



Norwegian University of
Science and Technology

New distribution channels for advertising through computer games and mobile devices.

Sivasathees Sivagnanasuntharam

Master of Science in Communication Technology

Submission date: June 2008

Supervisor: Steinar Andresen, ITEM

Co-supervisor: Thomas Jelle, Trådløse Trondheim

Problem Description

How should advertiser use computer games to advertise without alter the realism of the games?
Several companies have spent large sums of money in order to buy visible advertising spots in online games like World of Warcraft. Is this a fundamentally development for advertising?
What approach is needed to use mobile devices for advertising without bombarding the users with endless SMS? This thesis tries to identify new ways of advertising through computer games and mobile devices.

Assignment given: 15. January 2008
Supervisor: Steinar Andresen, ITEM

Preface

This Master's thesis is the final product of a five year study in Communication Technology at the Norwegian University of Science and Technology. The work was carried out in the period from January to June 2008.

I would like to thank my Professor Steinar H. Andresen of NTNU for helping me defining the problem statement. My supervisor, and manager of Wireless Trondheim, Thomas Jelle also deserves my gratitude for helpful guidance.

I would also like to thank my fellow students at Victoria, Tapas and Futurum lab for fruitful discussions and motivation throughout the work.

Trondheim, June 27th 2008

Sivasathees Sivagnanasuntharam

Abstract

The development in advertising industry has lately gone from open advertising through few, major distribution channels to a hidden and targeting advertising integrated into everyday life. Advertisers grow increasingly unhappy with the value delivered by the traditional mediums. They turn to alternative distribution channels in order to increase the success rate of advertising campaigns. Channels seen as unattractively with little purchasing power previously are attracting advertisers' attention.

The goal of this thesis has been to identify future distribution channels for advertising through computer games and mobile devices. In addition to identify, the report aims to look into the market potential of the identified advertising channels as well.

This thesis begins with an introduction to advertising. Then advertising in computer games are investigated in the next chapter. The audience and business aspects of this advertising branch are examined and existing distribution channels are presented. Then a case study of advertising in a computer game named *Cricket 07* and a virtual world called *Second Life* are carried out. Based on the thorough case study, several unexploited advertising channels are found and presented. The concepts are described in detail and high-level technical models are presented.

The second part of the thesis examines mobile advertising. The same procedure is used here as for advertising in computer games. The main contribution of this part is the proposed solution presented in the end of the chapter. An advertising channel tailor made for Wireless Trondheim is described and a high-level technical model of the proposed distribution channel is given.

The main contribution of this thesis is the identification of new distribution channels for advertising through computer games and mobile devices.

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List of Abbreviations

A2P	Application-to-Person
BBC	British Broadcasting Corporation
CPC	Cost Per Click
CPM	Cost Per Thousand
DVR	Digital Video Recording
EA	Electronic Arts
EMEA	Europe, Middle-East and Africa
ESA	Entertainment Software Association
EU	European Union
FIFA	Fédération Internationale de Football Association
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol over SSL
IEEE	Institute of Electrical and Electronics Engineers
IP	Internet Protocol
ITU	International Telecommunication Union
L\$	Linden Dollar
MMA	Mobile Marketing Association
MMO	Massively Multiplayer Online Game
MMOG	Massively Multiplayer Online Game
MMS	Multimedia Message Service
MTV	Music Television
MVP	Most Valuable Player
NBA	National Basketball Association
NFL	National Football League
NHL	National Hockey League
NOK	Norwegian Crown
NTNU	Norwegian University of Science and Technology
P2P	Person-to-Person
PC	Personal Computer
PDA	Personal Digital Assistant
PGA	Professional Golfers' Association
PS	PlayStation
QoS	Quality of Service
RTSP	Real-Time Streaming Protocol
SDL	Simple Declarative Language
SL	Second Life
SMS	Short Message Service
SSB	Statistisk Sentral Byrå

SSL	Secure Sockets Layer
TSL	Transport Secure Layer
TV	Television
USA	United States of America
USD	US-Dollar
WiMAX	Worldwide Interoperability for Microwave Access
WOW	World of Warcraft

1 Introduction

1.1 Motivation

Today, as advertisers grow increasingly unhappy with the value delivered by the traditional mediums, they turn to alternative distribution channels. Television advertisers have been suffering in the hands of the ultimate ad-skipping technologies- the refrigerator, the microwave and the bathroom. The advertising path has been predictable and people rush to the toilet as soon as the referee blows the whistle for half time during a football match. And what happen to the companies who have paid millions to advertise during the break, they don't get value for money. The ads don't fully reach the expected audience.

To further rub salt into the wound, the DVR market is forecasted to grow rapidly. Digital video recorders allow users to record programs for later viewing and enabling them to skip commercials. No wonder advertisers are desperate to find other distribution channels. The traditional online advertising is also feeling the heat. The days when people were thrilled by colorful pop-ups and flashing banners are long gone. People are tired of constantly being a target on the World Wide Web. There are too much advertising on the Internet and they are too directly. Users used to politely click on the "x" to get rid of pop-ups. Then they created pop-up blocker. In fact pop-up blockers are a standard feature in all web browsers nowadays. Still advertisers managed to come around the obstacle only to get blocked again by users, who started to block off entire ad-servers. But the ultimate blow to the industry is called Greasemonkey, a technology that automatically scraps every single ad on a web page before it is even loaded (1). Are there any distribution channels where people don't have a hostile attitude towards advertising?

Channels seen as unattractively with little purchasing power previously are attracting advertisers' attention. Among them, the computer game industry. Now, advertisers are trying to get into the games. But they need to take a cautious approach. Advertisers must have in mind that computer games are purchased by users and they don't want to pay money for a game that has annoying advertising.

Another distribution channel for advertising with great potential is mobile devices. As the number of mobile device grows, the medium attracts more advertisers. But are advertisers going to annoy the audience with similar methods used on the World Wide Web? The challenge is to tailor ads individually to every user. The success rate of advertising campaigns will increase if the people receive relevant ads. Is it possible to tailor ads to every single person?

1.2 Problem statement

The main goal of this thesis is to identify new distribution channels for advertising. This is a broad definition. In order to limit the study to my background, Master of Technology, I have chosen to focus on advertising using computer games and mobile devices.

How should advertiser use computer games to advertise without alter the realism of the games? Several companies have spent large sums of money in order to buy visible advertising spots in online games like *World of Warcraft*. Is this a fundamentally development for advertising?

What approach is needed to use mobile devices for advertising without bombarding the users with endless Short Message Service (SMS)? The author reckons that hidden and targeting advertising integrated to everyday life is the way to go. The ads should be relevant and meaningful to people in order to be effective.

This thesis tries to identify new ways of advertising through computer games and mobile devices.

1.3 Scope

The advertising industry is an enormous tree with countless branches. This Master's thesis focuses on identifying future distribution channels for advertising using computer games and mobile devices. The goal of this thesis is to identify new, unexploited channels and describe strategies that can be used to advertise through them. Only the concepts and high-level technical solutions are proposed in this report. Detailed market research, precise implementation guidelines and appropriate business models for the proposed advertising strategies are out of scope for this report.

1.4 Methodology

This report gives a brief introduction to advertising before computer game advertising and mobile advertising is investigated in detail. Existing advertising channels in both genres are presented and new, unexploited channels are identified through case study. The proposed solutions for computer game advertising are a result of case study of a computer game named *Cricket 07* and an online virtual world called *Second Life*. The suggested solution for mobile advertising is a result of using Wireless Trondheim as a potential distribution channel.

1.5 Outline

CHAPTER TWO gives a brief introduction to advertising. The author starts with trying to define the term advertisement, before a short presentation of history and global market situation of the market today is given. The chapter ends with a short advertising utilization theory.

CHAPTER THREE describes advertising in computer games. New advertising channels in the virtual world, *Second Life*, are identified. Furthermore, a generic framework for advertising in the sports genre of the computer games is given.

CHAPTER FOUR presents mobile advertising. The audience are identified and a tailor made model for Wireless Trondheim is described.

CHAPTER FIVE gives a conclusion of the study and additional guidelines for future work.

2 Background and Theory

2.1 What exactly is advertisement?

Advertisement is a form of communication whose purpose is to inform potential customers about products and services. The goal is to generate increased consumption of products and services through the creation and reinforcement of brand image and brand loyalty (2). There is however no consistent definition of advertising. Scholars, journalists and novelists have taken turns offering insights into its nature and scope but they all have different definitions of the term advertising. Professor Jef Richards of the University of Texas's Department of Advertising asked advertising and marketing experts how they use these terms. He assembled a group of experts to discuss their definitions and this led him to propose the following:

Advertising is a paid, mediated form of communication from an identifiable source, designed to persuade the receiver to take some action, now or in the future (3).

Mediums like television, radio, movies, video games, Internet, newspapers, magazines, cell phones and billboards are used for advertising.

2.2 History

The history of advertising can be traced back to 4000 BCE. Wall and rock paintings for commercial advertising, is an ancient advertising form which was widely used in Asia, Africa and South America. Egyptians used papyrus to create sale messages, while Romans and Greeks used papyrus to lost-and-found advertising (2).



Figure 2-1: An advertising for Volvo from the 1960s (4).

Modern advertising in Britain and America developed in the 19th century in support of mass consumption in highly industrialized societies. Advertising agents began to provide services like buying and brokering space in newspapers, magazines and other media in the 1800s. These agents later formed advertising agencies due to the high demands for their services. Following the emergence of these advertising agencies, advertising began to fill public spaces like train stations, high traffic areas, magazines and newspapers. The most widely advertised consumer product then was patent medicines.

The French newspaper La Presse was the first to include paid advertising in its pages, it happened as early as in June 1836 (2). This strategy allowed the paper to lower its price, extend its readership and increase the profitability. This formula pioneered the newspaper advertising and was soon copied by others.

The first radio-advertisement was broadcasted in 1922 in New York on the WEAJ radio station. And soon the practice of sponsoring programs was popularized; each individual radio program was usually sponsored by a single business in exchange for a brief mention of the business's name at the beginning and end of the shows. However, the radio owners soon realized that they could earn more money by selling adverts in small time allocation to multiple businesses rather than selling to one business per show. This business model was soon carried over to television in the late 1940s.

The modern advertising where creativity was allowed to shine was born in the 1960s. Earlier, the advertisers had taken an informative approach where the purpose was to inform consumers about the products rather than building a specific trademark associated with brands. The late 1980s saw the introduction of cable television. As cable and satellite television became popular in the 1990s, specialty channels emerged, including channels entirely devoted to advertising like TvShop.

A new chapter in advertising history was written in 1990s, online advertising emerged contributed by the “dot-com” boom. Entire corporations who operated solely on advertising revenue turned up in the late 1990s. Pop-ups and banners were the signature of the early online advertising. But people soon lost the interest in them as they were constantly bombarded by irrelevant advertising on the Internet. But in the last few years advertisers, led by Google, have taken a contextually relevant advertising approach. The aim is to achieve more successfully advertising campaigns and save money.

2.3 Global Advertising Market

Advertising spending has increased dramatically in recent years. The global spending was estimated to be \$449 billion in 2007, up 6% from the previous year (5). According to GroupM’s “This Year, Next Year” study, the advertising spending is expected to reach \$479 billion in 2008. The US ad market which is the largest worldwide with 37% of the investment, is forecasted to grow 3.9% in 2008.

Television and Internet will be the main forces behind the forecasted growth according to GroupM Futures Director Adam Smith. Television will account for 50% of 2008’s new ad dollars. According to the same report, the medium also dominates advertising in emerging markets. Furthermore, Television advertising use will be supported by major events like the American election, the Beijing Olympics and the European Football Championship in 2008.

China is expected to contribute 21% of new advertising dollars in 2008 followed by USA with 20%. Russia and Brazil make up the rest of the leading quartet with 6% contribution each.

Table 2-1: The table shows the global advertising spending in measured media. YOY= Year over Year (5).

Global Advertising Spending in Measured Media, by Region, 2005-2008 (\$ Millions)

Regions	2005	2006	2007f	2008f
North America	160,752	169,029	174,116	180,961
yoy %	4.2	5.1	3.0	3.9
USA	150,773	158,091	162,585	168,594
yoy %	4.2	4.9	2.8	3.7
Latin America	12,107	14,379	16,586	19,287
yoy %	29.1	18.8	15.3	16.3
Western Europe	110,988	116,360	121,979	127,171
yoy %	4.4	4.8	4.8	4.3
Emerging Europe	13,967	17,110	20,559	24,227
yoy %	20.9	22.5	20.2	17.8
Asia-Pacific (All)	91,202	96,713	104,370	114,828
yoy %	6.9	6.0	7.9	10.0
North Asia	29,216	32,810	37,087	44,022
yoy %	12.5	12.3	13.0	18.7
ASEAN	7,410	7,999	8,715	9,529
yoy %	10.1	7.9	9.0	9.4
Middle East & Africa	8,385	9,630	10,982	12,417
yoy %	11.8	14.8	14.0	13.1
World	397,401	423,222	448,592	478,891
yoy %	6.2	6.5	6.0	6.8

Source: GroupM, *This Year Next Year*, Dec. 2007

Television advertising is the leading medium and is estimated to account for approximately 37% of the worldwide advertising in 2008. Next in the share is newspaper advertising with about 30% of the worldwide revenue. Magazine advertising is expected to hold steady with 13% of the market followed by radio advertising. The radio advertising share is however estimated to decline from 13.4% in 2007 to just 8.5% in 2008. Despite all its hype, Internet advertising is forecasted to gain a market share of lowly 5% (6).

2.4 Utilization of existing distribution channels

The traditional way of advertising is to try to reach the target audience by advertising through major mediums like *television*, *radio*, *newspapers* and *outdoor advertising*. This strategy has been used for quite a long time and is rarely aimed at one specific customer base, leading to limited campaign success. Figure 2-2 illustrates how mass advertisement usually works.

For example when a company runs an advertising campaign for a new skateboard clothing range in a national newspaper with estimated 500 000 subscribers, only a fraction of these are potential customers. The advertisement campaign could be a costly affair for the company due to wrongful strategy. As the figure 2-2 indicates, only the blue circles are the company’s target audience, people who do skateboarding or are interested in skateboarding. As we can see, it’s just a small fraction of the reached audience. The company probably has to pay a fee based on total number of subscribers.

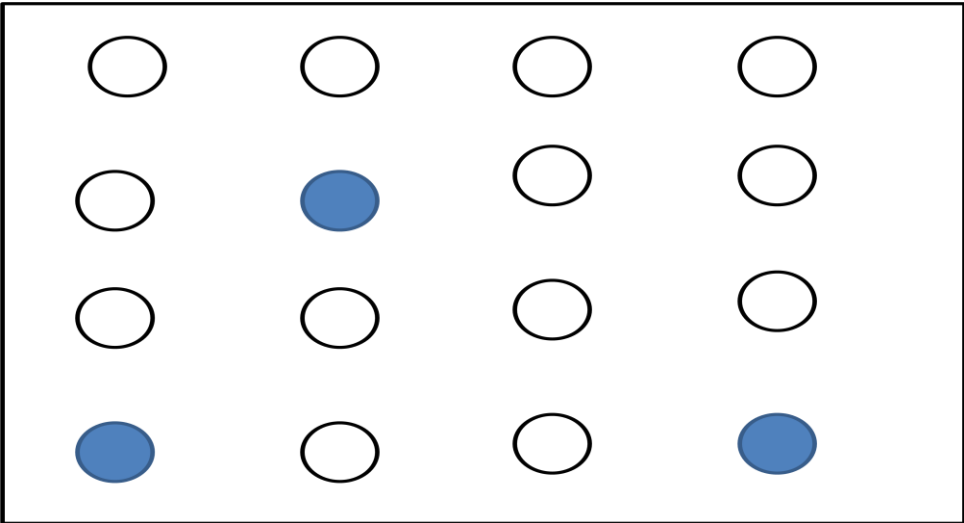


Figure 2-2: The figure shows the potential customers marked as blue circles in a big pool of targeted audience.

This is a major concern for companies operating in niche markets. Managers don’t want to use all of the allocated money to advertise through ineffective distribution channels. They would rather advertise through other minor distribution channels where probability to capture customers is higher.

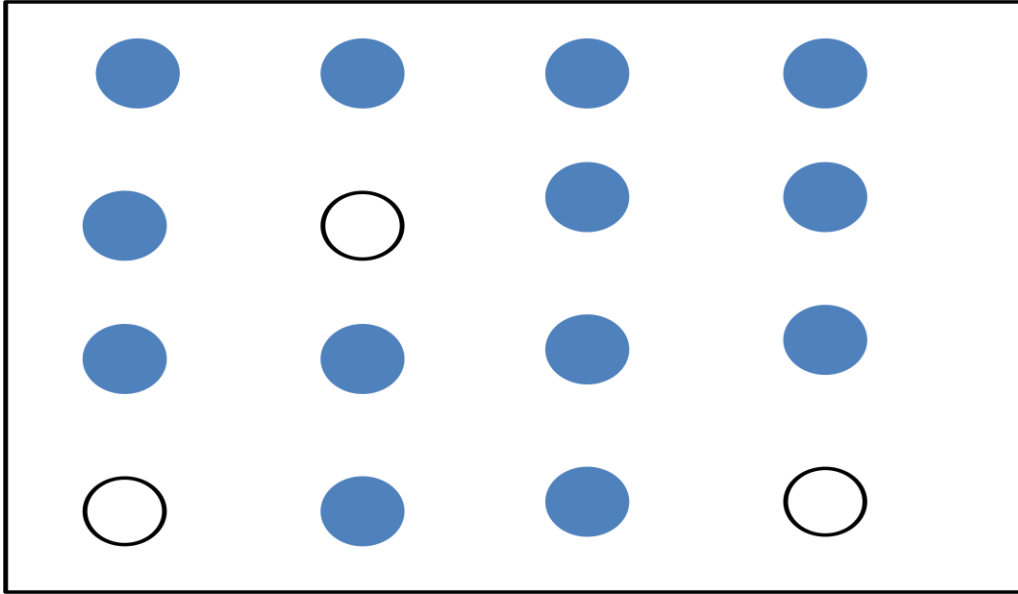


Figure 2-3: The figure shows targeting advertising where an advertiser targets a group that contains large number of potential customers marked as blue circles.

As the figure 2-2 shows, targeting advertising is done by identifying and advertising through different distribution channels which can reach relevant customers rather a mass without any or little relation to the advertised products. We can illustrate the idea by showing an example: a company that sells food supplement products increases its chances to capture new customers by advertising on varies training forums where the people are considered as relevant mass rather than advertising on random online newspapers, where the majority of visitors fit in under irrelevant mass category.

It's not said that the campaign in an online newspaper would not capture more customers than the one on training forums, but it would cost the company a lot more money. The captured customers/reached audience ratio would be higher on the forums compared to online newspapers. And the advertising campaign on the forums will be cheaper for the company. Of course, different advertising campaigns require different strategies. If the company was marketing a new soft drink then the strategy would have been opposite. All visitors of the online newspaper would suddenly fit under relevant mass category.

The development in the advertising industry is moving towards a hidden, targeting strategy where the advertising campaigns are integrated into everyday life rather than being intrusive like earlier.

3 Advertising in Computer Games

3.1 What actually is a computer game?

People use electronic games, video games and computer games when they discuss games. The differences are inaccurate and the situation is further complicated by the availability of console games, PC-games, mobile games, handheld games and virtual worlds.

Electronic games is a broad term, too broad for the author since it can include, for example slot machines and pinball machines. It's not what people associate with computer games.

The term "computer games" on the other hand is a better match. The term refers to games that are controlled or mediated by a computer. Video game refers to computer games that use video display as a feedback device. "Computer games" is the term used in this paper.

3.2 What kind of advertising is studied in this paper

There are a lot of strategies to advertise using computer games. Marketers could buy space for a banner on a popular review site, put adverts on magazines with gamers as core audience, sponsor events hosted towards gamers or advertise on gaming programs on television. The opportunities are endless.

But this paper's goal is to study adverts "in" computer games, meaning inside the game's magical circle. In other words, ads that are visible after you enter a game. This paper looks at how in-game advertising has been done in the past and offers new ideas how in-game advertising can be done differently.

3.3 The audience and business aspects

This chapter looks into the playing audience and the growth potential of in game advertising.

3.3.1 The playing audience

Before marketers enter the computer games industry, the need to gain some information about the audience is vital. A common misinterpretation is that a gamer is typically a teenager with little purchasing power. This view has changed lately after a number of researches.

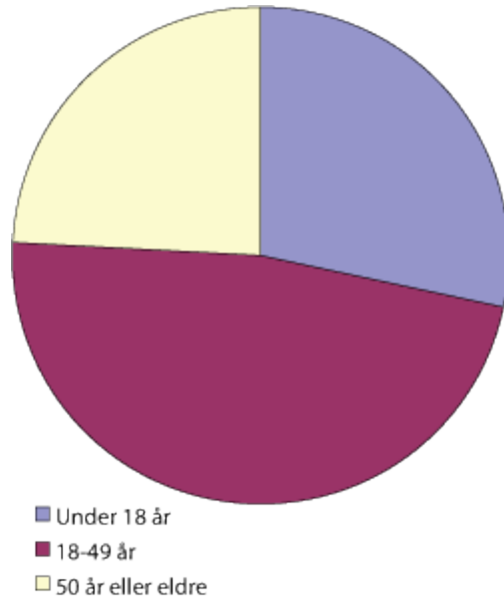


Figure 3-1: Shows demographic of the gaming audience (7).

According to the Entertainment Software Association (ESA), the average gamer is 33 year. But the data don't explain how the number is calculated. And if we take frequency into consideration, the picture looks different.

Table 3-1: Percentage share of people who have used a computer game any given day in 2007 (8).

Age	9-12	13-15	16-19	20-24	25-44	45-66	67-79
Percent	49	44	21	17	8	6	4

According to SSB's research in Norway, the age of the average gamer is considerably lower (8). As we can see from the table 3-1, the core audience seems to be 9-24 years old, at least for Norway. ESA's research shows that 67% of American heads of households play computer games. Interestingly, the same source cites that 24% of the gamers were over 50 years. This shows clearly that gamers are no longer youths but also elderly people.

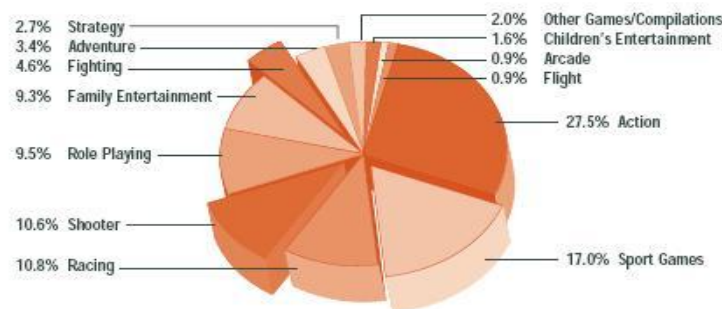
Another surprise development is that women are catching up with men. Thirty eight percent of the gamers in USA are females, compared to 62% male (9). This illustrates that computer games are enjoyed by all kind of people. The composition of the gaming audience is not as uniform as it was once considered; instead, it is fragmented into many small segments.

Family Entertainment genre is growing fast, NPD research shows that 93% of parents who play computer games have children who also play them (9). The average gamer parent plays computer games 21 hours a month. The male parent is playing most with 24 hours a month to females 18. This shows that gaming is rapidly developing into an activity for whole family like television.

All these people are playing different games as the figure 3-2 shows. There is something for everybody; strategy, adventure, fighting, sports games etc. In 2006, a total of 240.7 million PC and console game units were sold. And the gamers are distributed over several consoles too.

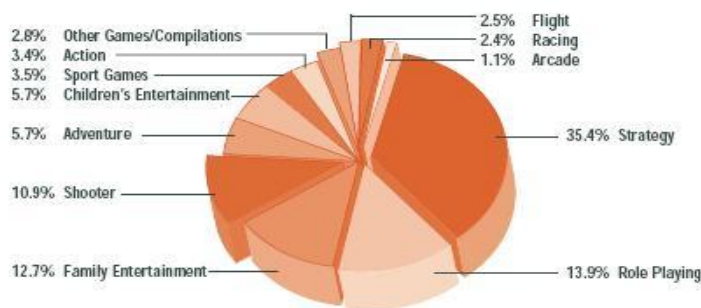
WHO PLAYS WHAT?

BEST-SELLING VIDEO GAME SUPER GENRES BY UNITS SOLD, 2006



Source: The NPD Group / Point-of-Sale Information

BEST-SELLING COMPUTER GAME SUPER GENRES BY UNITS SOLD, 2006



Source: The NPD Group / Point-of-Sale Information

Figure 3-2: Overview of the diversity of game genres (9).

The dominant consoles are Microsoft Xbox, Xbox 360, Sony PlayStation, PS2, PS3, PC, Nintendo Wii, Game Boy Advance and Nintendo DS. Games are also released on other specialized hand-held consoles, PDAs, Blackberry devices, cell phones, iPods and even cameras. As opposed to earlier practice, games are released on different consoles at the same time now.

The distribution channels for games vary too. Consumers purchase games at electronic retailers, specialty stores, on the Internet and even at a grocer's shop nowadays. Some borrow games from friends or rent it from stores. Another distribution channel is piracy on the World Wide Web; PC games are especially vulnerable to this kind of piracy. This makes it hard to estimate the number of gamers based on sale. The gaming audience is hard to estimate by a result of this and is probably bigger than assumed.

3.3.2 Business

The computer game industry has grown to become one of the biggest industries in the entertainment segment. In fact, it is now rivaling movie and music industry. With estimated annually growth of 9.1% in 2007-2011, it will soon, if it already hasn't, overtake the music industry (10).

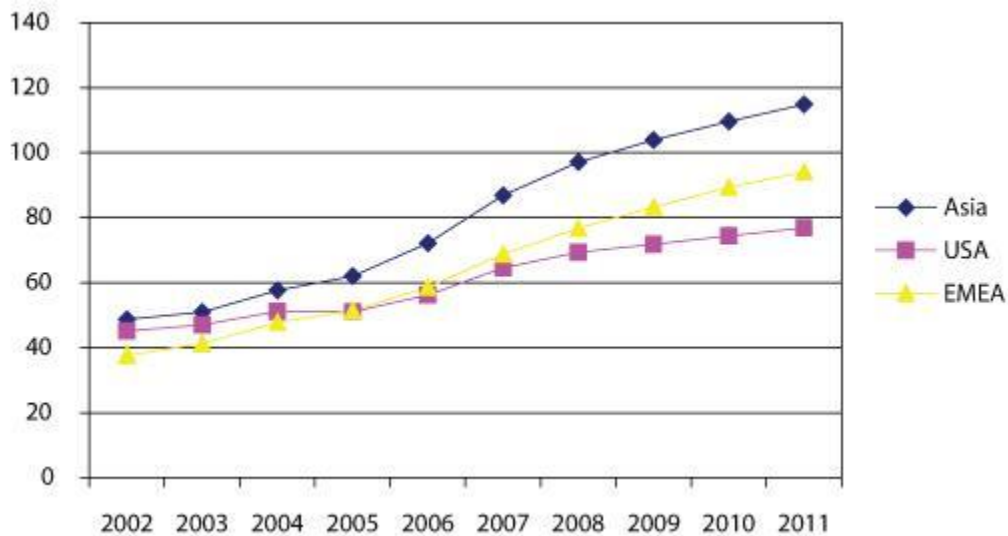


Figure 3-3: The figure shows the development of the computer game industry in different parts of the world, with x axis showing billions in NOK (10).

Just to illustrate the size of the industry, according to NPD Group nine games were sold every second on average in 2007. Halo 3, the best selling game in 2007, took in more revenue on first day of sales than the biggest opening weekend ever for a movie (Spider-Man 3) and the final Harry Potter book's first day sales (11).

The genre with greatest growth in 2007 was Family Entertainment, which increased 110% compared to 2006. Family games contributed to 17.2% of all games sold in 2007, that's more than one of every six games sold (11).

According to *eMarketer*, the worldwide market for in game advertising was estimated to be over \$1 billion as the figure 3-4 shows. And the research estimates 20% annually growth which would take the industry up to \$2 billion in 2011 (12).

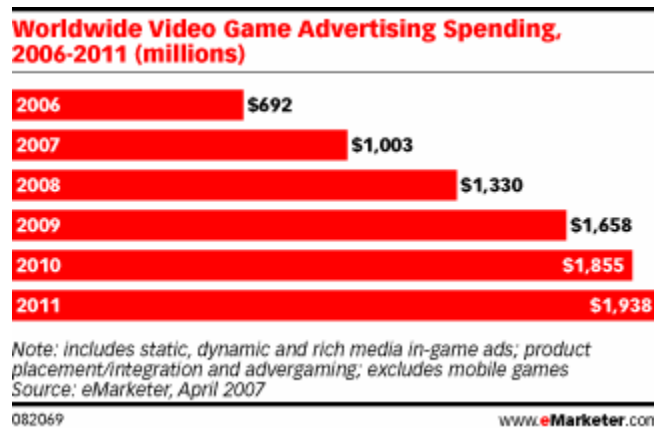


Figure 3-4: Forecast of video game advertising (12).

The estimates vary wildly, probably cause of the lack of historical data. They are probably derived by using data from growth of digital advertising markets in other media. One thing is sure, in game advertising is going to grow fast in the next few years.

3.4 The unique properties of games and challenges

The uniqueness of games and the hurdles advertisers can face will be discussed in this chapter.

3.4.1 The unique properties of games

Games differ from each other and their sequels not only in content but also in interface design (different icons have different behavior), virtual geography (how do I move to certain places), the mechanics of their peripherals (which buttons to push in different situations), hardware requirements and settings (feedback from keyboard varies in different games) and several other aspects. Every game has its own characteristic. So advertisers have to take different approach to different games. This is a new challenge posed by games compared to traditional medium like television that are consistent how it let audience interact with it.

Unlike some other form of contents, games are not fed to the audience. Gamers buy their own games and they have certain expectations about the experience they are about to enjoy. These expectations rarely include advertising. Advertisers have to be careful with how they advertise in order to not annoy the gamer.

While playing a game, you can hardly pay attention to anything else. Most games employ several senses simultaneously. Games communicate with the players through a wide range of channels: music, sound, surround effects, direct and recorded speech, animated and static images, three dimensions, text, color, distance and perspective and light. The multisensory richness can be exploited by advertisers; it's worth mentioning that advertisers should try to avoid advertising through a medium that can be shut off while gaming.

Another interesting theory proposed by a *Harvard Business Review* editor Paul Hemp, is that there might be a relation between a player and his avatar. The avatar is essentially the player's physical representation in the game. He argues that a player's avatar can influence the players purchasing decisions (13). The debate around the avatar-player relationship is ongoing and has not reached a conclusion yet.

Games often allow audience to modify the very settings and props. Many games on different platforms, especially PC, come with inbuilt editing tools. Gamers can create their own characters or modify the existing props to their liking. This, relatively big, industry of "mods" (modification) can be used by marketers as a distribution channel.

Pro Evolution Soccer (Winning Eleven in Japan and USA) is an example of widely modified game. It's a football (Soccer) game that lacks FIFA license, meaning that teams and players are made with fake names. And there is no real life advertising either. But the game comes with an editing tool that makes it possible to modify practically the entire game. Due to superior game play, the game is played by the most hardcore fans. And they make sophisticated mods to the game that can be exploited by marketers as an advertising channel.

3.4.2 Challenges

There are several hurdles that marketers need to be aware of when advertising in games. First of all, it's a daunting task to pick a game that fits to the campaign goals and brand strategy. Secondly, it's a very complicated process to find a suited place to for example place a billboard in games like *World of Warcraft* or *Anarchy Online*. The marketers need know-how from experienced gamers due to the massive landscape of the games.

Another risk marketers' face is, advertising in games under developing. The chosen game could be a failure and not be released or sell poorly. The sales are usually influenced by reviews, pre-release trailers and screenshots.

Furthermore, game developers may require a lead time up to three years for custom advert formats depending of the complexity. Apparently, advertising in games is a complicated process. First the advert has to be vetted by several authorities, and then approved by the developer and the publisher. If the game holds any license content then the advertiser needs the license holders' nod too. For console games, the console maker needs to approve the game (14).

In order to attract your target audience, you need to pick the right title. Game preferences depend on the platform the gamers are using, age, their social status, income, amount of leisure time, motivation, game rating, gender and other factors. The high degree of segmentation complicates the matter further. The reach of individual games is limited and advertisers need to advertise through different games.

Not all games are suited for advertising. Gamers' hostile attitude towards advertising in games has changed lately. Many have realized that advertising in games, especially billboards, increase the realism. But advertising is only tolerated where it's appropriate. Just to illustrate an example where a billboard could enhance the realism of a game, but do the opposite in another, we can take a look at *FIFA 2008* and *World of Warcraft*. A Coca-Cola billboard would enhance the

realism in *FIFA 2008*, a football simulator, because real football stadiums contain same sort of advertising. But the very same billboard wouldn't be suitable in *WoW*, a massively multiplayer online role-play game. The game features monsters and beasts and the billboard would just look silly in the environment.

A study by NPD Group showed that once a game is brought home, it is often played by other family members other than the one who bought the game. It shows that the reach can be prolonged further past the purchaser. Another factor that is not considered when estimating the reach of games is piracy. Piracy is an increasing problem for game publishers; they lose a significant amount of money due to piracy. PC games are most vulnerable, because the audience is more technically savvy. But piracy is not necessarily a problem for the marketers since the advertising will reach the playing audience anyway.

Computer game as a distribution channel is not a great one if you are looking for immediate effect. On the other hand, if you want to build a stronger brand in minds of smaller group of people, rather than reach out to wide audience that contains both relevant and irrelevant customers, the adverts in game can deliver good value.

A company named Exent Technologies has developed a new technology that enables insertion of adverts into games that are already released, without direct access to the source code (15). This can be a massive invention that can make advert in games more attractive. Imagine the number of games that are already out there that can be used by marketers. Another possible advantage with this technology is the possibility to eliminate the risk connected with sale. Marketers could wait and see if a game is a hit before advertising in it.

3.5 The many ways to advertise

This chapter considers many existing formats that are already taken in to use and offers some thoughts on how marketers can use different strategies that are unexploited. Two games are discussed in greater detail; these games are *Cricket 2007* and *Second Life*. The four main genres in computer games advertising are:

- **Advergames.** These are advertiser-sponsored games. Marketers create their own game as promotional content. They are usually small and contain limited feature.
- **Product placement.** Just like in movies, product placement occurs with the inclusion of a brand's logo in a game, or a favorable mention or appearance of a product in a game. There are many examples of product placement in computer games: Oakley sunglasses in *EA Cricket 2007*, Umbro Footballs in *EA FIFA 08* and Nike T-shirts in *Tiger Woods PGA Tour 08*. Due to significant improvement in quality, characters wear up to date clothes, shoes, watches and drive real world cars.
- **Real- world analogs.** 3-D environments provide space for ads with real-world analogs. This kind of advertising includes in-game billboards, sports banners in stadiums and radio spots. These adverts enhance the realism of the games and are often welcomed by gamers. Besides, they offer a direct advertising channel for marketers.
- **Cross-promotion.** By cross-promotion, we mean that real world products can be promoted in games. An example is Subway offering coupons to gamers through computer games. Marketers could also offer discounts and rewards. Another example of cross-promotion is clothing company Diesel, which used the computer game *Devil May Cry*, to promote their new range.

Advergames

Advergames are the oldest form of advertising. They come in a wide range of flavors and size, dictated by the size of budget. Advergames are popular for several reasons: they are relatively small and can be developed on a short notice. Besides, they offer full control of the creative unlike game developers who don't want the marketers to interfere too much into the design process. They are also cheap compared to full scale games, and they have a short lead time which means marketers can deploy different strategy according to market and business changes.



Figure 3-5: An advergame developed by Dr Pepper.

The most basic advergames are built into banner and pop-ups that appear on the Internet. The complexity of the games depends on the budget size. Full-length advergames are rare, due to high development cost and competition from other games.

But there are few examples of full-length advergames as well. Mercedes-Benz seemed to have faith in full-length advergames as they released a couple of games with limited success.

Mercedes-Benz Truck Racing was released in 2000 and *World Racing* was released in 2003.

Although they were full-length games, developers focused too much on showcasing the brand and too little on gameplay.

The future of full-length advergames doesn't look too bright. With so many games released nowadays, mediocre advergames are in danger of drowning in the assortment. And with high development cost, no wonder marketers try to avoid this strategy. Advergames future depends on the success of advertising through hand-held devices and give-away strategies applied by companies like McDonald's and Kellogg's.

Product placement

Today, product placement has reached a level where sophisticated strategies are applied. The product placement in games is no longer limited to billboards as it used to be. Highlights of recent in-game campaigns are given in the following section.

Rewards

This advertising strategy gives players a reward for defeating a certain opponent or reaching new levels. The reward is typically a branded item that can help you with certain tasks in the game. Examples are Burger King Mascot, Coca Cola branded car or Nike shoes.

Game characters

Famous game characters can be used to endorse a brand or product in other media. This type of advertising was popular in the 1980s and 1990s. Pac-Man has previously been used in TV-commercial. Other famous characters that can be used are Donkey Kong, Gordon Freeman from Half-Life, Lara Croft from Tomb Raider and Master Chief from Halo.

Imagine the effect of using Lara Croft to promote the new collection of Victoria's Secret underwear range or Gordon Freeman to front Specsavers eyewear collection. Racing simulators are also often used to promote different products by using identical gear on pit-crews.

Apparel and vehicles

The graphic resolution has improved so much that branding character clothing is possible. Nike's logo is visible in *Tiger Woods PGA Tour* series, Ferrari logo is fronted by pit crew in Formula One games by EA. Sports games are mostly used to front brand advertising. Virtual world like Second Life is a paradise for characters with branded clothing.

Real-brand cars enhance the realism of the game and are often welcomed by the audience. This is a great advertising channel for car manufactures to show off their cars without annoying the gamers. Some car companies have integrated editing-tools in games to let the gamers customize the cars. Marketers can put real-brand cars in games like *Grand Theft Auto: Vice City* instead of non-brand cars that appear in the game as standard. This could be a win-win situation for both the marketers and the audience.

Tools and accessories

Real world products can be placed as a part of a game. Main characters could be equipped with Rolex watch, Apple iPhone and MasterCard. Instead of traditional product placement, the products can be imbedded in the plot. For example when the character needs to check the time he has to use the Rolex watch or call his allied by using the iPhone.

Food and beverages

Since food and drinks are already present in many games, it's easy to put brand on them. In Worms 3D, worms need Red Bull energy drink to get energy boost. Several other games contain Pepsi and Coca Cola cans. In Second Life, some people even have Vodka and other alcohol beverages.

Buildings and rooms

Branded building can be visible from long distance and therefore should be used in games as a form of advertising. It's not common as billboards and other form of advertising in games. But there are some games like Need for Speed series that have this kind of advertising. However, they are widespread in virtual-worlds like Second Life where the stores and buildings are branded in full 3-D.

Static billboards

Billboards are the oldest form of advertising. It's easier to put a static sign in games than entire buildings and products. Billboards appear in their natural context like around racing tracks in games or in football stadiums. The trick with this kind of advertising is to place the billboards in natural context.

Modding and cheat codes

By modding, we mean modifications of a game made by gamers in order to change environment, add new objects or create an entire new game based on the original. A number of mod-friendly games come complete with editing tool like Konami's *Pro Evolution Soccer* series. Marketers could also considering using mods for games instead of advergaming. In this way they can save money and target mods for popular games with large audience. Alternatively, marketers can release sounds, jerseys, stadiums and other 3-D objects for games with embedded advertising.

Advertising through cheat codes is an interesting and unique channel as well. Cheat codes are secret combinations or words when typed, unlock new features or alter the gameplay. Cheat codes are usually leaked by the developers, and marketers could pay to get their brand or products name as a secret word. Different kit and equipment suppliers can for example deliver balls, jerseys, and boots in sports games that can be unlocked by gamers. Adidas could for example pay the game developers to use the word “predatorpulse” to unlock the new football boots from the company in *FIFA 08*.

Real- world analogs

As the technology evolves, marketers eye more sophisticated ways to advertise. Some have already developed adverts including animation, video and audio. Interactive billboards that changes to player response is also used. Such billboards hide more information and gamers can trigger it to reveal more upon touch. Some companies offer continuous advertising that is done by streaming adverts from server directly into games. Advertisers can update the billboards according to new campaigns instead of relying on static billboards that are coded directly into games without the possibility to update.

Full motion adverts with video and audio is also being used in games. Characters can watch different videos in games as a part of the plot that contains advertising. Exent Technologies uses Internet connection to update their interactive adverts and gather statistics. This can be a problem however; the console market doesn't use Internet as much as PC games. But the development is moving towards online-gaming for the console industry as well and we could see the consoles use the Internet as much as the PCs in the future.

Another potential challenge is the Internet connection. The connection is advertisers' path into the game, but the key to the entrance is in gamers' hands this time around. The annoyance threshold should not be reached in this distribution channel; otherwise the gamers could turn off the connection. The marketers need to apply a strategy for advertising that the gamer finds interesting. The gamer is the master and the advertiser the slave in this distribution channel.

3.6 Case study

3.6.1 EA Cricket 07

Cricket 07 is a cricket simulator developed by HB Studios and released by Electronic Arts in 2006. The game is available on PC and PlayStation 2.



Figure 3-6: EA Sports Cricket 07.

Cricket is not a widespread sport; it's mainly played in Great Britain, Australia, New-Zealand, South-Africa, West Indies, India, Pakistan, Sri Lanka and Bangladesh. As a consequence of that, Cricket 07 is not a game for a large audience worldwide. Advertisers using this game as an advertising channel would therefore have accurate information about the playing audience. One has to be an above average cricket fan to play this game. It takes some time to master the basics and you need to do that in order to fully enjoy the game. And the game can be boring and test players' patient at times. In other word, you have to be a hardcore cricket fan to spend a lot of time playing.

This game is affiliated with the cricket boards of England, Australia, New Zealand and South Africa. Only these nations are equipped with licensed kit, the other nations in the game wear fictive kit.

The advertising in this game is pretty simple and there are a number of areas that can be improved. The game features mainly to kind of advertising; static billboards in stadiums and equipment and apparel on players.

Static billboards

The game developers have randomly placed static billboards around the stadium as the figure 3-7 illustrates. Cricket bat manufacturers Puma, Gray-Nicolls, Slazenger, Kookaburra and Gunn and Moore are all visible at different stadiums and on players bat in the game. Furthermore, there are sponsors logos visible on national shirts, Hummel logo for South Africa and Adidas logo for the other three mentioned nations. That's all the advertising in this game; clearly this game can be used in a better way as an advertising channel.

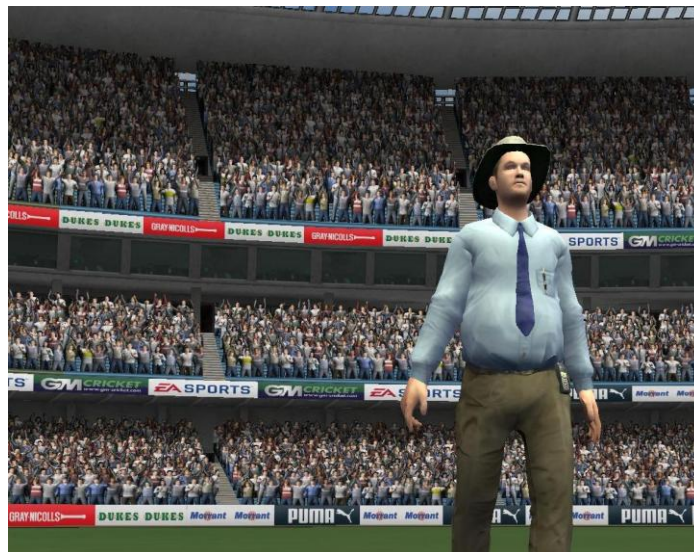


Figure 3-7: Static billboards in a stadium in Cricket 07.

Equipment and apparel on players

Different batsmen use different bat as in real life. The brand logos on bats are visible and so are the logos on jerseys. The stumps are also branded with sponsor logos, KFC in this case, as the figure 3-8 shows.



Figure 3-8: The picture shows a batsman in action in Cricket 07.

My Suggestions

Cricket is a sport where you need a few bits of specialist equipment to keep you safe. The figure shows all the equipment a cricket player needs in a match.

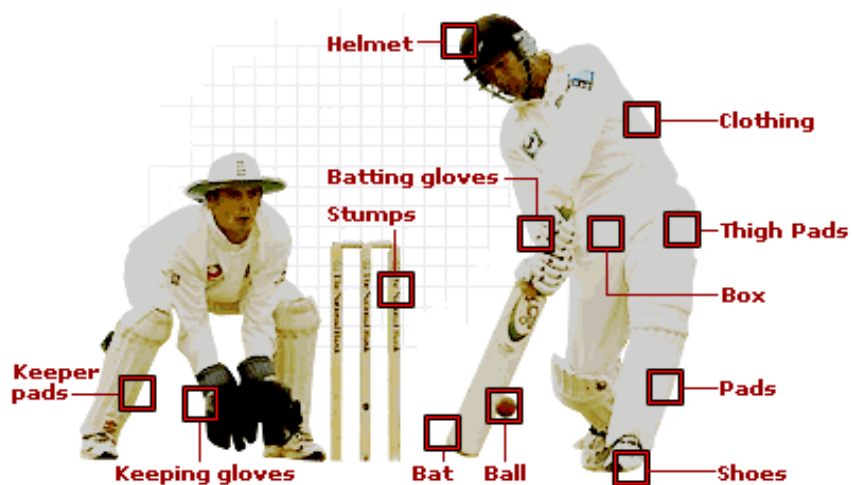


Figure 3-9 : Cricket equipment guide (16).

The main menus in all sports games have a similar layout. The figure 3-10 shows how the menu looks like in Cricket 07.



Figure 3-10: Main menu in Cricket 07.

I have two proposals that advertisers can use for advertising in the main menu of the game. Then I have two more proposals that can be applied in the playing mode of the game. The proposals and high-level technical solutions will be described in this chapter.

The Shop

The main menu could feature an option named *The Shop* or something similar. By entering this option, the player should be taken into a virtual room where different brands are presented. All the products featured in the game should be viewed as 3-D objects. Just to illustrate the idea, we can describe the Puma section in the virtual store: Puma as a sponsor should be allocated a section where the company can showcase all the featured products in the game and apparel, accessories and other items that may be relevant for the hardcore cricket gamers.



Figure 3-11: The virtual shop in Cricket 07 should look like this.

The showcased items should contain all the necessary information a potential customer needs and be revealed upon click, as shown in the figure 3-12.

Puma Cricket Bats

Puma Ballistic Cricket Bats - New 2008 model

With a slight bow, substantial edges and maximum willow through the playing area, the Puma Ballistic cricket bat delivers awesome pick-up and performance. Available with oval short handle only. A unique carbon composite handle now adds state of the art technology for unrivalled driving power and balance (6000 model only).

- Hand selected natural English willow on all models.
- Patented carbon composite / injected foam handle (6000 model only).
- Large profile and hitting area.
- Gradually tapered edges provide balance and power.
- Original oval handle profile provides optimum grip, comfort and control.
- Coloured Puma toe protector reduces wear and minimises moisture uptake.
- Traditionally hand-crafted construction.
- Highly distinctive latex grip and unique CHROME printed labels.

Weight Range:

Light - 2lb 7oz to 2lb 8oz

Medium - 2lb 9oz to 2lb 10oz

Senior Bats

Puma Ballistic 6000 Short Handle (CC Handle) £239.99

Puma Ballistic 5000 Short Handle £174.99

Puma Ballistic 4000 Short Handle £143.99

Puma Ballistic 3000 Short Handle £119.99

[BUY ONLINE](#)



Figure 3-12 : Viewing the information of a cricket bat as it should be in the shop.

When a gamer wants to purchase a product in the shop, the *Buy Online* button should be clicked. The system should react as the figure 3-13 shows.

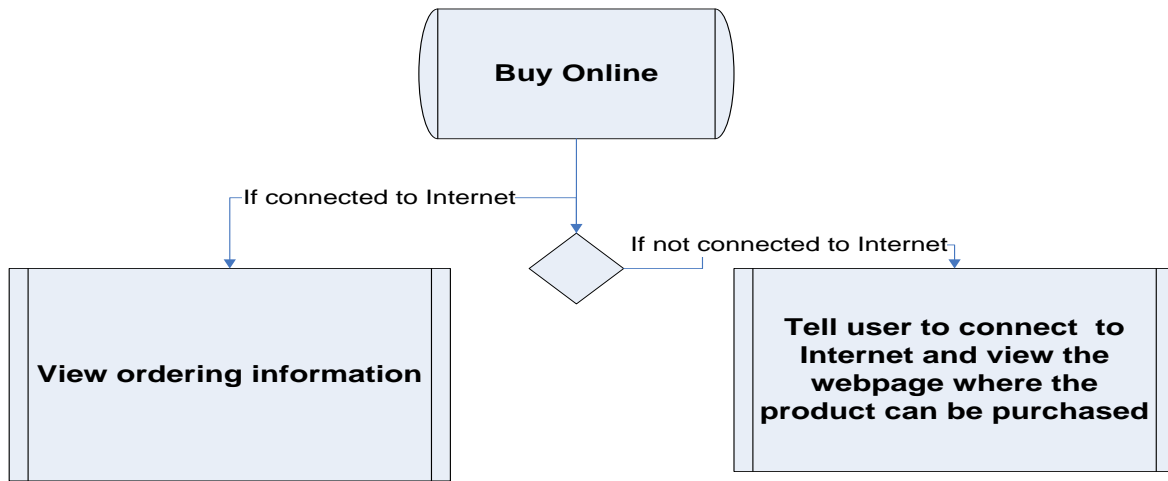


Figure 3-13: SDL drawing of the system.

The ordering information should contain the usual name, address, e-mail, phone number fields etc.

Your Account Information

Billing Information

First Name | XYZ _____
 Last Name | ABC _____
 Street Address | 1234 Anywhere Street _____
 | Unit 555 _____
 City | Palo Alto _____
 State/Province | CA | Postal Code | 10001 _____
 Country | United States | _____
 Telephone Number | 555-555-5555 _____
 E-Mail | aaa@bbb.ccc _____

Shipping Information

First Name | XYZ _____
 Last Name | ABC _____
 Street Address | 1234 Anywhere Street _____
 | Unit 555 _____
 City | Palo Alto _____
 State/Province | CA | Postal Code | 10001 _____
 Country | United States | _____
 Telephone Number | 555-555-5555 _____
 [Submit]

Figure 3-14: An example of an ordering form.

The Record Store

The main menu should feature another option named *Record Store* as well. All sports games contain music. The music contributors are often a mix of famous and unknown up and coming artists. The purpose of this store is to give the gamers opportunity to gain information about the music constitutors in the game and purchase their albums as well. The sports games often feature catchy songs and trying to purchase them through the Internet can be a time consuming process with no result.

The system should work similar to *The Shop*. Detailed information about how to purchase the albums should be visible for the user as soon as he enters the *Record Store*. The figure 3-15 shows how the interface of *The Store* could look like. The interface should be hooked to Rhapsody, Apple iTunes Online store, Amazon or game developers own music database. The purchase procedure should be done in the game as long as the gamer is connected to the Internet.



Figure 3-15: A potential interface for the record store in the game.

This advertising channel could be lucrative for artists on non-major labels. This kind of marketing makes the availability of relative unknown albums easy for wider audience. Without this opportunity, consumers have to spend time searching on the Internet and sometimes with no reward.

Clickable Equipment

The gaming audience should be able to purchase a product exactly like the one they see while playing the game. If they like the cricket bat used by a game character during the match they play, then it should be possible to change to a “shopping” mode while playing, where the gamer can click on apparel and accessories in the game. The click should trigger a pop up of a small window with information like the figure 3-16 illustrates. The pop up window should let the player add the clicked item to his shopping cart in *The Shop* on main menu so the player can purchase the product as soon as he finishes the game. The “shopping” mode should let the player add all the imaginable products like jerseys, bats, balls, pads, batting gloves, helmets, sunglasses etc to shopping cart with a simple click.

This should be an extended feature of *The Shop* function described earlier in the thesis. All purchasing should take place in the shop after the player has finished the game in order to avoid altering the game while playing. This feature can be handy since the gamer is engaged directly by offering a “shopping” mode while playing, eliminating the possibility of gamer forgetting to purchase the product after the game, or lose interest in the product after a while. This “shopping” mode catches the player in the very moment when he becomes interested in the product and nails the deal. Gamers should be delighted with the opportunity to buy the same equipment as their favorite team or player without having to waste time searching on the Internet. This strategy is a promising one that can turn into a goldmine for the advertisers.



Figure 3-16: An example of information triggered by a click on the bat from a gamer during playing the game.

Interactive Billboards

The final suggestion to improve the advertising opportunities in *Cricket 07* is taking interactive billboards in to use that change according to different stadiums. The static billboards are not flexible and offer little value to the advertisers. Instead, advertisers should be able to insert new advertising continuously using Exent Technologies or a similar company. According to Exent, inserting of ads can be done without direct access to the source code. But it relies on Internet connection in order to link up with user's device.

The advertising should be streamed from an ad-server. Furthermore, advertising should be selected according to geography using IP-address from the player's PC or console. By using IP-address to place advertising on the billboards, the advertiser can reach out to relevant audience and the gamer gets relevant advertising as well. A gamer located in Australia should get relevant

advertising on the billboards according to his location, while a gamer in India should get a different advertising that is relevant for him.

The game developers can maximize the profit by allowing more advertisers use this channel since the billboards are dynamic. And the playing audience profits by the interactive billboards as well. It enhances the realism of the sports games as the advertisements change often. But the advertisers should be careful with bringing irrelevant advertising into the games.

Challenges

There are several challenges that must be dealt with in order to implement the suggested strategies. A potential obstacle is the Internet connection; all the proposed methods require the player to be connected to the Internet in order to purchase the products or albums in the game. Of course, the players have the opportunity to get all the necessary information to purchase the wanted products, without being connected to the Internet too. However, with online gaming rapidly becoming popular, more and more devices will be connected to the Internet in the future according to experts' forecasts.

Advertisers' updates whether it is products or billboards are dependent on the Internet connection. Since the gamer is the master of this channel, the advertisers should offer him relevant advertising in order to be invited into his home. One wrong move and the gamers' annoyance threshold could be reached, leading him to disable the Internet connection. So the chaotic and annoying online advertising approach should not be applied here.

Cost affiliated with the development of the proposed strategies should be considered before applied. The technology requirements to implement the suggested methods shouldn't be an obstacle today. The technological capabilities today should easily cope with the requirements.

One other concern is security in connection with the purchasing process. This part could use the same solution used by the electronic commerce industry to provide users safe transaction over World Wide Web. Transport Security Layer (TSL) or Secure Sockets Layer (SSL) protocols can be used over HTTP to form HTTPS, for secure transactions over Internet. These protocols have proven safe and robust over a decade and should provide the security needed.

High-level Technical Solution

The figure 3-17 shows a proposed high-level solution. This is a simple model of the system required to put the suggested ideas into life. The system is divided into three parts: *user environment*, *data transmission channel* and *server environment*.

User Environment

This environment consists of the user and his PC, usually protected by a firewall. The firewall acts like a watchdog.

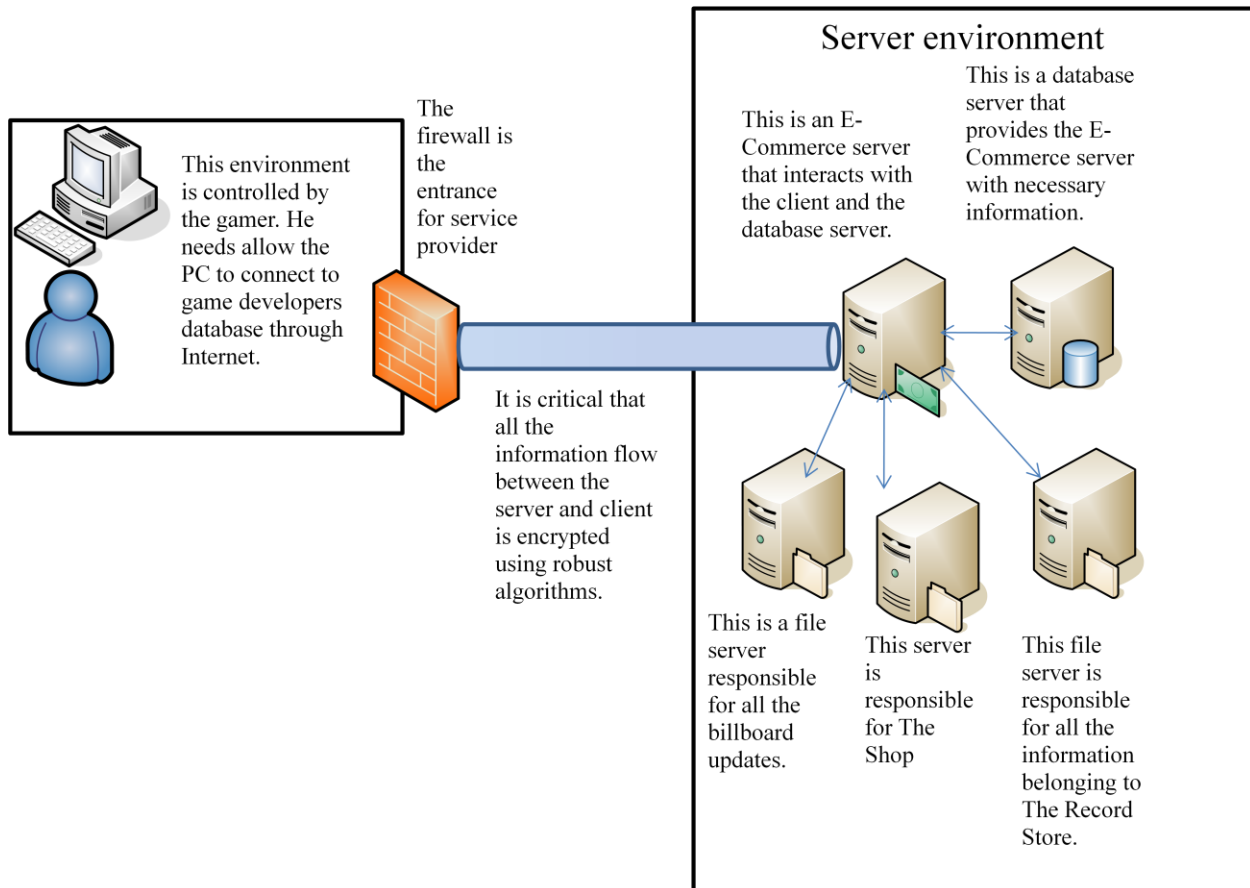


Figure 3-17: A high-level model of the backbone needed to realize the proposed strategies.

The user holds the key to the door which the advertisers need to enter, in order to continuously update *The Shop*, *Record Store* and the interactive billboards. But the user should realize that he needs to let the game connect to game developers servers in order to purchase the offered products in the game.

Data Transmission Channel

This is the channel that connects the client to the server. This is the weakest link under a transaction process. The security provided is essential for the user and game developers need to use a robust encryption protocol. The users are more willing to use credit card and other sensitive information when they know the channel is secure.

Server Environment

This is game developers' side of the system. The game developers are free to design their server plant according to their wish. But the plant should contain e-commerce, database and file servers. The e-commerce servers should handle all the business activities, while the database servers should keep all information about subscribers and their preferences up to date. The file servers are responsible for storing all information and handling updates from companies providing products and services in the game. The file server plant should be divided into three further sub groups: *The Shop* servers, *The Record Store* servers and billboard servers.

Applicable in other games

The four suggested solutions are applicable beyond the evaluated game. The author reckons that the four methods could be used in any computer games in the sports genre. All sports games are designed similarly. They have music in the background, banners and billboards in the arenas and usually have a huge fan base that is willing to buy merchandise.

The suggested framework could be used in several games like: NHL Ice Hockey series, Fight Night series, Cricket series, Rugby series, Madden NFL series, FIFA Football series, NBA Live series, PGA Tour series, MVP Baseball series and NASCAR series just to mention some.

Interestingly Electronic Arts distributes all these series. And one would assume that EA would be interested in applying the proposed strategies to their huge customer base.

Furthermore, the games are distributed across different platforms. Although PCs are the most suited platform for the proposed framework which relies on internet connection to function optimally, it can also be applied to consoles. Console market is catching up with the internet usage of PCs as the multiplayer online gaming industry is growing rapidly.

3.6.2 Second Life

Second Life (SL) is a 3-D virtual world developed by Linden Labs. However, it doesn't fit under the definition of a game. SL is a cross between a 3-D development platform and a chat program. The virtual world consists of hundreds of servers that are all connected into one grid. Unlike

other massively multiplayer online game (MMOG or MMO), SL is not divided into parallel realities, which means that all players can see each other regardless of located server.

All the game's assets are hosted on Linden Labs' servers, which mean the players need Internet connection to enjoy the world. The only thing that resides on the player's computer is the downloadable client called Second Life Viewer that visualizes the-world related information (17). The client also comes with editing and scripting tools that enables players to create, edit and color 3-D objects.

SL is mainly a virtual world for people above 18 years although it has a walled garden for players under 18. However, Linden Labs don't make any legal guarantee that all users of the SL mainland are over 18. The players have to act in accordance to rules and regulations set by the developers.

At the end of March 2008, approximately 13 million accounts were registered, although a large percentage is inactive (17). On average 38 000 residents were logged on at any particular time. The majority of the audience are from USA (approximately 30%), but there are many players from outside USA with Germany, Japan, UK, France and Italy being the next band of most users (17).

Linden Labs have adopted a business model that relies on subscription. They sell land or more correctly server space. Every player can advertise anything without paying the company in the allocated area. There are two types of accounts: *basic* and *premium*. Basic accounts are free but do not include the right to own land on the SL mainland. The premium accounts pay 9.95 USD per month, which includes the monthly tier fee of a small (512 square meters) land (18). You get a weekly stipend and premium support as well.

SL has a sophisticated in-world economic infrastructure with its own currency named Linden dollar (L\$). This feature has turned the virtual world into a market for people with entrepreneurial scent. SL has turned into a big business with daily transactions between players topping \$100 000 in real-world money at any given day. Exchange rate is around L\$266 for one US dollar (17).

Everything imaginable is for sale: cars, bike, trucks, clothes, hair, shoes, houses, theme parks, mountains and so on. There are even real-world law offices and embassies in SL where real people work by interacting with potential customers via chat.

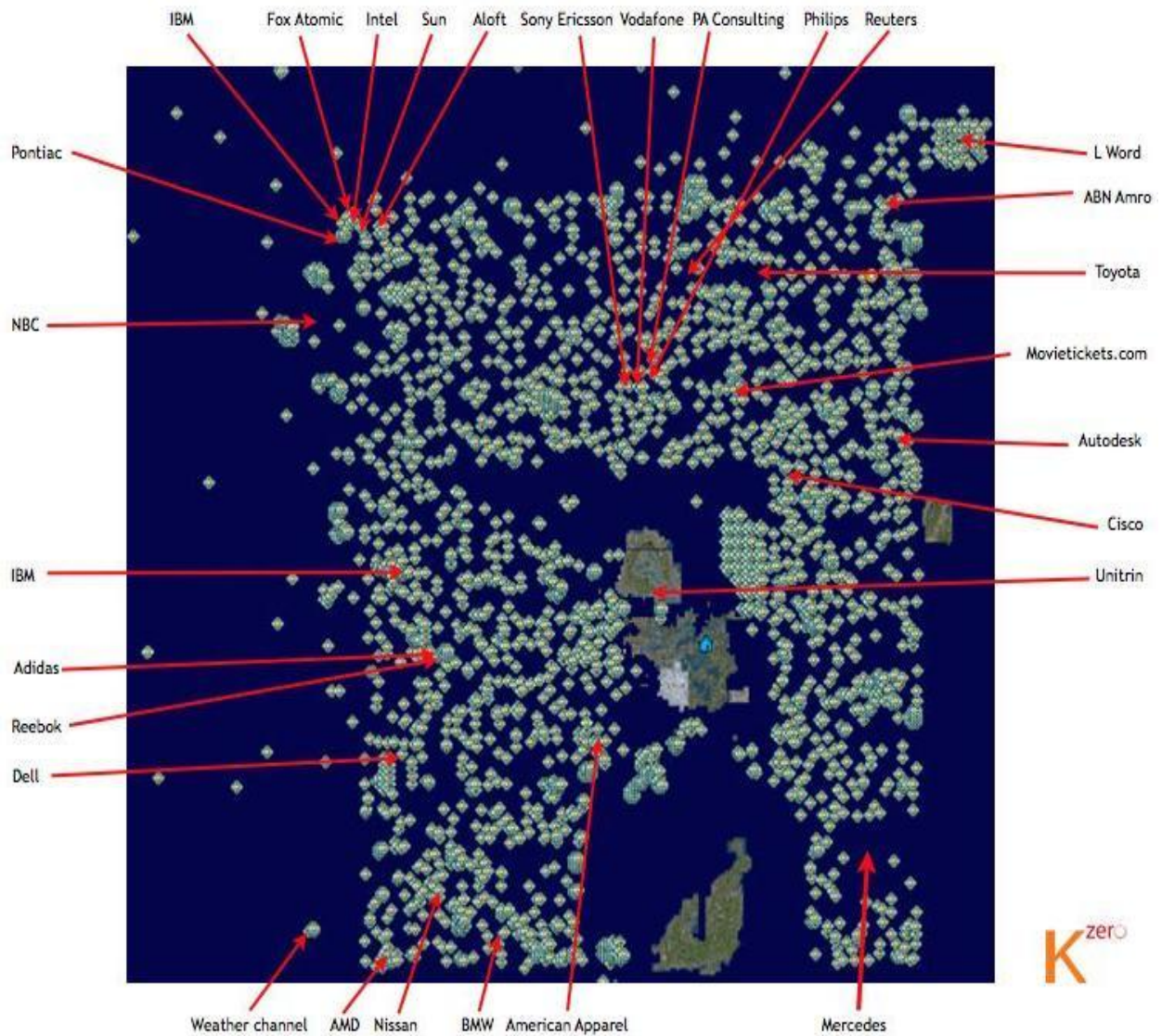


Figure 3-18: Brand map of SL dated 30 March 2007 showing all the involved advertisers (19).

As the figure 3-18 shows, SL advertising market is booming, there are already many companies who have opened stores in SL. There are several companies who have specialized in billboard placing in high-traffic areas such as malls and nightclubs. Live streaming radio shows sell advertising time so do the in-game newspapers. Live video streaming has a huge potential since many homes in the game are equipped with television.

Many brands get free advertising because of the users. Like many other games, SL offers editing opportunities that enables users to create objects with real-world logos. There are a range of such objects. Users own Mac laptops, Nike outfits, Ciroc vodka, boxes of Pringles, Ray-Ban shades, IPods, Adidas sneakers and so on. All this advertising is done by users without trademark owners' involvement.

There are also many famous replica buildings like Twin Towers and Dutch football team Feyenoord's and Ajax's stadiums. Feyenoord football club has designed an island with features like daily news video update, fan shop with replica kits and history room. Why this strategy? Because the club wants to reach out to new target markets and expand their fan-bases.



Figure 3-19: Feyenoord's stadium (20).

This is a part of a wider market strategy to penetrate new geographical markets and tap into lucrative fan-bases overseas.

Religious organizations are also using SL to promote their beliefs by creating virtual places. Many Christian churches have own islands in SL where they offer people information and

meetings. Egyptian-owned Islam Online has purchased land in SL where Muslims and Non-Muslims can practice and gain experience (17).



Figure 3-20: Princeton University in SL (21).

SL has begun offering virtual classrooms for universities and colleges too. SL enables educators to host lectures and projects online. According to a *New York Times* article (22), SL has sold more than 100 islands to educational purposes. Several big consortia have purchased many islands, sub-divided them and rented them to several educational projects. Hundreds of colleges and universities are experimenting with SL.

SL is also being used for foreign language tuitions. The British Council has launched English tuition in SL and many other schools are also following their example. Recently Spain's language and culture institute, instituto Cervantes (23), bought an island.

Travel agencies and consulting firms have launched virtual places with in-world customer support where users can interact with customer service representatives. Customers can experience “warmer” support conversation here than through other channels.

The potential of SL is enormous and other advertising strategies could be employed as the technology improves. The Second Life user-base is growing rapidly and advertisers would be better off by exploring opportunities and challenges these environments present while the scale is still relatively small and mistakes are affordable.

My suggestions

In this chapter, I will try to identify new ways advertisers can use to connect with potential customers in Second Life.

Video streaming

Different video streaming services are proposed in this chapter.

Major events

This category includes all major sporting and entertainment events. Events can be broadcasted live in restricted areas or on islands on large screens. Broadcasters should charge users with an entrance fee like the pay-per-view model. Events like football matches, big boxing fights, MTV awards, cricket matches, rugby matches and Olympic Games can be broadcasted live through this channel. These events usually attract huge audience and can be a strategy to penetrate new markets and lucrative customer-bases.



Figure 3-21: Showing an audience watching a program on a large screen in SL.

Many people enjoy watching television and especially major live events with other people. By watching together, they can interact and express feelings with each other. People can gather like they do in city centers during major events, but in a virtual world instead. The events can be advertised around high traffic areas in SL with dynamical billboards showing cinema style signs like “England-USA football match live tonight on SKY Island” for instance.

This channel suits pay-TV service providers like British Sky Broadcasting Group, Canal Digital and Modern Times Group who can target oversea markets. The broadcasters can in addition to create revenue, promote the brand of the company in other marketers that could help them to expand in the future. Advertisers, in addition to the broadcasting company, can exploit the huge mass, by using interactive billboards in the area and buy advertising time during the live events.

This broadcasting strategy cope with the availability problem many users experience. People don’t have or can’t afford pay-TV in many countries and major sporting events are usually broadcasted on these channels. Another problem is that some events are meant for some specific audience in a particular part of the world, meaning it’s hard or impossible to people outside this area to access the event. There are also some people who don’t have television but are interested in watching single events. There are mainly three groups that can be targeted by broadcasters:

- **People without access to pay-TV.** Typically people who can't afford to spend money on expensive subscriptions. Students, lower class and middle class in some countries are presented here.
- **People without TV.** Many people don't own television, the reasons can be that they don't have time to watch television or cannot afford one. Students, lower class to some extent and many hard working career-climbers stuck at the office are represented here.
- **People without any option.** People under this category are typically people who work in other countries than the country of origin. Examples can be an Englishman who works in South America who cannot follow his national cricket team due to lack of options or a Norwegian working in Malaysia who wants to watch cross-country skiing.

Television shows developed specifically for SL (AdverShow, expression invented by the author)

Advertisers can develop television shows specifically for SL. Many of the residents in SL are equipped with television and shows can be streamed directly into users residents like it's done in real-world. Advertisers can use a similar strategy as the advergence approach. Small videos like cartoons and humor cuts can be streamed into television with embedded advertising by different companies. This channel can be used by any companies that want to promote their brand or products. Movie distributors can also promote upcoming movie projects here. The development cost is low compared to other strategies and users don't get annoyed. Both, users and advertisers can benefit from this strategy. Advertising can be adapted to different users by picking up their interests and preferences by using simple questionnaires.

The adverShows can also be shown continuously on billboards in high traffic areas. But advertisers have to remember one thing; they have to catch users' attention in order to exploit the strategy and that can only be done if the audience is entertained by the billboards. Therefore, adverShows should not be like advertising shown on television where it solely focuses on promoting a brand or product. The advertising should rather be integrated and hidden in the adverShow. Target group for this strategy is pretty much every user who owns a television in SL.

Cable television vendors

This channel is mainly meant for cable television vendors located in different parts of the world. They can use this marketing strategy to penetrate new geographical market. Vendors can buy islands or large areas and offer services to customers like in real-world. The offered channels should broadcast the same material like them in real-world.

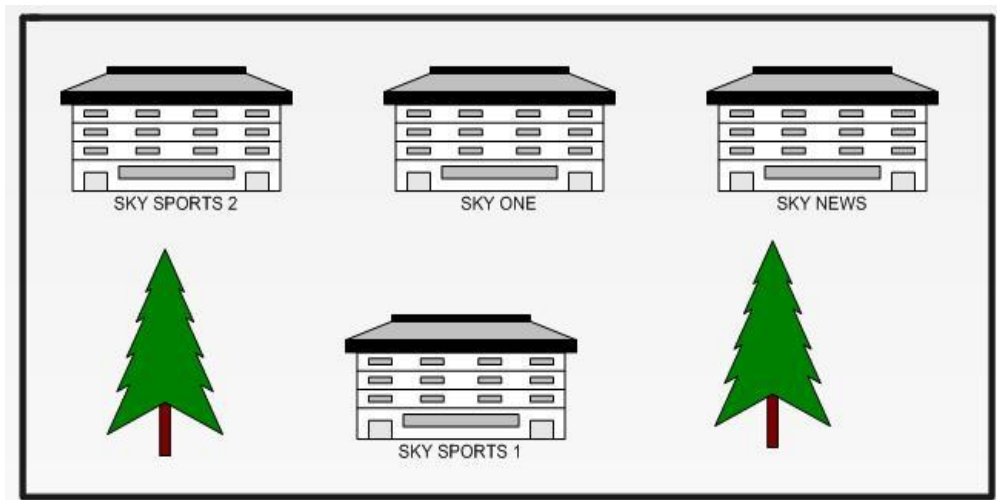


Figure 3-22: Showing the proposed island concept that vendors can use. The different buildings broadcast different channels.

The earlier mentioned British Sky Broadcasting Group can for instance purchase an island and build different buildings around the island that continuously stream different channels as shown in figure 3-22. Users should be able to enter the chosen building by paying an appropriate fee set by the broadcaster.

Cable television vendors can promote their brand through this channel to markets overseas. They can also use the island for advertising for themselves, partners and other companies who are willing to pay. Billboards and advertising time on video streams can be used.

The target group can be people without television, people who are away from home country who want to watch television in their first language. Either it's people on vacation or people living in another country due to work commitment. Or simply people overseas without the opportunity to watch the channels locally.

Challenges

This chapter looks into some major challenges associated with purposed models.

Bandwidth capacity

One major obstacle is bandwidth capacity when streaming out to big audience. The companies have to use large amount of servers. Furthermore, quality of service issue has to be solved to satisfy the customers. Broadcasters should consider all possible issues and costs before making a decision to enter the business.

Rights

Another challenge is rights and regulations that companies have to respect when broadcasting to people outside the legal geographical area. Broadcasting rights to major sporting events are usually sold by auction to vendors operating in different parts of the world. In order to stream events in SL, vendors need to restrict viewers by location or negotiate special contracts with rights holder in order to broadcast in SL. Thorough investigation of rights and regulations is out of scope for this thesis.

Security

The security is a main issue; people must feel safe in order to purchase services using credit cards. But service providers can use existing technologies developed for e-commerce. These technologies have been proven robust and secure by companies like Amazon and eBay.

High-level Technical Solution

The proposed video streaming model consists of four parts: *user environment*, *data transmission channel*, *SL environment* and *service provider environment*.

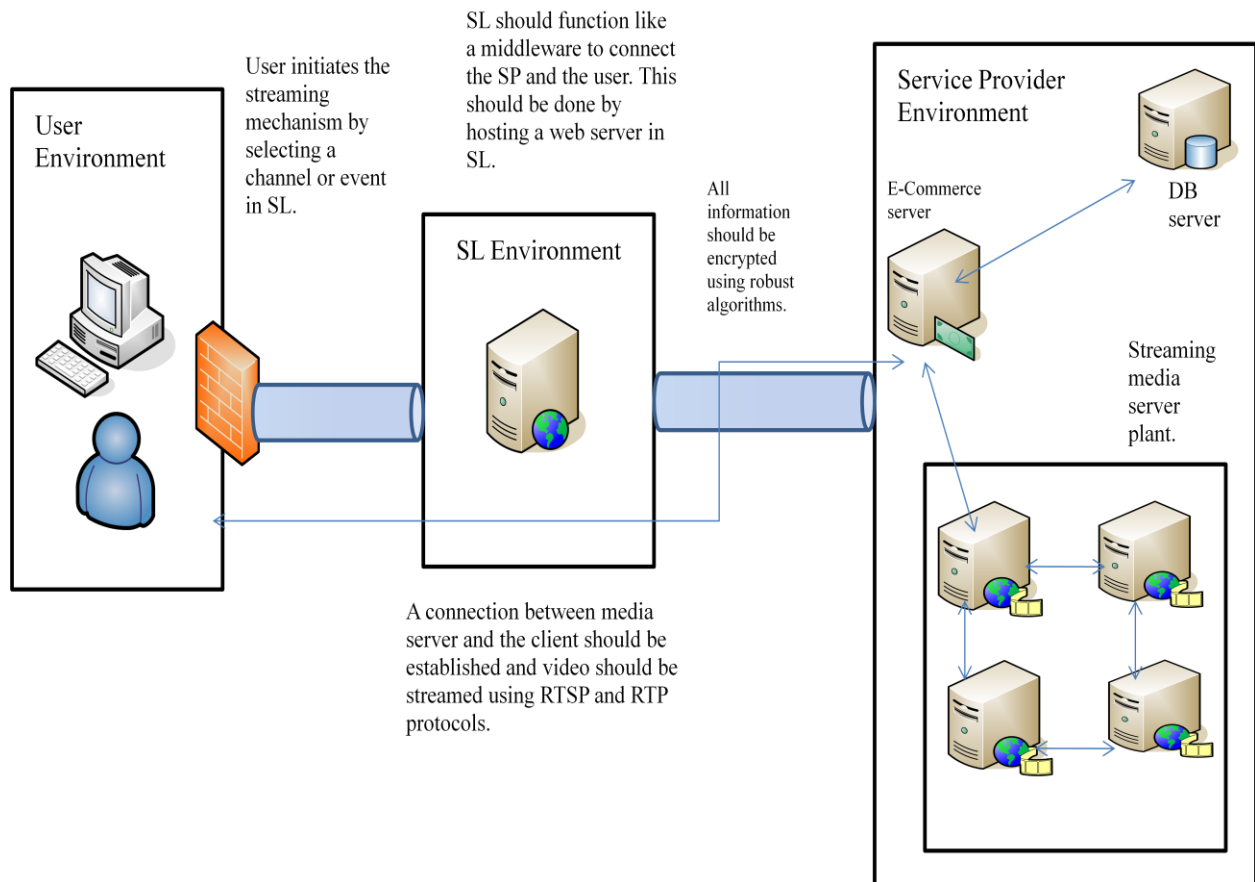


Figure 3-23: The video streaming model overview.

User Environment

This is where user and his PC, typically guarded by a firewall are situated. The user should be aware of the necessary firewall settings adjustments needed in order to start streaming.

Data Transmission Channel

This channel is vulnerable to attacks from hackers. SSL/TSL protocols should be applied over HTTP to form HTTPS protocol. HTTPS is a secure protocol that protects sensitive information in such a way that the unsecure Internet connection is transformed to a secure channel.

SL Environment

This is the environment within the virtual world. The users should be able to purchase streaming services from a web server. The web server is a middleware that provides the streaming server with all the necessary user information.

Service Provider Environment

The environment should contain an e-commerce server that handles all the business transactions. The database server should store and provide the e-commerce server with all the needed subscriber information. The media streaming server plant should handle all the data transmission to the client using RTP and RTSP protocols.

Show window

SL can be used as a show window by different actors.

Shopping malls

Famous shopping malls worldwide can use this channel to attract customers. SLs editing tools enable users to design complex and detailed 3-D objects. Tourist friendly cities like New York, Las Vegas, Singapore, Kuala Lumpur, Tokyo, Shanghai and Dubai can make replica of their shopping streets and malls. People can use the detailed replicas to gather information when planning vacation trips.

Vacation paradises

Holiday resorts can use SL to promote and show off their places. SL offers a great opportunity for many resorts to design replicas to show potential tourists. With the quality of the graphic offered by this medium, advertisers can create spectacular replicas with exact match. This channel can help many people to visually choose an appropriate vacation destination by maneuvering around in SL. Today, people gather information about different vacation paradises using web sites and user experiences. How convenient wouldn't it be to walk around different islands and resorts by yourself in a virtual 3-D before deciding where to travel.

Hotel booking

Hotels in cities with high tourist traffic can showcase their assortment by replicating the buildings. 3-D viewing is far more convenient by customers' perspective. Potential customers should get the opportunity to check out different rooms, customize and even book rooms before

travelling. This would certainly please people who rely on pictures on web sites to find a suited hotel today.

Cruises and planes

As suggested above, cruise ships and aircraft manufacturing companies, like Boeing and Airbus, can use SL as a platform to exhibit and develop their product lines. SL is not like any other social networking applications as far as the members go. High-level executives, writers, journalists and businessmen are represented with residents in SL. This makes SL an ideal platform for developers to gain valuable feedback. Manufacturers can display prototypes during development and make changes according to feedback from people.

Challenges

Replicas of shopping malls, hotels, vacation paradises, cruise ships and airplanes should not cause too much challenge for the developers. Existing replicas are very detailed and stand as an example that other can use to develop their own replicas. However, the reliability of the feedback collected in SL can be a problem. Unserious users can operate freely and cause a problem for actors who want useful feedback from people.

4 Mobile advertising

4.1 What is mobile advertising?

Mobile advertising is a form of advertising via mobile phones or other mobile devices like PDA, BlackBerry and Palm. It's a sector that provides marketers, agencies and brands the opportunity to connect with customers beyond traditional and digital media and directly on their mobile phones. Today, mobile phones can be utilized for much more than calls. Mobile advertising uses formats like voice services, messaging, Web, downloadable applications and video.

4.2 The audience and business aspects

In this chapter, the audience using mobile devices and the business potential for the advertisers using this medium will be evaluated.

4.2.1 The audience

Number of mobile devices has exploded lately. In fact, mobile phones outnumber TV sets by over 2 to 1, Internet users by nearly 3 to 1 and laptop and desktop PC users by over 4 to 1 (24). Number of mobile phones was estimated to be 3 billion in 2007 and reach 4 billion by 2008.



Figure 4-1: The diversity of mobile phone users (25).

Mobile phones are used by all kind of people. Children use mobile phones to keep in touch with parents and friends, so does the youth. Adults use mobile phones all the time, at the work and for private use. Even elderly people have begun to use them. So the whole population is pretty much represented.

Mobile phones are no longer a luxury good owned by people in western countries. In fact, the highest growth is taking place in developing countries. Africa showed the strongest growth over the past three years with annually growth of 39% according to the International Telecommunication Union (ITU) (26).

In Asia, the annually growth was 29% between 2005 and 2007 compared to annual global growth rate of 22%, according to ITU. Another interesting development is taking place in the world's two biggest countries by population, China and India. In the same period, the countries added 143 and 154 million new subscribers respectively. India expects to reach 500 million subscribers by end of 2010.

The trend is that mobile phones are eclipsing traditional fixed lines. Fixed global telephone penetration has been stagnating at 20% for the last years and growth has been under 1% between 2005 and 2007. Research shows that almost a fifth of European households use mobile phones as their only phone (27). Lithuania is top of the list with 48% of households replacing a fixed phone with a mobile, closely followed by Finland where 47% has done the same.

European Commission's research (28) shows that number of Mobile phone subscriptions per 100 inhabitants in EU members is 106. Luxembourg, Lithuania and Italy are the front runners with 155, 139 and 134 subscriptions per 100 inhabitants. Norway is just above the EU average with 109 subscriptions per 100 inhabitants. According to SSB, 94% of all people between 9 and 79 years in Norway own a mobile phone (29). Even though the mobile phone market is huge, only 1 % of global advertising is spent here.

4.2.2 Business aspects

The first person-to-person SMS message was sent in Finland in December 1994. But it would take further six years before the first known advertising in this channel would appear. Ironically, it also took place in Finland, when a news provider offered free news headlines via SMS, sponsored by advertising (24).

Despite the hype, advertising on mobile phones is a tiny business compared to other mediums. In 2006, the spending on mobile advertising worldwide was \$871 million compared to \$24 billion spent on Internet advertising and \$450 billion spent on all advertising (30). However, this could change soon, Informa Telecoms & Media forecasts that the annual expenditure will reach \$11.4 billion by 2011. Although mobile advertising uses formats like voice services, Web, downloadable applications and video, SMS is still the dominant format with estimated 90% of all mobile marketing revenue worldwide.

Japan is a frontrunner in mobile advertising. According to Sharma, the development in Japan reflects the potential market in the US or Europe (31). Mobile advertising revenue in Japan was approximately \$374 million or \$3.8 per subscriber in 2006. By 2009, this number is likely to hit \$6 per subscriber mark. Japan is not only an early utilizer of mobile advertising, but it has done it with success. Over 60% of the Japanese consumers use mobile coupons and discounts more than once a month (31). This shows that the mobile advertisers in Japan have overcome the hurdle of intrusiveness and aggressive approach towards the consumers, and offer value to them by advertising.

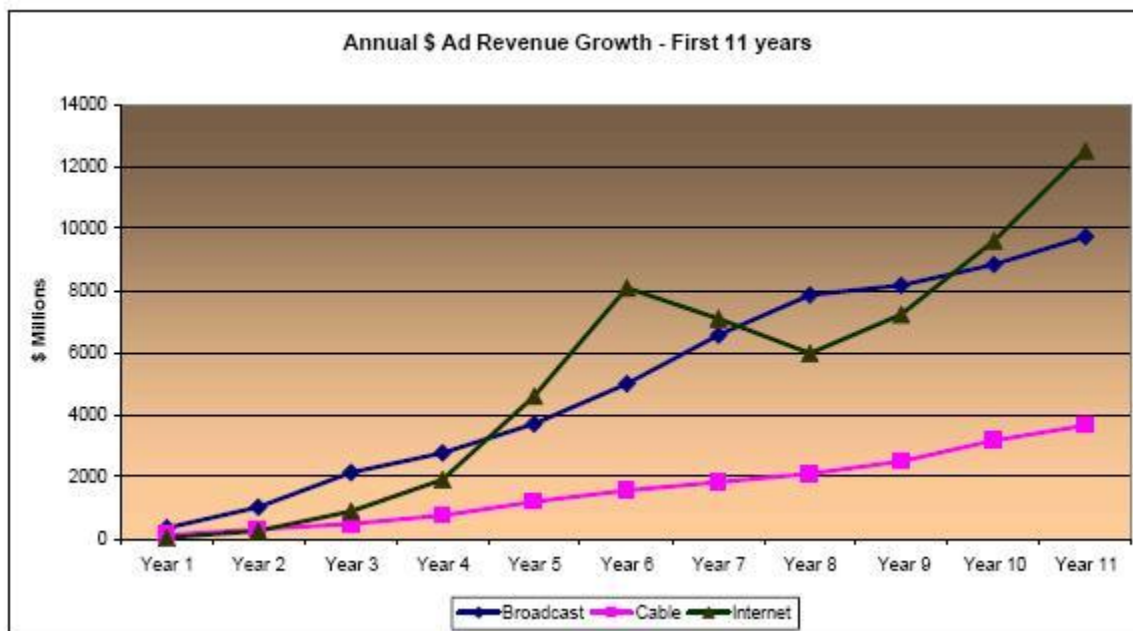


Figure 4-2: Annual Ad revenue growth in broadcast, cable and Internet in the first 11 years (31).

All the information confirms the potential of the mobile advertising market, but the question is; “How long will it take to reach a critical mass?” For reference, it took Broadcast advertising 2

years to cross the \$1 billion mark, while Internet and Cable did it in 4 and 5 years respectively. According to various expert forecasts, the mobile advertising market is soon going to go from being a blip in the advertising revenue stream to rival the advertising on Internet, television, radio and newspaper.

Another advantage with this channel is relevance. Advertisers believe that only half of all advertising through traditional channels like television and radio reach the right audience. Advertising on mobile devices can be tailor made to match each subscriber's habits. But advertisers need to be careful choosing an advertising strategy. The mobile phone is an extremely personal device; one phone has typically one unique user and the user carries the device almost all the time. This makes the mobile phone a precisely targeted communication channel. But intrusive advertising can easily get the user annoyed.

Another obstacle is privacy laws that may prevent operators to share information about their clients. Mobile operators have lots of databases with information about their customers' habits that would be valuable to advertisers.

4.3 Existing mobile advertising channels

Existing channels will be discussed in this chapter. There four main channels are:

- **Mobile Web.** The Mobile Web gives the users the opportunity to play games, search for information, look up telephone numbers and addresses and do shopping on their wireless phone.
- **Downloadable Applications.** This category includes software and contents consumers download to their mobile phone and run locally. Examples include applications such as games and ringtones.
- **Mobile Messaging.** Under this category come SMS and MMS. SMS is available to all mobile phone users and MMS is also widely used. The reach of this channel is great. SMS is limited to text ads while MMS ads can contain image, audio and video.

- **Mobile Video.** Video delivered to mobile phone's media player. Videos are usually either streamed or downloaded from a Mobile Web site or contained in an MMS message. The reach is limited because of limited use.





Mobile Web

The Mobile Web is fast emerging as a source to information for people on the move or away from a PC. The Mobile Web is similar to PC-based web browsing. Users can check out the latest news, weather, and shop and do their banking. But there are also some major differences between PC-based and phone-based browsing. Since mobile phone is a highly personal device with typically one user, accurate and relevant communication messages can be delivered, resulting in increased campaign effectiveness. Another difference is the smaller screen which leads to limited input mechanisms for users, so the Mobile Web sites have to be easy to navigate using keypad. The broad range of mobile phones with different settings and display sizes present a challenge for the display and optimal viewing of content and advertising.

Most operators provide their subscribers a home page or portal which is the correct term that is configured to work well with subscribers browsers. The portal provides users with a variety of links to other mobile-specific external sites. People are now beginning to explore the possibility to browse outside their operator portal. Many sites like BBC and TV2 are offering tailored mobile experiences.

Graphical, interactive display ads are dominating Mobile Web advertising. Banner and text ads along with branded Mobile Web sites are the traditional opportunities provided by this format. Mobile Web banner ads are usually purchased on a cost per thousand (CPM) or cost per click (CPC) basis.

Table 4-1: Recommended dimension, aspect ratio and size for banners by MMA (32).

Ad Size	Technical Specifications	Sample Creative (approx. size)
X-Large Image Banner	<ul style="list-style-type: none"> • 300 x 50 pixels • .gif, .png, .jpg for still image • Animated gif for animation <p>Basic</p> <ul style="list-style-type: none"> • <5KB file size <p>Enhanced</p> <ul style="list-style-type: none"> • <7.5 KB file size 	
Large Image Banner	<ul style="list-style-type: none"> • 216 x 36 pixels • .gif, .png, .jpg for still image • Animated gif for animation <p>Basic</p> <ul style="list-style-type: none"> • <3KB file size <p>Enhanced</p> <ul style="list-style-type: none"> • <4.5 KB file size 	
Medium Image Banner	<ul style="list-style-type: none"> • 168 x 28 pixels • .gif, .png, .jpg for still image • Animated gif for animation <p>Basic</p> <ul style="list-style-type: none"> • <2KB file size <p>Enhanced</p> <ul style="list-style-type: none"> • <3 KB file size 	
Small Image Banner	<ul style="list-style-type: none"> • 120 x 20 pixels • .gif, .png, .jpg for still image • Animated gif for animation <p>Basic</p> <ul style="list-style-type: none"> • <1KB file size <p>Enhanced</p> <ul style="list-style-type: none"> • <1.5 KB file size 	
Text Tagline (optional) ¹	<ul style="list-style-type: none"> • Up to 24 characters for X-Large • Up to 18 characters for Large • Up to 12 characters for Medium • Up to 10 characters for Small 	View Program

Mobile Marketing Association (MMA) has given guidelines with global format that advertisers can follow when producing banners optimized to best fit the mobile phone on which the ad is being displayed on. Mobile phones are becoming increasingly sophisticated today with high-resolution screens, sophisticated Mobile Web browsers and high-speed access, all of which will result in high-quality and media-rich ad banners in coming years.

Messaging

The idea behind messaging is to deliver SMS (Short Messaging Service) and MMS (Multimedia Messaging Service) to user whenever he can receive it. The advantage with this format is that, the messages can be stored in the network and delivered later if the recipient's mobile phone is out of reach. SMS allows the user to send and receive messages up to 160 characters and over

any operator network. SMS is the single most frequently used mobile data service and offers enormous reach for the advertising party. MMS allows user to exchange picture, audio and video in combination with text. The use of MMS is growing rapidly as the number of multimedia-capable mobile phones is increasing in the market.

Media publishers are using messaging to distribute mobile content and businesses are providing services through mobile messaging. Advertisements can be inserted into those messages; this type of advertising is called inventory advertising. Inventory advertising can primarily be divided into two types: *Application-to-Person* (A2P) and *Person-to-Person* (P2P).

Application-to-Person

This type includes SMS and MMS sent by a business or organization via an application to consumer's mobile phone. In many cases, consumers may have the opportunity to interact with the application. Advertisements can be inserted into these messages given there is space left. A2P messaging is used for services like:

- **Push Content Services.** Media publishers send requested content, like weather, sports and jokes, or information to their users. Advertising can be inserted using the non-used space within the message; in exchange the user can get subsidized content.
- **Business Services.** Business services like stock updates, goal-alert in football matches, interest-updates from bank and ticket confirmation from airlines uses messaging as a communication tool. They can insert ads in the left-over space when using SMS and MMS. They can also sell advertising space to other advertisers. Service providers usually offer some value to their customer base in exchange for viewing these ads.
- **Search and Inquiry Services.** Search service providers use SMS and MMS to send back information to user requests. These include inquiries for phone numbers, location, price search etc. Ads can be inserted in the free space.
- **Interactive Services.** These services typically let users participate in voting, polls, contests and chat. Services are typically integrated with other media activity such as television and radio. Ads can be inserted when people receive automated response like "Thank you for participating".

Person-to-Person

Person-to-Person messaging consists of information sent between users. The main purpose of SMS was to let users communicate with each other. Today it is the second most used mobile service after voice. The idea behind P2P advertising is to insert ads in the space left after the personal messages, up to the message limit size.

Advertising insertion in P2P messaging is not a common practice today. But some operators are rewarding subscribers with discounts on messaging in exchange for receiving ads within the messages received by friends. The potential of P2P inventory is enormous but there are some issues that need to be addressed related to privacy laws and regulations (33).

Complete Messaging Advertising

These previous discussed standards are designed for advertising insertion in user-requested content. This standard deals with messages designed purely for using the 160 characters for advertising. Many advertisers use this strategy to reach out to people. Eurobate is a company in Norway who uses a similar strategy. The members get 300 free SMS a month and 30% discount on a number of other services in exchange for receiving an advertising SMS weekly (34).

Success Drivers

There are several reasons for the success of messaging advertising. Virtually all mobile phones today have the capability to receive SMS, which makes the reach enormous. MMS capable mobile phones are also increasing in both developed and developing markets. Another factor is attention level, which is high. People never delete messages received without reading them.

Simplicity and compatibility are also factors that contribute to the success of this format. It's easy to develop ads and messages can be sent over different networks and they work in different countries as well. Furthermore, it's easier to track information such as channel usage etc compared to other medium. The success of the campaigns are also high since person usually are engaged directly after displaying the ad in various ways such as click-to-Mobile Web, click-to-call or click-to- receive mobile coupon. Direct and personal way of communication is also an important aspect of this format, customer often feel that the ad addresses only him.

Downloadable Applications

Mobile downloadable applications are software that is resident on the mobile phone. This segment is fast growing in the global market. The applications are usually games, location

tracker, mobile blog and mobile messenger. They are often downloaded over wireless networks, but can also be uploaded via Bluetooth or cable. The applications are optimized by platform (J2ME, Symbian, Windows Mobile etc.) and mobile phone to give each individual user an optimal experience.

The advertisers need to be careful in order to not degrade the application's user experience. For instances, advertising that is disruptive and takes over a user experience or takes the user out of the application must notify him first. Many of today's downloadable application advertising campaigns are associated with a particular brand or product rather than a particular ad unit size, placing them in the "advergame" category. Following strategies can be used in mobile downloadable application advertising (33):

- Click through to Mobile Web outside the application
- Click to additional page inside the application
- Click to call outside the application
- Click to message outside the application
- Click to anything external to the application (e.g.; e-mail)
- Combination of above

Mobile Video

Mobile video is a video delivered over mobile network to consumer's media player. There are many different embedded media players used by different mobile phone manufacturers, a widely used player is RealPlayer. Different methods can be used to deliver the mobile video files to the consumer.

Download Video

A video file is downloaded completely before played. The quality of the video is as good as the quality of the source file on the server. The underlying technology is not as important as when streaming. The server cannot detect if the downloaded video file is watched at all, since the client doesn't start playing the video before the whole file is downloaded. So the advertisers don't get any guarantee that the consumer of the video is watching the ads.

Streaming Video

A streamed mobile video starts playing as soon as the first bits are received by the client's embedded media player. The quality of the streamed varies according to the underlying

technologies used by the service provider. Real-Time Streaming Protocol (RTSP) is widely used for streaming. The service provider should offer some form of QoS in order to keep the consumer happy. Ads are placed at the beginning, middle or end of a mobile video. Video ad servers are able to give advertisers valuable feedback about how many sections or what percentage of a particular video ad have been viewed by a unique individual.

Broadcast Video

This is not a common method yet. Video channels are broadcasted continuously over a mobile network and consumer can select which channel to watch. Like television, the ads must be viewed with short intervals in order to compensate for the consumers switching opportunity, which may lead to consumers failing to watch the ads while switching.

Progressive Video Download

This is a combination of streaming video and download video. By using this method, consumers get high quality and rapid playback. This format is not widely used yet, but has a promising future.

Mobile videos (streaming video, download video etc) are usually distributed by Mobile Web sites. Consumers typically use hyperlinks published on the Mobile Web sites of service provider to get to the source of the video.

4.4 My Suggestion

The proposed solution is tailor made for Wireless Trondheim and uses Mobile Web. The model will be briefly described in this chapter.

Wireless Trondheim is a joint venture by several actors in Trondheim. The company offers wireless internet access in Trondheim, mainly in the city center, on 12 hour basis. It charges NOK 10 for the service with speed up to 500kbit/s. The company owns and operates the network and users with a nomadic or mobile use of the services are the target customers. More information about Wireless Trondheim can be found in Appendix B.

The user has to be in Wireless Trondheim's coverage area in order to get access. The procedure is simple; the mobile device will detect WirelessTrondheim as one of the networks on the list. By choosing to connect to the network, you will be directed to the login portal where you can buy

access. The only thing you need to do is to type your mobile telephone number in the text box and click on the submit button. You will get a login code in return by SMS which you can use to get instant access.

The authentication SMS the purchaser gets in return can be used for advertising. Inventory ads can be inserted in the space left in the message. The proposed strategy will use a Click-to-Mobile Web page link in the authentication SMS as shown in figure 4-3. The user will be directed to a simple Mobile Web page upon click where a map over Trondheim is viewed. The map will view the location of all advertisers using the service like the figure 4-4 illustrates. Google's interactive maps can be used by Wireless Trondheim. Cafes, shops, malls and other businesses should be able to subscribe this advertising service for a monthly fee. The advertisers will be marked on the map and their offers will be viewed 24/7.



Figure 4-3: An example of an authentication SMS with inserted advert.

This advertising channel is flexible and suits all type of campaigns, everything from daily offers to offers without specified duration. Companies using this service will get free access to a field on the map with a limited space. Once they subscribe the service, they are free to update the field whenever they want. This channel is effective and reaches relevant target audience.

The Mobile Web page should be simple and configured to work well on any kind of mobile phone. Wireless Trondheim should try to keep the web page simple as possible in order to reduce the loading time on mobile phones. 3-G phones have not fully hit the market yet and most people rely on General Packet Radio Service (GPRS) or similar mobile data service to access the Internet. GPRS provides data rates from 56 up to 114 Kbit/s (35).

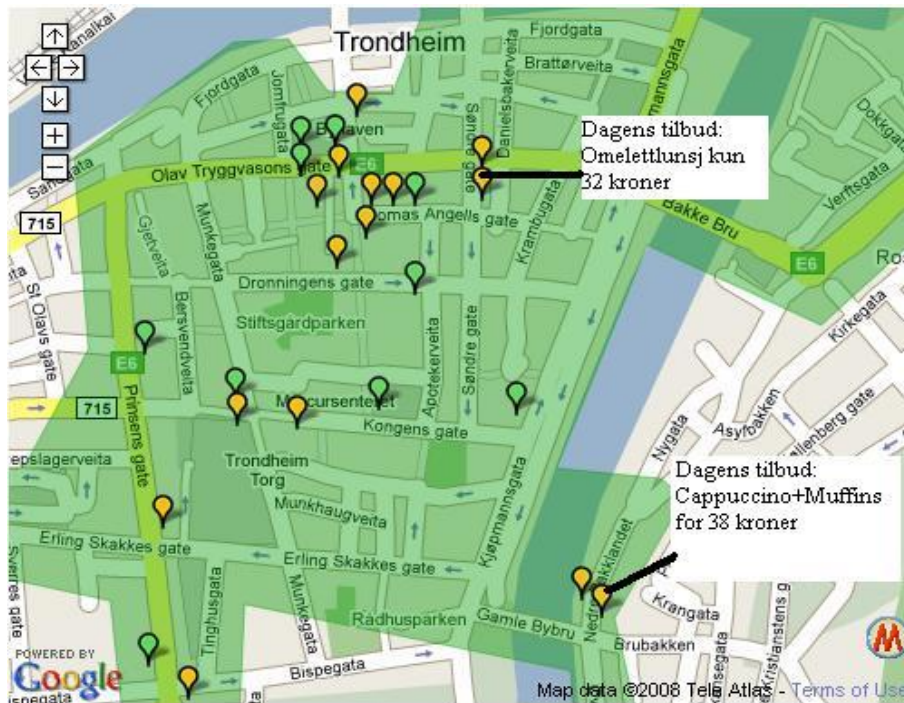


Figure 4-4: An illustration of how the Mobil Web page could look like with advertisers' offers visible.

The Mobile Web page with the advertising map should be continuously updated. The advertisers should get access to a restricted area on Wireless Trondheim's web site where they can update their offers without intervention from the company. This restricted area can be a simple HTML page with a form connected to a database server. The advertiser should be able to delete and insert new information according to need.

This Mobile Web page should also be available on Wireless Trondheim's web site as a regular site that PC-based browsers can access. This way, the advertisers get value for their money and the advertising is exposed for more people.

High-level technical solution

The high-level model consists of two parts: *User Environment* and *Wireless Trondheim Environment*.

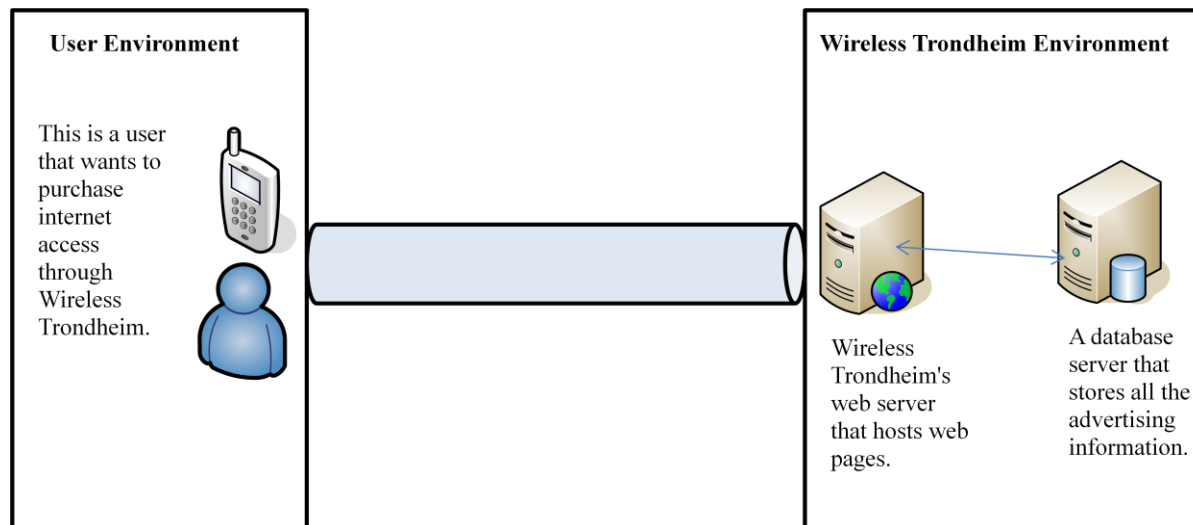


Figure 4-5: The high-level model.

User Environment

The user typically uses a mobile phone with GPRS or 3-G capability to connect to the Mobile Web page provided by the authentication SMS. The user should be notified that he will be directed to a Mobile Web page upon click on the link in the SMS.

Wireless Trondheim Environment

This is the service provider's environment. This is where the company's web site and the Mobile Web page should be hosted. The web server interacts with the database server when updating the map with advertising. The database server should be robust and handle all the advertising information.

5 Conclusion and future work

This chapter presents a final conclusion of the work and a guideline to future work.

5.1 Conclusion

This report has identified new, unexploited advertising channels for computer games and mobile devices. One of the suggested models is tailor made for Wireless Trondheim, a wireless internet access provider in the city of Trondheim. This thesis gives a brief explanation of the term computer games advertising and investigates the audience playing computer games. The business aspect of the computer game industry is also thoroughly examined. Furthermore, the existing advertising channels are identified and described. Then author's own contribution; identifying new distribution channels is presented. The proposed new advertising channels are described in detail. The concepts are explained and high-level technical solutions are designed. Finally, challenges associated with the concepts are evaluated.

Same procedure is used in part two of this thesis, mobile advertising. Main contribution in this part is a solution using Mobile Web page and Short Message Service to distribute advertising. This strategy takes a nonintrusive approach towards customers and offers them personal advertising with high relevance.

It's worth mentioning that the proposed advertising channels are a result of case study. Models for computer game advertising is a result of studying the sports and virtual world genre represented by *Cricket 07* and *Second Life* respectively. The suggested mobile advertising model is a result of investigating Wireless Trondheim as a potential distribution channel.

The main contribution of this thesis is the identification of unexploited advertising channels for computer games and mobile devices.

5.2 Future work

The results presented in this report are only describing the concepts with high market potential. In order for actors to implement the suggested models, further work is necessary.

Detailed market research is needed to map the precise potential of the solutions. Wireless Trondheim should for instance carry out a market research before implementing the proposed model.

Another aspect is implementation guidelines. The given high-level models are just illustrations of how the concepts can be realized. Actors need to develop a detailed guideline before they can initiate implementation phase of the services.

Proper business models should also be applied to the concepts so the business potential of the services can be analyzed. It's important to choose an appropriate business model in such a way that the true potential of the services are revealed and only then a decision can be made.

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Appendix A: Other Advertising Channels

This appendix gives an overview of other existing advertising channels. The relevant customer reach possibility, cost, flexibility and examples of campaigns are analyzed for each of the presented channels.

Television

Television commercial is an old, effective medium to reach out to the customers. But as with other big mediums, it has its disadvantages. First of all, it doesn't suit all companies due to high prices charged by television networks. Secondly it's difficult to target a particular group in order to increase the success rate. The prices charged by television networks are correlated to number of viewers, it means that companies operating in niche markets are better off not using this distribution channel. On the other side, it's considered as the biggest mass market distribution channel and is excellent for advertisement campaigns for chewing gum, soft drink, shampoo, toothpaste and similar products where every human being is a potential customer.

Television advertisings typically feature a catchy jingle or catch-phrase that generates sustained appeal which may remain in peoples' minds long after the span of the advertising campaigns. Advertising agencies often use humor as a tool in their campaigns and this way of advertising is backed by many psychological studies as the way to empower advertising persuasion (36). The vast majority of television commercials today consist of brief advertising spots, ranging in length from few seconds to several minutes.

It's worth mentioning that it is possible to single out target groups on television to a certain degree by advertising accordingly to a program or a certain time during the day. But even then you don't get a whole picture of the viewers. One can assume that majority of the viewers during a football match is interested in football and advertise according to that. But it's hard to predict the degree of interest, and if they like to play themselves or just enjoy watching. Furthermore, it's difficult to map the different age groups, gender, ethnic group etc. If one is able to acquire all the mentioned information accurately, then it's a straight forward task to choose an appropriate advertising strategy.

Advertising campaigns on television are expensive; the pricing is based on number of viewers. The annual Super Bowl football game is known as much for its commercial advertisements as for the game itself. Average cost for a 30 seconds TV spot during the game reached \$2.7 million

in February 2008. The game was seen by estimated 90 million viewers (36). The advertising is also costly to develop and offer little flexibility. This means that a company doesn't get the opportunity to change the advertising according to different television channels or scenarios. The core reason people find advertising annoying is that the offer is not of interest at that moment, or the presentation is not clear for that particular person. It's almost impossible to tailor television advertising to each individual with the present technology.

Radio

Radio commercial is a form of advertising in which products and services are promoted via the medium of radio. Radio commercials are sold in 10, 20, 30, 40, 50, 60 and 120 second increments. Radio announcements can be made as a "live read" where a radio announcer reads the advertising per verbatim or broadcast through a personal endorser. Since a radio commercial is a sequence of sound limited to a short period, it's important to have a catch-phrase or a catchy jingle. Furthermore it's important not to give too much information in a short period to listeners.

Radio, as a medium offers a form of entertainment that attracts listeners while working, travelling, and relaxing or almost doing anything. It's an effective distribution channel that can be used to reach out to various customer groups. And it's cheaper than television. But it's important to pick out the right time to advertise through radio, people don't listen to radio all the time. If you want to reach out to most people, then it's best to advertise in the morning when most people are driving to work or in the afternoon when they return (37).

It's relatively easy to reach different target group via radio since there are so many stations. If you want to reach youth, then you can advertise through a hip radio station that broadcasts chart music. If the local bingo wants to reach out to elderly people then they can advertise via stations that have elderly people as core listeners.

Advertising campaigns through radio are relatively cheap. And it's easy to change a radio commercial in order to reach different target groups. Most radio stations have the ability to produce radio commercial in house for advertisers. With so many local radio stations nowadays, it's a great distribution channel for small business owners too. Radio advertising works better when combined with other distribution channels since one can only deliver limited information to the audience. A typical example is ending the commercial with a phrase like "check out our webpage".

Newspapers (Paper Edition)

Almost every home receives a newspaper and reading the newspaper is a habit for every family. There is something for everybody: news, sports, crosswords, comics, weather forecast, etc. Advertisers can reach certain type of people by placing advertising on different sections of the paper. Typically mutual funds would place their advertising on the business section while Nike would certainly place theirs ads on sports section.



Figure 0-1: Figure shows front page of Aftenposten covered with all sort of advertising (38).

The figure 6-1 shows a typical newspaper with advertising. People don't get annoyed by ads on paper; in fact they expect advertising in the newspapers. Many people buy newspapers just to read ads. Unlike advertising on radio and television, ads in the newspapers can be examined when people have the time. Furthermore a newspaper ad can contain detailed info such as prices, telephone numbers and coupons (37).

On the other hand, newspapers have short life cycle, they are usually read once and stay in the house just one day. Unlike radio and television advertising, reader can skip pages, hence advertising in the newspapers in a blink of the eye depending of mood. Advertisers also have to compete with other ads for reader's attention. Most newspapers make nearly all their money from advertising hence contain plenty of advertisements (39).

As mentioned above, newspapers offer the opportunity to target different customers via one distribution channel. Different local newspapers have geographical coverage and therefore limit the spread range. If a local repair shop in Trondheim wants to advertise, they can do that through Adresseavisen, which is a local newspaper, without worrying about paying for irrelevant customer group. This is a right direction towards the author of this thesis' definition of an optimal advertising strategy where you eliminate all unlikely potential customers.

Table 0-1: Adresseavisen covers 71% of Trondheim (40).

Leserdekning i Trondheim handelsdistrikt:				
Adresseavisen	VG	Dagbladet	Dagens Næringsliv	Aftenposten
71%	34%	21%	8%	6%

(Trondheim, Malvik, Klæbu, Melhus, Skaun, Selbu og Tydal - totalt 168 000 personer over 12 år)
Kilde: Forbruker & Media 06.1

	Sør-Trøndelag	Nord-Trøndelag	Trondheim kommune
Adresseavisen	68%	29%	70%

Kilde: Forbruker & Media 06.1

Leserdekning i forhold til alder:						
	12-19 år	20-29 år	30-39 år	40-49 år	50-59 år	60 år+
Totalt i området	19 000	27 000	32 000	30 000	23 000	36 000
Leser Adresseavisen	10 000	10 000	22 000	24 000	20 000	32 000

(Trondheim, Malvik, Klæbu, Melhus, Skaun, Selbu og Tydal - totalt 167 000 personer over 12 år)
Kilde: Forbruker & Media 06.1

Newspaper advertisements are relatively cheap. The price depends on the size of the advertisement and placement. Advertisements are sold by column and inch.

Modulkart - klikk på ønsket modul:

56		54	53	52	51
		44	43	42	41
		44B	43B	42B	41B
36		34	33	32	31
36B		34B	33B	32B	31B
26		24	23	22	21
26B		24B	23B	22B	21B
16		14	13	12	11
					11A
			13B	12B	11B
					11C

Publikasjon: Adresseavisen
Annonsetype: Annonsesider
Plassering: Stilling ledig lørdag

Modul 54
h365 x b164 mm
Antall moduler: 20
Andel av siden: 67 %
Pris farge: kr. 68.253
Pris sort/hvitt: kr. 54.418

Priser er u/mva og prod.tillegg. Forbehold om feil

Figure 0-2: Shows an example of advertising cost in Adresseavisen (41).

The figure above shows a price example of an advertisement in Adresseavisen. A 36.5x16.4 cm sized advertisement in color costs 68 253 NOK on a Saturday edition under job section. Advertisements in newspapers are flexible. It's easy to make changes for the advertiser. An advertiser has the opportunity to change size, layout, placement, etc for everyday. Advertisers can experiment in order to increase the success of the advertisement without spending too much of the allocated budget.

Outdoor Advertising

The Outdoor Advertising distribution channel consists of billboards, benches, posters, signs and transit advertising (advertising on buses, subways, taxicabs, trains and planes). Outdoor Advertising reaches its audience as an element of environment. This distribution channel offers one big advantage compared to radio, newspapers and television, users can't switch it off or throw it out. In other words, people don't have to invite it into home or be entertained.



Figure 0-3: The figure shows a huge, creative billboard of German national goalkeeper Oliver Kahn.

People are exposed to advertisements whether they like it or not. But it's important to be aware of that these types of advertisements are characterized as a glance medium (37). It only draws a couple of seconds of reader's mind. Hence creativity is a decisive factor to success. Another factor to consider is that most of the time the message or the audience is in motion. As a consequence of that, it's important to keep the information detail low.

It's not easy to single out a target group when using outdoor advertising. Advertising on billboards and subways can be seen by anybody. Advertisements using this channel usually have wide customer appeal. Earlier mentioned captured customers/reached customers ratio would be low in this distribution channel, meaning advertisers will be paying more money than what they would do in an optimal scenario. Although it's difficult to discriminate target groups, it's possible. You can use billboards outside gyms to reach bodybuilders. Or you can place advertising on sporting events to reach people who like sports. Hotel managers can buy advertising on airport buses to reach the right customer segment.

Outdoor advertising price depends on location. Location is everything, high traffic areas are good, but you have to pay higher price. On the other side, billboards in an undesirable area will do you little good even though they're cheaper. The flexibility is poor unless you have electronic billboard, which is not common yet. Outdoor advertising doesn't suit short, week a long campaigns, since you usually have to pay for a three month commitment.

Magazines

Advertising in magazines can be an effective way to reach out to customers. Unlike newspapers daily publications, magazines have weekly or monthly publication. This increases the importance of catching the eyes of the readers. Since the quality of the picture and paper are superior to newsprints, advertising involve flashy color more often. Most magazines offer space ranging from a full-page ad down to under a quarter-page.



Figure 0-4: A high quality image that characterizes magazine advertising.

A typical advertising campaign in a magazine can be used 3-5 times before its appeal lessens. And the lead time for advertising is anywhere from 1-6 months. Unlike newspapers, the advertising on magazines relies on creativity and spectacle rather than frequency.

An upside of this distribution channel is that it is easy to target specific market demographics. Most magazines have a very specific readership based on factors such as age, gender and

interests. By leveraging readerships demographics, you instantly ensure that your message is seen by the right people- the one most likely to buy your product.

There are two categories of magazines: trade magazines and consumer magazines. Trade magazines are publications that go to certain types of businesses, industries and services. Consumer magazines are usually the kind you find on news stand.

The downside of magazine advertising is cost. Magazine adverts are significantly more expensive than advertising in newspapers. But advertiser can control the cost by specifying the size of the advert. The reason for stiff price is that it is expensive to print in a full-color, glossy format. The price will vary, depending on the number of subscribers too. Magazine advertising is not flexible because they are very expensive to produce. As mentioned above, the leading time is long and it takes a lot of effort to plan a campaign.

Movies (Product Placement)

Product placement is a form of advertising where advertisers pay money to make their products visible to audience in a movie. Product placement occurs with the inclusion of a brand's logo in shot, or a favorable mention or appearance of a product in a shot. Almost every movie nowadays has a number of product placements. James Bond films are an example of movie containing a number of product placements, notably the last movie Casino Royale, where Omega watches, Vaio and Aston Martin cars are featured. More recently, Apple products frequently appear in films.

Product placement is used to partly fund big productions. Sometimes placements provide productions with savings. Cars, clothes and cell phones can be loaned for the project in exchange of placement in the movie.



Figure 0-5: A scene from *I, Robot* illustrates a classic example of product placement where logo of Audi is visible.

A variant of product placement is *advertisement placement*. Instead of product itself, an advertisement for a product is seen in the movie.



Figure 0-6: An example of advertisement placement, an Evian billboard in this case, can be seen in the background.

It's not easy to target a specific customer group using this distribution channel. The biggest blockbuster movies nowadays are seen by large audience, making it difficult to reach a specific target group. This advertising channel is suited for big companies who can afford to splash big sums in order to increase sale. Typically automobile, watch and software companies use this medium to advertise for their products.

A major driver for the growth of this distribution channel is the increasing using of digital video recording (DVR). DVR enables users to skip traditional commercial. Product placement is not

flexible way of advertising. Only a limited number of products can be placed without ruining the movie. And it's difficult and costly to make changes later. In order to make this medium flexible, development has gone towards *virtual placement*. A virtual product placement uses computer graphics to insert products in movie after the movie is done. By doing this, one can easily change the graphic according to need.

Virtual placement makes this distribution channel more flexible. Advertising can be switched based upon e.g. demographics, geographic or behavioral information about the user.

Internet (Online Advertising)

Internet advertising is the marketing of products and services over the Internet. The goal is to promote an organization using online media to generate increasing sales and boosting the brand image. There are a wide range of different strategies one can use to advertise on Internet.

Electronic mail advertising, web advertising, search engine results pages and viral advertising are examples of branches under Internet advertising tree.

This distribution channel can be effective and suit any kind of business. The interactive nature of Internet marketing, both in terms of instant response and in eliciting response, are unique qualities of the medium. Another advantage of this medium is that it's easy to target specific target group. As mentioned previously in this thesis, it's more effective to advertise among relevant customers. The information and content is not limited by geography or time.

The downside of Internet advertising is that requires customers to use newer technologies rather than traditional. This may be an obstacle in some developing countries or segments like among elderly people. Low speed Internet connection is another barrier. The development in Internet advertising has been rapid and today's adverts require faster connection. In USA, the fastest growing advert-format is video with 89% growth in 2007 (12).

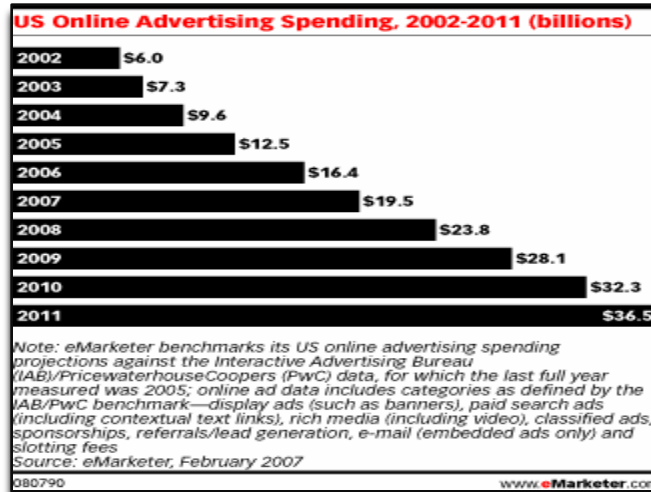


Figure 0-7: The development of online advertising in USA(12).

More sophisticated adverts requires higher throughput and can limit the audience because of it. The cost of online advertising is cheap compared to other mediums like television and magazine. The price varies for different strategies. And there are opportunities for every business. The adverts are also flexible and allow advertisers to change them according to target groups.

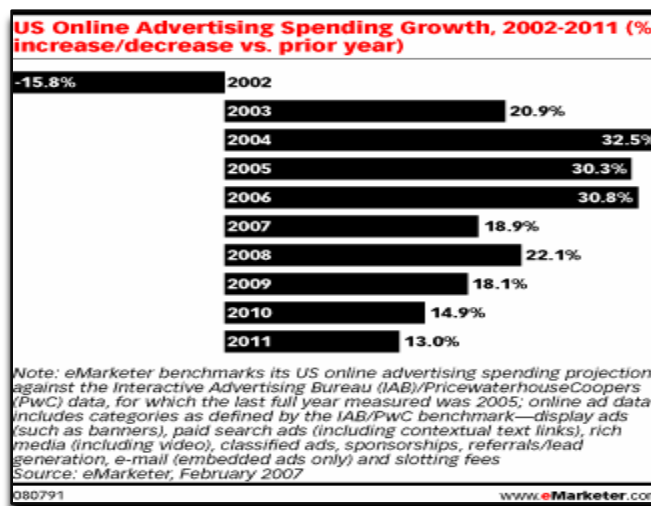


Figure 0-8: The growth of online advertising is USA (12).

It's important to produce creative adverts to catch the eyes of the audience. The competition is fierce through this distribution channel with all kind of pop-ups, roll-ons and roll ups. And it gets more and more important to stand out from the other advertisements to succeed. Online advertising is a battling medium, where there's a constant battle to reach audience. People are getting sick of spam and pop-ups and they are trying to get rid of unwanted advertising by using pop-up blockers and other technology.

Appendix B: Wireless Trondheim

Wireless Trondheim is a co-operation between the Norwegian University of Science and Technology, Sør-Trøndelag County, The Industry Association in Trondheim, Trondheim Municipality, SpareBank1 Midt-Norge, Adresseavisen and Trondheim Electric Utility (42). These actors constitute the shareholders of Trådløse Trondheim AS, the firm operating and owning the network.

The wireless network started as an initiative from NTNU back in April 2006. The vision was to transform the city into a “laboratory for research and development of mobile data services”. Large parts of the city center are now covered by the networks as figure 7-1 shows.

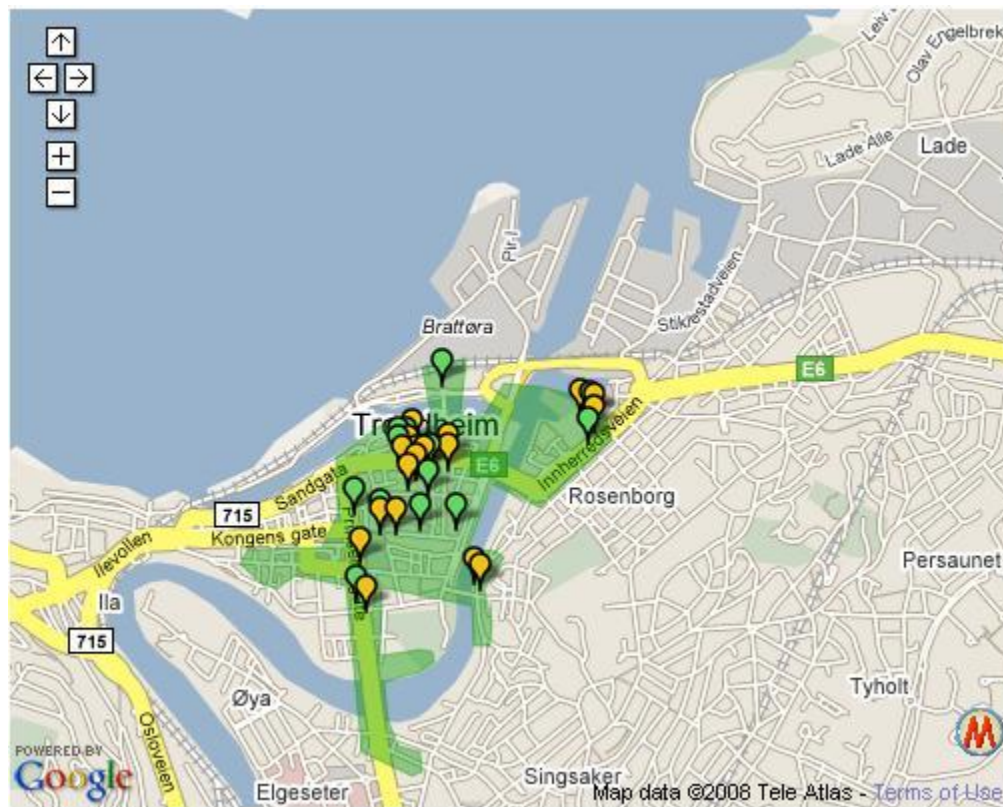


Figure 0-1: Coverage of Wireless Trondheim as of May 12th 2008 (42). Areas in green indicate current coverage.

The city of Trondheim has 150 000 inhabitants, with 31 000 of these living in the central areas. Users with a nomadic or mobile use of the services are the target customers of Wireless Trondheim.

Wireless Trondheim's access network is based on IEEE's 802.11a and 802.11b/g standards. The company has also recently started to use the WiMAX technology. The backbone is mainly fiber, complemented by some 802.11a and high capacity radio links.