

Chapter 13

A 3D Virtual Space for the E-Commerce Strategy Model

Gong Cheng

NanJing College of Chemical Technology, China

Changrui Yu

Shanghai University of Finance and Economics, China

Kecheng Liu

Informatics Research Centre, University of Reading, UK

ABSTRACT

In recent years, innovative applications of electronic commerce (e-commerce) are facing the challenges of mobile commerce (m-commerce) and ubiquitous commerce (u-commerce). To address these challenges and improve the competitiveness of e-commerce, the three-dimensional e-commerce (3DEC) theory is proposed and a 3DEC business strategy model is built up in this study. The new conceptual 3DEC model incorporates the industrial environment analysis, SWOT analysis, and business model canvas (BMC). As a case demonstrated in the British Museum program, this model brings benefits to a wide range of organizations in public and private sectors, as well as e-commerce researchers and practitioners.

INTRODUCTION

Electronic commerce (e-commerce) is stepping into the age of mobile commerce (m-commerce) (Golam & Hasin, 2011), which will become the hottest and most potential market in this new period (Li, 2012). With the emergence and development of the m-commerce and ubiquitous commerce (u-commerce) (Wu & Hisa, 2004), e-commerce enters into an era of personalized services (Kshetri, 2007) to improve its competitiveness.

This article proposed the concept of a 3D virtual space for e-commerce or 3D e-commerce (3DEC), which is the product of this era with the future operational environment considered. In 3D tourism, 3D malls (Noguera, 2012, Huang, 2012, and Markus, 2010), and other industries, customers' experience and the emulation level have become the judgment criteria of personalized services. Although the cur-

DOI: 10.4018/978-1-5225-2599-8.ch013

rent e-commerce technology is only applied to the display of 2D graphics, animation, and video, many practitioners are trying hard to realize 3DEC based on the technology of Web 2.0 and 2D e-commerce model. Such examples include 3D Ego (<http://www.3dego.cn/>) and 3D Taobao Mall. However, the business model, including the virtual space of 3D physical malls, customer experience, personalized services, and authenticity of 3D goods, remains to be improved. Hence, an appropriate business model is the key to improve the present 3DEC situation.

This article presents the 3DEC theory for practitioners and researchers to carry out a 3DEC project and applies it to the British Museum (BM). After a brief introduction of the present situation and background of 3DEC, the next chapter outlines the 3DEC theory which includes a 3DEC business strategy model. Chapter *Case Study* describes how to apply the model to the BM, involving the prototype design and strategy at the early 3DEC stage. In chapter *Discussion and Future work*, we discuss the future work and implementation of 3DEC. Finally, conclusions are summed up in the last chapter.

3DEC THEORY AND BUSINESS STRATEGY MODEL

3DEC

As a method for business analysis and decision, the business model canvas (BMC) is widely applied in various kinds of enterprises, helping them make decisions on profit making. The BMC was initially proposed by Alexander Osterwalder based on his earlier work on Business Model Ontology. Since the release of Osterwalder's work in 2008, new canvases for specific niches have appeared, such as the SaaS Canvas. The BMC is a strategic management template for developing new business models or recording old ones. It is a visual chart demonstrating a firm's value propositions, infrastructure, customers, and finances, assisting firms in adjusting their activities by illustrating potential trade-offs. The BMC consists of nine major elements, by using which analysts can do SWOT analysis to make a better decision. The elements are described in Table 1 and shown in Figure 3. In this article, the BMC is used with a 3D virtual space. The details on the BMC applications are illustrated in section 3, as well as described in references (Osterwalder, 2011; Noren, 2013).

Business Model Canvas

As a method for business analysis and decision, the business model canvas (BMC) is widely applied in various kinds of enterprises, helping them make decisions on profit making. The BMC was initially proposed by Alexander Osterwalder based on his earlier work on Business Model Ontology. Since the release of Osterwalder's work in 2008, new canvases for specific niches have appeared, such as the SaaS Canvas. The BMC is a strategic management template for developing new business models or recording old ones. It is a visual chart demonstrating a firm's value propositions, infrastructure, customers, and finances, assisting firms in adjusting their activities by illustrating potential trade-offs. The BMC consists of nine major elements, by using which analysts can do SWOT analysis to make a better decision. The elements are described in Table 1 and shown in Figure 3. In this article, the BMC is used with a 3D virtual space. The details on the BMC applications are illustrated in *chapter Case Study*, as well as described in references (Osterwalder, 2011; Noren, 2013).

14 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/a-3d-virtual-space-for-the-e-commerce-strategy-model/183289

Related Content

A Study of Recursive Techniques for Robust Identification of Time-Varying Electrical Equivalent Circuit Models of Li-Ion Batteries

Ashraf Mostafa and Manohar Das (2017). *International Journal of Handheld Computing Research* (pp. 52-74).

www.irma-international.org/article/a-study-of-recursive-techniques-for-robust-identification-of-time-varying-electrical-equivalent-circuit-models-of-li-ion-batteries/196259

Hype or Ready for Prime Time?: Speech Recognition on Mobile Handheld Devices (MASR)

Dongsong Zhang, Hsien-Ming Chou and Lina Zhou (2012). *International Journal of Handheld Computing Research* (pp. 40-55).

www.irma-international.org/article/hype-ready-prime-time/73805

Assessing Computer-Aided Design Skills

Yi Lin Wong and Kin Wai Michael Siu (2019). *Advanced Methodologies and Technologies in Network Architecture, Mobile Computing, and Data Analytics* (pp. 1339-1349).

www.irma-international.org/chapter/assessing-computer-aided-design-skills/214704

Mobile Video Streaming

Chung-wei Lee and Joshua L. Smith (2010). *Handheld Computing for Mobile Commerce: Applications, Concepts and Technologies* (pp. 425-438).

www.irma-international.org/chapter/mobile-video-streaming/41645

Mobile and Handheld Security

Lei Chen, Shaoen Wu, Yiming Jiang and Ming Yang (2010). *Handheld Computing for Mobile Commerce: Applications, Concepts and Technologies* (pp. 313-327).

www.irma-international.org/chapter/mobile-handheld-security/41639