence for the users, businesses should use virtual advisors that can vividly mimic the looks, voice, emotions and behaviours of real-life employees (Guttentag 2010).

2.2 Virtual Advisors and Online Trust

Online trust is a main concern for e-commerce sites, as evidenced by extensive research endeavours into trust issues (Wang and Benbasat 2005; DOMPG; Lim et al. 2006; Komiak and Benbasat 2006; Komiak and Benbasat 2004; Gefen et al. 2008; Gregg and Walczak 2010). Online trust is defined as ‘an attitude of confident expectation in an online situation or risk that one’s vulnerabilities will not be exploited’ (Corritore et al. 2003, p. 740).

Online trust is critical in situations where there is a state of dependence between two parties and when this dependence involves risk (Corritore et al. 2003). Users are expected to get support and advice from virtual advisors and this potentially forms a dependent situation between users and virtual advisors. Moreover, trust can help to simplify the advisory process and help the users to gain a better understanding of the advice on offer, due to the fact that increased trust enables the message recipient to abandon their concerns relating to the virtual advisor’s undesirable, yet possible future behaviour (Gefen and Straub 2003; Komiak and Benbasat 2006).

Literature shows that human elements (e.g. facial pictures) on an e-commerce website can increase a visitor’s sense of social presence, which in turn leads to a higher level of trust towards the website (Cyr et al. 2009). In the online banking context, the inclusion of the employees’ photos on a banking website was demonstrated to enhance the customer’s trust towards the site (Steinbruck et al. 2002). It was also observed that users who are supported by 3D virtual agents have a higher sense of *trust* towards the customer service representatives (Qiu and Benbasat 2005). Virtual advisors mimic many aspects of human beings and are therefore expected to enhance a user’s trust towards the site providing such advisory services.

Simon (2000) claims that websites that are *information-rich* and *customer-oriented* should help ‘reduce *ambiguity*, increase *trust*, reduce risk and encourage users to purchase with lower levels of consumer dissonance’ (p. 26). One empirical study has shown that the personalisation of a recommendation agent significantly improved customers’ intention to adopt the agent and its advice through increasing cognitive trust and emotional trust (Komiak and Benbasat 2006). Similarly, virtual advisors who can provide *informative*, *transparent* and *personalised* advisory services are going to increase a customer’s trust towards the site or virtual space and encourage them to conduct transactions with the business.

2.3 Virtual Advisors and the IT Empowerment Framework for Advisory Services

The above discussions on the virtual advisor's role in enhancing customer trust and the sense of social presence align well with the IT empowerment framework for advisory services (ITEAS) raised in (Li and Gregor 2010). Developed through a systematic literature review process, the ITEAS framework basically scrutinises how advisory services, harnessed by innovative information technologies, can empower the general public. Although the framework emerged from the public sector, Li and Gregor claim that it can be readily applied to general commerce domains with minor modifications (Li and Gregor 2010). The ITEAS framework states that the IT advisory service empowerment phenomena are understood through three main components, namely the antecedents, key dimensions and consequences of IT advisory services. The key relevant empowerment consequences include trust, commitment (e.g. engagement, goodwill), personal satisfaction, perceived connectedness (i.e. relevant to social presence); and the key relevant empowerment antecedents are transparency, personalisation and scenario-based advisory mechanisms for highly unstructured, complex and dynamic problems.

With a perfect match to the aforementioned key issues of interest in advisory services in the virtual-world context, this framework is deemed very helpful in understanding the role of virtual advisors in the virtual world. In particular, it sheds light on how innovations such as the provision of virtual advisors can empower general users in virtual worlds.

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