Business Models and Value Chains for Pervasive Gaming

S T A F F A N   L I N D R O T H

KTH Computer Science and Communication

Master of Science Thesis
Stockholm, Sweden 2008
Business Models and Value Chains for Pervasive Gaming

STAFFAN LINDROTH

Master’s Thesis in Media Technology (30 ECTS credits) at the School of Media Technology
Royal Institute of Technology year 2008
Supervisor at CSC was Daniel Pargman
Examiner was Nils Enlund

TRITA-CSC-E 2008:126
ISRN-KTH/CSC/E--08/126--SE
ISSN-1653-5715

Royal Institute of Technology
School of Computer Science and Communication

KTH CSC
SE-100 44 Stockholm, Sweden

URL: www.csc.kth.se
Business models and value chains for pervasive gaming

Abstract
Pervasive gaming is a genre in which gaming is interwoven with peoples’ daily lives. The genre is still new, and many of the existing game concepts are still at the research stage. In order to reach the consumers and manage to generate revenue it has to be examined how these games should be marketed and how the production of them should be organized. The goal of thesis is to determine what potential some of the most talked-about concepts within the genre possess, and how they can be taken towards commercial success. Since games within this genre usually do not follow the norms of the digital games industry as far as player participation and technology involved it is far from obvious what the most usable business models look like. Neither is it obvious how long time it will take before these games can become part of the general playing public’s consciousness and be products that are natural to purchase or take part in. In this thesis, through literature studies, a study on an existing pervasive game, and in-depth interviews with people from related industries, the difficulty in designing healthy business models for this type of games is confirmed. In many cases, these problems derive from the involvement of a number of parties that sometimes have conflicting interests. The most promising models during the introductory phase of the genre are believed to be those that are based on time limited game occasions directed towards, for example, companies in connection to events or marketing campaigns and those where the pervasive elements are sold as add-ons to existing games. Other models believed to work are those where the game uses an existing brands or where strong human instincts such as collecting, caretaking and socializing are involved.
Affärsmodeller och värdekedjor för pervasive gaming

Sammanfattning

### Contents

Introduction ................................................................................................................................. 10
Purpose and delimitations ........................................................................................................... 10
IPerG ........................................................................................................................................ 11

Background ................................................................................................................................ 12
Literature and earlier research ................................................................................................... 12
History of pervasive gaming ....................................................................................................... 14
Role playing .................................................................................................................................. 14
  War games ................................................................................................................................ 15
  Dungeons & Dragons .................................................................................................................. 15
  Computer Role Playing Games .................................................................................................... 15
  Live Action Role Playing ............................................................................................................ 16
Alternate reality games ............................................................................................................... 16
  Majestic ...................................................................................................................................... 16
  The Beast .................................................................................................................................. 17
  I Love Bees ................................................................................................................................. 17
  Perplex City ................................................................................................................................. 18
Mobile games ............................................................................................................................. 19
  Botfighters ................................................................................................................................. 19
  Geocaching ................................................................................................................................. 20
  Jeep 4x4 Geocaching Challenge .................................................................................................. 20
  Titta va ja hitta (Look what I found) ......................................................................................... 20
Existing business models and value chains ............................................................................. 21
  Background and definitions ...................................................................................................... 21
  Business model .......................................................................................................................... 21
  Value chain ................................................................................................................................. 22
Examples ....................................................................................................................................... 23
  Computer games ......................................................................................................................... 23
  Mobile games ............................................................................................................................... 25
  ARGs and Advergaming .............................................................................................................. 28
  Events ........................................................................................................................................ 29
Case: Botfighters ......................................................................................................................... 30
Method ......................................................................................................................................... 33
  Process ....................................................................................................................................... 33
  Interviews ................................................................................................................................... 34
Introduction

Pervasive gaming is an emerging field both within the gaming research world and the gaming industry. The term is, however, slightly hard to explain in a clear and concise manner. The term ‘pervasive’ is derived from the field of pervasive computing. Pervasive, or ubiquitous as it is also called, computing is a term that is used to describe the trend of introducing small, interconnected, computer based devices into the environment. In pervasive gaming, however, the term pervasive is used to describe the game itself, rather than the technology being used. ‘Pervasive Gaming’, therefore, is a design concept, not a description of how the game is carried out technically. This is made clear in the definition of pervasive gaming proposed by IPerG (D5.3, more info on IPerG to follow):

*Pervasive game: a game that is ambiguous regarding the spatial, temporal, social, or interaction aspects of the game.*

Examples of pervasive games could be those that use a positioning service to determine the physical location of the player, they can be games in which the players take on unusual social roles or games that have the player interact with the game in unusual ways. Common for all of these games is that they mesh with the player’s daily life, often making the boundaries between the game and the ordinary world fuzzy.

There have not been many commercially successful pervasive games as they pose challenges that are different from traditional games. There are often technical, legal and moral issues to be solved before the games can reach their intended audiences. It is clear that this fairly new industry and research field needs to find suitable business models in order to succeed in finding games that generate revenue. Most concepts that could be categorized as pervasive involve multiple business partners and extend the characteristics of more than one particular industry. Therefore, an understanding of the conditions within several existing industries, such as computer games, mobile content, broadcast media, advertising and event production is needed. Out of this knowledge new, unique, business models can be created, interconnecting elements from the above mentioned industries.

Purpose and delimitations

The purpose of this thesis is to evaluate the business potential in pervasive gaming, based on some of the concepts presented by academic as well as industrial representatives involved in the development of the pervasive gaming genre. In the choice of concepts to evaluate a conscious effort has been made to achieve a high degree of diversity in areas such as technology level, target groups (if such have been identified), player interaction etc. The main question set out to be answered in the course of this work is: *Is it possible to make money on pervasive gaming?* This question can, and needs to, be divided into sets of sub-questions:

1. Which of the existing concepts have most potential?
2. What do, or what should, the business models of these concepts look like?
3. How would a business working with a pervasive concept best organize itself?
4. What are the main obstacles present that prevent businesses from succeeding or being initiated?
5. What does the time-frame look like for the commercialization of these concepts?

The creation of new business models requires an understanding of what position in the value chain a company is taking, so the area of value chains related to the genre is also to be explored. This includes both value chains that take place within the industry of the company, “Intra-industrial value chains”, and those that reach outside the industry, “Inter-industrial value chains”. These terms may not be referred to later but are beneficial to keep in mind when reading the related sections.

Any more detailed analysis of the psychological reasons for playing or not playing these types of games has intentionally been left out. However, in order to create viable business models it has been necessary to try to identify the product categories these games fall within as far as what activities they compete with. The outcome of the research will be a set of possible business models and guidelines that will hopefully be worth considering for anyone interested in pursuing the realization of a pervasive concept.

IPerG

The Integrated Project on Pervasive Gaming, or IPerG, is a research project sponsored by the European Union and will span across three years time from when it was initiated in 2004. Within IPerG research is done on both technical and design aspects of pervasive games. The objective of IPerG is to develop infrastructure, tools and methods for pervasive games, in order to enable rapid and cost-effective creation and staging of pervasive games, create good designs, understand the intended audience and understand the societal impact of games.

IPerG consists of five core work packages; Management, Business and Organization, Design and Evaluation, Infrastructure, Tools and five showcases; Crossmedia, Socially Adaptable Games (SAG), Massively Multiplayer Reaching Out (MMRO), enhanced Live Action Role Play (LARP) and City As Theatre (CAT).

Within the showcases game designs and prototypes are being developed. Examples of these are the games Epidemic Menace (Crossmedia), Garden of Earthly Delights (Massively Multiplayer Reaching Out) and Day of the Figurines (City as Theatre).

This thesis was initially planned to be used in part for a deliverable within Work Package 4, Business and Organization, of IPerG. The tie to IPerG has faded over time due to reorganization within that project. The thesis is now considered to be a representation of the authors view only, without any particular target use, even though much of the background and earlier research is derived from IPerG. Of course, eventual results of this thesis are free to be used, cited or criticized by anyone who wants to do so.
Background

Literature and earlier research

The literature used as background for this thesis can basically be divided into three kinds. First there is literature that deals specifically with the research area of this thesis; business models for pervasive gaming. As will be shown, most of what has been written on this matter was found within the IPerG framework. Secondly, there is literature that deals with the various fields that make up the history of pervasive gaming. For this, a combination of web sources and white papers has been used. These will be referenced in their respective sections. Thirdly, literature on business theory has been used for a theoretical background.

The literature has been found through a combination of web searches, searches within white paper and e-book databases, through direct contacts with researchers within related fields and through library database searches.

The starting point used for this research was the summary of business and revenue models that had been done earlier within Work Package WP4: Business and Organisation of the IPerG project. The work done in this work package make up almost all material uncovered that deals directly with the object of this thesis. Studying of the WP4 deliverables therefore provided an initial insight in the current state of the research area and provided several useful leads on what direction the research should take.

The first deliverable of WP4, Deliverable D4.1: Business Guidelines, provides descriptions of some known business issues based on experience of the IPerG commercial partners (e.g. Nokia, Daydream, Sony). These experiences seem to be limited mainly to those made by Daydream (It’s Alive at the time) with the game Botfighters, although it is not explicitly stated so in the report. The main problem areas identified in this document are: the time factor of producing and selling a mobile pervasive game, end user density and end user acceptance. The time factor is determined by the many obstacles presented when setting up a distribution channel for a game. The main issue here is how to get the attention of a mobile operator, being a small creator of niche games. The report states that a time-frame of a year from first meeting until launch should be considered the best case scenario. End-user distribution and billing arrangements are other issues that need to be decided upon, in cooperation with the operator. End user density is an important factor to the producer of location-based pervasive games. The aim for the conscious game designer has to be that a game is fun to play even if you are the only player in the area. If the case is not so, the game will have trouble attracting any lasting player attention outside the most densely populated areas. This is especially true considering that the number of simultaneously active players in a mobile pervasive game is usually quite modest. End user acceptance is an important area to address when creating a pervasive game. The fact that most pervasive concepts will be seen as something new and perhaps unfamiliar to many first-time players needs to be taken into account. Any unnecessary technical details or settings need to be eliminated in order to make the game as accessible as possible. On the whole, this document provided less useful information than its follow-up, since its scope is limited to that of a Botfighters-type of game, although it introduced some useful terms and thoughts.
Deliverable D4.2: Business and Payment Models features, as stated in the title, a summary on business and payment models used traditionally within the gaming industry and also shows how pervasive gaming needs more complex or broad models than those being used today. Since pervasive games feature elements from a lot of different areas of gaming it is necessary to see what parts of the economical frameworks used for each of those areas transfer to the pervasive world. This document provided a good background, as well as several examples from many areas of the gaming industry, that helped in getting started on that sort of research. The conclusions drawn in Deliverable D4.2 as far as potential future business models seem to promote the idea of the pervasive producer, in a short-term perspective, being a tool in the toolbox of event marketing and production. The reasons given for this prediction/advice are mainly the limitations in temporal and geographical aspects of many pervasive ideas (e.g. many Alternate Reality Games). It seems to be the firm belief of the authors of this document that the most beneficial way to operate a pervasive business, at least when starting out, is with a business-to-business strategy in mind. The customers/targets would be shopping malls, hotels, event marketing bureaus, indoor and outdoor museums, archaeological sites, tourist agencies etc.

Deliverable D4.3: Market and Technology Watch, written by ex-Daydream producer Tom Söderlund and currently Daydream-employed Lars Andersen, is a rather comprehensive guide to technologies related to pervasive gaming. It also provides a list of past and current pervasive games and a section on portable gaming devices. The nature of the document makes it suitable mainly as a means of orientation within the technical aspects of pervasive gaming. However, it also points out a few trends within the world of digital gaming that may be fruitful to bear in mind. These include the increasing possibilities of self-distribution of games by its creators due to the penetration of broadband Internet and the opening up of the mobile market (i.e. operators losing some control of the mobile networks).

Apart from the IPerG documents, a lot of the literature referred to in this thesis consists of white papers related to pervasive gaming in general, or to specific examples of games or concepts. These have been useful from an orientation standpoint, and have helped in acquiring an outlook on the field of research within this thesis. Szulborski’s very ambitious e-book on Alternate Reality Games has been highly informative as he, apart from painting a picture of the history of ARG:s, while at the same time giving lots of design tips, also addresses several factors related to the business areas of such games. He points out several challenges facing the ARG designer who wants to make money, and also gives some suggestions on how to remedy those kinds of problems. The most useful, and time-tested, tip perhaps being embracing the world of marketing, connecting the game story to another product. Some other sources of revenue within a game that he identifies are the selling of game-related merchandise and holding web auctions with objects tied to the storyline. The latter suggestions, however, are mostly aimed to the smaller ARG producers, perhaps games managed by one single person, and don’t seem to apply to a high level game.

In the book Wireless Foresight (2003), Bo Karlsson et al. create four scenarios on what the mobile, or wireless, world will look like in 2015. Each scenario is based on different premises as to the development of technology, the future role of operators, various economical factors such as world conjuncture development etc. and also a number of other variables such as ecological and environmental issues. This book was an interesting read and made clear the importance of keeping in mind that the future of pervasive gaming probably walks hand-in-hand with the future of wireless networks and applications. Within the scenarios, several gaming ideas are mentioned, one including a set of goggles projecting 3D images on the players retina. However, these kinds of ideas in the book seem to be limited to the scenarios in which wireless connectability is not a scarce or expensive resource.
In *Digital Capital* (2000), Tapscott D et al., an extensive insight into the new economy and ways in which to respond to it, is presented. Through the concept of ‘business webs’ it is shown how the infrastructure is changing within the industrial world, and how traditional roles are being blurred. The authors stress the importance for firms to ‘disaggregate’ and ‘reaggregate’ their business models in order to make good use of the dynamics of the emerging ‘virtual Agora’, to use their words. This book provided both a good background on the historical development of business models as well as the challenge of creating business models for the ‘new economy’.

IGDA, the *International Game Developers Association*, have a special interest group on mobile games and published a very useful report, *2005 Mobile Games Whitepaper*, on the mobile gaming industry following their summit of 2005. This paper has been used in this thesis mainly for an overview of the mobile value chain, but also for sections dealing with best practice methods and future recommendations. This paper will be referred to simply as *IGDA 2005* throughout this report.

mGain, an EU project on *Mobile Entertainment Industry and Culture*, have also produced a series of useful papers. For this thesis much valuable information, particularly on mobile business models, was found in their deliverable D5.2.1, *Business Models*. This paper will hereafter be referred to as *mGain 2003*.

**History of pervasive gaming**

It is not self-evident exactly what goes into the history of this genre of gaming. As the name of the genre denotes certain design features that let the players immerse their lives into a game it is not possible to point to a specific thing, like the evolution of a certain technology, as decisive in its history. However, the earliest and most natural predecessor of the pervasive games of today is *role playing*. Therefore the history section begins with a brief description of this genre. The section on role playing is followed by descriptions of games within the genres *Alternate Reality Gaming (ARG)* and *mobile pervasive games*. These genres, or sub-genres of pervasive gaming, are the ones that can show the most examples of games that have actually been played on a wider level. Although these genres have histories of their own, originating in fields such as advertising and computer gaming, no explicit account of those will be given here. The section is closed off with descriptions of games based on *treasure hunt* ideas. Some of which uses GPS positioning as an element, and some using pictures and written clues published on the web.

**Role playing**

Many pervasive games are closely related to the field of role playing, oftentimes having the player’s character merge with a fictional character, or having the game being very highly monitored in real time, just like traditional role playing games (RPG’s). Here follows a brief history of these kinds of games. Although many examples of older variants of role play exist,
such as reenactments of historical battles at European courts, this section will deal with more modern instances that show a clear line into the pervasive games of today. It is also worth remembering that role playing is a widely used educational and psycho-therapeutical method.

**War games**

In 1913 author H.G. Wells published the book *Little Wars* in which rules for a war simulation game were set up. The aim was to create a more extensive framework for children who wanted to engage in battles with their toy soldiers. From this a more adult movement emerged in which historical battles were re-enacted. Around 1960 the first signs of Role Playing Games as we like to think of them now emerged. At the University of Minnesota the wargaming society started acting out scenarios based on a set of rules published by game designer Gary Gygax in his publication *Chainmail*. These rules were based on a medieval environment and also featured possibilities to expand the game with elements of fantasy, such as dragons and wizards. Although the game play still featured boards and miniatures, elements of fantastic narrative were now more emphasized ([http://www.hmgs.org](http://www.hmgs.org)).

**Dungeons & Dragons**

In 1974 Gary Gygax published *Dungeons & Dragons (D&D)*. He did not expect to sell a lot of copies, but the game soon had attracted a huge cult following in the United States. It took almost a year for the first 1000 copies to sell out but. By 1979, D&D was selling at 7000 copies a month. The game was largely inspired by fantasy literature such as the works of Tolkien and Lovecraft and incorporated many elements from those worlds into its own game universe. The game, in its original form was comprised of three booklets containing rules, characters, creatures, spells and other game elements. D&D used a lot of the material comprising the earlier Chainmail game, to a point that actually made the game almost impossible to penetrate for first time players who were assumed to know the rules of its predecessor.

Many tried to copy the success of D&D by publishing their own incarnations of the game under different names. Noteworthy examples are Tunnels & Trolls (1975) and Chivalry & Sorcery (1976). ([http://en.wikipedia.org/wiki/Dungeons_and_dragons](http://en.wikipedia.org/wiki/Dungeons_and_dragons)).

**Computer Role Playing Games**

The world of D&D and its variant of role playing have continued to live on in computer games, at first in simple text based versions called *Multiple User Dungeons (MUDs)* and later in graphical pc and console games such as the *Final Fantasy* series among many others. Today most games are being played in multiplayer modes, using Internet connections to let players from all over the world meet to cooperate or fight each other. These games are often referred to as *Massively Multiplayer Online Games*, or *MMOGs*. Some of the more popular MMOGs are *Neverwinter Nights*, *World of Warcraft* and *EverQuest*. ([http://en.wikipedia.org/wiki/Computer_RPG#History](http://en.wikipedia.org/wiki/Computer_RPG#History))
Live Action Role Playing

Live action role playing, or LARP, is essentially a traditional RPG acted out in the real world. Instead of saying that “my character does this or that”, the player acts out all actions physically. The game usually takes place at a previously prepared location, a “setting”. The setting is usually decorated to resemble the time period and situation in which the game session takes place. The focus of these games is often on social interaction and role taking. This allows the player to try out a completely different character and also act its characteristics in the physical world. ([http://en.wikipedia.org/wiki/Live_action_role_playing](http://en.wikipedia.org/wiki/Live_action_role_playing))

It is difficult to say for sure when these games occurred for the first time. It is even possible to see simple childhood play as being a basic form of LARP. However, the first organized playing of these games as we think of them today occurred in USA during the 70’s and in Europe during the early 80’s. ([http://en.wikipedia.org/wiki/History_of_live_role-playing](http://en.wikipedia.org/wiki/History_of_live_role-playing))

LARP is a separate research area within IPerG under the name eLARP, short for “enhanced Live Action Role Playing”. This research deals with ways of enhancing traditional LARPs with today’s technology. The main objective being how magic and supernatural phenomena can be simulated using for example wireless communication.

Alternate reality games

The second genre thought to be important to the history of pervasive gaming is *Alternate Reality Gaming (ARG)*. Games within this genre largely take place on the Internet and are often made up of a network of websites, blogs and other phenomena that together tell some sort of story that it is up to the player, or rather the players since cooperation is essential in these games, to uncover and decipher. The problem with these types of games from a business standpoint is that a large part of the idea of most of these games is that the player shouldn’t be certain of whether he or she is actually playing a game or not. It is therefore difficult to actually charge any kind of fee for taking part in the gaming experience. Even the more serious attempts in this genre, like the game Majestic by Electronic Arts, have had difficulties generating enough revenue to successfully sustain the game for a longer period of time. Instead, the most successful games have been the ones that have been sponsored by a company as a means of advertising a certain product. The most well known examples of this phenomenon include The Beast (a Warner advertisement for the movie AI), I love Bees (a Microsoft advertising campaign for the X-Box game Halo 2) and Art of the Heist (sponsored by Audi). However, as we shall see there are interesting ideas on how to generate some revenue through these games.

Majestic

Majestic was launched on in July of 2001 by Electonic Arts (EA). The tagline of the game was “it plays you”. Basically, Majestic was a “game about a game”, the story being that something goes wrong with the game itself, drawing the player into a world of conspiracy and hidden meaning. Within a short period after launching the game, EA issued a press release stating that the game had to be shut down. It was then the task of the player to find out the reasons for this shutdown and also uncover the circumstances around the disappearance of the game designer.
The initial pilot of the game was free but it required a subscription fee of US$ 9.99 per month for further play.

The game was played using various modes of communication such as telephone, fax and instant messenger programs apart from the proprietary game interface. Through these channels the player received video and audio clues, as well as addresses of fake websites and other things. This was one of the first digital games to challenge the boundary spaces of personal life and game character. The disturbing nature of some of the content, in conjunction with the September 11th incident of 2001 proved the game to be a little too intrusive to many players’ tastes. This, in combination with the game not attracting enough players to start with, caused the game to be withdrawn prematurely (Taylor and Kolko 2003).

The Beast

The first successful game within the ARG genre, The Beast, was part of a marketing campaign for the movie AI: Artificial Intelligence, directed by Stanley Kubrick and Steven Spielberg, and created quite a stir in the digital realm of that time. Most of the people who participated in the game had followed a lead given in the trailers and posters for the film, where a Jeanine Salla is credited as "Sentient machine therapist". By doing Internet searches on her name and following subsequently given clues it was found out that she was the key to the unsolved murder of Evan Chan; who he was, or why he was murdered, seemed to be up to the players to find out. Many of the players joined forces and created community called the Cloudmakers (http://www.cloudmakers.org) which towards the end consisted of more than seven thousand people (cloudmakers.org). Nowadays, collaboration is considered to be one of the most important virtues of this type of game.

The story of the game took place in the future, in a game-universe that was inspired by the film, and the trail the players followed was made up by a large web of Internet pages, blogs and puzzles. The game also required people to make phone calls and receive faxes, as well as sending a lot of e-mails, in order to receive clues. On a more than one occasion Eliza chat-bots were used in order to reveal information to the players (cloudmakers.org). Within four months of the founding of the problem-solving group the game was officially considered solved. Websites related to the game attracted nearly three million unique visitors (Lee in Kim 2005:2), a proof that the marketing campaign had been successful in attracting attention.

I Love Bees

Another successful game within this genre was I Love Bees, launched in 2004. As mentioned earlier, the game was, just like The Beast, a marketing tool. This time the object of the campaign was the Xbox-game Halo 2 by Microsoft.

The game was ignited when twenty representatives from the digital games industry received FedEx packages each containing a bottle of honey. Within the bottles nine tiny letters spelling out “I-L-O-V-E-B-E-E-S” were submerged. One of these packages was sent to an editor of the ARG Network site, who immediately told of this event at their homepage. Shortly thereafter the movie trailer for Halo 2 started showing in theaters and within this trailer the Internet address
www.ilovebees.com was shown for a split second. Those who visited this website found that it seemed to have been taken over by some sort of virus, or artificial intelligence program rather.

It took a few weeks before people uncovered the objective of the strange website, but it was eventually found out that the program originated from a space craft that had crash-landed on earth and actually belonged to another time and place; the Halo game universe. It was found that the name of the program was *The Operator* and that it was chased by another program from the Halo universe called *The Covenant*. The players learned that they needed to gather a crew for the crashed spaceship and activate a strange artifact called *The Artifact*.

Within three months of its launch, the game was officially solved. According to the design team of the game, the player base grew exponentially throughout the twelve weeks it was being played, rendering an impressive number of three million players (Lee in Kim 2005:8). What level of participation it takes to be considered an active player in the eyes of the designers is not perfectly clear.

The core storytelling device in this game was similar to a radio drama, but was delivered in fragments to payphones around the country. Players recorded and gathered these clips and collectively placed them in the correct sequence. Some of these clips also occurred on the web, cleverly hidden within image files. Alongside with this, information occurred in more common ways; through blogs, websites etc. However, the use of physical world devices was more heavily emphasized in this game than in previous ARG’s.

**Perplex City**

Perplex City is an ARG which is currently being played by close to fifteen thousand players around the world. The game combines many previously known elements from the ARG genre, such as phony blogs and webpages, with their own unique element: physical playing cards which can be purchased in stores or ordered over the Internet. Most of the physical stores selling the cards are located in Great Britain, since the game company is London-based, although there are stores in other parts of the world, including Sweden, who sell the cards. The cards feature clever puzzles of varying difficulty and type. There are some that require advanced cryptography knowledge as well those that appeal more to common wit and creativity. A characteristic the game shares with many of its predecessors is the element of player cooperation, or ‘coopetition’ ,rather, since they also compete against each other. Since there is only a finite set of cards available (132 at the time of writing, 256 will be out in the end (perplexcity.com)) it is not possible to present each player with a unique puzzle, instead a silver scratch-off panel is used in order to give each card its unique id that the player can use when attempting to claim points for solving the card.

The game story tells of a mysterious cube from another world which has been hidden somewhere on earth. The cube was stolen during the annual ball of the Perplex City Academy, located in this other world, and very few clues were to be found regarding the perpetrators of this crime. Throughout a series of events, however, clues have subsequently been emerging, clues that can be uncovered and decoded by people here on earth. The clues are to be found both by means of the aforementioned cards and by following leads within the digital realm. There have also been live events arranged in the cities of London and New York during February of 2006. The New York event was a head-to-head game of wits whereas the London event was a
team-based scavenger hunt taking place in the central parts of the city. The player who finally ends up finding the cube will be awarded a cash prize of two hundred thousand dollars.

This game is interesting from a business standpoint for several reasons. Firstly the added element of the playing cards provides a source of income for the creators, something which has been hard to incorporate in previous ARGs not tied to an advertising campaign. Secondly, the game play has been subdivided into several types of player action. There is the traditional element of scouring the Internet, as well as the live event feature, also previously used in similar games, notably *I Love Bees*. Perplex City also use Podcasts as a new and interesting way to distribute new chapters of the story. The playing cards add yet another element to the game, they provide the players with physical artifacts that can anchor the game in their daily lives in a, to ARGs, previously unexploited way. The cards can be brought along to the coffee shop or to the cocktail party where they can stir up interest in the game and cause people to become involved in playing as they try to solve the cards. This means that even though you might not be interested in fully engaging in the game as a whole, there are parts of the game that stand for themselves and can be played independently of the full story. Perhaps this is a good lesson for other ARG designers who cannot generate enough interest in their games. This is certainly something that has been a conscious choice of the designers. On the homepage of the game it is easy to access an extensive summary of the game so far, and they stress the fact that it is never to late to join in (perplexcity.com).

**Mobile games**

Another subgenre that can actually show a few examples of commercially tested games is a genre that, at least within the IPerG research community, has been labelled *Massively Multiplayer Reaching Out*, or MMRO for short. The idea behind this type of games is to use experiences and concepts from the online gaming area but to use mobile technology to partly move these out into the physical world. This harmonizes with the pervasive concept of designing games in manners that make them ambiguous in certain ways; location wise, socially, temporally etc. In this case the ambiguity obviously lies in the location aspect. The games take place in a virtual world, in a physical reflection of it or in the actual real world. The most relevant example from this genre is, from a Swedish point of view, the game Botfighters.

**Botfighters**

*Botfighters* was created by Swedish company *It’s Alive* who launched it in 2001. In this game players fired missiles at each other via text messaging technology. The game used real world positions to determine the location of the players’ bots (short for robots) and to calculate whether the missiles that were fired hit their target or not. Each virtual location had its corresponding physical location which meant that the players had to move around in the real world in order for the bots to move in the game universe. The positioning was carried out by means of a cell-based technology that triangulates the player’s position through time differences in his connections to surrounding GSM base stations. The player interaction consisted of simple SMS commands such as “hunt”, which generated a list of bots within a certain range, or “search” which could be used to find out the location of a specific bot.
Since the game was SMS based it soon got rather expensive for active players, a fact that probably limited the base of such participants. According to Tom Söderlund, co-founder of It’s Alive and producer of the game, they fought hard with Telia, the operator who distributed the game, to introduce a better payment model that would encourage more people to play the game actively. The ideal solution would, according to Söderlund, be a subscription solution much similar to those of today’s popular MMOG games. This was, however, not possible to carry out with this version of the game, but was the model intended for the second version of the game, Botfighters 2, which has not yet been released. Other alternatives suggested were a lower SMS fee, or an upper limit for how much money a player could spend each month. More on this topic can be found in the chapter *A closer look on Botfighters.*

**Geocaching**

Geocaching is a term that refers to an adventurous type of game, or treasure hunt rather, in which participants use GPS units to find locations on which so called ‘geocaches’ have been hidden by the creator for them to find. The term ‘cache’ is taken from the hiking/camping world in which a cache is a container in which food is usually stored. The rules of the game state that the finder of the cache, apart from acquiring the contents of it, has to leave something for the next finder. That way the same coordinates, and the same cache, can be used over and over. The founder of a cache usually leaves a logbook in which he or she can provide the finders with all sorts of information, such as nearby attractions or a good joke, it also custom for the finder to add something to the logbook in return. ([http://www.geocaching.com](http://www.geocaching.com))

**Jeep 4x4 Geocaching Challenge**

One of the more popular geocaching games was the Jeep 4x4 Geocaching Challenge. To take part in this game the player first had to locate one of the 42 “traveling bugs” that had been hidden in geocaches throughout the United States. The traveling bugs were miniature jeeps that had unique tracking numbers and were to be moved to certain locations sequentially by the finder. The game was, of course, very much a Jeep advertising campaign but nevertheless a powerful and adventurous experience for the participants. ([http://www.jeep.geocaching.com](http://www.jeep.geocaching.com))

**Titta va ja hitta (Look what I found)**

Tittavajahitta ([http://www.tittavajahitta.se](http://www.tittavajahitta.se)), is a Swedish website for treasure hunters and treasure hiders on which clues for treasures that have been hidden are published. It is not by definition a geocaching game, but due to the similarities it is included here. The treasures usually consist of small amounts of cash that have been donated by the hiders or by sponsors. The clues can be of any kind, but are usually given in the form of images accompanied by written clues. The site was founded on a non-profit basis, but uses on-site advertising as a means of sustaining the game. Although no positioning technology is being used (so far) the game, or activity, is very much in the geocaching tradition of generously giving time, money and creativity in order for the others to have a fun experience.
Existing business models and value chains

In this section the most important business models and value chains of the digital games industry and related areas are listed. The section begins with an attempt to define some important terms and continues with examples from the computer and mobile games industries, as well as a short subsection on the field of advergaming. A brief description of the events industry has been included as well since it may be of later importance.

Background and definitions

In order to better understand the concepts of business models and value chains, and facilitate further reading of this document, descriptions and definitions of those are presented here.

Business model

The term business model is notoriously hard to define, the main problem being what to include in it. Some definitions are very broad, in the manner of “how a company makes money” and some are much more detailed. For the work made within this thesis one of the most commonly accepted definitions will be used as reference, although the word business model sometimes will be used to describe only parts of the actual model.

Definition:

Adrian Slywotzky, Managing Director of Mercer Management and author of many books on the subjects of business models, profitability etc., defines business model as:

“The totality of how a company selects its customers, defines and differentiates its offerings (or response), defines the tasks it will perform itself and those it will outsource, configures its resources, goes to market, creates utility for customers and captures profits. It is the entire system for delivering utility to customers and earning a profit from that activity.”

(Tapscott 2000:10)

This definition is one of the most widely accepted, and will be the one used as a reference throughout this thesis. However, there are situations, especially when making predictions on future models, when not all of the aspects included in the definition can be considered. Therefore the model, in a way, serves as a goal to fulfill when creating possible future models. This goal will be attempted to be met to the highest degree possible.

One of the first trends to shape the way business models have been designed, leading away from the simple shop keeper model, was that of vertical integration. For example, the Henry Ford Motor Company not only possessed automotive assembly plants, but also incorporated their very own rubber plantations and marine transportation fleets into the company structure (Tapscott 2000:13). This way of business design holds somewhat true still today, let’s for example consider newspapers owning their own printing plants or a dairy producer keeping its own transport system within the company. However, this is not always the most efficient way to go. Nobel Prize laureate Ronald Coase has presented the idea that a company will tend to grow to the point were the return of incorporating structures into the company equals the return of outsourcing the services to other firms. Therefore, it proves important for the business leader to
make the right decisions as to what to do within the firm and what to leave for others to do. For the genre of pervasive gaming, which is potentially subjected to a diversified production and distribution process this becomes an even more crucial point to consider.

As the twentieth century progressed, and communication technologies evolved, the costs and complexity of making transactions between businesses was dramatically lowered. It turned out that those companies who did not adapt to this change and reorganized their business structure went into a crisis. Today, with the Internet being the primary means of communication and the primary place for customer transactions to take place, many new business models have appeared. These are characterized by being highly agile, adaptable and cooperation-based. Producers, distributors, service providers, infrastructure providers and end customers form networks of relations and transactions that each has to compete with other networks in the same industry. Tapscott et al. call these networks *business webs* (b-webs for short). A company may offer a service or a physical product, but the offerings are in either case embedded in a system of activities and relationships that sum up the company’s business design (Tapscott 2000:10).

**Value chain**

The concept of value chains was popularized by Michael Porter through his book *Competitive Advantage: Creating and Sustaining Superior Performance* (1985). This concept categorizes the value-adding activities a company performs during the course of delivering its product or service. Such activities include production, logistics, research, marketing and many others, and determine how much perceived or real value is added to the product by the company. As an example, a tree in the forest is cut down by a harvester who then converts it into a log, adding value to it. It is the sawn into planks at a saw mill, further increasing the value of the raw material. From there value is added in several more steps until the wood has become a house, a chair or whatever else its final stage may be. In the world of computer gaming, a product will most often start with an idea. As the idea has been put down on paper to form a manuscript its value has increased. A playable prototype of the game could be the next step onto the finished game, whose value is even further increased through marketing and other means of leveraging the value of the original idea. A different starting point could be a new technology or platform, whose value is increased by the introduction of playable content. Evidently someone has to perform these value-adding tasks, and this is where it becomes important for a company to decide to do within the company, and what to out-source. It is also important to see what chains can be formed within the industry (intra-industrial), and in what ways they can reach outside the industry (inter-industrial). The computer games industry collaborating with the advertising industry to create advertising games is an example of such an “inter-industrial” value chain.

**Definition:**

“*Value chains design, produce, and deliver products or services to meet a specific set of customer needs ... Through a sequence of steps, value chains transform raw materials – atoms in the physical world and bits in the electronic world – into finished goods to points of distribution ... Value is added each step of the way, from the extraction of raw materials through to customer fulfillment.*” (Tapscott 2000:95)

Apart from the value chains, which work mostly in the vertical direction, and were originally conceived for companies producing physical products, the concept of value nets, which include the horizontal direction, is of interest to the business side of pervasive gaming. Due to the often unusual ideas and organizations required within the genre it seems important to form networks,
or even mergers, of actors who possess separate vertical chains. In the mobile gaming industry especially, horizontal integration is still quite common as many companies when starting out are quite small. Small companies tend to be bought by slightly larger companies who already have formed the necessary vertical relations. One example of this is Daydream, in mobile gaming terms a large company, which during its course has bought a number of smaller game studios such as It’s Alive, Unique and E-Game. Daydream also integrated companies working with Internet payment solutions, music recording and investment planning in order to gain access to those competences, in forms that were already organized. A natural step to take for Daydream during this evolutionary phase was to change its focus from externally to internally financed productions, and also taking on more of a publisher role (http://www.daydream.se).

In Nalebuff B and Brandenburger A’s book Co-opetition (1996) the term “complementor” is proposed for people and companies who supply complementary goods and services to a company. The book is based on game theory, and the authors use five basic elements thereof in their analysis of the world of business, the players, the added value they can supply, the rules of the game, tactics and the range of the game (Nalebuff B, Brandenburger A 1996:19). The traditional image of a business model moves mainly, as said earlier, in the vertical direction, that is supplier – company – customer. Nalebuff and Brandenburger, instead, stress the horizontal direction (that in their model consists of competitors – company – complementors). Both the vertical and the horizontal directions will be taken into consideration for the models proposed based on the results of this thesis. However in some industries, particularly the mobile entertainment industry, the value webs tend to be incredibly complex meaning that most theoretical models will be very impractical to apply on real world cases (mGain 2003:8).

Another term frequently used is revenue model. The revenue model basically determines how the company obtains its revenue streams, be it through premium SMS, subscription fees, store sales or something else. The revenue model can be seen as a part of the business model (see for example mGain 2003:9). The revenue model is usually interpreted as to encompass the way revenue is shared by the involved parties as well, whereas the term payment model is often used to describe in which way, when and how often, the customer pays for the product or service.

Examples

Here follows a section featuring examples of existing business models from various industries. The aim is to show how businesses are currently being organized within the industries that pervasive games currently exist, and potentially will exist in.

Computer games

The traditional business model/value chain for the computer games industry is the studio – publisher model (or developer – publisher model) (Söderlund T et al. 2005:8) see fig.1. In this model a group of talented individuals, acting on a sub-contract with a publisher, get together and create a game. The financial risk is assumed by the publisher, who in return gets the major share of the generated revenue.
A good example of the success of this model is Electronic Arts’ reliance on external studios to produce the games published by them. For instance, the highly successful games in the Battlefield series were produced by Digital Illusions, the largest Swedish computer games development studio (as a disclaimer, however, it should be mentioned that Digital Illusions were later bought up by EA now making them an actual part of that company). Through this arrangement game studios can gain access to the extensive distribution channels of the large publishers, not having to worry about the aspects of marketing, pricing and packaging. The publisher does not have to employ a full-time development work force within their own company and doesn’t necessarily have to spend any effort on their own on developing new ideas; rather they can concentrate on picking out interesting concepts created by game designers within external studios. This model presents a challenge in compromise since each party tries to extract as much value as possible out of the value chain while keeping the risk to their own organization at a minimum (IGDA 2004:15).

Another popular model within the computer games industry is the self publishing model (Söderlund T et al. 2005:9). This model implies a company that performs all the aforementioned chores within their own company. The company employs their own staff of programmers, designers and artists apart from the work force needed for the administrative tasks of delivering the game to the end consumers. This model is probably not suited for smaller game developers, and certainly not when the distribution is tied to a physical media storage unit. This model, however, appears to work well for developers of smaller games. A good example of this are browser-based on-line games, such as Hattrick (http://www.hattrick.org), where the task of physical distribution does not exist and the marketing is largely carried out in a community, or word-of-mouth fashion.

Today, the business model of computer games have shifted towards on-line distribution for larger scale games as well, largely due to the wide-spread availability of high-speed Internet connections. The same trend has also shifted the gaming industry to become more service oriented; this brings us to the increasingly popular on-line distribution model. In this model, the studio – publisher model is often inherited, but the publisher uses Internet hosts and service
centers for the distribution and support of the game. Of course, the fact that so many games today take place in a shared digital world forces the game developers to also supply an infrastructure for network and data base connections needed for the shared gaming experience. This trend has forced many computer games companies to adopt a service model rather than the old retail model, making many organizational changes necessary (Jarett 2003:11).

Another observed business model is the hardware bundling model. Games such as Play Station titles EyeToy and Singstar come bundled with either cameras or microphones needed for playing the game (Ghellal 2005:1). The EyeToy games, for instance, use body movements and gestures as input for the interaction. However, third-party developers have not been overly keen to develop larger games for this sort of new hardware, instead Sony has bundled collections of mini games together as a sort of demonstration of what the device is capable of (Söderlund T et al. 2005:14).

The traditional distribution model within the computer games industry has been that of selling games tied to physical medium storage container (Ghellal 2005:1). This container has earlier, in the case of console games, been a plastic cartridge equipped with a memory chip or, in the case of computer games, floppy disks or CD-ROM discs. Nowadays almost all manufacturers use optical media such as DVD discs for the distribution of games.

Mobile games

The mobile content business models and value chains can be seen to come from two different industries, the mobile voice and the media/content industries (mGain 2003:6). Therefore many parts of the business models within this category have had to adapt to the framework of the mobile voice industry. Another point to keep in mind is that the use of the word “industry” sometimes is a bit unclear:

“The common use of the word “industry” within the media is very often far from its use in academic contexts. Porter’s (1980) definition of an industry, having a starting point in a supply-oriented perspective, is a group of companies that produces products or services that can be said to be close substitutes to each other. Using this definition the mobile entertainment market could probably be said to constitute of over twenty or thirty distinct industries ranging from development of operating systems to the production of mobile phones to the recording of a song.” (mGain 2003:6)

The issue of integrating several different industries into one value chain has proven to be especially problematic when it comes to payment models and similar issues. Since most of the game concepts that this thesis deals with include the mobile phone I will go a bit further in depth on this subject. In IGDA 2005 a good overview of the mobile value chain is presented.

The mobile value chain:

IP (Intellectual Property) Owner

The IP owner can be either the publisher, the development studio itself or someone else. It is rather common, as in other areas of gaming, that the concept for the game is derived from a
licensed brand. This could either be a movie, a book, a TV series or anything else that provides a basis for a game.

Game Developer

The developer’s role in the mobile game business is very similar to that of the traditional video game business. The obvious difference is that the games being developed need to be able to run on a large variety of different handsets with differences in API’s, screen sizes and resolutions, processing power etc. This means that several different versions of each game have to be created, so called “reference builds” (IGDA 2005:9). One of the biggest challenges that exist for developers of mobile games, apart from making their games work on all kinds of phones, is the lack of power they possess in comparison to the carriers, or operators.

Porting Service

Not all developers are able to carry out the extensive modifications and testing required in making their games work on all handsets. Oftentimes developers also need to consider localization issues, such as providing several different language modes within the games. These tasks can, instead, be completed by specialized firms dealing with such issues.

Game Publisher/Aggregator

The business model of the game publisher is to either create IP or acquire IP rights and then make sure that these are exploited to their full potential by making them available on as many different handsets, and through as many carriers, as possible. Carriers tend to favor games that function on as many different handsets as possible, making the porting issue extremely important. The publisher, once it has decided to publish a certain game, see to the creation of game via either an in-house development team or a third-party developer. Of course, the publisher can also choose to publish games presented to them by external developers in the first place.

Handset Manufacturer

The handset manufacturers in the mobile industry are the equivalent of game console manufacturers. The handsets are equipped with different virtual machines or byte code run-time environments, the most common being Java (J2ME). They are further equipped with binary run-time environments, operative systems, where applications are stored in binary form (IGDA 2005:10). The handset manufacturers play an important role in enabling game technology that determines what types of games can be produced. As an example, the incorporation of 3D chipsets has made it possible to create games using more realistic environments, soon to approach those of other handheld gaming devices. The incorporation of GPS technology also makes it possible to create even more accurate location-based mobile games, a genre that up until now has used network-based technology to achieve that sort of experience. The largest players in this group, as far as global market share, are Nokia, Motorola, Sony Ericsson, Siemens, Panasonic and Samsung (IGDA 2005:10).

Carriers/Operators
The carriers, or operators, are undisputedly the biggest players of this field (IGDA refer to them as the “eight-hundred pound gorillas”). The reason for their importance is that there is no real alternative to using them in getting the game into the device, apart from having them pre-installed. Some carriers work on a national or regional level and some are active internationally as well. The carriers are often mentioned, as we will see in the interviews, as a bit of a decelerator of the game evolution. This has to do mainly with the fact that they, unlike most other actors in the mobile gaming value chain, don’t have to rely on income from games to survive.

Independent Channels
Independent channels are those who distribute games apart from the carriers. These usually carry out their business using WAP and SMS technologies and are often run by device manufacturers who want to make sure that there is always content available for all their phone models.

Consumer
With consumers, of course, is meant the end buyers and potential players. These are not to be forgotten when designing a game. Consumer tests, target group analysis and marketing campaigns are all ways with which to judge the consumer attitudes towards a game.

Payment models
Mobile games, and the wireless purchase environment, facilitate a number of different billing models. These include (IGDA 2005):

- One time purchase – The game is purchased once and allows unlimited play.
- Time defined – The game can be used for a specified period of time.
- Usage defined – The game can be played for a certain number of sessions.
- Subscription – A, most commonly, monthly charge is paid.
- Multipack – A number of products are purchased. Can be time or usage defined.
- Free trials – The game can be played for a certain number of sessions or in a reduced way.
- Pay per play – A single gaming session is purchased.

The dominant models today are one time purchase and subscription. However the other forms of payment make possible many new and interesting ways to sell mobile games. The introduction of micro payments, for example, will provide the possibility of charging the player for content added to the game over time.

Within the software industry it is common to combine an up-front payment with a subscription. The subscription charge can be paid, for example, each year and gives the customer access to support, upgrades etc.

One recent trend is that traditional computer games companies such as Electronic Arts and Activision have entered the market of mobile gaming as a means of increasing revenue and make further use of their brands (IGDA 2005:7). This trend, alongside with the improvement taking place in handset capabilities, i.e. on-board 3D rendering and increased processing capabilities, and the improvement taking place in connectivity and carrier bandwidth is a sign that mobile gaming may very well become an entertainment form in its own right in the close future. This can be compared to the cycle of content improvement that took place on the
Internet, largely driven by widespread access to high speed, or broadband, Internet connections (IGDA 2005:8).

**Business models**

Within the mobile gaming industry, the *studio – publisher* model is still quite common. This model is usually extended with a second intermediary called *content aggregator*. The content aggregators do not, in most cases, work exclusively with games. However, since creation of mobile games are less costly and time consuming, many companies choose to take on many of the publishing chores as well, with internal financing of the production being common. In this case the model would be *studio/publisher – content aggregator*. The actual value chain often is much more complicated. To exemplify this, here is the value chain of the mobile game “*Who wants to be a Millionaire?*” as analyzed in mGain 2003:

Content/license owner – studio/publisher (game creation) – aggregator – studio/publisher (platform and maintenance) – operator – customer

Another example, taken from mGain 2003 as well, is that of the mobile service *Private Stars*. Private Stars is not a game, but rather a form of adult entertainment. This example is included in order to show the importance of SMS gateways in applications when the content has to be customized for each end user:

Content/license owner – studio/publisher – SMS gateway – operator – customer

The customer buys the content via a Premium SMS that specifies what content is requested. In this case the revenue is shared by all parties, with deals that apparently leave everyone unsatisfied except the operator, another indication that the operators are using their position to exploit other members of the value chain. In this case there also exist several different instances of SMS gateway – operator – customer relations because of the fact that not all customers subscribe to the same operator (mGain 2003:19).

Earlier mobile games would sometimes only consist of *studio – operator*. This, for example, was the case with *Botfighters*. This arrangement was a necessity since the game required a much more active and demanding role of the operator than what is common.

A recent trend, and a subject of much research and development at most mobile game producers, is that of integration of the mobile network with the Internet and all its wide variety of communication protocols. One example of such an effort is Kayak Live, a technology that “creates compelling user experiences by enabling applications to communicate handset to handset or handset to server across a wide range of mobile handsets, networks, and operator configurations” ([http://www.blaze.com/about_us/kayakSyner.html](http://www.blaze.com/about_us/kayakSyner.html)). These sorts of efforts are all good signs that connected pervasive play will be made easier to accomplish in the future.

**ARGs and Advergaming**
As we have seen in the description of previously launched ARGs there are basically three ways to finance a game. One is to have the player pay a subscription fee, like in the case of Majestic. This solution, if enough players are recruited, provides a predictable and even cash flow which lends itself well to games that will run for a long period of time. The drawback, as discussed earlier, is that this form of payment can impair the gaming experience if the idea is to make the game transparent in regards to the real world.

Another solution, as used by Perplex City, is to create an income based on sales of a physical product related to the game. This can be in the form of collecting cards, clothes or other forms of memorabilia. Possible future variants, possibly not tied to physical objects, of this could be connecting the game to comic, or other, books, sales of a TV series or DVDs recapturing the game story in some way.

Many of the game examples mentioned earlier in this document; I Love Bees, The Beast, Jeep Geocaching Challenge for example, actually fall within the advergaming genre. Essentially, advergaming implies the concept of using a game to get across a specific message, commercial, ideological, or something else (Söderlund et al. 2005:16). It doesn’t have to be the sole objective of the game. For example, product placement within games, such as a Mc Donald’s restaurant appearing in The Sims is but a small detail to the game as a whole. This concept turns games into a usable device for advertising bureaus or communications strategists alongside traditional media such as television or printed media. With TV-advertising losing about 12% of its audience a year while gaming, according to research, is mainly done during prime time TV hours (Brightman in Söderlund et al. 2005:17) it seems games as an advertising tool poses great potential.

Events

The reason events are mentioned here is that many pervasive games are thought to lend themselves to event-type situations. The event industry is fairly straightforward. Companies dedicated to planning events rely heavily on various suppliers of services such as catering, music, entertainment, facilities etc. There are of course several possible levels this can work on depending on the size and type of event. The most basic example would be something like a company throwing a party for its employees which contacts all the different suppliers by itself. Someone at the company contacts catering companies, music groups or DJs, facility owners etc. one by one.

Another example would be that the company hires a dedicated event company which in turn possesses a network of service providers. It is in this network a pervasive game company might find a place as a provider of entertainment, team building or competition services.

Yet another way that pervasive games may reach out by means of the event industry is to have a company specialized in supplying different pervasive experiences. This company may in turn hire their services from game producers or be specialized in arranging pervasive games themselves. This type of company could either manage all the contacts with potential customers by themselves or be part of the network of another event company. Of course, you have to keep in mind that each actor in the value chain wants a share of the generated revenue, meaning that you have to balance the benefits of an extensive network against the loss of revenue each intermediate instance of the value chain may cause.
Case: Botfighters

This section is based on an interview with Tom Söderlund, co-creator of Botfighters. The reason why a case study of Botfighters has been done is that it is practically the only commercial Swedish pervasive game to run over a considerably long time. The factors that led to its initial success, in terms of getting it onto the market, and its eventual disappearance are of course very interesting to this thesis. The interview has been divided into separate sections to make clear what areas were discussed.

Business model

In the case of Botfighters the business model wasn’t the first thing to be solved, according to Tom Söderlund. Rather, it was dictated by Telia, the operator to which It’s Alive had presented their idea. The payment was done through an SMS model, something that didn’t seem to fit the way the game was being played:

“When the game had been up-and-running for a while we saw similarities in the way it was being played with how MMOGs are run. Which led us to think that such a subscription based model would be better. We approached Telia with this idea but they found no way to use such a model since the game required SMS traffic.”

The game was financed through venture capital, something that is not that common in the mobile gaming business. He explains the reasons why he thinks they managed to attract this form of financing:

“It’s hard to say what is just good timing. This was during the spring and summer of 2000, and the “IT bubble” was already starting to give in. Perhaps being a game company even worked to our advantage; they might have thought our idea was interesting and exotic enough to stand out.”

The business model that was used for Botfighters is outlined in figure 3 below.
**Revenue model**

He admits that they hadn’t really thought too much in advance on how they would make money on the game but that they initially made good money licensing the game to the operator. After a while the *licensing model* was replaced with a *revenue share model* instead. He also says that if he got to do it again he would fight more for either a subscription model, lower SMS price or a maximum limit of how much it could cost. Indeed, the game got rather costly for those who played it heavily; one actual player says his worst phone bill was at around 15000 Kr (1500 Euros). Tom goes on to pinpoint one of the problems they faced:

“It wasn’t just a new game, it was a totally new kind of game. There were no pre-made models of how it should be packaged and sold. There was one other SMS game on the market, but that was a quiz game and much easier to package.”

This goes to show that the models which the operators use for the majority of their SMS, positioning, and other services most of the time do not fit in well pervasive and perhaps other games. Other SMS-based games, as Tom stated, were of shorter length and only required a series of perhaps ten messages to be sent. In Botfighters players would sometimes send hundreds of messages a day.

**Marketing**

The operator, Telia, was also responsible for most of the marketing being done. It was mainly used to advertise their new portal, Pocket Mobile, and it was also used in an event fashion during a summer music tour that was sponsored by Telia.

**Other business partners**
Other than by Telia, It’s Alive was promoted by Ericsson who used it to push their new positioning technology. Not many applications that used this existed and Botfighters provided a good way to show it off. In the same way It’s Alive worked with Mobilaris who had a software platform for positioning and other mobile services. Later on, with the planning of Botfighters 2, they worked with Tre, another Swedish operator. Apart from these technical co-operations, It’s Alive were close to landing a deal with MTG (a large Swedish media company) who would run TV commercials for the game for free but instead get a share of the revenue. According to Tom, Telia had a hard time agreeing on this, which meant that the deal never happened. He continues:

“In the case of Telia we had, in many ways, a shared ownership of the product. Telia were responsible for how the product was priced, sold and marketed. However, It’s Alive had a much greater interest in these co-operations than Telia did. Botfighters was our only product but only one of hundreds of products at Telia. That created a strange structure of incitement that prohibited us from developing the product in many ways.”

**The market today**

According to Tom the market has in many ways evolved to make the launching of games easier. Now there is a real value chain to talk about, whereas when Botfighters was launched there were basically just the game studio and the operator, apart from some kind of buy/sell instances that could hardly be compared to the publishers of today. Nowadays, he explains, there are large publishing houses even within the mobile industry who buy rights to for example movie brands and have those kinds of games created. However, he concludes, positioning remains an area with badly developed business models, technical problems and some legal issues remaining to be solved.

**Conclusion**

Although Botfighters in some ways was a remarkable success, it is evident that some bad decisions were made. Perhaps it was a necessity due to the positioning technology used, but giving away so many business crucial decisions to the operator was a huge disadvantage to It’s Alive. We have seen that it affected not only the pricing and payment of the game, but also how It’s Alive were unable to form beneficial partnerships with other companies during critical phases. Had they known in advance how the game was going to be played they could have presented a business plan of their own to Telia, who now got to decide how the game was going to be sold. Perhaps it would have been better to just set up a testing account with Telia and then perform a game study for, say, a month.

Botfighters was later launched in Finland, Russia and China, with especially the Russian version being much more successful than the Swedish. Swedish players of Botfighters also proved to be disappointed with It’s Alive, feeling that they had been abandoned. Perhaps It’s Alive felt that Botfighters could never work really well in Sweden under the current business arrangements and opted for international releases instead?
METHOD

Method

Two methods were used for this thesis; qualitative interviews and arranging a study of an actual game. The interviews are thought to make up a more predictive element within this work, whereas the game study was included in order to bring forth actual player experiences of a pervasive game. Apart from these two methods, a lot of information was of course gathered during through the literature studies described earlier.

Process

The task of examining the field of pervasive gaming, and what future market possibilities it may possess, proved to require a rather long start-up phase and lots of initial research. Even though some knowledge on the matter had been assimilated due to an earlier contribution to a chapter on pervasive gaming for the book Framtidens Datorspel (Computer Games of the Future), the need for a better grasp of the genre and the components that make up this field was evident. The vastness and diversity of this area required several limitations to be made and forced the research to focus on areas that, somewhat subjectively, were deemed more interesting than others. This step was also very important in order to be able to formulate a valid purpose for this document, and of course for the task of finding the proper resources to research. Another important decision that needed to be made was what theoretical framework to use for the organization and analysis of the research. The research area certainly implied the need for an insight into economical models of these sorts of business dynamics, although very little has been written on this specific subject earlier. However, much literature exists on the topic of business models for the ‘new’ economy, that is, the economy of the ‘information age’. Although not all pervasive concepts are directly related to the world of traditional digital games many of them extend at least some characteristics of that industry. It was therefore decided that the theoretical base of the thesis would be derived mainly from literature on models for web based businesses, and digital media in general. This base was then added on with the compilation of existing business models mainly within computer and mobile games presented earlier. The choice of interviews as a method felt natural. The idea to use the scenario approach, described below, came up in consultation with my advisor. Earlier ideas, such as using different questions for each interviewee depending on their field of expertise, were not thought to be as generalizable, and having input from several people on the same issues was considered very desirable. It was planned very early on that a gamy study should be included in the thesis as well. Several studies were being planned within IPerG which was thought to provide good opportunities to gain access to actual player experiences, and perhaps design the test in a manner that would generate good results. As all those studies were postponed or made impossible due to reorganizations and technical difficulties, the collaboration with Second Degree of Reality, creators of the game City Mission was begun instead. This game was finished, tested and easy to start playing.

In addition to these two methods it was decided to look deeper into the game Botfighters. Details on the game can be found in the chapter Mobile Games. Since this game is one of very few examples of actual commercial games it was deemed interesting to research how business had been carried out in this case and what factors led to its eventual disappearance from the Swedish game scene. This research consisted of an interview with Tom Söderlund who co-created the game and was involved with the running the business around it and also of the interviews with Botfighter players that were done by KTH Master’s student Martin Bjerver for his thesis, dealing with player behavior in Botfighters.

1 http://www.framtidensdatorspel.se/content/boken.htm
METHOD

Interviews

One of the methods used was qualitative interviews with representatives from the gaming and mobile industries, as well as with people working within the field of business planning and organization on a more general level. The reason for these choices is that it was believed to be important having interviewees that had either an experience of actually creating and/or selling games or had experience from judging the potential of business ideas as well as adapting these to the conditions of relevant industries. During the interviews the interviewees in some early cases answered and discussed a set of more general questions but mainly the goal was to have them react on a number of scenarios that had been adapted from the concepts that I during the phase of background research had evaluated to be most relevant to further research. The actual names of these games had been changed in order to avoid any preconceived notions of the concepts presented. The concepts had also been refined to make clear their unique characteristics. In the scenarios the interviewee was given the role of a newly hired business developer at a small company consisting of two to six people, depending on which concept the scenario was based on. They were then to tell what actions they were going to take, both in adapting the game design and the later stages of distribution, advertising etc.

Problems with the method

There are several possible problems with this research method. Firstly, there is the problem of choice of interviewees. How can one know that the persons I’ve interviewed are the best ones to survey? The way I reasoned on this matter was that I wanted the persons that probably would be the ones working with these games if they were to be realized, as well as, obviously, the few ones that had already been involved with producing pervasive games. I also wanted input from people who were not necessarily working within the gaming industry, but had experience from business planning and evaluation of business ideas. This approach, I figured would cover a good range of people that had competent, yet somewhat different, views on this field of digital media. Secondly, there was a risk of me missing out on, or misjudging, any possible business models. The approach used, to chose concepts thought promising or interesting by people within this research field, I could assume that they had some potential.

Thirdly, there was the problem of asking the right questions. At first I designed the interviews to include real examples for the scenarios. This was changed, as mentioned, after consultation with my advisor in order to avoid problems with bias on the interviewee’s part. The scenario approach was chosen in order to force the interviewee to think in a concrete manner about this concept. The ideal method could arguably have been working with focus groups. However, the logistic aspects of such a method made it impractical to use in this case.

Another fault that initially was made was asking questions that were not of any particular relevance to the purpose, but rather came from a general interest in the various working fields of the interviewees. This was corrected early on and an effort was thereafter made to find questions that would be more beneficial to the object of my thesis. This, as described earlier, was done by actually removing any interviewee specific questions from the interviews. Instead the focus was on the set of five game scenarios that had been constructed based on actual games that were thought to, collectively; represent the area of pervasive gaming.
METHOD

Studies

During the course of this thesis several studies were planned or proposed. A study on the IPerG showcase *Garden of Earthly Delights (GED)*, a Massively Multiplayer Reaching Out (MMRO) game by Work Package 10, was initiated but never completed for various, unclear, reasons. Hence, several weeks were spent on preparing focus group questions that were never actually used. The next study was to be a cooperative effort between KTH, IPerG and the Interactive Institute. This study was going to be made on a game created from scratch by IPerG Work Package 11 which works in the area of Live Action Role Playing (LARP). A few months were spent on preparing this study which was also cancelled due to a re-organization within IPerG. Instead, a study was done on the pervasive game *City Mission* by Swedish company Second Degree of Reality (for details see the Game Study chapter). The goal with this study was to carry out a game session with actual players and thereafter conduct focus groups to document the player experiences and extract opinions on, among other things, whether the players would consider to buy the game and, that being the case, how and where they would like to purchase it. In addition this game, in a neutralized form, made up one of the interview scenarios.

Problems with the method

The problems that arise with this method stem from the facts that the game is played for only a limited time and that the participants during focus groups may be willing to 'please' the arranger with his or her answers. Playing the game for a limited time, in this case over a weekend, may make it to be more of a special event in the player’s eyes, perhaps generating more enthusiasm than it would if it was played for a longer time. It is hard to find a good remedy for this, apart from either arranging a more drawn-out test. Being aware of this problem, however, the results can be interpreted with it in mind. The problem of getting truthful and nuanced results out of the focus groups was attempted to be remedied by encouraging the participants to bring up negative experiences as well.

Reliability

Reliability measures whether a research method will give the same results at different times during similar circumstances. If the research method is interviews or focus groups, as in my case, an unreliable question would be one that doesn’t produce the same answer every time it is asked. However, when the answer is based on a person’s opinion this factor doesn’t apply in the same way. In the way the questions were asked this was avoided as much as possible. For example, giving made up names, or no names at all, to the concepts presented was one action in that direction. One thing that was noticed early on, in spite of these efforts, while listening back to the tapes, was that the tone of voice changed in correspondence with what concepts I liked personally. This was, thereafter, corrected.

Validity
The concept of validity deals with whether a question or instrument measures what you think it does. Since most of the questions, or scenarios, were superseded with rather good descriptions and introductions, and the interviews were of an in-depth kind that provided lengthy answers, such an implication was believed to be avoided, or else it would have been detected. The interviews were recorded, which may have affected the results in certain ways. This never caused any great concern, however, since no signs implying such an effect were noticed. The main concern that did exist was whether the results extracted from the interviews could actually answer the bigger questions posed within the problem section. It was felt that apart from observing actual examples of commercially tested games (which was also done during basic research) this was the best available method. It also appeared that the questions or scenarios formulated were of a kind that would yield a viable result through expansive and thought-through answers.
Game Study and Interviews

When initially planning a method that would be good at determining what business models could help the various areas of pervasive gaming to achieve financial success a few aspects stood out as being tricky to address. First of all the method would have to have some predictive qualities. Secondly it should be based on actual player experiences. The study on City Mission is felt to address both of these criteria fairly well as the game was complete at the time of the study and that it was played in the way it is “supposed” to during the study. The study was initially planned to incorporate more players and be carried out for a longer time period, but due to some issues described below this was never practically possible. Botfighters is one of very few examples of actual, commercial, pervasive games. Therefore it has been included a brief section on how business was carried out on this occasion. The qualitative interviews following the study are intended to provide some predictive material on the future of pervasive gaming. More on how they were planned will follow, and was also covered in the method chapter.

Study on City Mission

In November 2005 a game study was carried out on the game City Mission (http://www.citymission.se), developed by Swedish game developers Second Degree of Reality (SDOR). The game study was a joint venture of SDOR, Swedish Institute of Computer Science (SICS) and KTH.

In City Mission, which is a mobile game that uses Cell ID positioning and the phone’s built-in camera, missions are created in advance either by the game designers or by players who have an idea for a mission (Cell ID positioning, to put it shortly is a technology that uses the position of the base station the handset is connected to in order to locate it). The mission creator takes pictures of various locations in a certain area and equips each picture with a clue that later on will hint the player in the right direction. Each picture is uploaded to the central game server along with the Cell ID coordinates of its location. It is up to the creator to come up with a theme or story that ties these places together in some sort of logical fashion. When starting the game, the player gets the picture of the first location sent to him or her. When the player believes the right location has been found, he or she submits a guess to the game server. If the coordinates match the ones of the current picture, the picture of the next location is sent to the player. The game continues in this way until all locations have been found. As an example, one of the missions created for the test featured pictures of four different murder and crime sites in Stockholm which the player was to locate. The current business model of City Mission is found in figure 2 below.
Test conditions

The initial plans for this game test were fairly extensive, with plans to engage a large number, say fifty to one hundred, of players for a longer period of time, one month or so. However, the positioning technology used required that the players had access to such a service. SDOR had previously set up such an account with Telia, a Swedish mobile operator, but very few of the people that signed up subscribed to this particular operator. An effort was made to create a deal with Tre, the operator with most subscribers in our group of volunteers, but this was never finalized. Instead, ten people got to play the game over one weekend, each equipped with a dedicated cell phone set up with the proper positioning service. The problems involved in contacts with operators are well known in the mobile gaming industry, and this is yet another example of that.

A collection of four missions had been created in advance, each taking place in central Stockholm, and each containing four separate locations. The missions had different themes ranging from criminal mysteries to public artwork. Of the ten people that played there was an equal mix of male and female participants and the age ranged from around 20 to 35. Most of the participants had tried out the game for at least one day, whereas some unfortunately did not find time to actually complete a mission. The actual gaming activities start with browsing the available missions, accepting a mission and receiving the first picture and clue. The players would then move through the city, submitting a guess when they thought they were close to the target.

The game test worked out well technically, although some issues regarding the somewhat low precision of the positioning arose. These issues consisted mainly of the players being able to guess the next location without knowing or even being close to it. Without going to deep on the matter this could be overcome by using better positioning, such as GPS, or by requiring some sort of feedback from the player confirming that they are really at the location. This could be,
for example, that the player has to answer to a question that can only be answered with information found around that place. “What is the price of today’s offer at the coffee shop?” could be such a question.

Focus groups

The focus groups were carried out on two occasions, each group involving 4-5 of the players. The sessions were filmed, and later transcribed. Moderators during the sessions were Mattias Svahn, SICS, and Karin Björken, KTH. Since the research areas of everyone involved were different, an effort was made to ask questions related to each area. The quotes presented below have been selected based on the fact that they in one way or another relate to the business aspects of the game. The goals, in reference to this thesis, with the focus groups were to determine:

- If the participants enjoyed playing the game
- If they would consider buying the game
- Where the players thought this game should be purchased
- What activities the game would compete with

The actual questions, relevant to this thesis, submitted to the focus groups were:

- What makes City Mission different from other games?
- Where do you see the game being sold?
- How much should the game cost to play?
- Who is the typical City Mission player?
- What features does the perfect mobile phone have?

Results

On the question of where/how to purchase the game most participants thought of City Mission as a downloadable or pre-installed game, much like traditional mobile games. Here are some quotes as an illustration of that:

“Right now it feels like something you’d download. A box in the store doesn’t feel right”

---

“I would try to download it, or perhaps it could come with the phone”

As far as how to pay for the initial download the most common view was that it should be charged to the credit card, indicating that most people see that as a safe way to perform
transactions nowadays. However, one of the participants expressed an unwillingness to download the game actively:

"It takes a lot of effort to care to download something. I probably wouldn’t bother"

And some participants thought the game could be sold in stores:

“Not just for download, boxes as well”

---

"Onoff (Swedish electronics chain) with it’s own box perhaps. Could be sold both in the phones- and in the games departments"

Most of the participants responded positively on the question of whether City Mission is a game they could see themselves purchasing. Some of the reasons for this seem to stem from the things that separate City Mission from other available games and mobile products:

“Yes, other things you download are more like decorations you don’t really need. CM is more of an actual activity”

---

"Normally you can always play something better on the computer. City Mission is unique"

As to how much the game would cost to play, most thought every guess should be about the same cost as an SMS. However, some thought it should be bought on a per mission basis instead:

“Five kronor to play a complete mission would probably be a good way to do it”

Given the fact that the players have to walk a lot in order to play the game, the possibility of giving the game a fitness image was pondered. The question “could you see it being bought at Friskis & Svettis (a Swedish fitness chain)?” was asked. The participants didn’t respond to well to this idea and did not seem to fully acknowledge this connection. “I don’t associate the cell phone with working out” was a typical response to this idea.

The idea of selling the game at a coffee shop, like Wayne’s Coffee, seemed a better idea to the participants, “Why not have a mission that results in the player getting a latte afterwards?” was one of the more positive responses to this idea. The idea of selling a boxed version of the game in a computer games store was discussed but dismissed due to the light-weight character of a mobile game.

The participants, as exemplified in the above quotes, seemed open to the idea of connecting the game to an existing brand, such as a coffee shop. This, of course, provides a potential way of financing the game, making it less costly for the individual player. The game could hereby provide an interesting business and advertising opportunity for the brand in question.
Regarding the question of what activities the game would compete with, and therefore what kind of activity the game itself can be seen as; most participants seemed to see the game as being event-related, illustrated by the below quotes:

“I thought a lot about ways to use the game. It could be a party- or tourist kind of thing. It’s a good reason to take a walk in the sun”

Many of the participants actually thought this would be a necessity in order to get people to play it. Below are two such quotes:

“I think it would have to be connected to some sort of event. I don’t think you would create a mission for your friends otherwise”

“It is narrow, hard to sell to the general public. Hard to sell to those who want recreation and relax with something entertaining. However, I can imagine tight communities being created among those who do play”

Many of the participants acknowledged the idea of using the game as an educational tool since it can be filled with all sorts of content from various contexts

“The game could be filled with all sorts of things to fit in to various circumstances”

“It could be made more like a quiz walk”

“Potentially a very tricky quiz game. You could challenge friends on who can make the trickiest mission”

It is worth mentioning that SDor have operated with this idea in mind for the first few, successful, sales of the game. The game was, for example, sold in as a means for the employees of a large insurance company to find the location of a dinner party that was held. The idea of using the game as a tourist tool, mentioned in the focus groups, was also spontaneously brought out by Johan Nordquist at Aspiro during the interview that was done with him. This will be discussed further in the interview section.

“Then it would be good to have some sort of feedback on where other players are”

“It was a lot more fun when I knew that people I know were playing at the same time”

On the question of who the typical City mission player is:
“Lives in a big city”
---
“Perhaps a couple”
---
“Saturday pastime for couples”
---
“Not for those with a tight schedule”

Conclusions of the City Mission game study

Despite some technical issues and some participants not thoroughly testing it, the game proved a positive experience for most players. The concept was entirely new to the players so there was naturally some confusion as to what make of it. However, which is important, the game ignited thoughts among the players on how it could be used. Some of the ideas were (as shown in the quotes).

- Game played during a particular event
- Tourism/sightseeing tool
- Teaching aid

The participants seemed unsure of whether the game could attract casual players, not tied to an event. Some of the problems identified or experienced by the players were:

- The game feels narrow
- The game is time consuming
- It is not self-evident where the game should be sold

Despite these reservations, the participants gave several examples of what makes City Mission an interesting game:

- It is unique
- It requires physical activity – more than just a “time killer”
- It requires that you play it on the phone – doesn’t have a better “computer equivalent”
- It is possible to adapt the game to a multitude of circumstances

As to how to sell the game to the public many possibilities appeared in the focus groups. Some of these were:
GAME STUDY AND INTERVIEWS

- A special bundle with a particular phone/sold in the mobile phone department/pre-installed in certain phone models
- Boxed version sold in coffee shop/store chain
- Downloadable from the phone

Basically these possibilities come down to three different strategies:

- Selling the game as a promotional tool for a certain hardware – Mobile phone/mobile camera/positioning technology
- Selling the game as promotional tool for a particular brand
- Selling the game as a conventional mobile game

These strategies are all possible, and they are all based on rather traditional models. A different approach, which was suggested or implied during the focus groups, and is also used by SDOR so far, is the event based strategy. This way, the focus of the game producers is mainly to deliver a technical game framework, rather than delivering game content.

Either way, the game producers will have to sell the game to another company, whether it is a publisher, an operator or content broker. The difference lies partly in the level of customization, the number of end users for each game instance, and also in the way the game company charges for their services.

A revenue share model can be arranged in a manner where neither the game company nor the distributor can lose money. The customer pays a subscription fee to the distributor, of which the game producers take a certain percentage. The positioning costs are also charged to the customer. Of course, in order to make this work, those costs need to be low enough to promote active gaming on a larger scale.

The creators of City Mission have also included advertising space in the user interface which means that the client either can promote their own brand or sell the space to someone else.

One of the apparent advantages that this game has compared to other games that require localization or customization is that the content is user generated. This means that any customer can fill the game with the content they need by themselves, or have their players do it. However, if the game was to be sold to an actor in a different country the proper operator arrangements would have to be set up and the game instructions would have to be translated (see the section on the mobile value chain, mobile porting services to read more on this matter). There is also the issue of making the game work on any handset that meets the technical requirements. In this test the game did work on all handsets it was tested on, including models from several different manufacturers. However, the task of making sure that this is the case for all models out there is tedious. The task of writing alternative code for models that potentially fail these tests is even more so.

The conclusion of this test has to be that the initial business plan for City Mission should aim at selling the game as a “one time” event, with the handsets being supplied to the customer. With
this model it can be guaranteed that the handsets will work, the servers are sure to be able to handle the amount of traffic, and the monitoring of mission activity can be done by a small staff, perhaps one single person. The drawback of supplying the handsets is that the phone bill cannot be paid by the players. This is basically the only variable cost involved in launching a game session, and is as of now rather high.

Furthermore, the game test showed that the participants perceived the game as something too time consuming to pursue on a casual basis. The players also hinted that the game would benefit from being played in groups, or couples, of players. In a second phase of the business, when it has been more firmly established whether the game has a true business potential or not, it is time to scale up the game play. This could be done by aiming at events of a greater scale than a company team building session. Cultural events such as festivals, or cities that celebrate a certain event or anniversary could be targeted for such sales. A currently relevant example could be the city of Salzburg that celebrates the 250th birthday of Mozart.

Another business model which could take the game a step further is to sell it to an existing Internet community which in turn can offer it to their members. This business model will be further explored in the interview analysis section. The future possibility that phones in general will be equipped with GPS positioning, or similar, will of course greatly enhance the potential of a game of this kind. However, the creators of this game don’t see that happening for at least another three to four years. See the interview section, scenario 2, for more discussion on this.

**Interviews**

In an effort to evaluate the business potential of some existing pervasive concepts qualitative interviews with industrial and academic representatives were made. The interviews were carried out face-to-face except in one case in which it was carried out via telephone.

The persons interviewed were:

- **Tom Söderlund** – Head of Games Publishing at Blaze, a large publisher of mobile games. Co-founder of It’s Alive.
- **Marie Nilsson** – CEO at Mediavision, a Swedish digital media business analysis and consultancy company.
- **Håkan Ozan** – CEO at Second Degree of Reality, creators of the game City Mission.
- **Mikolaj Dymek** – Doctoral student at KTH/Industrial Economy. Co-author of the book *Polygonmakarna* (the polygon makers) which deals with the business side of computer gaming.
- **Johan Nordquist** – Head of content at Aspiro, Swedish mobile content aggregators.
- **Tommy Palm** (telephone interview) – Founder of Jadestone, a Swedish mobile games studio.
One issue that arose during the interviews was that it was quite hard to discuss the business aspects of the scenarios without actually discussing the game concepts. Most of the interviewees pointed out ways in which they thought the scenarios could be modified in order to potentially become more profitable. Since the initial plan was to show the scenarios and then ask how these would be turned into commercially launched games, without altering them, this caused some concern. It was decided that such ideas were to be taken into account since they, most of the time, did not change the underlying character of the concepts. Furthermore, most of these ideas seemed necessary in order for the interviewees to believe in the commercialization of these games. Hence, the results of the interviews will consist not only of business models, but also of some design issues that may have an important impact on the commercial possibilities of the genre in question. You could even stretch to say that the game design is part of, it definitely takes part in determining, the business model.

Results

In all the scenarios it is assumed that the technology is available and fully developed. This is also the actual case, as all of these games are based on real concepts on which game tests have been performed. Some interviewees did not give much response to certain scenarios, partly for lack of time and partly because it was thought to be more valuable to primarily have them discuss scenarios related to their field of business or research.

Scenario 1: Garden of Earthly Delights

A computer games company has created a Massively Multiplayer Online Game. What separates this game from others is that it has been extended with a mobile client. By means of this client, which uses cell-based positioning technology, players can participate in the game by moving in the physical world. Some missions can be completed within the virtual world, some in the physical, and some require a real-time collaboration between players in both worlds. The virtual world has to be modeled after any city in which the game is to be played.

This scenario, based on the game Garden of Earthly Delights, was generally considered interesting and believed to possess business potential. It is worth noting, before moving on, that Tom Söderlund was actually involved in developing and testing the concept, meaning that he talked not about the scenario but of the actual game.

Despite much enthusiasm towards the concept, several problems were identified, the main one being the difficulty to achieve enough end user density. This problem was mentioned by several of the interviewees:

“*The end user density isn’t high enough even in big European cities. If you are willing to wait for the market to mature it could possibly work within three to four years.*” – Ozan

“*Very few players at each location, but perhaps more from a global perspective*” – Nilsson

“*Difficult to achieve the critical mass needed to make a business of it*” – Dymek
GAME STUDY AND INTERVIEWS

---

“It’s a bit like when you’re playing golf, it has to be planned out in advance.” – Palm

This problem is of course mainly due to the fact that the game has to be customized for each city where it is to be played, something that some thought was a good reason to come up with a similar concept which didn’t rely as heavily on localization.

Many of the interviewees also perceived the game as being something that would attract mainly hardcore gamers, and not something that would promote much casual play. Some of the reasons given for this were that the concept is a bit difficult to communicate which would require a word of mouth type of marketing, and that the game probably would be fairly time consuming:

“The game would demand very high presence. Hardcore.” – Dymek

---

“Heavy users would play this game” – Nilsson

---

“The concept is directed towards hard core gamers and we have seen that those do not play mobile games. They believe that mobile games cannot compete with computer games.” – Nordquist

Tommy Palm agrees that the game falls into the hardcore category, and suggests that it be altered in order to promote more casual play:

“Extremely hardcore. You would want the players to be able to move in a more casual way. The Japanese game ‘Mogi Mogi’ works well in that way. That’s a game that people play even when they are out jogging.” – Palm

Håkan Ozan seemed unsure whether this was a hard core concept or not, claiming that it might as well be the group of casual players that would play it:

“Who would play this? I don’t know. Is it hard core gamers? It might as well be the group of extreme casual players that would get into it, those who don’t want to sit for sixteen hours in front of the computer.”

Another area that seemed to generate some concern was that of integrity and user behavior:

“It’s a big obstacle that you somewhat lose your integrity when you play. I would feel uncomfortable knowing that people can see exactly where I am on their computer screens, even if my avatar was disconnected from my person. ... It would feel better if I played only with people I know.” – Nordquist

---

“When we did interviews with MMOG players they seemed to think that it fits rather badly with the way they like to play. They like to be able to step in and out of the game universe freely and seemed rather frightened by the idea of a game that goes on all the time.” – Söderlund
“You must know how young people travel and move. Perhaps it shouldn’t go on at night since most parents wouldn’t want their kids to be out at that time.” – Nilsson

As far as how to sell, market and package the game some suggestions were given. It was the opinion of most interviewees that the game would have difficulties to thrive on a small scale and would benefit from being launched on a larger scale.

“It could be done more as an open source, underground, thing. The mobile operators would be interested in either case since the game generates traffic. If it would prove able to generate a surplus of money someone would then get in there and exploit it. It is also possible that there are large scale advantages. Someone could create a platform without any content, which then can be sold to all cities of more than one million people.” – Dymek

“Mobile games have been hyped the last five years and many have received venture capital to develop their games. Otherwise you are bound to get a publisher deal. The market is a bit searching right now. … In Japan it has worked out better. They have had crystal clear principles for these kinds of things. The operators have understood the concepts and take a smaller percentage on the revenue in order to get the market going. In Sweden it’s all in the hands of the operator as they demand a share of up to thirty or forty percent. To sell this game it could either be bundled with a certain phone model or bundled with the PC version.” – Dymek

“How it is packaged depends on the dependency between the mobile client and the computer game. I think it’s important to be able to choose what role you want to take in the game.” – Özan

“You could have a product where you charge the end consumer through a subscription, much like a traditional MMOG. I would try to use an existing MMOG to which the mobile client can be added.” – Söderlund

“This sort of concept could be sold as an add-on to an existing MMOG” – Palm

“I would make sure that the game can be played in several different ways; that the same player doesn’t have to sit in front of the computer and run around in the streets. Different player types can do different things in the game and still cooperate.” – Söderlund

“I would both sell the game in stores and use other channels. It could be attached to magazines etc. The subscription is the important thing. The box is still a hygiene factor to many players, but the tendency is to move away from this form of distribution.” – Söderlund

**Scenario 2: City Mission**

A mobile games company has an idea in which players, on their mobile phones, create missions for other players. The creator of the mission takes pictures with the phone camera at certain locations and attach written clues, or perhaps parts of a story or riddle tying the places
together, to these. The real world position for each picture is also stored. When the mission has been created it is uploaded to a server and can be downloaded from there for other players to complete. The task of the player is to find the places in the pictures, one at a time. When the player believes he is at the right position, he dispatches a guess. If he or she is in the right place the picture of the next destination is sent to him or her.

This scenario, which is based on the game City Mission, seemed easier to grasp and was believed to have a good potential to being launched within a shorter time frame. Håkan Ozan, as mentioned earlier, is the co-creator of this game and also runs the business side of it. Therefore he was able to provide an insight into what their plans for the game are and how they have run the business thus far.

Just like in the focus groups the most interviewees saw the game as some sort of “kick off” marketing or tourism event:

“Smells like a kick off thing, or marketing tool for young people” – Dymek

“You could have a Lonely Planet branded version that tourists buy when they are going to, for example, Paris. ...Perhaps there could be a game that gave access to all main capitals of Europe. This would appeal to a broader public.” – Nordquist

“It is an interesting concept, and definitely doable. It could be done as an event directed towards companies or as a tourism kind of thing. You’d have to look the way event business is being done today and probably sell it on a per-session basis.” – Palm

Håkan Ozan also mentions the tourism idea when asked about what business possibilities and co operations he sees apart from working with an operator:

“It would be possible to work with many kinds of resellers. There could be business models out there that we haven’t thought about, tourism things and such. In China they are interested in offering the game in some way in connection to the Olympic Games. The technology is there, and if you come up with something fun anything is possible. We are working on an interesting modification right now where everything is handled by us. It looks like everything is taken care of by our client, and they can use whatever server language they want, but everything goes through us. We don’t have to market ourselves as deliverers of the game towards the players at all.”

He also confirms that the game currently indeed targets the event business, but adds that that is basically a way to finance the business until the market has matured. He continues:

“We are looking at international distribution as well. Since it is a cooperative game and you usually play with your friends it is very limiting in that it doesn’t work on any operator. However, this works better in some other countries. ... We don’t have a complete analysis of [what countries would be better] yet, but we do have contacts with actors in China. It mostly has to do with how the operator reacts to the positioning issue and the costs it produces.”
Another idea on how to sell and market it was for an operator to use it as a means to generate more traffic:

“It seems like a good idea for those who want to create more traffic in the mobile nets. I see it being sold by an operator.” – Nilsson

“If there were no technical hindrances, from a telecom point of view, it would probably be used to promote a certain service, for example positioning. Tre (a Swedish telecom operator) pushed their positioning service quite heavily in the beginning, but it was rather expensive and most people probably didn’t think it was worth it.” – Dymek

The idea of marketing the gaming as a tourism tool was thought to make possible educational versions as well.

“As an educational tool it could be sold to schools, for example with a “Stockholm Old Town” package included.” – Nordquist

Johan Nordquist also saw the possibility of creating two versions of the game, with one broader version without positioning:

“We could sell it in a broad fashion as the “Get to know Sweden Game. For example: ‘How many tiles is the Stockholm Globe Arena made up of?’ That would probably work. Then it could be sold in local versions, with positioning, that people would buy once they’ve tried the broad version.”

A similar alteration is proposed by Håkan Ozan as well, as a means to make players more independent of others:

“An alternative way of playing is to use the quiz function where you are not as dependent on other players. This way you get a multiple choice question at each location instead. This can be used commercially. You get a question at the grocery store; ‘What is today’s offer?’ etc. This creates an awareness of the product that is on offer. This can be used in combination with the regular missions and many have thought it to be so much fun that the positioning isn’t actually needed. You could ask questions that still require that you go to the location. It’s a great complement when technology fails.”

This function stands out as a great example of ways in which creators of pervasive games can make their product work on a broader level and make the game more accessible despite slow breakthrough of new technology.

One idea that has popped up in discussions around these concepts is the possibility of mediating the content and game play in order to distribute it through other channels, perhaps through a television show. Marie Nilsson responds to this idea:
“Yes, we have seen programs like that work. However, and this has to be kept in mind by the games industry, you can’t make television for a small audience. Many think that is the case, with the digitalization of television and so on. What is actually being done is that television is done for small audiences in many different places, meaning that the total audience is big. You have to think big. You won’t be attractive to a television channel if you are too local. However, many would probably be interested in the phenomenon itself.”

As evident by both the above answers and the focus groups, most have perceived this game as something that wouldn’t be played on a casual basis. Here are some further thoughts on the reasons why:

“It is based on having the time and being in the mood to play. ...It is hard to see a casual version of the game. Then you would probably have to incorporate a really good story. Or, if the game itself is really fun to play, sort of like good puzzle games, it could work. It would be hard to get many people to play it repeatedly. Event and marketing tool seems more plausible.”
– Dymek

“‘It sounds like some kind of Trainspotting. Sort of like the people who hang around at the airports collecting plane numbers. Perhaps I have too little fantasy, am to old or too much a girl to see how money could be made on this.’” – Nilsson

The possibility of more casual game play is at the moment further decreased due to lack of standards and the technology not being wide spread enough.

“We stand in front of a market that isn’t mature yet, and we know it. It’s not like with traditional computer games, where if Battlefield 3 is about to be released and we stand with a similar product we have to rush to be first and get market shares. The positioning technology is rather primitive, and there is no standard way to do it. Instead, we make sure to get our market shares right now in order to be able to act fast when people are ready. Then we have done it for a while and are an established business. There’s no need to hurry right now.” – Ozan

The possibilities of commercial pervasive games are thus reduced further by the conflicting goals and time frames that a company like Second Degree of Reality (SDoR) and a mobile operator or content broker works with. Where SDoR wants to go slow and take one step at a time, operators and content brokers are not willing to subject themselves to a scheme of that kind. In the analysis section this subject will be further discussed.

On the question whether there are indications that this will change Håkan Ozan responds:

“In Sweden it’s really bad. Internationally it varies a bit. I read just this morning that BenQ are releasing a mobile phone with GPS. It’s a matter of time, I’d say it takes three to four years. It’s not enough that the products are out there, people have to have them as well. Most people don’t even have a camera phone today.”

On what types of activities they compete with:
“There is no direct competition. I don’t think we’re competing with traditional computer games. No one quits playing those to play pervasive games instead. I think you could say we’re competing with event companies, but rather I like to see our game as a business opportunity for them. We can present them with a new an interesting solution.” - Ozan

He further explains how the event company makes money off the game:

“Say that Trygg Hansa (a Swedish insurance company) is throwing a party for their staff. To make it there the employees get to play our game, with a mission that has been specially designed for the occasion. It can be incredibly satisfying since the mission has a relevance to the participants. We have seen that the sense of competition can become incredibly strong, players practically run all the way. What the event company puts on top of this is marketing and sales of the game, as well as being on location to instruct and support the players. We can give them a recommend price to sell it for and say what percentage we want in that case.” - Ozan

He continues:

“We haven’t actually done any business with event companies yet, we have taken care of the customer contacts so far, and we have a model where we can go directly to restaurants, caterers etc. as well. A catering company could begin their parties with City Mission, and use a fixed mission that is included in a package they offer. We haven’t had time or interest to test this yet. …There are pros and cons with our situation. The bad thing is that we don’t have that much capital to work with, the good thing is that are costs are quite low. We don’t have to make that much money to survive.” - Ozan

---

“We have chosen not to work with venture capital. We are game developers but don’t want to run it ourselves. We offer others to run the game in a no-lose situation. When they make money we make money. The game can also be sold directly to companies as an event, but we don’t want to do that ourselves, that is for event companies to do. It’s not our main track right now either. The idea is to have a network pyramid where the competence we don’t have can be found in other companies that we work with.” - Ozan

---

“If we were to produce finished versions of the game we would have to have some other competences within the company. We would need more developers and sellers. It would be very important to have a good network and someone dedicated to approach companies with our product. Right now this is done on a somewhat ad hoc basis, but it works since we’re on version 0.9 of the game.” - Ozan

---

“As far as financing, we have done some sales of City Mission, but most of the income is from other development tasks. City Mission makes up only a small part of our income at the moment.” - Ozan

On the question of what they would do if someone was willing to offer them a million Euros to work with:
“We have people who want to supply us with money. I don’t really want to take it in. We’re getting along fine. What we could possibly need is a larger development staff. We haven’t come so far with our business yet, but it’s starting to pick up. In any case we’d rather work with earned capital. …We have the competence we need, and we’re not exclusively making games. It’s working out surprisingly well.”

Another possible business model for a game like City Mission is selling it to existing communities such as Lunarstorm (a large Swedish community for young people). Håkan Ozan explains why such a deal doesn’t work out very well at the moment:

“The operators are hard to deal with. In our case Telia charges 190 Kr (around 19 Euros) just to add a phone number to their positioning service. Then there’s a monthly cost of around 20 Kr to keep the number active. On top of that there’s a cost of around 1.20 Kr for each positioning. With a large community, where we would have to add like fifty thousand phone numbers, they expect us to first pay up like 9.5 million Kr whether people play or not, and then 1 million each month whether they play or not. Their business model isn’t made for these kinds of things. During our development phase, however, we have a deal that gives us free positioning.”

In any case, given that the positioning becomes better and cheaper, a public launch of the game is likely to take place through a community:

“The indications we have show that it would probably be sold through a community and not by means of a magazine ad. In a community you already have natural groups, and they are big. Lunarstorm has 1.3 million users and internationally they can consist of several millions. One of the problems right now is the amount of different operators.”

Despite the costs involved with running the game commercially at the moment Håkan Ozan wants it to be cheap to play:

“We are not greedy and availability is very important. It would be optimal to release it for free but that doesn’t work due to the positioning costs. A large customer base presents us with many different possible business models. As far as payment models there are many possibilities. Pay per mission, pay per guess, pay per mission and revenue share with the client or a fixed monthly fee. It has pretty much boiled down to a monthly fee and the installation costs to make it playable. From there you have a dialogue.”

A criticism directed towards this form of gaming was raised during the interview with Marie Nilsson:

“I don’t want my kids to run around town, especially not if it takes time from homework etc. I bet a lot of people feel the same. We have to get this into the adult world to make it work. That is an absolute requirement.”

Håkan Ozan responds to this:
“All we do is creating a framework where you can create groups to play with. For example, some missions could only be played by your classmates. It has to do with maintaining control and creating the right kinds of mission. ...In our dialogues with Lunarstorm they have thought it to be very important with control, especially in regard to what pictures are uploaded. ...What we deliver is the framework, then it’s up to each customer to fill it with they think is appropriate. We don’t have any moral values in that way. But of course, we think that the main target group is young people who want to interact. However, the game can be played close to home, on the way to places you were going anyway.”

**Scenario 3: Epidemic Menace**

A company has an idea in which a limited number of participants, somewhere around ten, are divided into two teams. At a location which has been prepared in advance they compete in, by means of using AR technology (virtual content layered upon reality), finding and capturing enemies that roam the area. Half of each team is located indoors at stationary computers from which they can guide the AR-equipped players working on the field. Before the game begins the teams get to see a short film which explains the background to and goal of their mission. Actors are also hired to perform some of the storytelling.

This scenario, which is based on the IPerG showcase *Epidemic Menace*, was chosen for several reasons. Firstly it represents a more intense and immersive game experience, secondly it is limited in both in number of participants and in time. Thirdly it is a high level game in terms of technology and facilities which presents special challenges both for the arrangers and the participants. It also received good reviews from those who took part in playing the prototype which indicates that it could possess qualities that makes possible a commercial version. This was possibly the scenario which the interviewees least could relate to. It certainly did not seem to evoke quite as much interest as the previous two which goes to show how different the pervasive concepts are as far as how they should be marketed and sold.

The spontaneous reactions to this game were somewhat similar to those of scenario 2 with the game being seen as something being played on a highly planned out basis, probably in connection with some other event:

“It sounds very much like a kick-off kind of thing. I get a paintball feeling about it. It sounds complicated.” – Dymek

“I think it would compete with gaming halls, Laser game etc. I have trouble seeing how business could be made from it. The reason why MMOG’s are doing so well is that a lot of people play them and that communities are created around them. It takes size to succeed.” – Nilsson

“The economic potential is so-so. I think it could be set up as some sort of event; a Tivoli attraction or a kick-off thing.” – Söderlund

“Technically it’s possible, but who would play it? It would be real enthusiasts or kick-off/event participants. Just like with Cybertown (a Swedish laser game) you have to have prepared the facilities in advance. Potentially it could be very exciting, and the AR-technology is of course
very promising. With that you could even play Pacman in a similar way! I think this would work better in USA, in a place like Disneyland. ...There are no existing models of how to do this. You would have to create a new organization with a separate understanding of the problems involved. Current technology, current organization and current player attitudes perhaps don’t allow this kind of game, but the potential is, as mentioned big.” – Dymek

The idea that this scenario requires a different organization and different competence than the other scenarios is also mentioned by Marie Nilsson:

“...You would have to track down those who work with similar things today, those who know how to attract that kind of audience. You probably want small groups of people who already know each other to play. However, it still sounds like a small niche product.”

“...The question is how much you can alter the products in order to commercialize it. You could keep the story, setting, game play and some of the technical gadgets but make it more like a Botfighters type of pervasive game. On the other hand, if you think the acting and the big flora of technical gadgets is the “heart” of the game it is hard to see a broad version of it.” – Söderlund

Scenario 4: Perplex City

This game is based on a complex network of websites, blogs and forums that together tell a story, partly using content that has been encrypted in various ways. The story tells of a magic artifact which has been hidden in the real, physical, world. To find this artifact, and thereby be awarded a large sum of money, is the final goal of the game. Further clues, and ranking points, can be obtained by purchasing and solving puzzle cards that are sold in selected stores and on the web. The players meet in a web forum where they share recent discoveries, help each other solving cards, and chat about the development of the story.

This scenario is based on the game Perplex City described earlier in this thesis. Not surprisingly, most of the interviewees thought of the game as a marketing tool:

“This is a game that could be done today, but everyone has to be so involved that I think it would be used as a marketing tool. It would be fun as a commercial game since pretty much anyone could join in on it. It’s also interesting that the mobile aspect isn’t there.” – Dymek

“In order to make money off the game, why not use SMS instead of cards? If a company, as a marketing campaign, sets up a few websites of fake companies etc. it would be a lot like this game. Perhaps the goal could be to find a certain thing on the Internet.” – Dymek

“It’s hard to make money off of other things than advertisements. It would be strange to go into this parallel world and pay for it. It’s all about having an engaging story; that is the business model. The world of market economy is a lot about predictability, rhythm, margins, low risk. It’s difficult to say how it would work out in this case. It’s far from the computer games world. You could somehow drive sales on by continuously developing the story. However, it has to be broadened to move out of the “conspiracy/parallel world” territory.” – Dymek
“It’s also about a visual experience. A lot of computer games have excellent graphics but shallow stories and still do well. The cards could represent this as well, and also appeal to being collected.” – Dymek

“Sounds a bit like the position based ideas. Sounds like it could be fun!” – Nilsson

Marie Nilsson, while feeling positive towards the idea, suggests that it could be made even more exciting and at the same time reach a broader audience:

“I think of Hjalle, Heavy and Svuullo (Swedish TV personalities involved in various reality shows). You could develop the game idea in combination with a large TV show, Saturday entertainment for the whole family. To find a new audience for this you definitely have to step out of the current gaming community and TV is one way to do that. You have to reach out and create interest around it.”

---

“I think this game would be sold launched in parallel with a TV show or series.” – Nilsson

---

“I think a person who plays this kind of thing is fully busy with the digital side of it. I don’t see how the cards could become popular. It also seems to appeal to a hard core type of gamer.” – Nordquist

Scenario 5: Hot Potato

A small company has developed a simple game which is based on Bluetooth technology. In the players mobile phone there is a “virtual potato” which becomes hotter and hotter. To cool it down, and avoid the potato exploding, the player has to find a person in his or her surroundings with Bluetooth connectivity turned on and place the potato on that phone instead. After a while the potato has cooled and the player can take it back. To do this the player has to keep track of where the other person goes, and get within range for the Bluetooth connection to work. If the player happens to place the potato on the phone of another player it explodes and the player loses.

This scenario, based on the game Hot Potato developed within IPerG was chosen because of the low-level technology required, the simple idea, and also because of the ethical problems it poses. There are other Bluetooth ideas out there, some of them in less problematic ethically, but this one was chosen in order to bring up some ideas on how the ethical problems perhaps could be overcome.

As predicted, the ethical aspects were the first ones to be brought up:

“Well, this brings out into the integrity question again. I wouldn’t like to have a 12-year-old following me around in the grocery store.” – Nordquist

---
"You would want to find a concept where you don’t have to follow people around" – Palm

Johan Nordquist followed up his concerns with some ideas on what could be done to make the game more attractive:

“The integrity problem could perhaps be solved by using positioning, that you have to find another person playing the game and find that person. Perhaps you have to find one person each day or something like that. Then everyone has accepted the conditions.”

Perhaps this concept isn’t good enough, but the principle is really interesting. It could be a giant hype in school. In that case it would have to be more human, more “Tamagotchi”. If you have a creature on your phone, and when you wake up in the morning and it’s hungry. Things like that. Then you have to find other players and make them a source of energy, perhaps each creature could be used only once everyday as source of energy. Then there would be a rush. Perhaps with enough energy the creature reproduces and you could build a whole army. That would add a collecting element as well. You could perhaps steal things from each other etc.”

Tommy Palm also thought of the collecting element as a way to make it more fun and less problematic:

“This is the scenario that appeals to me the most. You can find a lot of different possible applications and add a collecting element to it.”

Still, there was no full consensus on how the game should be sold:

“It would perhaps be hard to sell as just a simple mobile game; you may want to bring it into a larger context.” – Palm

“A fun idea doesn’t always mean that there are good business models. You could always get a good distribution if it doesn’t cost anything of course, but Bluetooth games don’t do very well right now. I think we’re looking at a three-to-four year time frame here as well.” – Ozan

“There is always the risk of the “Botfighters-syndrome”: not enough players on the same location. If this game was played in connection to some event it would probably work” – Ozan

“If I’m only playing against myself the game has to very fun. Then what’s the incitement? What happens if I win? What happens if I lose?” – Ozan

Analysis

For the analysis of the interview results it was decided that a number of key factors affecting the business potential of the concepts were to be judged. The key factors have been chosen both
based on the knowledge gained from the basic research and based on what issues seemed to be considered most important during the interviews. There was no real way of setting up truly objective method of analysis, but the factors chosen are all thought to be well grounded in the background of this document. Some of the factors have not been explicitly discussed during the interviews, in which cases the outcomes have been based on previously known parameters.

**Key factors identified:**

1. **Understandability** – This is a measure of how easy the concept is to explain. It is important mostly from a marketing and selling point-of-view. It is applicable both to intra-industrial communications, such as with a publisher or operator, and to business-to-customer communications.

2. **End user density** – This factor is most important to the concepts that specifically require a fair amount of players at the same location for the game to actually work.

3. **Agility/adaptability of concept** – How dependant is the game on one or a few single design factors for it to work, without being an entirely different game? Were there any alterations that were thought to be required?

4. **Creation** – Does the game require a long period of development before it can be launched? Does it require much money or a large staff to create?

5. **Launching** – Will the game require agreements with many other service providers before it reaches the end customer?

6. **Maintenance** – Will the game have to be maintained or be monitored over time? Will content be added continuously?

7. **Acceptance** – This is connected to the understandability factor, but also to what moral, ethical or legal implications it may possess. In this analysis this factor will not be emphasized, and only obvious game characteristics that are thought to have an effect will be mentioned.

8. **Availability of technology** – This factor is a measure of to what level the technology necessary to play the game has reached out to the public.

9. **Sources of financing** – As mentioned by Mikolaj Dymek in regards to scenario 1 there are basically two standard ways to finance a game. One is through venture capital and one is through a publisher deal. There are, however, other models out there as well. One is, if it’s a less costly production to use personal or borrowed capital to begin the business, another one, is to apply for money from research institutes, regional or national development funds, innovation support organizations etc. It is likely that pervasive game concepts, oftentimes being unique and innovative while at the same time possessing future potential, will receive lots of interest from these kinds of instances, and hopefully qualify to receive financial support. The way financing should be done, and at what tempo the game is taken towards being launched commercially, is probably best determined by the time factors in analysis section. The concepts of the scenarios are all at, or close to, completion as far as technology.

10. **Operator/secondary service providers** – How much of the revenue generated will be taken by intermediate partners of the value chain?

11. **End consumers** – Will the game be cheap or expensive to play?

12. **Diverse competences needed** – How is the game produced? How many people, and with what backgrounds, will work on the game?
**Scenario 1 – Garden of Earthly Delights**

This scenario was mentioned as being hard to communicate, making issues as marketing and selling the game problematic. There is actually a good ‘historical’ example of how a very similar concept was hindered from being launched because of a publisher not appreciating the concept. The location-based game Mogi-Mogi ([http://www.mogimogi.com](http://www.mogimogi.com)) by Newt Games, which ran in Tokyo during 2003, was initially designed to be a quite sophisticated role playing game, using GPS-equipped phones and online clients simultaneously. When it was presented to the publisher, UbiSoft, by the designers they dismissed the idea of making it such a complex game. Instead they prompted on a collection-based approach, inspired by the Pokemon trend. Decisive in this case, apart from the intricacy of the game, was the fact that whereas a traditional MMOG gives the first time player access only to a limited part of the game world, this game idea would, due to the involvement of the physical world, give the player instant access to the whole universe. The gradual access to more content is very important in building loyalty to the game, something the publisher considered enough reason to make the game something completely different.

High end user density seems crucial for this scenario to work. As for the concept, most interviewees thought that some alterations of the concept were needed in order to succeed. Those mentioned were: Making the game playable during more casual activities, not having the game go on at night, and making sure that one player doesn’t have to use both the PC and the mobile version. None of these adaptations seem to inflict on the basic idea.

This type of game seems to need fairly lengthy development period given the dual clients. It will also require distribution of both the mobile and the PC client and deals with operators to be set up. The game will not require the same staff over time as during its creation. However, there will have to be maintenance and monitoring done and perhaps continuous customizations of the game world for separate cities. The acceptance was on some occasions fairly low for this game. It was thought to pose integrity issues, while at the same time being hard to communicate.

The technologies are all there. However, the Achilles heel is the positioning which hasn’t reached out to most consumers in an accessible fashion yet. This game, given the time factors, would probably be financed through a combination of publisher advance deals and revenue share of subscription fees.

We have seen that operators tend to take a large part of the revenue created through these kinds of games. In Europe this can be as much as 50 percent (IGDA 2005:11). Since the operator is crucial in making the game the game work, you have to calculate with this loss. Hopefully a shift of balance in this relation will take place over time, leaving more revenue for the creators and IP owners. It is possible, in the model when an existing MMOG is used, that the revenues of the PC and the mobile clients will be kept entirely separate. If both clients are issued by one company you have to bring the computer games value chain into the picture as well.

As to pricing and payment, this game would be about the same cost as a regular MMOG, probably a bit lower if only using the mobile client. There would probably be a one time start-up fee along with a subscription. The costs of the clients would probably be different with the PC version being more expensive. The costs of positioning would potentially be charged to the customer as well, potentially making the game more expensive.

This game would require competence both within computer and mobile games production. Hence, a rather broad range of competences is needed. Since the game takes place on two platforms you would need a good game designer and project manager that understands both modes of play.
Scenario 2 – City Mission

The game is thought to work well in its current form. However, some suggestions towards making a non-positioning based version were mentioned. Such models would probably use the quiz-function more heavily.

For this game a deal with at least one operator is needed and for the event based scenario you would want a deal with an event company. For the community model you would need an agreement with an Internet community. For a standard mobile game model you may have to go through a publisher. Advertising agencies are other possible partners in some models.

The game needs continuous monitoring of server traffic and game content, since it is user generated. Once the basic game has been created, however, most of the work will have to be focused on continuous sales.

This scenario also created some mixed feelings as to who should get to play it. It has some problems in regards to young people playing it in a non-controlled fashion.

This game also depends on positioning but is less vulnerable due to the possibility of smaller groups of players that can be supplied with prepared handsets, and due to the possibility of a non-positioning based version.

Due to the less costly production this type of game can be financed either by personal/borrowed capital, or through a deal with an operator who pays in advance in order to have the game as a an example of what can be done with positioning technology.

Here, the costs of positioning and other data traffic are all in the hands of the operator. It is possible to think, however, that a revenue share model is set up in regards to this revenue as well. If a separate event company or sales instance exists, these will take a portion of the revenue as well.

According to Håkan Ozan this game would preferably be free. However, that doesn’t work due to the costs of positioning. At any rate, the game would probably not be expensive to the end consumer, especially not if it’s connected to an event or advertising campaign.

Scenario 3 – Epidemic Menace

This scenario was well understood by the interviewees, whether it is as easy to explain to a potential player is not as certain. Regarding the concept, one suggestion was to keep the most important storytelling elements as well as some technical gadgets, but to make it more of a Botfighters style game. This could, however, potentially make it a totally different game.

This game requires a fairly long period of time developing content. The game uses many different modes of game play that each will need customized soft- and in some cases hardware. In addition, you also need a setting. This means that you have to hire or purchase such a place. Some of the equipment may have to be hired and a production company may have to be worked with in the creation of content, unless that competence is integrated with the company.

This scenario depends highly on technology that is still only available at very high costs. However, the game producers only need one set of the equipment to arrange a session.

This type of game, which needs a large capital in order to acquire technology, would probably benefit from cooperating either with a research institute or a high tech company. In the actual example the game was sponsored both by IPerG and Sony.

In this scenario the money charged from players will all go into the hands of the creators. The suppliers of technology and content will probably charge fixed fees for their services.

This game would probably have to be more costly. The high level of technology and the involvement of multiple media channels would also demand a large staff to be involved with
launching the game. On the whole, the game experience is also much more intense and unusual than in the other scenarios which also motivate a larger fee for playing it.

This, being one of the more complex scenarios, requires a wide range of competences. These will include programming the applications that handle the wireless communications and programming the rest of the game content. You would basically need the standard computer games competence alongside the competence needed to handle the gadgets involved. In addition, you need media production competence, be it internal or external, and competence in directing/game design.

**Scenario 4 – Perplex City**

The cards were on one occasion suggested to be replaced with an SMS service which could generate revenue and perhaps make it more accessible.

As far as development period, this game requires a good story to be written and web content to be created. The cards will have to be designed and printed.

The service providers are basically the Internet hosts. As far as the cards they may have to be created by external designers as well as being printed externally. Apart from this, a store chain or similar will have to be used as a partner unless the cards are ordered online.

This game will require constant monitoring and maintenance. Content will have to be added according to the pace with which the mystery is being solved. However, this scenario is not in any way limited by technology and uses channels accessible to almost everyone.

This game can be produced with a fairly small amount of capital which can either be acquired through an advertising deal or by using personal/borrowed money. The revenue generated here can either come from the cards/physical products or from advertising money. A deal could be made with a company that the more active players there are the more money is awarded the game company.

This type of game, unless the cards are required, could potentially be free. The cost of the cards in the actual game is less than one Euro each, making casual playing quite easy on the wallet.

For this scenario you can imagine people with more of an advertising/script writing background since the game is so heavily based on the story involved. You would also need competence in authoring the content for use on the web.

**Scenario 5 – Hot Potato**

This scenario took some explanation, especially in how Bluetooth functions and that now actual transferring of objects takes place between the phones.

High end user density mentioned as desirable.

Alterations seem necessary. One is to avoid the “stalking” element and one is to add appealing elements such as collecting or caretaking.

For this game you would probably need the usual mobile value chain for distribution.

This game will not require much work following its release in its basic form. Making sure server traffic works is one task that will always have to be done. In the case of a more elaborate version it is possible that content will have to be added with time.

This game was perhaps hardest to accept due to its ethical problems.
The Bluetooth technology is very common at consumer level, but not used for gaming to a high degree.

This game could be produced with personal/borrowed capital or through a publisher advance deal.

This scenario is probably subjected to the standard value chain of the mobile entertainment industry. If the operator is used for distribution, they will want their share of the revenue. The content aggregator/publisher will also assume the standard procedure. The aggregator/publisher usually takes about 15 – 40 percent of the gross (IGDA 2005:11).

This game would also be cheap. There is no obvious need for a subscription in its basic form, but rather it should be bought through a one time payment equal to most other mobile games.

### Possible business models

It is very hard to provide finished business models to these concepts, partly due to the fact that most of them seem to need modifications in various ways. However, an attempt to pin-point the most promising ideas are presented below. These models are quite basic and most of them do not deal with details such as payment or revenue share models. They are presented in order of their complexity, perceived or real.

#### Low level games

**Scenario 5 – Bluetooth**

The Bluetooth concept was thought to be very interesting, despite having some problems, most related to its challenge on current ethical codes. One potential business model for a Bluetooth game is to find a concept that appeals more to the human side of players. That is, using design elements such as caretaking and collecting. Technically, this is not hard to achieve. It was suggested during the interviews that this sort of game might benefit from being embedded in a larger context. Perhaps using a famous IP, or integrating the Bluetooth client with another, larger game, would be such a way. It is even possible to connect it to a MMOG if the server databases be interconnected. A timeframe of 3-4 years for the acceptance of Bluetooth games was mentioned during the interviews. The figure below is a sketch of what this model could look like:
Scenario 4 – ARG

ARGs in general can be considered low-level, technology- and production-wise, as they take place almost exclusively on the Internet. The future of these games probably lies in continued partnership with the advertising industry. It is not necessary to create the kind of demanding, time consuming, game plots exemplified by the scenario. Rather, it is probably more likely that the most successful games are those that can be solved quicker and present a more instant reward. One example could be a game that, upon being solved, requires an SMS to be sent to a certain number returning a code that can be used to get an exclusive discount on some item. Again, multiple ways of participation and interaction will further help gaining the critical mass needed. A good example of this is the use of Podcasts in Perplex City. A company producing these games would probably find it beneficial to hire someone with a background in advertising. This would provide the company with a network of connections to that industry as well as competence related to it. Below is a basic illustration of how this business model could be organized:
Mid- to High-level games

Scenario 2 – Location based game. The natural continuation of the existing City Mission game is to make a widely accessible public version based on the same idea. This type of concept is very recognizable to most people which should make it easier to market than some of the other ideas. A good business model for this type of game is to develop a transparent game engine that then can be customized for a variety of circumstances. The evolution in this case probably goes from one time event games to games related to tourism/sightseeing and later on to games connected to a large community. A possible organizational model is to manage all the contacts with operators/technology providers within the company and leave all the actual sales to event companies and media bureaus. Even so, it could prove worthwhile to internalize some of that competence into the core business. Figure 6 depicts the two separate paths a company like this could use.

![Figure 6. Possible model for scenario 2.](image)

Scenario 3 - Cross media

This is perhaps the hardest concept to find a suitable business model for in its current shape. Since the game requires such a high level of technology it seems that the concept would have to be adapted in a way that allows some sort of alternative participation or use of game content. It has been suggested, in regards to other scenarios that games can be connected to other media, such as a TV show. This scenario is perhaps the one that lends itself best to that approach. The game play of this concept could easily be used as an element within a competition-based TV show. The story of the game can be connected to other parts of the show, making it a natural part of it. The business model for this concept would, in that case, be that the game creators work as consultants to a production company, providing and managing its technical framework and perhaps some or all of the content. The figure below is simply a draft of a very hypothetical model in which the game can either be sold on an event basis or be used within, for example, a TV show:
Yet another way of turning this game into a widely playable product is to, as suggested by Tom Söderlund, scale down the technological arsenal used. By using a mobile phone instead of the AR-equipment this game would in fact become very similar to that of scenario 1, Garden of Earthly Delights. You would have the stationary, PC-based, players as well as the mobile users, now roaming a larger area than they would in the initial game.

**Scenario 1 – MMRO**

This concept, complex due to the dual clients involved, demands a very clever business model in order to work. As shown in the interviews, the problems with end user density and unclear player modes are the key issues to be solved. The most reasonable starting point for a game like this would be to create it as an add-on to an existing MMOG. This could perhaps provide an existing player base and an alternative way to participate in the existing game. This game would probably, in its first incarnation be fairly limited, perhaps both in time and space as well as in its functions. Based on the interviews it seems like the game would benefit from being suited for playing during more casual strolls around the city, not demanding too much from the player in terms of traveling. This concept presents many ways of cooperating with existing businesses. Below is a figure that illustrates cooperation with an existing MMOG:
Conclusions

The question of whether it is possible to make money on pervasive games is one of the most important ones to be answered for researchers and business representatives within the field. The conclusion must be that it is very possible. We have seen, of course, that it is most possible to make money on computer and mobile games and there is no apparent reason why this should not hold true for pervasive games as well. However, and this has hopefully been shown with this work, there are a few factors that have prohibited this from happening so far. The most important ones, and these are both related to user behavior and business aspects, seem to be:

1. Slow technology breakthrough
2. Demanding game concepts
3. Problematic relationships with value chain intermediaries
4. Unwillingness by investors and distributors to embrace these concepts, favoring well-known and time tried ideas
5. Insecurity as to who the target groups/potential players are
6. Lack of media coverage
7. Payment models not optimal
8. Many games target limited groups of people

Recommendations

These recommendations are basically a summary of previously mentioned factors that have seemed important. However, a few new references are introduced as an enforcement of some points made. It is quite hard to bring these down to the low-level details of running a business and most of these recommendations are probably of a more general character.

Working around technology limitations

Since many pervasive games rely on technologies that are not fully adopted by the customers, create a business plan that will allow the game to be played despite low end user density. One way is to, as in the City Mission case, target discrete groups of people that get to play the game during a particular event. Another way to work around slow adoption of new technology is to make versions of the game, if possible, that do not rely as heavily on the pervasive elements, adding those to the game as the market matures.
Communicating the concept

Find a way to make your concept easy to communicate. Many pervasive games are hard to explain, and sometimes it seems too much effort is put into explaining the pervasive aspects of them, perhaps it is better to focus on what is traditional in the idea instead of what is new or pervasive about it. This is perhaps most important in contacts with operators or other intermediaries of the value chain. Another advice is to perhaps scale down a little bit on the visionary aspects of the game concepts themselves. Even though it is a lot of fun to come up with novel ideas that represent something entirely different from earlier gaming experiences these seem hard to communicate to the target groups, both in terms of players and business partners. Instead, it seems more rational to choose to either reduce some of the pervasive aspects of the game or to base the game on an existing and familiar concept. Indeed, some of the pervasive game concepts meet these criteria, but many of them would probably benefit from a move towards more well known territory. Also, making sure your game, or issues related to your game are mentioned in media is important. Issuing press releases or getting gaming magazines to write about your game can possibly help attract future players. In the case of mobile games, the operators are the keyholders in many cases. They often “own” the customer and determine what services they purchase or have access to. Understanding how they work and what conditions are present in an operator partnership is vital. Having a playable prototype, and documentation of studies performed on it can probably help in gaining interest from operators and content aggregators. One advice, presented as a best-practice method in the IGDA Business Proceedings, is to advertise non-violent games in non-gaming magazines as many developers of such games are of the opinion that traditional advertising vehicles are inadequate when it comes to this genre of games (IGDA 2004:19). One important factor that will play a huge part in the future of gaming, which is important to the development and communication of the concept, is the ever-increasing average age of gamers around the world. According to Michael Gartenberg, Vice President and Research Director at Jupiter Research, the average game age in 1999 was nineteen, in 2004 twenty-five and in 2009 expected to be as high as twenty-nine (IGDA 2004:11). He also states that many outside of the industry still believe that the gaming consumers consist only of children. He continues this by stating that the favorite genre is dominated by low-intensity puzzles and board games, whereas software revenues are driven by action/arcade titles. This, according to him, presents an opportunity since there is clearly a group of customers who haven’t reached their full revenue generating potential (IGDA 2004:11).

Intellectual Property

Use an existing IP if possible – Building up the value and recognition of a game IP from scratch takes time and money. A well known IP is already (almost) guaranteed to bring attention to your game. The ways IP can be exploited are many, and one recommendation is that much effort is made to leverage its value early in the development process in order to maximize, for example, the benefits of an advance-against-royalty deal with a publisher. In the IGDA (International Game Developers Association) Business Summit proceedings from 2004 it is said that a good way to actually value IP is to look at comparables across the industry. This is perhaps less easy for developers of pervasive games since not as many direct comparisons can be made. It is also important to be able to make a correct assessment of the value of IP in order to determine the value it can generate over time (IGDA 2004:16).

Product life cycle

One of the best advices for a game developer, which also finds support in the study and interview sections, is to make sure that your product can continue to live in some form when its first incarnation is ceasing to generate revenue. As a pervasive game, just like other games, can
be seen as a combination of IP/content and a technological framework it is possible to see future versions of the product both where the technology is used with a different content and where the content is used together with a different technology/platform or in a different media. This is illustrated in the figure below.

Figure 9. The product life cycle.

As a producer of a pervasive game you may be in possession of either a very interesting technical platform, of a very interesting IP or both. Perhaps the content you are using to sell your technical platform is not interesting enough? Perhaps your content is strong but doesn’t work very well with the platform you are using?

Financing

As we have seen, a good way to finance a pervasive game is through advertising deals. Could your concept be connected to an existing brand or media channel? Perhaps a newspaper, a TV channel or show or a Café chain? Financing can also be found in research institutes and similar organizations, as well as in venture capital companies. Game companies often find themselves “sitting on two chairs”, one of culture and one of technology. This makes things a bit hard as the game company will sometimes be perceived by a cultural institution as being “too technological” and by a venture capital company as being “too artistic or too cultural”. One way to overcome this is to, perhaps only mentally; divide the company in two parts. When talking to a cultural or artistic institution, focus on the game concepts human and artistic sides. In which ways will this game make people interact in new ways? How will this game make people feel and think? How does this game reach groups that normally do not play digital games? When communicating with a venture capital company, or perhaps an innovation support organization, focus on the technology and economy of the game. What new technologies are being used? What existing technologies are being used in new ways? How has your company worked out solutions that will make payment of the game easy? What does the revenue stream look like for this game? Who will be involved? How will each partner make money on the game? Knowing what language to speak on every occasion is very important. Be sure to have articulated in advance questions and answers on both a cultural and a technological level.

Some pervasive games are possibly very well suited as educational tools, having the participants act out various scenarios related to the studied subject. This could perhaps open for financing through a publisher of traditional educational material, or a research institute dedicated to a certain field; politics, history, sociology etc. There are of course many examples of educational computer games already, but pervasive games would surely provide more immersive
experiences, suited for, as stated, historical or political studies. Examples of such existing games, that in some ways border the pervasive genre is Food Force (http://www.food-force.com) and A Force More Powerful (http://www.aforcemorepowerful.org/game/). Food Force is a freely downloadable game sponsored by the United Nations in which the player has to deliver food to country suffering from starvation. At the website of the game there are lesson plans for teachers as well as information on how to help fighting hunger in reality. A Force More Powerful is a game designed to educate people in how to defeat dictators, military occupiers and corrupt rulers using nonviolent conflict strategies. This game was financed by ICNC (International Center on Nonviolent Conflict) and York Zimmerman, a production company dedicated to producing documentary television films about historical and political events. Both of these institutions recognized the need for educational material on this matter, a need mainly brought up by the many oppositional organizations of former Soviet countries plagued by dictatorial rule. In this game it is possible for the player to import pictures of real people and manipulate the game world to simulate a real world scenario. After trying out various methods in the game world the democratic organizations can then put them to work in real life. There are certainly many other areas, such as health care, military training and many others, in need of interactive educational material. The game engine of a pervasive game can, as suggested earlier, be filled with different content depending on the situation.

Focus on core competence

When it comes to selling a concept, it is important not to look at consumers as the only target. It is equally important to keep publishers/distributors in mind. This can be done by focusing on one core competence that gives the company recognition throughout the industry (IGDA 2004:19). In the case of the pervasive producer this can be a strong competence in incorporating positioning technology into mobile games or a competence in re-designing content for a wide range of different media. At any rate, it is imperative to know, and be able to articulate, your core competence. The advice “don’t put all your eggs in one basket” seems highly applicable on the producer of pervasive games, a fact that has been exemplified in the interviews section. Although the core competence might be the production of pervasive games, and the focus lies on this area, one way to minimize the risks of a business start-up might be to also provide more well-known services initially or in parallel with games production.

Further research

There have been indications that pervasive concepts may have better chances of being successful in certain non-European countries. It would for example be interesting to analyze the market structure of a place like Japan to see why it’s apparently easier to get interesting mobile game concepts onto the market. It would also be interesting to make a more detailed analysis of technological trends, for example the time frames of better positioning technologies being implemented. Another area that would be interesting to research is the attitude towards using pervasive games as marketing tools. For this, interviews could be done with people at media bureaus, advertising agencies and event companies. Of course, more actual game studies, at larger scales, would be very beneficial as well. These could be designed to bring forth actual statistics on what the players’ behaviors related to purchasing these games would be.
References


KIM, J (2005) Alternate Reality Gaming, Information School
University of Washington, Seattle [Unpublished]

KRONZELL, M ET AL. (2003) Business Models, mGain Deliverable 5.2.1


GAME STUDY AND INTERVIEWS


PANKOME, U (2005) Evaluation and organisation of the „Epidemic menace“ Game – Early draft, IPerG Intranet, WP10

SALEN, E AND ZIMMERMAN K (2003) This is Not a Game: Play in cultural environments, Digital Games Research Association (DiGRA) “Level Up” Conference Proceedings


SZULBORSKI, D (2005), This is Not a Game: A Guide to Alternate Reality Gaming, eXe Active Media Group


Available online:

Web sources