

Chapter 4

Exploring the Player Flow Experience in E-Game Playing

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ABSTRACT

Flow theory has been widely applied in the context of information technology and is useful in understanding users' behavior; however, few studies empirically examine what factors influence players' flow, and what the facets and consequences of flow are in the context of electronic games (e-games). In this study, the author reviews previous flow-related literature to develop the proposed model to explore these research questions. The proposed model is empirically evaluated using survey data collected from 277 users responding about their perception of e-game. Results of this empirical study show that perceived ease of use, immediate feedback, skill and challenge are antecedents of flow, while enjoyment is the most salient facet of flow. The results provide further insights into e-game design and development.

INTRODUCTION

Information technology is advancing so rapidly, it has extensively restructured people's leisure activities. A very popular leisure activity is the electronic game (e-game), which includes video games, computer games, and online games. A video game is comprised of a TV monitor and console machines such as Sony's PlayStation, Microsoft's Xbox, and Nintendo's Wii. Computer games require a personal computer (PC) platform

to play. Online game users can play not only with the PC, but also with other users connected via the Internet. Notably, people can play all e-games mainly for leisure and enjoyment.

People can play games for enjoyment (Hsu & Lu, 2007). Accordingly, there will be huge business opportunities in this field. According to eMarketer (2006), the global market for e-games which includes game-related hardware and software, computer games, console game, computer games and online game will rapidly expand from \$ 29 billion in 2005 to \$ 44 billion in 2011. Many e-game companies consequently invest far more

DOI: 10.4018/978-1-61350-465-9.ch004

resources to develop game products. Moreover, countries such as Taiwan, Singapore, and Korea have in recent years launched projects to speed up the digital entertainment industry; game-related manpower training and platform building are growing significantly. For example, Taiwan's government launched the Taiwan Digital Contents Industry plan, which includes both digital games and multimedia animation, to promote the whole e-games industry.

While many reports indicate that the e-games market will be huge, there has been relatively little research into this area. Notably, most studies to date have concentrated on online games user (Hsu & Lu, 2004; Choi & Kim, 2004; Voiskounsky et al., 2004). These studies show that users' flow experience is a critical factor of intention to use. When a user is in the flow state, he/she is completely immersed in it. This cognitive state has been defined as the flow experience. As this experience is intrinsically enjoyable, users always want to maintain this state. Furthermore, Johnson and Wiles (2003) also indicate that a game may be successful when it is able to create a sense of flow in the user. They use the concept of flow in computer games to inform affective user interface design. Therefore, it is important to understand the driving forces of users' flow experience in the context of e-games.

Over the past few years, a considerable number of studies have related the concept of flow to information technology (Trevino & Webster, 1992; Webster et al., 1993; Ghani & Deshpande, 1994; Hoffman & Novak, 1996; Webster & Ho, 1997; Chen et al., 2000; Koufaris, 2002; Konradt et al., 2003; Pilke, 2004). Flow has been identified as the key for attracting and retaining customers as well as obtaining competitive advantage on the internet. However, few attempts have been made with entertainment technology. Although studies have been made on games (Johnson & Wiles, 2003; Hsu & Lu, 2004), they seem not to explain what factors influence the players' flow experience. Remarkably, numerous attempts have

been made to explore the antecedents of flow but the results are still confusing mainly because different contexts, such as web sites (Novak et al., 2000; Korzann, 2003), e-commerce (Koufaris, 2002) and online games (Choi & Kim, 2004) are used. Moreover, while antecedents of flow have been examined in these studies, no research has been found to investigate the facets of flow. Therefore, the question this study has to ask is: what motivates users to create flow experience in the context of entertainment technology, such as e-games? In addition, what facets and consequences of flow in the context of electronic games need to be clarified?

The purpose of this study is to examine the antecedents, facets and consequences of flow in e-games. This study proposes that flow experience is important to the study of e-game users' behavior because it serves as a key antecedent to users' attitude and behavior to an e-game. Furthermore, it is also vital to understand the antecedents and facets of flow because by manipulating these factors, game developers can better create users' flow experience, and subsequently, suggest new ways to improve game use. In this study, structural equation analysis is applied to explore the theorized nomological network of flow.

FLOW EXPERIENCE

Csikszentmihalyi (1975) originally defined flow as "the holistic sensation that people feel when they act with total involvement". When in the flow state, people become absorbed in their activity. Flow is characterized by a narrowing of focused awareness, so that irrelevant perceptions and thoughts are screened out; a loss of self-consciousness; a responsiveness to clear goals and unambiguous feedback; and a sense of control over the environment. Recently, researchers have used this concept to understand people's behavior while using information technology. As stated by Novak et al. (2000), online executives note that creating

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