

Chapter 79

Mobile Gaming: Perspectives and Issues

Krassie Petrova

Auckland University of Technology, New Zealand

INTRODUCTION

Mobile gaming (mGaming) belongs to the category of mobile entertainment applications. It is widely adopted in some countries –for example in Japan (Baldi & Thaug, 2002; Chan, 2008) and is fast becoming a popular and profitable mobile commerce service (Kleijnen, de Ruyter, & Wetzels, 2003; Paavilainen, 2004, p. 133). In 2006, the revenue from phone games in Europe alone reached US\$6 billion (Fritsch, Ritter, & Schiller, 2006). It is predicted that worldwide mGaming revenues will continue to grow with Asia-Pacific markets contributing significantly to the growth (Paul, Jensen, Wong, & Khong, 2008).

Past research results indicate that both customer perceptions and attitudes, and mGaming supply chain factors may play a critical role as determinants of mGaming business model success and mGaming

adoption (Barnes, 2003; Carlsson, Hyvonen, Repo, & Walden, 2005; Kuo & Yu, 2006; Macinnes, Moneta, Caraballo, & Sarni, 2002; Peppard & Rylander, 2006; Petrova, 2007; Siau, Lim, & Shen, 2001; Soh & Tan, 2008). Following up on prior findings the study presented here develops further the proposition that customer adoption of mobile gaming services and products is linked to:

- i) User perceptions about the value of playing a mobile game in the context of their lifestyle, and
- ii) User expectations about the quality of the mGaming service in the context of the environment.

The main objective of this chapter is to identify the determinants of mGaming success, to highlight the most important issues related to mGaming adoption, and to suggest recommendations for mobile game design and mGaming service pro-

DOI: 10.4018/978-1-61520-611-7.ch079

visioning. The chapter is organized as follows: First, definitions and background information are provided, and mobile gaming demand and supply are discussed. The sections following introduce mGaming adoption drivers and factors derived from studies using adoption models. mGaming determinants are proposed and discussed. The chapter concludes with an overview of future trends and research directions.

BACKGROUND

A mobile game is a video game played on a handheld device such as a mobile phone, by a player with a connection to a mobile data network. A game may require a permanent connection, or may be a standalone one ('download once'). Actively connected players may be moving and frequently changing their geographic location. Mobile games may involve groups of competing and/or collaborating participants. Using location-awareness features, mobile games may superimpose features of the real world into the game space and create an augmented reality environment (Bell et al., 2006; Broll, et al., 2008; Finn, 2005; Koivisto, 2006; Maitland, van de Kar, de Montalvo, & Bouwman, 2005; Rashid, Mullins, Coulton, & Edwards, 2006). Pervasive mobile games involve players in interaction with another and with the physical environment, and may be played by geographically dispersed groups of players (Segatto, Herzer, Mazzotti, Bittencourt, & Barbosa, 2008).

As a service, mGaming uses the communication channel provided by the private mobile data network, which may also connect to the public Internet (the 'mobile Internet'). Only mobile network subscribers or prepaid customers may play mobile games which require a permanent connection. However some games may be played within an ad-hoc network formed by the players implementing a short range connection technology such as Bluetooth.

Most mobile games are designed and offered to be played for entertainment, with NTT DoCoMo (Japan) the best known case of a mobile entertainment provider. DoCoMo users access the mobile Internet via iMode – the DoCoMo access platform. Mobile entertainment activities and specifically mGaming are seen by DoCoMo as a key growth driver (Barnes, 2003; Chan, 2008). However mGaming is also deployed in other contexts as a motivational strategy, or as a knowledge building facilitator. Examples include testing student knowledge (Wang, Øfsdahl, & Morch-Størstein, 2008), or encouraging 'sedate' players to exercise and thus improve their wellness (Bell et al., 2006; de Freitas & Griffiths, 2008; Wylie & Coulton, 2008). There is a current rise in the number of projects exploring location-based educational mobile games (Cogoi, Sangiorgi, & Shahin; 2006; Schwabbe & Goth, 2005), games involving 'sightseeing' or 'touring' (Spikol & Milrad, 2008), and virtual reality games (Doswell & Harmeyer, 2007) – all of them designed to be played by players actively moving in the physical space.

MOBILE GAMING: SUPPLY AND DEMAND PERSPECTIVES

Prior results in the area of user adoption of mGaming indicate that customer demand could be uncertain (e.g. Maitland et al., 2005) and therefore the business models deployed could be unstable. However even back in 2002 Anckar and D'Incau considered interactive mGaming as one of the top applications consumers were likely to adopt. Confirming this earlier prediction in the last five years the mGaming market has shown significant growth with an increasing supply of new games including multiplayer environments and situation-aware scenarios (Soh & Tan, 2008). In order to uncover the issues related to the future development of mGaming and the potential for

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