Chapter 9
The Issue of Fragmentation on Mobile Games Platforms

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ABSTRACT

The rapid growth of mobile device usage in recent years has given rise to the problem of fragmentation in mobile platforms. In this chapter, we address the background of the rise in mobile devices and their platforms. We then look at the issue of fragmentation in mobile platforms and the effects of it on the parties in the mobile services ecosystem. We conclude by discounting the solutions that the industry has implemented to resolve this issue of fragmentation.

INTRODUCTION

In present times, mobile devices have become the fastest growing consumer products in terms of adoption. There have been more phones shipped each year than automobiles and personal computers combined (Mahatanankoon et al. 2005; Clarke & Madison, 2001). It is thus not surprising that the market value of the mobile game, which is only 0.46 billion Euros in 2003, had soared to 1.65 billion euros in 2006 (Mobile, 2006). In addition, the mobile game market is expected to grow to 9 billion euros by 2011(Jordan, 2007).

Mobile games have quite a few advantages compared to PC and console games. Mobile games are ubiquitous and portable; allowing people to game anywhere, anytime. In addition, they can serve as a practical alternative to PC-based games (Okazaki et al., 2007). While mobile games could be played with mobile phones or other hand-held gaming devices, this chapter focuses solely on games that are being played on mobile phones.

The fast growing mobile game industry has a prominent role in the area of mobile technology development. Games, similar to the experiences with Internet shows, are among the few network data services which consumers are willing to pay for (Nokia, 2004). Since mobile phones are being rapidly embedded with software platforms, which are capable of supporting gaming, many handset manufacturers, operators and game developers have come to recognize the opportunities in mobile games.

In the current market, there are 5 significant mobile platforms - Android, iPhone OS, J2ME, Symbian OS and Windows Mobile - all of which make up close to 100% of the market. These popular platforms offer extensive middleware support, to help developers create rich mobile applications rapidly. This includes allowing a developer access to different platform resources, such as the underlying operating system, middleware components, useful libraries and tools, etc. An example is the Linux-based open-source platform that Android provides to third-party developers which allows them to create and port their applications, while at the same time making use of services like search, Gmail and Google Maps. Similarly, Nokia S60, iPhone OS offer their own application development environments. Most platforms also provide applications with interfaces that allow them to access an abundance of information on the mobile handset. Information, such as user contact, calendar, geographic location, as well as functionalities like making calls, sending SMSs, using the camera, and so on. By combining application logic with these platform interfaces, richer applications may be created. For example, using the location information available on the mobile phone, one can design a number of location-based applications.

However these mobile platforms are not interoperable as each differs in their interfaces and service access points. This is due to the portability of mobile applications across multiple platforms. This fragmentation of mobile platforms has be-

come a problem that cannot be ignored (Fasli & Michalakopoulos, 2008) particularly in the mobile gaming area with its massively parallel community. In the remainder of this chapter, we discuss how this problem of fragmentation affects the parties in the mobile game application market, and offer some recommendations on how to achieve standardization of mobile gaming platform.

The Development of Mobile Devices

In 1946, the first global mobile network was introduced by the USA and it could only be used nationally today for it was mainly developed for military purposes. However, it was not until the end of the 1950's that the Analog network (A-network) replaced this technique. In 1973, Motorola launched a prototype of the first cellular telephone in the world. It was approximately 12 inches long, weighted 2 pounds, costed US$3995. This cell phone, which became commercially available in 1983, could provide one hour of talk time and could store up to 30 phone numbers. Within a year, 300,000 people from all over the world sought to claim ownership of this phone. This hardly crossed the chasm but the steadily declining price of the mobile phone has brought about a striking market growth and a plethora of applications.

In 1982 the Finnish handset manufacturer Nokia launched its first mobile phone, "Mobira Senator" which looked much like a portable radio weighing 21 pounds. Bell South/IBM released the first cell phone with PDA features in 1993. It included applications and capability such as phone and pager functionalities, calendar and calculator as well as electronic mail and fax. The weight was about 18 pounds and it was sold for $900. Motorola's "StarTac" launched in 1996, was integrated with both aesthetic design and usability. It was much lighter than the previous phones by at least 3.1 pounds. Kyocera introduced its mobile phone QCP6035 in 2000 and was the first widely available Palm OS-based phone. In

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