Mobile Games: An Emerging Content Business Area

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1 Introduction

Games have a very long history. Ever since the dawn of mankind, humans have played games – engaged into an activity that we nowadays call "game". People play games for several reasons, one of them being entertainment and relaxation. People's eagerness for competition and problems/puzzle solving further explains the popularity of games. As people learn by playing, it is also an action of gaining new knowledge: learning skills that are important elsewhere in life.

Computer gaming is a very young phenomenon in the history of games. Although computers were originally designed to increase efficiency in calculations and later in business, they always had their more creative uses – entertainment and games. Already in the 1960s, enthusiastic engineers designed productivity software – but also games – for the room-sized mainframe computers. Since then, computer games have evolved to their current popular status in modern society.

Computer games are currently one of the key drivers for personal computing, computer graphics and sounds. The market for games consists of two main areas: 1) games for personal computers (PCs), and 2) games for dedicated game consoles (such as X-Box or PlayStation). Though considered a leisure activity for teenagers, computer games have also become big business. In 2002, the estimated total turnover of the computer game market was US$ ~20 billion, out of which mobile games represented roughly US$~ 0.9 billion (Kirsi 2003).

Many games have always been mobile, e.g. people have carried their chessboards with them when travelling. The mobile computer games had their first popular coming in the 1980s with Nintendo's launch of its series of portable miniature computer games. These small games created a whole new environment for computer gaming, which has intensified ever since

with current Nintendo's GameBoy series of portable consoles. Nokia (FIN) introduced its Snake-game on its mobile phone in the mid-1990s. Rapidly after this, games became an essential part of mobile phones regardless of manufacturer. More recently, technological advancements have made it possible to purchase more games through the mobile telephone networks.

This chapter illustrates key trends in the mobile game[1] market. The key objective of the chapter is to analyse and discuss the challenges confronting the emerging European mobile game industry. In addition, the chapter aims to provide insight into the game industry's business logics and value creation processes. A recent EU-funded research project, M-Gain (2004), has published a very thorough analysis of the whole mobile entertainment market. The aim of this chapter is not to provide a thorough market analysis but rather a compact illustration of the key trends. The analysis is based on several secondary sources as well as the experience of the author in the mobile game market. The report is written from a Northern European perspective of the market and can therefore have limitations in the depth of its analysis regarding the other regions of Europe.

2 A Short History of Mobile Games

Mobile computer games have their roots in Nintendo's portable LCD game series "Games & Watch".[2] These games became very popular in the 1980s. The simple miniature consoles introduced the concept of keeping a small source of digitised entertainment in the pocket – constantly available. There were nearly 70 different kinds of LCD games.[3] In this series, Nintendo introduced its most well-known game character, Mario, and also made active use of licensing by creating games with Disney's characters.

In the 1990s, Nintendo's markets became more and more competitive with multiple competing LCD game manufactures, and thus it introduced a new kind of game console – the GameBoy with changeable game cartridges. The device became dominant in the market and is currently almost a synonym for portable game consoles. Nintendo with its partners has launched hundreds of game titles for the device and its more advanced successors.

Wireless gaming (games on mobile phones) emerged with Nokia's launch of the Snake game in 1997. The simple Snake game became sur-

[1] See e.g. Alcatel (2003) for a more detailed definition of a mobile game.
[2] See http://www.gameandwatch.com
[3] See http://www.planetnintendo.com/nindb/gw.shtml

prisingly popular, and Nokia brought additional titles to their devices. Simple mobile phone games, similar to the original Snake, are played during short breaks to provide relaxation and a small escape from routines. These games were originally permanently installed on the phones, but more and more they can be purchased through mobile networks nowadays.

At the end of the 1990s, the Japanese success of i-Mode network based games created a boom for WAP games – games that mobile phone users would play through their WAP-browsers in the phones. In Europe, Nokia's 7100-series of phones were the first ones capable of this activity. The slow connection speeds made these games a very disappointing experience, and thus they never conquered the mainstream market. Yet, some SMS-based games have gained popularity, especially when supported by television broadcasting[4].

In 2001, the introduction of downloadable games and colour screens on mobile devices has brought wireless games to the mass market. Suddenly, consumers were willing to purchase small chunks of entertainment to broaden the game selection on their mobile devices. In addition, mobile phones are constantly developing towards small microcomputers – smartphones and thus game play is nowadays much richer than the simple Snake-like-games used to be. 3D-graphics and realistic sounds are also entering wireless games.

Nokia has continued to pioneer in the field of wireless gaming. In 2003, it introduced its N-Gage game deck, and wireless online gaming with N-Gage Arena[5]. This device is a full-scale game console with changeable cartridges and smartphone functionalities. In addition, the N-Gage started a new era in online gaming – the device and some of its game titles are linked to a game server via GPRS networks, which thus enables group games in an online community. Furthermore, N-Gage has Bluetooth gaming functionalities for short-range (~10 m) group games. The N-Gage launch was carried out on a large scale. Yet, there is still no guarantee for a business success of the device. Nevertheless, the N-Gage has created an increasing interest in mobile games, and Nokia's competitors (e.g. Sony) are also planning similar activities in the handheld game device market.

[4] See e.g. http://www.waterwar.tv

[5] See http://www.n-gage.com

3 The Mobile Game Market

3.1 Two Original Business Areas

The emerging mobile game market is closely related to two existing business areas: 1) mobile telecommunications content business, and 2) computer game publishing business. In both of these content creation areas a similar value creation pattern exists. Any content business has four main operational phases: content creation, content aggregation, content marketing, and content distribution (Bruck et al. 1997). The key actors in the market are game developer companies and game publishers. In the traditional game publishing business, game distributors carry out marketing activities, and sales take place mainly in retail outlets. In the mobile game business, telecom operators and online/mobile portals generate most of the sales and implement to a great extent the marketing activities. In some cases (e.g. N-Gage cartridges), mobile games are also sold in retail stores. Consumers (the gamers) act as the key revenue source for the whole industry – and the money they generate with their game purchases is distributed to the rest of the industry value chain/web. Figure 1 presents the game industry value web and the main actor groups in the market.

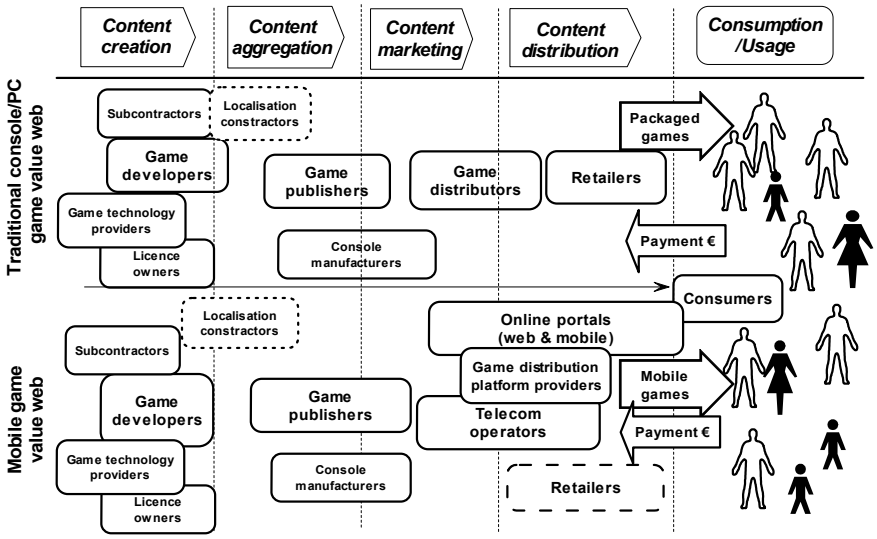

Fig. 1. The traditional game industry and the mobile game value webs (Source: Pelkonen 2004).

3.2 Growth Business, but Turbulent

The gaming business (including PC, console, and mobile games) is currently evaluated to total US$ ~20 billion (€ ~26 billion). Mobile game business comprises approximately € 0.9 billion, ~ 5% of the total game market (Kirsi 2003). Yet, the growth rates within this area are forecasted to be very strong. Analyst predictions of the total future volume of mobile game business vary from one analyst to another (see Figure 2).

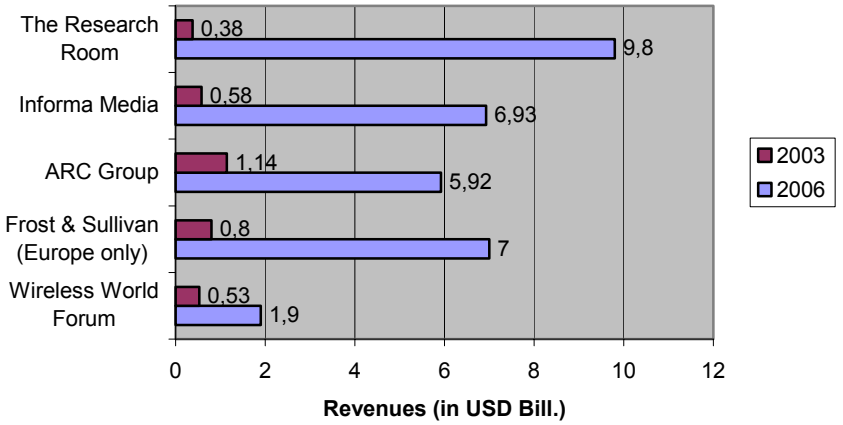

Fig. 2. Selected mobile games forecasts, 2003 & 2006 (Source: Baskerville Telecoms 2003)

Strategy Analytics (2003) predicted that the mobile game market would grow to US$ 7 billion by 2008. The ARC Group (2002) forecasted that the number of worldwide mobile game users will grow from 196 million in 2002 to 667 million in 2005. Informa Media Group (2003) has stated that the mobile games segment of the videogames industry would comprise 11.7% by 2006. Although there is no clear agreement on the total amount of the expected turnover, most of the industry players have indicated nonetheless that their business is growing faster than expected. E.g. the German mobile portal Jamba has reported 300,000 Java application downloads per month in 2003, out of which 80% are games (Begemann 2003).

The mobile game business is very short cyclic in its nature. A typical game title is valid for the market and sells well approximately 6–12 months dependant on its geographic distribution range. In addition, the mass market for mobile game titles is very global. A company aiming to gain major revenues in the market has to find methods and activities to

bring its products to the main markets such as Japan, USA, and Korea. This may become a major obstacle for a small company starting its operations in the mobile game business. A small company needs to find strong distribution partners to help it in its efforts. In addition, a game developer has to find means to localise its productions to the key markets in the most efficient manner.

3.3 USA and Japan Lead the Show

The leading traditional computer game markets have been in the USA and in Japan. Hence, the most significant game industry innovations very commonly emerge from these markets, not from Europe. Among the world leading top twenty game publishing companies only three have their headquarters in Europe (see Table 1). Yet, European companies are in a much stronger position in the mobile telecommunications content business. In Europe, the mobile game business has developed rapidly due to the strong support from the device manufacturers and the high penetration rate of mobile telephony.

Table 1. TOP 20 global game developer companies and their turnover in 2002 (Source: Adams 2003)

1. Electronic Arts (USA), US$ 2,482 M	11. Square Enix (J),US$ 526 M
2. Sony Computer (J), US$ 2,180 M	12. Unisoft (FRA), US$ 494 M
3. Nintendo (J), US$ 2,128 M	13. THQ (USA), US$ 480 M
4. Activision (J), US$ 864 M	14. Capcom (J), US$ 407 M
5. Vivendi Universal Games (USA), US$ 832 M	15. Bandai (J), US$ 372 M
6. Take-Two (USA), US$ 793 M	16. Namco (J), US$ 360 M
7. Atari (FRA), US$ 761 M	17. Acclaim (USA), US$ 269 M
8. Konami (J), US$ 740 M	18. Koei (JP), US$ 224 M
9. Microsoft Game Studios (USA), US$ 614 M	19. Eidos (UK), US$ 197 M
10. Sega (J), US$ 563 M	20. Midway Games (USA), US$ 190 M

It is expected that the large Japanese and US game developers and publishers will increase their market presence when the mobile game business really reaches mass markets. Actually, this trend is constantly increasing with e.g. Electronic Art's strong entrance into Nokia's N-Gage game cartridge market. The smaller European game development companies will have to co-operate increasingly with the game industry giants. Table 2 below presents some of the key European companies operating in the mobile gaming markets.

Table 2. Examples of gaming market actors in Europe (Source: own research).

Actor	Examples
Mobile Game developers	e.g. Sumea (FIN), Elkware (GER), Mr.Goodliving (FIN), It's Alive (SWE), Macrospace (UK), In-Fusio (FRA), CodeToys (FIN), Sulake Labs (FIN)
Mobile gaming technology providers	e.g. Fathammer (FIN), Nokia (FIN), Ideaworks (UK), Akumiitti (FIN), Synergenix (SWE), BitArts (UK)
Mobile game publishers	e.g. Eidos (UK), Nokia (FIN), Gameloft (UK)
Mobile game console manufacturers	e.g. Nokia (FIN), SonyEricsson (SWE/JP), Sendo (UK), Siemens (GER), MyOrigo (FIN)
Online/ Mobile portals	e.g. Jamba (GER), Sonera Zed (SWE/FIN)
Mobile operators	e.g. Vodafone (UK), TeliaSonera (SWE/FIN), Orange (UK), mm02 (UK), T-Mobile (GER)
Retailers	e.g. Carphone Warehouse (UK)

The geographical key mobile game markets in Europe (from the revenue generating perspective) are Germany, France, the UK, and Italy. Currently, the key development centres for the solutions and business areas are in the UK, Germany, Sweden, and Finland. There is a clear indication that mobile telecommunications companies such as Nokia, SonyEricsson, Siemens, mm02, Orange, and Vodafone benefit of having several innovative small companies at close distance to provide these giants with ideas and game titles to promote their own entertainment focused offerings.

3.4 Consumers Increasingly Demand Quality

The initial price for a mobile game used to be relatively low, around € 2–7 per game. Multiple early adaptors in the game business are testing and buying mobile games at this price. The only exception in game pricing have been the N-Gage cartridges priced at € 20–40 per title. Yet, these are much broader and more complex games than the compact downloadable games from the operators' networks.

It is clear that the demand for high-quality games will increase when consumers are getting used to purchasing mobile games. Players are expecting the service provider to guarantee that the value of the purchase matches the price paid for it. If there will be a lot of disappointment, the industry may be harmed by loosing its reputation. It is important to price games according to their perceived value. Older games should be cheaper than new titles, e.g. the launch of a new FIFA Football mobile game in 2005 would immediately decrease the price of a FIFA 2004 game at a mobile portal.

Currently, the most sold game genres[6] among the consumers have mostly been action driven games (space, shooting, sports, and especially racing). When mobile games increase in popularity among consumers, other kinds of game solutions will appear. An interesting development area here is location-based gaming, i.e. games that combine players locations (identified by mobile networks or GPS satellites) and actual game play.

4 The Business Model/Work Flow

4.1 Key Objective: To Make Profit

As with any other business, the key objective for a game business-focused company is to make profit out of its operations. Profits are simply created when a companies' revenues exceed the costs carried out to obtain these. Within the value web of the mobile gaming business (see Figure 1) the key revenue source for the industry as a whole are the consumers and their willingness to purchase mobile game products. Consumers either pay a flat fee for their product or they subscribe to a monthly scheme of payments. Additional revenue sources are various kinds of advertising and sponsorship deals.

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[6] Major game genres are: 1) action, 2) adventure, 3) strategy and 4) simulation, see e.g. http://www.game-research.com/history.asp

Advertising can take place either at the site of distribution (online, mobile, retail) or in the mobile game itself. This kind of sponsoring has similar features as product placements in television shows and movie. The game might take place in the preferred location of the brand or the brand may be brought to the attention of the game player in a way as it is already very commonly done in motion picture. Movies and game design do actually have very much in common regarding their production methods. It is more and more common that movies, PC/console games, websites, and mobile games consist of similar elements and promote the same sponsors/advertisers throughout the digital medium.

A key issue from the revenue perspective is what kind of share each actor group gets from the consumer payments. Currently, publishers get 50–60%, mobile operators 20–25%, licensors 15–20%, and the game developers get 10–15% of the total revenues (Pelkonen et al. 2003). Naturally, advertising and sponsorship deals may change the distribution ratios. Table 3 summarises the key revenue and cost items for industry actors.

Table 3. Key revenue sources and cost items in the mobile game business (Source: based on industry experience & ACTeN Business Round Table 11)

Actor in the value network	Key revenue sources	Key cost items
Game distribution and marketing business (20–25% of total revenues)	Direct sales to consumers (flat fee) Subscription-based fees (e.g. monthly) Additional feature sales (e.g. extra levels) Game rentals (pay-per-play) Advertising & Sponsoring Network access and transfer fees (for telco operators)	Personnel costs Marketing campaigns (planning + media) Infrastructure building and operation costs (distribution platforms, servers, mobile network operation) Licence fees to publishers
Publishers (50–60% of total revenues)	Wholesale game revenues (flat fees/ per usage/per sales) Subscription fees from consumers (e.g. to online communities) Advertising & sponsoring, e.g. (to include branded content in the game)	Personnel costs License fees to brand owners Licence fees to console manufactures Payments to developers

Mobile game developers (10–15% of total revenues)	Flat fee payments from publishers Commissions per mobile game usage/sales	Personnel costs Game development software licences and costs Game development hardware costs Licence fees to brand owners
Mobile game console manufacturers	Mobile console sales (Subscription fees to online communities)	Personnel R&D costs Marketing costs Distribution costs

4.2 Risky Business Area

Game development is a very risky business. Only one out of ten titles becomes profitable. Yet, the revenues generated by this ten percent or less can be very high and the reward of the risks may balance out the business risks taken (Kuittinen 2003). Key elements of the game industry risk are e.g. high production costs, timing of launch, and access to distribution networks/chains. Mobile game development has been less capital-intensive than traditional game publishing business. While it takes a minimum of one to three million euros and 12–24 months to develop a console game, it takes only a few hundred thousand Euros and two to four months to develop a simple mobile game, and four to six months for a more complex one. The mobile game development cycle is illustrated in Figure 3.

Game console manufacturers sell their devices at a deficit. As nearly all device manufacturers operate also as game publishers they make most of their revenues from game software sales. In mobile games, the console is in most cases a mobile phone and thus the case is slightly different. Games are sold as additional service from the mobile operator to broaden the phone usage. A mobile phone is still mainly a phone, though yet having game functionalities. The device subsidy, similar to the game console manufacturers' front-loss, is carried out by telecom operators in most of the European markets. They provide mobile phones to their customers at a deficit, but tie their customers to their networks with long-term (24–36 months) contracts. The revenues are thus generated later by phoning and data services usage, e.g. game downloads.

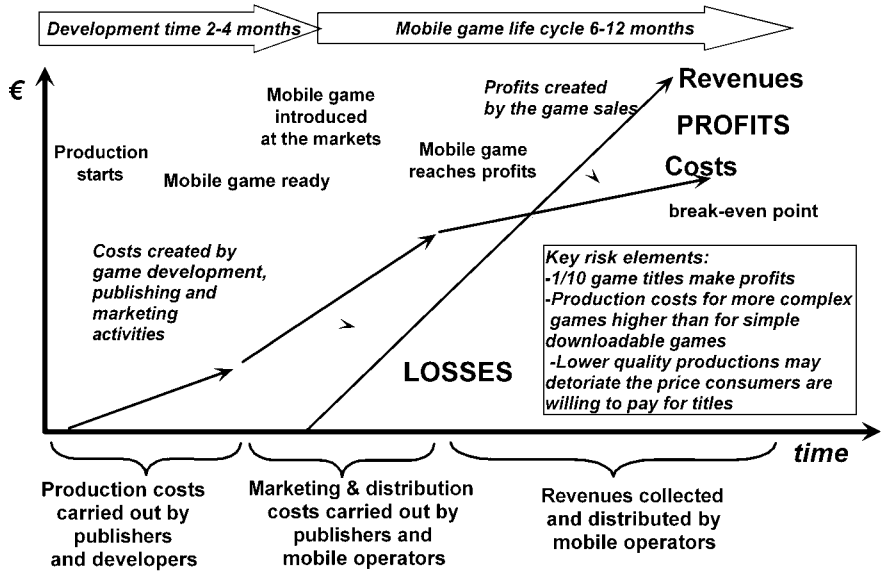

Fig. 3. Illustrative earnings cycle for a mobile game title (Source: Pelkonen 2004).

Mobile games are an excellent feature for mobile telcos to generate additional revenues. Due to this business rationale and – of course – thanks to real customer demand, this area has developed rapidly. Dedicated mobile game consoles (such as Nokia N-Gage) will increase public interest towards mobile games. With little doubt the business area will achieve its goals. Yet, as already mentioned, telcos should focus more clearly on providing value for their customers. WAP gaming was a major disappointment in its early years. Mobile games should not become yet another example of too much hype and of too little realised revenues. Taking risks may generate tremendous amount of revenues. Yet, too little risk taking will not generate any revenues for the industry as a whole.

4.3 The Mobile Game Production Process

To understand in more detail the challenges a game developing company faces in its operations, it is important to understand that mobile game design is an interdisciplinary, collaborative effort. People within the production process work with each other to keep budgets, schedules, and the feature and bug lists up-to-date. On the development side artists and designers collaborate across disciplines to bring the game to live. Finally, production

and development teams co-operate with each other in order to keep the project on track and run smoothly (Adams 2003). Meanwhile, various kinds of business personnel negotiate on game distribution, project management, sales and corporate management issues. The simplified operational and competence model is presented in Figure 4.

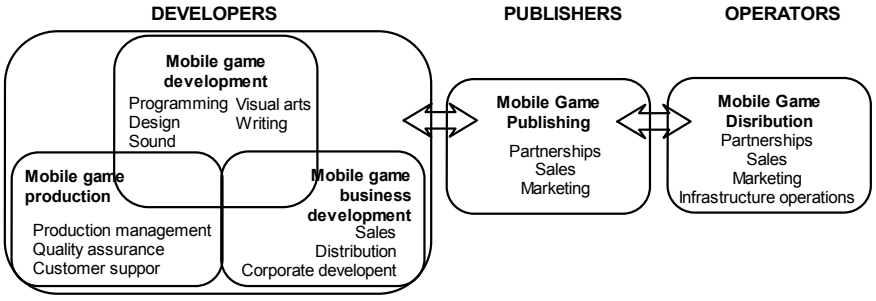

Fig. 4. Mobile game market competencies (Source: modified from Adams 2003)

As the illustration shows, it is not sufficient to only create a high quality mobile game title. They key to business success in the markets lies in mastering marketing and distribution operations as well. The business risks as well as possible revenues are spread between the development and sales partners.

5 Major Technological Development Trends

5.1 Standardisation Battle

From a technological perspective the mobile game market is very heterogeneous. Multiple game platforms, technologies, and game consoles exist and compete fiercely for market dominance. The standard battle has three dimensions: game console, operating system, and actual game programming technology. The three dimensions are illustrated in Figure 5.

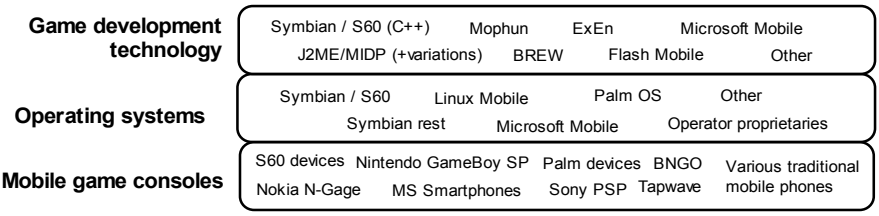

Fig. 5. Competing mobile game technology standards (Source: Pelkonen 2004)

One of the key battles is fought at the mobile device operating level: Microsoft-lead Windows Mobile vs. Nokia-lead Symbian Series 60 systems. Nokia is currently in a strong position, but the true mass market for smartphones is only emerging. In the mobile game business, there is also a very strong competition originating from the traditional game console manufacturers, such as Nintendo and Sony. These companies are adding communication features to their upcoming mobile game consoles. This will further intensify competition on the mobile game market.

One additional dimension at the level of technology is brought to the mobile battlefield that is similar to one seen in the early Internet years – the battle for the preferred mobile Internet browser. The Norwegian Opera Software (supported by Nokia and SonyEricsson) is taking major efforts to compete against Microsoft's Mobile Internet Explorer (pre-installed on e.g. Orange Smartphones: SPVs). This competition will have its impact at least on the browsing technology solutions of mobile game sites. The current trend seems to head into the direction that WAP-based sites are becoming more and more XHTL-based sites.

Multiple standards create major challenges for mobile game developers. A game created with one technology solution has to be re-created for another platform. Different screen sizes, varying sound solutions, operating system differences and memory shortages limit the possibilities of a rapid game software transfer from one platform to another. Additional challenges can also be created by game crackers – the mobile device is no exception in the struggle for intellectual property right protection. This influences directly the profitability of multi-platform game development. Several development companies have selected only a few technology solutions and game platforms they support.

5.2 Mobile Multiplayer Gaming

One of the most interesting technology development areas in mobile gaming relates to multiplayer games. Mobile game devices can be connected to a gaming server. The server enables gamers to play against each other regardless of their geographical location. Nokia has created a full-scale mobile online game environment, the N-Gage Arena.[7] This online service is an environment where N-Gage owners can compete, communicate, and obtain special benefits for their activities. In traditional game console markets similar online services have become very popular (e.g. X-Box Live[8]). Mobile online game services are expected to follow this trend.

An interesting dimension is brought to mobile multiplayer gaming by exploiting the location-identification features of the mobile networks. A Swedish company called *It's Alive*[9] has created a multiplayer game called "Botfighters". In it players chase each other to various cellular network locations. The experiences from "Botfighters" indicate that there are interesting opportunities for combining real-life action and virtual game play. The German company *Jamba* has created another interesting new mobile game concept. In their game "Attack of the Killer Virus" the player shoots viruses/monsters projected into a real-life environment shown through the lens of a camera phone (Palley 2004). The player has to move around with the camera to destroy the viruses. With little doubt, similar kinds of combinations of cellular network technology and real-life experience will increase in the future.

Another innovative perspective for multiplayer gaming is created by a combination of television broadcasting and mobile phones.[10] The players compete against each other by SMS commands in various kinds of games, e.g. in shooting, skill, sports etc. The users are charged by their moves, i.e. by SMS. These games have become surprisingly popular throughout Northern Europe – most probably due to the phenomenon of the 15 minutes (in mobile 15 seconds) of fame, attributed to Andy Warhol.

People love to see their messages and game actions to be displayed to the large audiences that game shows in television may gather. In the near future, similar kinds of gaming communities may also appear around digital television applications in terrestrial, satellite and cable television networks.

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[7] See http://arena.n-gage.com
[8] See http://www.xbox.com/en-us/live
[9] See http://www.itsalive.com
[10] See e.g. http://www.waterwar.tv or http://www.putti.tv

6 Conclusions and Recommendations

6.1 Market Outlook

Mobile game markets are evolving rapidly and becoming a true business for the industry actors. Mobile games are one of the key mobile content areas and create profits for telecom operators as well as for their publishers and developers. More powerful mobile devices have enabled the creation of better and richer games. Colour screens will increase the possibilities to use lucrative elements in mobile games, similar to the more advanced computer games. In addition, the distribution technology in the mobile networks is capable of delivering mobile games for consumers.

The entertainment business has been growing constantly in the past few years. Computer games have been one of the key sources for this growth. Within computer gaming, the importance of mobile games is expected to increase in the near future. The mobile channel will be used both to support existing games, but also to create totally new gaming experiences. The combination of location-based games, multiplayer-gaming and powerful mobile devices will most likely enable much richer entertainment experiences for the consumers. Though a very promising business area, there are still many open issues related to mobile games. These challenges include e.g. game transferability from one device to another, game piracy and intellectual property rights.

The competition for consumers' time expenditure is fierce – there are no real guarantees that computer games will become the favourite form of entertainment for all the segments. Currently, most of the game titles are designed for male gamers, and favourite genres are action driven. If the mobile game industry would like to reach other market segments, new kinds of concepts should be created. Consumers could e.g. obtain benefits if reaching certain high scores or levels, winning in tournaments etc. The combination of mobile games with television shows, e.g. with trivia and quiz shows, are an interesting opportunity for mass-market games. It is also important to understand that the more gamers join mobile game phenomena the more different from the current situation game segments will become. The mainstream mobile gamer is then no longer "young, male, tech-savvy" but rather a casual gamer "middle-aged, male/female, non-tech-person".

The value chain of the mobile game business has evolved to bond with two major business areas – the mobile content business, and game publishing. Mobile telecom operators are crucial for the whole industry's earning logic. Their marketing efforts in providing the games to their customers decide whether consumers will increase their interest in the area. The game

publishers' and game developers' responsibility should be to create game titles that are of high quality and well functioning in the scattered mobile technology environment.

Mobile game technology standards are still evolving, and their immaturity will, for quite some time, influence the profitability of the mobile game development business. Game developers are struggling with emerging technologies and will very often have to work hard to make their games available for most of the devices. Mobile phones' main functionality is still telephony. Thus, the game features are not yet the most crucial element in the mass consumer's choice of a new mobile device.

Europe was the leader in mobile telecommunications development at the end of the 1990s. Yet, recent developments, also in mobile games, have shown that the most innovative game concepts seem to be implemented in Asian markets. The challenge from Asia may have a major impact on the European mobile games industry. The computer game business is dominated by the USA and Japan. The future will show whether this will also be the case for the mobile game business.

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