

# Tangibility preference and involvement as predictors of willingness to pay for digitally distributed video games

Information Systems Science

Master's thesis

Tapani Kaijanen

2010

## **ABSTRACT**

The aim of this study was to examine the role of tangibility preference and involvement in video game consumers' willingness to pay for a digitally distributed version of a typical game purchase. In addition to tangibility preference and involvement, predictors were extracted from previous research on information goods. Both quantitative and qualitative methods were applied, emphasizing statistical analysis of survey data collected from a video game enthusiasts' internet forum.

Recent academic literature relevant to entertainment industries and digitally distributed entertainment goods was reviewed in order to build a research model for the empirical part of the thesis. The literature review established a conceptual background for information goods, consumer involvement, willingness to pay and adoption of new technologies, and compared alternative methods for measuring these constructs in a survey. Furthermore, the central roles of physical tangibility and tactile experiences in video game entertainment were discussed. The current situation of digital piracy and its relevance to the video game industry was also examined.

In the empirical part of the thesis, an incentive aligned web survey was performed on the web forum of a Finnish video game magazine. A total of 210 responses were collected during a period of 7 days. The survey was open to the general public, but only subscribers of the magazine were eligible for the incentive. The survey was not marketed outside of the web forum.

Statistical analysis of the data revealed that in this sample, game console digital distribution technology acceptance and product class involvement were the strongest positive predictors of willingness to pay (WTP) for a digitally distributed game, while tangibility preference (TP) and age were the strongest negative predictors.

In the case of WTP disparity (i.e. the percentage difference between WTP for the physically distributed game and its digitally distributed alternative), TP and age were the strongest positive predictors. Furthermore, acceptance of the associated digital distribution technology was the strongest negative predictor. It was also shown that WTP disparity is not always in favor of the physically distributed game: 11.9% of respondents had zero disparity, and two participants might have paid more for the digitally distributed version.

In this study, attitude towards piracy was not found to be a statistically significant predictor for willingness to pay.

Analysis of collected qualitative data showed that for many consumers, aftermarket and game collecting related issues are important in making value judgments between a physically distributed game and its digitally distributed counterpart.

**Key words:** consumer involvement, digital distribution, tangibility preference, video games

## Table of contents

|  |    |
|--|----|
| 1. Introduction .....  | 3  |
| 1.1 The academic and business relevance of the video game industry.....        | 3  |
| 1.2 Earlier research .....   | 5  |
| 1.3 The focus of this study .....  | 6  |
| 1.4 The structure of this thesis .....   | 6  |
| 2. Literature review .....   | 8  |
| 2.1 Information products.....  | 8  |
| 2.1.1 Defining information products through consumer perceptions.....          | 8  |
| 2.1.2 Strategies for marketing information products.....                       | 11 |
| 2.1.3 Digital distribution strategies for the video games industry.....        | 17 |
| 2.2 Physical tangibility in the context of video games .....                   | 21 |
| 2.2.1 Bridging the gap between the physical and the digital world .....        | 21 |
| 2.2.2 Tactile experiences as an integral part of video gaming .....            | 22 |
| 2.2.3 Tangibility related consumer benefits of the physical media.....         | 22 |
| 2.3 Consumer involvement .....   | 27 |
| 2.3.1 Definition of the involvement construct.....                             | 27 |
| 2.3.2 Antecedents and consequences of involvement .....                        | 28 |
| 2.3.3 Measuring consumer involvement .....                                     | 30 |
| 2.4 Models for adoption of new technologies.....                               | 36 |
| 2.5 Measuring willingness to pay for digitally distributed goods.....          | 40 |
| 2.5.1 The disparity between willingness to pay and willingness to accept ..... | 40 |
| 2.5.2 Approaches to measuring WTP.....   | 41 |
| 2.5.3 Choosing a suitable WTP measure for digitally distributed goods .....    | 43 |
| 2.6 Video game piracy .....  | 47 |
| 2.6.1 Current developments in video game piracy .....                          | 47 |
| 2.6.2 Anti-piracy strategies in the entertainment industry .....               | 49 |
| 2.6.3 Consumer antecedents of digital product piracy .....                     | 52 |
| 2.7 Research model and hypotheses .....  | 54 |

|   |    |
|---|----|
| 3. Data and methods .....                                   | 56 |
| 3.1 Survey design and items .....                           | 56 |
| 3.2 Survey pilot.....                                       | 59 |
| 3.3 Data collection process .....                           | 60 |
| 4. Findings .....   | 62 |
| 4.1 Description of the data.....                            | 62 |
| 4.2 Self-assessment of reasons for WTP disparity .....      | 70 |
| 4.3 Statistical analysis.....                               | 75 |
| 4.3.1 Correlation of study measures with WTP measures ..... | 75 |
| 4.3.2 Multiple linear regression analysis.....              | 76 |
| 5. Discussion and conclusions.....                          | 80 |
| 5.1 Research hypotheses .....                               | 80 |
| 5.2 Strengths and limitations of this study.....            | 83 |
| 5.3 Suggestions for further research .....                  | 84 |
| REFERENCES.....   | 85 |
| APPENDICES.....   | 90 |

# **1. Introduction**

This chapter reviews current academic research and business developments regarding the entertainment industry, and explains why the video game industry was chosen as the subject of this thesis. This chapter is divided into four sections: in section 1.1 reasons for both academic and business interest in the video game industry are given. Then, Section 1.2 discusses key earlier research regarding digital distribution in the entertainment industry. Section 1.3 sets the focus of this study, and Section 1.4 explains the structure of this thesis.

## **1.1 The academic and business relevance of the video game industry**

The video game industry is the fastest growing part of entertainment industries. According to the Entertainment Software Association computer and video game sales in the U.S. grew 22,9% in 2008 to \$11,7 billion (ESA 2010a). In comparison, the U.S. recorded music sales and motion film box office revenues for the same year were \$8.4 billion and \$9.5 billion respectively (RKMA 2010). For perspective, it is also noteworthy that the production budget of a modern high profile video game may match that of a Hollywood movie. For example Grand Theft Auto IV, a highly anticipated sequel in a popular video game series had an estimated record-breaking budget of \$100 million. This figure was given by the president of the developing studio in an interview where he also remarked that "[Making the game] is like making a theatre production, a few movies and an album all to fit into one package" (Bowditch 2008). This particular game also demonstrates the fact that many high profile games are suitable to mature audiences only - usually due to the amount and nature of violence they contain. However, the majority of all video games produced are still aimed for younger audiences - for example in the year 2009 the Entertainment Software Rating Board (ESRB) assigned 1791 ratings, out of which 6% were "Mature", 18% "Teen" and 76% "Everyone" or "Everyone +10 years" (ESRB 2010).

Naturally, the relevance of the industry is not only in its ability to create revenues, but also in the way it leverages latest digital technologies in order to gain its share of the entertainment market. The video game industry is in the center of media convergence: for example the Sony Playstation 3 makes it possible for the consumer to enjoy most of his or her digital entertainment using this single device. Movies, music, video games, the internet and even

traditional television channels can be consumed (and in some cases archived) using a PS3 as a living room media center.

Considering entertainment industries in general, the music industry obviously has had the largest difficulties in adjusting to the pressures of peer-to-peer (P2P) file sharing technologies. While experiments in digital rights management (DRM) have left many consumers with a skeptical disposition towards it (Stott & Taneja 2009, Helberger et al. 2004), consumers' behavior appears to be shifting from purchasing physical music albums towards downloading individual songs (Burkart 2008, Bockstedt et al. 2006). For example, the U.S. market recorded music sales are projected to decrease from \$8,4 billion in 2008 to \$6,0 billion by 2011 (RKMA 2010). It is debatable how much of this change is attributable to piracy and how much to consumers' otherwise declining interest in complete physical music albums.

While the whole entertainment industry has been shaken by P2P piracy, music companies were the first to feel the impact, because music files are small in size and therefore easily shared over even the slowest broadband connections. This pressure forced a transformation in the way the music industry operates: historical reliance on physical media in the music business has given way to digital downloads. According to ESA projections, the U.S. recorded music market will be dominated by digital downloads by 2010 (RKMA 2010).

As digital distribution has greatly transformed business models and operative processes in the music industry, it is likely that such a transformation will soon occur for other areas of the entertainment industry as well. Music, movie and game download services already exist for all major gaming platforms, and Sony has recently launched a hand-held console that only supports digitally distributed games. Innovative new subscription-oriented entertainment delivery services such as Spotify and its movie counterpart Voddler have been launched, that fully leverage the possibilities of digital distribution. When buying entertainment, consumers are faced with choices between physical goods, digital downloads and monthly subscription based services. On the PC, the pioneering Steam platform by Valve Corporation has lead the PC games market into a boiling pot of digital distribution services that appears to work towards dramatically reducing the importance of physical retailing in the gaming goods value chain. This transformation raises both academic and business interest in how consumers perceive value in digitally distributed goods and what are the factors that affect consumers' purchase decisions between physically and digitally distributed goods.

## **1.2 Earlier research**

Due to the growing popularity of digitally distributed music, preference for the tangible has recently attracted some academic interest. For example, a recent study (Styvén 2009) suggested that for music, digital distribution is not necessarily eradicating physical CDs but serving a different need. In her study the author also found that while high involvement in music correlates positively with preference for the tangible, it also correlates positively with the perception of higher value of physical formats over digital formats.

In addition to Styvén's research, there is a growing body of academic work on tangibility as a factor in user interface design (e.g. Kirk et al. 2009, Ishii 2008, Larssen et al. 2007). While the role of tangibility in user interfaces is different from its role in video game distribution, it is my view that multitouch interfaces may in the future bridge a perceptual gap between physically and digitally distributed goods. This may for example be done by providing the consumer with a tangibility enhanced interface for handling his or her collection of downloaded content: early attempts already exist for touch screen smartphones. Nevertheless, the relevance of preferring the tangible – in the context of this study – is in its possible value in predicting willingness to pay. In addition to Styvén's work, there is little research on the role of physical tangibility or involvement as predictors of consumers' willingness to pay for digitally distributed entertainment goods.

The problematic relationship between P2P technologies and piracy has lead to a considerable amount of academic work about digitally distributed goods. Much of this research focuses on the relationship of piracy, perceived risk and consumers' willingness to pay for music or PC software. It has been shown that income level and age are significant predictors of willingness to pay for digital downloads - especially when pirated content is available (Chiang & Assane 2009, Fetscherin & Lattemann 2007). Therefore, considering that the main audience of video games are teenagers and people in their early twenties (ESRB 2010), piracy must be considered as a factor in this thesis. However, while the dynamics between availability of illegal content and the consumer's capacity to pay for legal content do clarify the link between piracy and consumer purchase behavior, they do not fully explain how a consumer makes the decision between physical and digitally distributed purchase alternatives. Furthermore, if we make the assumption that entertainment industries continue to drift towards digital

distribution, it becomes more and more relevant to examine and discover other factors behind consumers' willingness to pay for downloads.

### **1.3 The focus of this study**

Overall, research has shown that purchasing behavior for digital goods is complex and has multiple determinants besides those related to piracy. While some existing academic observations made regarding digitally distributed music are applicable to video games, it is obvious that music, games and movies are fundamentally different in the way they are consumed. Therefore, adding tangibility preference and involvement into the determinant mix for video game purchase behavior, and examining how they are linked to willingness to pay, will contribute to the academic body of knowledge regarding digital distribution. Ultimately this may help the video game industry work towards optimizing consumer willingness to pay for digitally distributed gaming goods, and help understand consumer adoption of digital distribution.

This study will examine factors that influence consumers' willingness to pay for digitally distributed video console games, with special emphasis on tangibility and involvement. Therefore, this thesis has a strong consumer behavior focus. The context of video games is in the empirical part of this thesis limited to the current generation of video game consoles: Sony Playstation 3, Microsoft Xbox 360 and Nintendo Wii. Mobile and portable gaming is not within the scope of this thesis.

Because earlier research has shown the importance of piracy in the context of digital entertainment, it will be included as a factor in the study. Other factors are drawn from earlier research regarding digitally distributed goods and technology adoption.

### **1.4 The structure of this thesis**

This thesis is arranged into 5 Chapters. This introductory chapter has described the academic and business relevance of the video game industry as well as its connection to media convergence and digital distribution.



Chapter 2 reviews literature relevant to this study, and builds a research model to be used in the empirical part of the thesis. Chapter 3 describes the method of data collection for the empirical survey, and explains the operationalization of the research model. Chapter 4 reports the findings of the study, and final conclusions are drawn in Chapter 5.

## **2. Literature review**

This chapter has two goals, the first of which is to establish a conceptual foundation by reviewing key academic literature about information products. The second goal is to build a framework for the purposes of the empirical part of the thesis. To reach this goal, this chapter will examine tangibility, involvement, willingness to pay, technology adoption and piracy in the context of digital products.

### **2.1 Information products**

To understand information products better, I will first take a look at the types of knowledge consumers can have about them. Then, I will review definitions of information products, and reflect on how they compare with the traditional classification the products as a combination of service- and tangible attributes. Finally, this section examines strategic approaches to selling information products, and takes a look at recent developments in digital distribution in the entertainment industry.

#### **2.1.1 Defining information products through consumer perceptions**

The academic tradition of marketing argues that there are three types of knowledge consumers can have about a product. Such knowledge may be about 1) product attributes 2) positive consequences of product use or 3) values the product helps the consumer achieve or satisfy (Peter & Olson 2008). Consequently products can be seen as bundles of attributes, bundles of benefits or as value satisfiers. Each of these three views represents different challenges in defining information goods.

First, when a product is seen as a bundle of attributes, consumers make affective and cognitive evaluations about concrete and abstract attributes of the product (Peter & Olson 2008). Taking this approach, an information product that is distributed in a physical media retains some concrete attributes in its packaging, but a digitally distributed good will be entirely abstract (Styvén 2007).

Second, when a product is seen as a bundle of consequences of use (or benefits of use), the consumer evaluates what he or she perceives to follow from buying and using the product.

These consequences may be functional or psychosocial and can be either positive or negative. In the mind of the consumer, these consequences and their likelihood are interpreted as a risk (negative consequence) or a benefit (positive consequence) (Peter & Olson 2008). In the case of information products, piracy and its consequences play a more dominant role in risk perceptions, than in the case of physical goods (Freiden et al. 1998). Also, benefits are dominantly psychosocial, because functional benefits are mainly limited to those offered by productivity software. Consumers may experience elevated perceptions of negative risk, because they cannot make reliable judgments about the consequences of the product use (Styvén 2007).

Finally, values are broad life goals people have, and recognizing that a value has been satisfied by a product is quite intangible and subjective (Peter & Olson 2008). Arguably information goods are effective in fulfilling values such as being environmentally friendly, being secure about information or being informed. On the other hand, values related to tangible evidence such as perceptions of being successful among peers may not be at all applicable to information goods. Since values are often associated with the strongest affective responses, it seems that information goods may have less impact on personal value satisfaction than physical goods. However, it has been argued that information goods may satisfy unique wants and needs that are not readily addressed by tangible goods and services (Freiden et al. 1998).

Based on how information goods are perceived differently from traditional goods and services, it has been suggested that information goods should be treated as a unique product type alongside goods and services. According to Freiden et al. (1998), information goods are characterized by very low heterogeneity, perishability, tangibility and inseparability. At the same time their reproducibility is very high, while establishing ownerships represents challenges that are different from goods and services (see Table 1).

Heterogeneity of information goods is very low, because there is no difference between the original and subsequent copies of the information good (Freiden et al. 1998). Perishability is also very low, because information is practically permanent and doesn't deteriorate under use. Reproducibility is very high as producing the first copy is often expensive, but subsequent copies are easily and quickly made with marginal cost being close to zero (Shapiro & Varian 1998).

Regarding tangibility and intangibility it must be noted that there are two types of intangibility: physical and mental (Featherman & Wells 2010). Physical tangibility refers to the degree to which a product can be touched or seen or has attributes the consumer can physically interact with. Mental tangibility on the other hand refers to how well the consumer can interpret mental cues so that he can build a coherent picture of the product or service in his mind. For information goods physical tangibility is very low (Freiden et al. 1998), but mental tangibility will vary depending on how successful the marketer is in providing virtual cues to the consumer (Featherman & Wells 2010).

Inseparability refers to the distance between the originator of the product and the end consumer. For services this is low as services are usually co-produced with the consumer at the place and time the service is used. For information goods this distance can be high, because digital distribution channels make global distribution possible in seconds. Thus, the originator and consumer are easily separated. (Freiden et al. 1998)

Ownership adds a measure of complexity into the definition of information goods. While the ownership relations of information goods are easily determined, they can be very difficult or impossible to exercise and oversee. Information has good-like characteristics that make legal ownership possible, but at the same time the intangible characteristics of information make its possession and control a challenge. (Freiden et al. 1998)

Table 1. Comparison of characteristics of goods, services and information

| <b>Product characteristics</b> | <b>Goods</b> | <b>Services</b> | <b>Information</b> |
|--------------------------------|--------------|-----------------|--------------------|
| <b>Heterogeneity</b>           | Low          | High            | Very low           |
| <b>Perishability</b>           | Low          | High            | Very low           |
| <b>Inseparability</b>          | Low          | High            | Low                |
| <b>Tangibility</b>             | High         | Low             | Very low           |
| <b>Ownership</b>               | High         | Low             | Both               |
| <b>Reproducibility</b>         | Low          | Low             | Very High          |

Source: Freiden et al. (1998)

Based on the above discussion, it seems logical to classify information products as a separate product class from traditional goods and services. However, recent innovations in digital distribution make the matter slightly more complex. For example, streaming services and various subscription based business models call for an extensive taxonomy of information goods, and a deeper examination of how information products should be marketed. Therefore, recent innovative business models and marketing strategies for information goods will be discussed in the following section.

### **2.1.2 Strategies for marketing information products**

The distinct characteristics of information products enable – and require – special strategic approaches to marketing and distribution. To maximize the potential benefits of low perishability, heterogeneity, inseparability and high reproducibility, strategies such as versioning, bundling and utilizing the Long Tail effect can be implemented. This section reviews such strategies, which are especially suitable for information products. The strategies are also summarized in Table 2 at the end of this section.

#### **Versioning, bundling and the long tail**

With information products, it is often possible to prepare multiple versions of the product at a low cost and market them at different prices to reach different consumer segments. This strategy is possible, because holding an information product in stock may be entirely without cost and the unit marginal costs of sales are often negligible. This strategy is an effective way to handle a market with very heterogenous customer segments: when there are various versions available at different price points, the market effectively “segments itself” (Shapiro & Varian 1998). A special versioning strategy such as offering a free version of the product may be effective, for example when the goal is to build awareness, create a network effects or to build word-of-mouth (WOM) about the product.

The Long Tail effect refers to the fact that for many product categories, there is at any given time a relatively small subset of all stock keeping units (SKUs) that sell in large volumes. High demand for these SKUs usually lasts for a relatively short while. Eventually the initial

sales peak declines and a very large number of products with low demand remain. For tangible goods, such remaining demand may be too low for stock keeping. This is major challenge for traditional distribution of physical goods. However, information goods change this, because their stock holding and marginal sales costs can be close to zero. Consequently, companies can continue to sell a much wider variety of information products than tangible products. Furthermore, consumers' purchasing behavior may change, because they can discover and buy products otherwise unavailable to them (Brynjolfsson et al. 2006).

Business examples of the above mentioned strategies can be identified within the 21<sup>st</sup> century entertainment industry. For example Spotify, a music service launched in late 2008 combines the Long Tail and versioning in their approach to selling music. Fundamentally an internet jukebox, the service is offered in three different versions: Open, Unlimited and Premium, which respectively cost \$0, \$5 or \$10 a month. By subscribing to the \$5 Unlimited service, a 20-hour monthly listening limit and advertisements are removed. The 10-dollar Premium subscription adds enhanced sound quality and mobile device functionality. This versioning approach is combined with a diverse selection of music that fully utilizes the Long Tail effect.

Another effective information product strategy is to bundle several information products into a single package. If such a bundle is successfully priced, many consumers who would not buy several products at their individual prices will buy the bundle, because to them it represents better value (Bakos & Brynjolfsson 1999). In effect, total revenues can increase considerably as consumers spend more money on the bundle than they would have spent buying products individually.

Valve Corporation, which operates in the video game industry, has combined bundling with the long tail effect on their digital games distribution platform, which they call "Steam". On Steam, special offers frequently collect several or even all products from a given game developer or a game series into one aggressively priced bundle. The long tail effect is also well utilized: large numbers of obscure games that would be impossible to distribute through traditional channels can be found on Steam. This has enabled surprise successes for small, low-profile games that the gaming community otherwise would have probably missed.

## **Subscription based streaming services**

While Spotify and Steam demonstrate bundling, versioning and the long tail effect, they are different in one important aspect: Spotify is fundamentally a streaming subscription based service, whereas Steam relies on the more traditional model of selling downloads of individual products or bundles of products. This audio-on-demand (AOD) approach taken by Spotify is fascinating, since only a few years ago it was suggested that AOD is not yet feasible, and for it to be successful, music should be deliverable on both wireless and wired mediums without technical issues such as audio dropouts and other fidelity issues (Premkumar 2003). Spotify has accomplished all this, which suggests that as broadband connection speeds and technology reliability continues to improve, similar subscription based strategies may become common for other entertainment goods as well. In the US, a streaming movie subscription service NetFlix is already offering thousands of movies and television channels instantly watchable on a PC. In Sweden, a similar service called Voddler is nearing public launch.

General benefits of a streaming subscription strategy include minimization of copyright violations, because the content is not stored locally (Premkumar 2003), or is stored in a strongly encrypted form. Also, many consumers may find that such a service parallels with traditional entertainment subscription services such as cable television, which may ease service adoption.

In the context of video games, there already are attempts at a streaming gaming service such as StreamMyGame.com which runs a game on the consumer's home PC and streams both audio and video to for example a laptop computer over the internet. A more ambitious, subscription based "true" streaming game service called OnLive.com is currently marketed to launch in 2010 – this service assumedly can stream recent high profile games via a web browser plugin. The games will run on the service provider's high performance servers, and the consumer will be able to play the latest games on a low-spec PC, Mac, or even on a television by using a special "microconsole" connected to the internet.

The attractiveness of a streaming game service is based on the fact that many modern games require a very high performance PC to play. A streaming service assumedly would remove this restriction and make modern games playable to people who are not interested in

frequently upgrading their PC for gaming purposes. Naturally, benefits of portability apply as well, because high performance gaming PCs usually are not portable.

### **Tangibilizing the intangible**

While it is generally accepted that intangibility in the context of services and products increases consumers perception of risk and therefore has impacts on consumer buying behavior, there are things marketers can do to alleviate this issue. Strategies for marketing intangibles include emphasizing tangible cues, managing social information sources and strong branding (Styvén 2007).

A traditional approach in the case of services is to focus on the physical evidence in the servicescape i.e. the service facility interior, exterior and other tangibles such as uniforms and brochures (Zeithaml et al. 2006). But, when the purchase is made online in an entirely virtual servicescape, the only way to tangibilize is through visual or audio cues. This can be done by using the following key strategies of tangibilization: 1) physical representation 2) association 3) visualization and 4) documentation (Berry & Clark 1986).

First, physical representation refers to focusing on any physical elements in the intangible product or service – or a part of supplementary products or services. For video games, this might involve representations of a physical game box, video material of playing the game, or for example representations of the game console being used to start the game.

Second, association is used to create a mental link in the consumers' mind between the product and something not directly part of the product. This could for example be a sports personality, a place or an event that consumers are positively involved with.

Third, visualization can be applied to get the consumer to create a mental picture of the benefits of using or experiencing the product. For video games, a typical approach is to use still images or actual gameplay footage in marketing – in this sense marketing a game can be very similar to marketing a movie.

Fourth, documentation can be used to factually describe the quality and value of the product. For video games, this is a typical approach that involves referring to positive review scores from game review magazines or websites.



Thus, the traditional approaches to tangibilizing intangible services can be readily applied to the marketing of video games. However, when a game product is distributed digitally, the situation may change slightly. According to Eggert (2006), in the online environment consumers experience an elevated perception of risk compared to the physical purchase environment, mainly because they are concerned about privacy and security of the purchasing system. This shifts marketers focus from product related cues towards tangibilizing the actual distribution platform.

Intangibility in the context of services has the undisputed consequence that consumers begin to put more value on other people's experiences about the service (Zeithaml et al. 2006). For this reason it is very important to manage this word-of-mouth, because stories of consequences of using a service have a great impact on how consumers perceive the service. Due to intangibility, pre-purchase evaluation can be difficult and the same phenomenon applies to e-services (Featherman & Wells 2010), and it seems logical to assume information products such as games are similar.

Typical modern uses of word-of-mouth in marketing information products include testimonials at the selling platform such as the user reviews that Amazon.com uses. More recently, as a result of the social media boom, Spotify has made it possible for consumers to share their music playlists among their Facebook friends. Direct suggestions and music recommendations are possible from within the Spotify or Facebook user interface. Social media features integrated within a selling platform are a very powerful way to leverage WOM, but it must be noted that simply making WOM possible is not managing it.

Influencing word-of mouth can be done through appropriate strategies. For example, marketers can simulate WOM in advertising by using testimonials and opinion leaders (Zeithaml et al. 2006). Another way is to focus marketing efforts on influential consumer individuals, so that they as opinion leaders initiate positive WOM. Also, it is possible to use incentives with existing consumers to encourage positive WOM from them.

Finally, a very good strategy to mitigating issues associated with intangibility is to leverage a strong brand (Eggert 2010, Zeithaml et al. 2006). When consumers are faced with a purchase decision that involves risks related to uncertainties such as intangibility, they are more likely to rely on a brand which they associate positively.

Table 2. Review of strategies for marketing information products and managing intangibility

| Strategy                            | Benefits of strategy   |
|-------------------------------------|--|
| Versioning                          | Versions of different functionality or fidelity at different prices match different consumer segments. A free version may be used to attract attention and reduce risk perceptions.  |
| Bundling                            | Estimating consumers' valuation of a bundle is easier than estimating valuations of individual products. Overall consumption increases due to perceptions of higher value in bundle. |
| The Long Tail                       | Selling obscure, low individual-sales-volume products becomes profitable, when there are very many of them. This requires very low carrying and marginal sales costs.                |
| Streaming and subscription models   | May reduce perception of consumer risk and mitigate purchase decision barriers. Copyright issues can be alleviated, when combined with streaming and strong encryption technologies. |
| Emphasizing tangible cues           | Reduces discomfort and risk perceptions related to intangibility and abstractness. Anchors consumer's perceptions with something tangible or factual.                                |
| Managing social information sources | In the absence of tangible evidence consumers tend to emphasize word of mouth.   |
| Brand management                    | Mitigates perceptions of uncertainty, intangibility and risk. Creates positive psychosocial associations.  |

### 2.1.3 Digital distribution strategies for the video games industry

While there are some important practical consumer benefits to the physical distribution media (discussed in Section 2.2), internet based digital distribution has already become the consumers' preferred distribution channel for music. Because the same development in my opinion eventually will happen with movies and video games, it is worthwhile to shortly examine the alternate distribution strategies available for digital entertainment goods.

In an article by G. Premkumar (2003) the author discusses how digitalization has created opportunities to re-engineering the supply chain for music. With some considerations, the presented strategies are applicable to other digital entertainment goods as well. Below, I will review the digital distribution strategies suggested by Premkumar (summarized in Figure 1) and discuss how they relate to the video game market. In this discussion I will substitute the terms *Artist* and *Record Company* used by Premkumar with *Developer* and *Publisher* respectively to better represent the video game industry.

First, in the *Developer-Publisher-Retailer-Consumer* –strategy, the product is transferred in digital form until the final distribution stage i.e. the consumer is the only one to handle the product in a physical media. For music, this could involve the consumer choosing a set of songs e.g. at an in-store kiosk and then waiting for the kiosk to automatically burn a CD of them, or write them on the consumer's memory stick or portable media player. In the context of video games this approach might be viable with portable gaming devices, such as cell phones. Also, the strategy could work combined with the long tail effect: a suitable niche of consumers might be interested in creating and buying casual games or older games as self-made compilations or as single titles from such a kiosk. Interestingly, a recent application of this strategy in music was just announced as a company intends to deploy music and movie download kiosks at 57 entertainment stores and 35 airports in the US (NCR 2010).

Second, in the *Developer-Publisher-(Intermediary)-Consumer* –strategies, there are no physical stages involved in the distribution. Instead, the physical retailer is entirely bypassed, and the product is downloaded by the consumer on an internet distribution platform. This platform may for example be an online retail store such as Amazon.com, or a publisher may have an online store of its own. In the video game industry there are several applications of

these strategies: major game publishers such as Electronic Arts and Atari have their own online stores for PC games and there are countless niche and casual gaming online stores.

Arguably the most successful implementation of these strategies on the PC has been the Steam online store by Valve Corporation, which distributes both PC and Mac games from many large and small publishers in addition to their own products. Since the beginning of Steam, a key differentiating feature of the service has been that there are no limits to how many times a consumer can download his or her purchase. All purchases made are permanently registered to the account, and can be installed on any number of computers. The only limiting factor is that any online features the game has can only be accessed from a single instance of the account at a time. My view is that this policy is a very strong way to mitigate perceptions of risk that immaterial purchases involve, and may be the main reason for the success of this individual distribution platform. Another innovative feature of the platform is the Steam Cloud, which refers to user-transparent storing of game settings and gamesaves to Steam servers. This relieves the consumer from manually transferring settings and game saves between computers, and further mitigates risk perceptions because consumers no longer need to worry about losing their settings and game saves in case of a PC crash.

In the context of console video games, all three major consoles have their own online stores. All of these purchase platforms (Xbox Live Marketplace, Sony Playstation Store and Nintendo Shop Channel) are closed systems: buying games and downloading them can only be done using the respective video game console. There are many benefits to such a closed system: on the service providers side piracy risks are minimized and obvious distribution channel monopoly benefits apply. On the consumers' side the shopping experience is enhanced as games are bought using the same interface they are played with. Also, risk perceptions are minimized because the purchases are done in a very strongly branded environment that is full of tangibility cues. In short, many consumers will feel very safe shopping in a branded, closed online store environment.

While the above mentioned distribution platforms are closed in the sense of devices that they can be accessed with, they have a credit feature which extends them beyond the digital realm. For all platforms, consumers can purchase "credit" to be used for purchases within the online stores in the form of physically retailed cards. The card, usually sold in a box identical to a game box, contains a code that adds a certain amount of credit on the consumer's online store

account. This is an interesting way of tangibilizing the intangible. Also, while it is entirely possible to make online purchases simply using a credit card, the use of a physical box gives the online store a presence in the traditional physical retail environment. Naturally, retailing credit codes also enables online purchases for young consumers who don't have a credit card.

The third digital distribution strategy suggested by Premkumar (2003) is the *Developer – (Intermediary) – Consumer* –strategy, which removes major publishers from the equation. Instead, game developers either distribute their products directly to consumers or use an intermediary online aggregating service that simply gathers many independent developers' products on a single distribution platform. In the case of music, there have been practical examples of both strategies. For example Radiohead, a high profile alternative rock band, distributed their 2007 album "In Rainbows" by selling it directly on their website as a download, and there are numerous websites that currently apply the intermediary strategy on music (e.g. TuneCore.com and CDBaby.com).

In the context of video games the *Developer – Consumer* –strategy was successfully applied already in the 1990's in the form of "shareware". Then, shareware referred to free versions of games, which were distributed on game magazine cover discs, over the internet and shared with friends. Usually the free version contained a few levels of the game, and once completed congratulated the player and gave him or her instructions on how to purchase the full game directly from the developer. This strategy is still used by some small developers, but the intermediary strategy is much more popular due to the sheer amount of games currently available.

The fourth strategy is the *Content-on-Demand* –strategy. This strategy has already been shortly discussed in a previous section, where Spotify was mentioned as an example of subscription based music streaming services, and OnLive was discussed as an example of game streaming. For video game consoles, the concept of content on demand has so far referred to simply purchasing and downloading games. However, as streaming technologies advance, it is conceivable that a full streaming service be introduced to game consoles as well. After all, both Sony and Microsoft are generally believed to be selling their consoles at a loss, and profits are made from the sales of games (including platform monopoly royalties) and peripherals. In such a situation, prolonging the life of a console generation could be possible through streaming games, which the aging console hardware otherwise could not handle.

The above discussion on strategies for distributing video games was based on Premkumar's (2003) article about strategies for the distribution of digital music. Various ways of distributing game content to consumers have been brought forward, and the implications of these strategies will be considered in building the research model and hypotheses for the empirical part of this thesis.

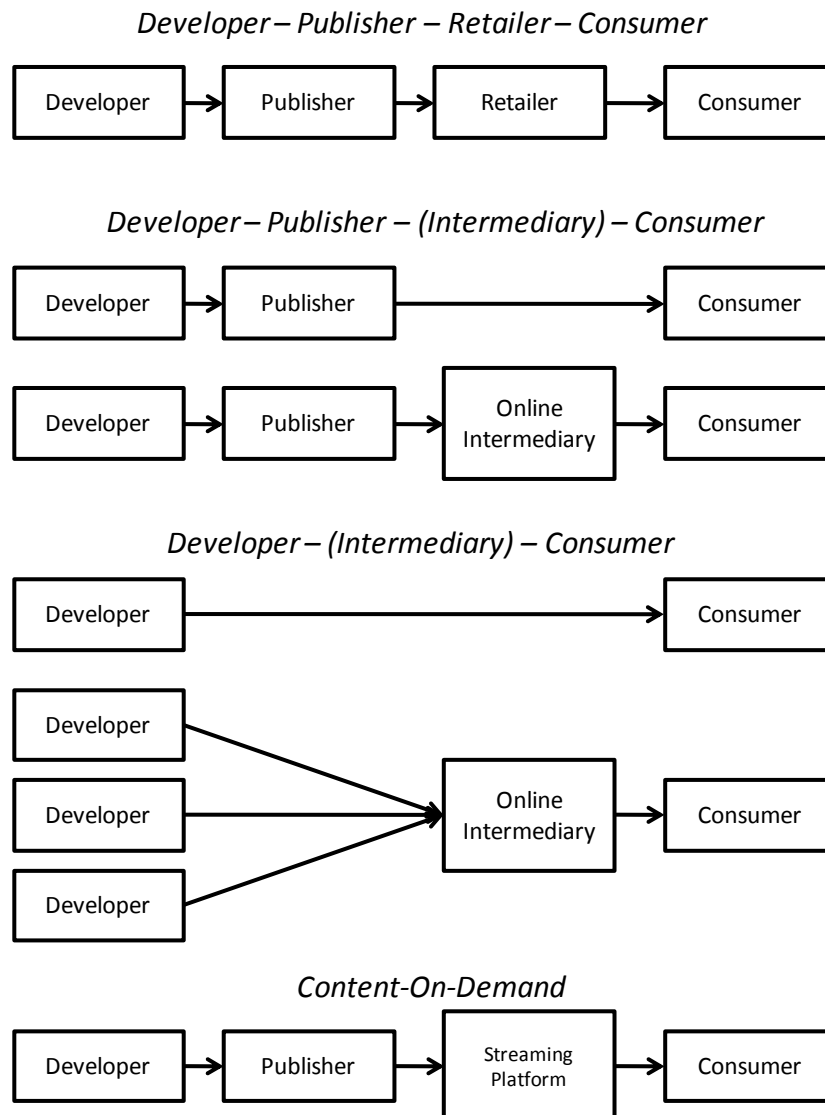


Figure 1. Strategies for the digital distribution of video game content.

Adapted from Premkumar (2003)

## **2.2 Physical tangibility in the context of video games**

This chapter examines the role and benefits of physical tangibility in the context of video game consumer markets. The goal of this chapter is to identify consumer benefits of the physical distribution media and to discuss the role of tactile experiences in the context of video game goods.

### **2.2.1 Bridging the gap between the physical and the digital world**

There are few academic texts that focus on physical tangibility in the context of digitally distributed goods, although intangibility related issues have received much attention. This lack of academic interest seems strange, since quite a lot of work has been done in usability and user interface research on the subject. Much of this research focuses on tangible user interfaces (TUIs), which in contrast to graphical user interfaces (GUI's) aim to physically embody digital information and thus create a seamless extension of the digital world into the physical world (Ishii 2008). A primus motor for such research is the fact that evolution has made us beings with a wide array of sophisticated skills for sensing and manipulating physical objects in physical environments – yet interaction with the digital world has remained largely an audiovisual experience.

The potential of tangibility enhanced digital products has only recently begun to realize in the consumer market. Notable recent successes in this field are Nintendo Corporation with its DS and Wii video gaming systems, and of course Apple Corporation with its iPhone and iPad - a GSM phone and an internet tablet with a multitouch UI. In addition to communication and gaming devices, touch screens are gaining popularity in other consumer products as well, such as personal computers, and even home appliances. This transition in UI paradigm may be creating a new generation of consumers whose intuitive response to controlling technology is not to push buttons and turn dials but instead to use gestures or to touch and move objects directly on the visual display.

### **2.2.2 Tactile experiences as an integral part of video gaming**

Regarding video games, tangibility has special relevance: the need for tactile experiences has played an important role in the development of video game systems. The first video game consoles were simple devices with limited graphical and audio capabilities. In those early years of video gaming, the most technologically advanced systems could be found in public video game arcades, where young gaming enthusiasts spent their allowances on the latest arcade games. Much of the appeal of the video game arcades was founded on tangibility-enhanced game cabinets and controllers, many of which resembled a real life vehicle or a gun. A high end driving game cabinet might even turn, shake and roll according to the events on screen.

Video game systems in the 21st century have drawn much from the history of arcade gaming: playing on a modern home video game system is a very tactile experience. The player has both hands on a controller that vibrates when the player shoots or experiences an impact in the game. For driving games, there are wheel controllers that vibrate and resist turning of the wheel according to the driving simulation. The latest extensions to tactile video gaming are the Nintendo Wii, Sony Playstation Move and Microsoft Xbox Kinect controllers that quite accurately measure a player's physical movement in a 3D space. For example wielding a shield and a sword for medieval combat is now something the player may actually do in the physical world, instead of just pushing buttons to control a character's in-game actions. Combined with tactile feedback, these motion sensing control systems very effectively immerse the player in the game: video gaming has become a relatively physical activity.

### **2.2.3 Tangibility related consumer benefits of the physical media**

In contrast to developments in how games are played, there is an opposite trend in how the game content is delivered: as playing becomes more physical, purchasing games is being directed towards immateriality. Digital delivery platforms exist for all major gaming platforms, and companies are involved in creating an online experience that promotes purchasing digitally distributed games. So far many players have adopted digitally distributed extra content such as additional game levels or in-game equipment, but on the other hand many are reluctant to purchase full high profile games as downloads, if a physical alternative



is available. It seems that the majority of gamers still prefer the physical game box and disc. There are many reasons why a person might prefer a physical game box over a download, which I will examine in the following section.

Taking a general approach, tangibility refers to the physical properties of a product, and the extent to which the consumer can experience these properties through the senses. For information goods such as video games, the only tangible attribute about the good is the media in which it is delivered. Therefore it can be argued, that an information good is even less tangible than a service – most services after all have some tangible evidence involved in service delivery (Freiden et al. 1998, Zeithaml et al. 2006). In this sense, the packaging becomes very important to consumers who wish to evaluate a video game at the point of purchase. In the case of a download, all the consumer has at the point of purchase is the audiovisual representation of the game within the selling platform. For some consumers this may not be enough to warrant a positive purchase decision, because there is no tangible evidence at all. However, modern game delivery platforms mitigate this problem greatly by offering downloadable free demonstration versions (“game demos”) for evaluation purposes. Usually, such demos are available for a considerable time before the full game becomes available for purchase, building consumer anticipation of the actual product.

A digitally distributed good is a very high abstraction. It has been presented by Featherman et al. (2006), that this high level of abstraction of digitized products may be connected to feelings of un-authenticity or artificiality. The authors also suggest that for technology savvy consumers such perceptions would be much less frequent. In the case of video games the abstract nature of a download is likely to raise issues the game is bought as gift. In such a case, the buyer may be someone not technology-savvy and therefore the high level of abstraction has potential to induce feelings of artificiality or un-authenticity.

In addition to the above mentioned issues of evaluation and authenticity, there are end-user level practical issues that may affect tangibility preference. Such factors are deducible from how physically distributed video games are consumed: the traditional physical distribution media has created consumption habits, which may act as barriers to adopting digital distribution and elicit perceptions of higher value in physical goods. The relative importance of these tangibility related factors, which are discussed below, will be examined in the empirical part of this thesis.

First, physical media has obvious portability benefits. The consumer can take the game with him to places where the gaming platform is available, but there is no access to the internet. Examples of such situations include holiday trips and social gatherings, where internet access may either be unavailable or prohibitively expensive. Physical portability is also related to data security issues: even if internet access is available, consumers may feel uncomfortable inputting their private user account information on a publicly used gaming system to download a game. The speed of the internet connection is also an issue in such a situation: it can take hours to download a full game in contrast to the seconds it takes to insert a disc. Furthermore, physical portability enables lending and borrowing of games between friends, which on a digital distribution platform is of course impossible because it makes no economic sense.

Second, as was previously mentioned in the context of authenticity and artificiality, a game may be given as a gift. The notion of giving an immaterial gift – a download – is probably something many consumers shun, especially if they have little technological expertise and are not avid gamers themselves. It is possible that in the mind of a consumer, receiving or giving a digitally distributed good as a gift might be perceived similar to a gift card or a cash gift. The appropriateness of an immaterial gift is contingent on situational factors: the more personal significance the act of giving or receiving the gift has to the individual, traditionally the more suitable the tangible alternative. Furthermore, in the context of gifting a video game, the person giving the gift is usually older than the person receiving it. A parent giving a game to his or her child as a Christmas- or a birthday gift must be the most common video game gifting context. Here, a download may feel out of place.

Third, physical goods have secondary market value. The video game secondary market is thriving: online auction sites such as eBay and its Finnish counterpart Huuto.net have thousands of second hand video games listed. Also, most video game retail stores have a strong foothold on the video game secondary market: many consumers trade in their used games when buying the latest releases. Consequently, in many retail game stores second hand games have more shelf space than new, unused games. The secondary video game market represents an ongoing challenge to the video game industry, and in my view plays a major part in consumers' perceptions of higher value for the physically distributed video game.

Fourth, video games are a common subject of collectors' interest. As is the situation with music and movies, many consumers are highly involved in building a comprehensive collection of video games. For collectors, the act of collecting usually has more significance than the actual content, design or functionality of the items they collect. Some collectors simply archive what they collect; items are held factory sealed with no intention of ever actually taking them to use. Admiring and displaying the collection is often a significant source of satisfaction for the collector.

Collections also carry social significance: collectors typically discuss and compare their collections among peers for social recognition. As anecdotal evidence, a short human interest story about a Japanese collector with a complete collection of all released Xbox 360 games enjoyed gamers' attention worldwide in May 2010. This tendency youths have to collect, compare and trade with their collections has been widely utilized in marketing for decades: good examples include traditional baseball and hockey cards and the Pokémon franchise.

Until recently collections have been strongly tied with the physical world, but innovations in video game design have paved the way for similar phenomena in the digital realm. On the Microsoft Xbox 360 gaming platform two innovative functionalities called "gamerscore" and "achievements" have greatly increased many consumers' involvement with the platform. In short, the gamerscore is a cumulative sum of scores the player has been awarded for fulfilling special sets of game conditions i.e. "achievements". For example completing a level without taking any damage may award the player 100 points, which is then added to his or her gamerscore. Players can compare their achievements in a special trophy viewing environment, and rank their gamerscore with friends. Many competitive persons find this highly involving. These immaterial collections and the high level of consumer involvement around them support a suggestion made by McCourt (2005): as goods lose their physicality, they become more and more imbedded with constructed value.

Even though innovations continue to enhance social experiences within the digital realm, physical collections are still significant to many consumers. Therefore they will be included as a tangibility related factor in the empirical part of this thesis.

In the above discussion of physical tangibility in the context of video games, I have identified the following six tangibility related benefits. These benefits may elicit perceptions of higher

value in a tangible, physical product over the digitally distributed alternative, and will be included in the research model used in the empirical part of this thesis.

- Evaluations and judgments about a game at point of purchase
- Perceptions of authenticity or genuinity
- Portability benefits of physical media (e.g. lending, borrowing and travelling)
- Social and practical conventions related to gifting
- Secondary markets
- Displaying and admiring physical collections; social relevance of collections

## 2.3 Consumer involvement

The empirical part of this thesis is a web-based survey among gamers who subscribe to a Finnish video game magazine, and participate in discussions on its web forum. Therefore, people who answer the survey are highly involved with video games – a factor which must be considered in both survey design and the interpretation of survey results. Towards this goal, this section will define involvement and review literature on how it influences consumer behavior. Also, various ways of measuring consumer involvement are examined and a proper involvement measure for the empirical part of the thesis is chosen.

### 2.3.1 Definition of the involvement construct

Consumer involvement has been studied in marketing for decades, and consequently there are many different definitions of the construct. Approaches to defining involvement may be categorized into two general groups based on how they see it connected to a person's psychological functions (Garcia et al. 1996). In the first category, involvement is based on cognitive information processing: for example the amount of cognitive connections or personal references a product elicits in a person. In the second category, involvement is viewed as a state of activation or arousal, driven by various antecedents and leading to various consequences. It has been argued that despite different approaches to defining involvement, it could be perceived as practically synonymous to *personal importance* or *personal relevance* – such a perception is at least a constant theme in academic discussions about involvement (Ratchford 1987, Mittal 1995, Peter & Olson 2008).

This thesis adopts the view that involvement is a motivational state that energizes and directs consumer's decisions, affective processes and behaviors (Peter & Olson 2008). In this study, involvement refers to consumer's perceptions of importance or personal relevance for an object, event or activity. Taking this motivational approach to involvement, it can be operationalized as a continuum between low and high, which enables its statistical analysis in the empirical part of this thesis.

### **2.3.2 Antecedents and consequences of involvement**

According to Peter & Olson (2008), the fundamental mechanism that explains involvement is means-ends chains. When making purchase decisions, consumers are consciously or unconsciously looking for means to reach an end, and this end (i.e. ultimate consequence of product use) may be something practical or even completely abstract such as fulfilling a personal value or belief. The level of involvement experienced by the consumer is determined by the type and amount of means-ends information activated by the situation. The stronger the perception of product use leading to valued psychosocial consequences in addition to relevant functional consequences, the higher involvement. If the situation activates only functional consequences, involvement is likely to be low.

In short, the antecedents of involvement may be personal (e.g. needs, values and personal aims), situational (e.g. time requirements of purchase decision) or stimulus-related (e.g. situational stimuli such as advertisements) (García et al. 1996). Put more exactly, means-ends based perceptions of self-relevance lead to the various levels of involvement (see Figure 2). The sources of this self-relevance can be categorized into two sources: 1) intrinsic self-relevance and 2) situational self-relevance (Peter & Olson 2008). Here, the word intrinsic refers to means-ends information activated from the consumer's memory.

Intrinsic self-relevance is a function of both the characteristics of the consumer (e.g. values, goals, need, personality and expertise) and the characteristics of the product (e.g. price, symbolic meanings, potential for harm or poor performance, time commitment)(Peter & Olson 2008). In contrast, situational self relevance is determined by information in the immediate physical and social environment. In addition to the immediately observable product characteristics, the situational context may include factors related to the purchase situation, intended immediate use, temporal pressures and both the social and physical environment.

Thus, involvement may be shortly described as a motivational state, caused by affective responses and activated self-relevant knowledge about product attributes, use consequences and personal values (Peter & Olson 2008). While the level of involvement is a significant factor affecting consumer behavior, it has been argued that involvement is a passing

psychological state experienced only at certain occasions (ibid.), elicited by the activation of means-ends knowledge.

However, an important addition to the involvement construct is the separation of purchase decision involvement from product or product class involvement. This is easily understood through practical examples. While product class involvement can be a relatively enduring (e.g. a consumer may be perpetually and highly involved with cars or movies in general), purchase decision involvement lasts only the duration of a purchase episode, but can be very high for that duration. For example, a consumer may not be generally involved with dishwashers, but can experience high levels of involvement for when he or she has to decide which dishwasher to buy (Mittal 1989).

As a general consequence of high involvement, a consumer does more searching and processing of product information, and his or her attitude towards a product may change (García et al. 1996). Highly involved consumers may be generally more active in relation to advertising communications, and they may extend their processing of this information (Laurent & Kapferer 1985). Highly involved individuals might even perceive that their “life would change” without the product: affective links and social interactions related to the product are typical signs of high involvement with a product or product class (García et al. 1996).

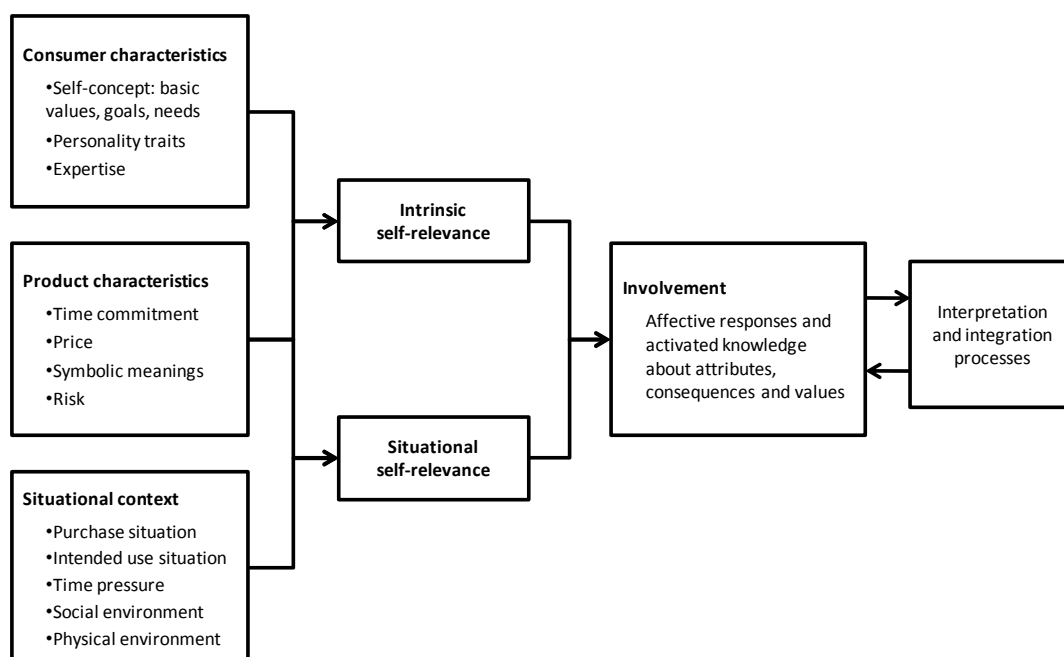


Figure 2. A basic model of product involvement adapted from Peter & Olson (2008)

### **2.3.3 Measuring consumer involvement**

Considering that the participants of the survey done in the empirical part of this thesis are video game magazine subscribers who participate in the web forum of the magazine, it seems safe to assume that their involvement with video games is relatively high. However, it is still likely that there are significant differences in involvement within this population. For example, many individuals may be contributing to discussions mainly because of social reasons. Despite this assumed characteristic of the study population, involvement is included as a factor in this thesis because of its strong relation to affective responses people have towards products or product categories they are interested in. This section reviews different measures of involvement in order to gain further insight into involvement, and to choose the most appropriate measure for this thesis.

There are five involvement measure candidates in academia: the Personal Involvement Inventory (PII) by Zaichkowsky (1985), the Consequences of Involvement Questionnaire (CIQ) by García et al.(1996), the Consumer Involvement Profile (CIP) by Laurent & Kapferer (1985), the Purchase Decision Involvement measure (PDI) by Mittal (1989) and the involvement dimension of the Foote-Cone-Belding grid (FCB) (Ratchford 1987). Four out of five of these measures were analyzed in a comparative study by Mittal (1995) - namely PII, CIP, PDI and FCB. All were found to be reliable and valid measures with marginal tradeoffs. The CIQ measure has so far been used in only a few Spanish studies, and I was unable to find any comparative studies about the measure. However, the approach taken in CIQ – measuring involvement from its consequences – is unique enough to warrant consideration. In choosing a proper measure for this thesis, there are two major factors to be considered: operational complexity and suitability to measuring product class and purchase decision involvement.

The Zaichkowsky PII was originally designed as a context-free measure, applicable to products, advertisement and purchase situations, and it consisted of 20 bipolar adjective evaluation tasks (Zaichkowsky 1985 and 1994). Respondents were required to evaluate 20 adjective pairs such “important-unimportant” or “useless-useful” according to his or her perception of a product. In 1994, a revision of this scale was published in which the original author showed that the scale can be reliably reduced to 10 evaluation pairs (Table 3). The author also suggested that in this reduced form, the scale may be further broken into two subscales that represent cognitive and affective portions of involvement. The PII scale was



further reduced by Mittal (1995) who recommends his 5-item reduction of the scale for a pure, unidimensional measurement of product or product class involvement.

CIQ is also a measure intended for measuring product involvement, but unlike other involvement scales it measures involvement from its consequences (García et al. 1996). The scale consists of 21 statements respondents evaluate on a 7-step Likert-scale. The statements are chosen to represent consequences of high or low involvement: for example “My life would change without this product” and “I would not make much effort to find information about this product”. CIQ approaches involvement as a multidimensional construct. According to the authors, the statements have been chosen to represent 5 different components of involvement: 1) affective links 2) search and information processing 3) social integration 4) purchase purpose and 5) social relevance. The main problem with this scale in the context of this thesis is that the statements would require some revision to be applicable to product class involvement. Also, the original statements were in Spanish and then translated to English, and it seems risky to further modify the statements and then finally translate them to Finnish for the survey. Furthermore, it would be risky to apply a measure that hasn’t been widely used and hasn’t been yet analyzed comparatively. The scale is also operationally relatively heavy: it seems probable that CIQ could be reduced to considerably less than 21 items.

CIP also takes a multidimensional, but antecedent oriented approach to involvement. The measure is divided into four facets which are 1) perceived product importance 2) perception of risk impact and risk probability 3) hedonic value of the product class and 4) perceived sign value of the product class (Laurent & Kapferer 1985). According to Mittal (1995) only the first facet should be used, because it is the only one that measures involvement *per se*: the other three facets are its antecedents (i.e. perceptions of importance follow from perceptions of risk, hedonic value and sign value). Also, Mittal (1995) suggests that the CIP importance facet is applicable only to product category involvement and to not brand-decision on purchase involvement. The importance facet of CIP seems a good alternative for PII, but apparently Laurent and Kapferer have never published the actual measure items. Thus, CIP cannot be used in this thesis.

PDI focuses on purchase decision involvement. As was previously mentioned, purchase decision involvement is different from product or product class involvement, because consumers can become highly involved during a purchase decision episode even if they

otherwise are not at all involved with the product or product class (Mittal 1989). The PDI measure consists of three Likert-scale evaluated statements (Table 3) and it can be combined with a product class involvement measure if required (Mittal 1995). PDI is also operationally light. These features make it a very good candidate for this thesis.

Like PDI, the FCB grid also has focus on purchase decisions. The complete FCB grid is a model for classifying purchase decisions according to two basic dimensions: the involvement dimension and the think/feel dimension (Ratchford 1987). As a result, products or product categories can be placed in one of the quadrants of the grid (Figure 3) which represent four basic types of purchase decisions. What is of interest here is the way involvement is operationalized in the FCB grid. Operationally, the FCB involvement measure is very light: there are only three items that respondents must evaluate (Table 3). All of the items have purchase-decision involvement focus, thus they can be combined with PII for an involvement measure of both product class and product class related purchase decision involvement (Mittal 1995).

Based on the above review, for this thesis, a suitable scale is a combination of PII (for general product class involvement) and either FCB or PDI (for purchase decision involvement). Because the survey will be conducted in Finnish, the final decision depends on how well the scale items translate to Finnish.

Choosing between the two versions of PII (the 10-item and the 5-item version) is relatively easy: the five items in the reduced version (see Table 3) are nearly impossible to translate so that the original connotations of the English language expressions would remain. The 10-item version of the scale on the other hand uses adjectives that can be translated more accurately. Also, because there are more items, small differences in the meaning or connotation have less impact on scale reliability.

Table 3. The PII, PDI and FCB scales of involvement

**Revised PII personal involvement inventory scale (Zaichkowsky 1994):**

| To me (object to be judged) is: |               |               |                   |  |
|---------------------------------|---------------|---------------|-------------------|--|
| 1.                              | important     | 1 2 3 4 5 6 7 | unimportant       |  |
| 2.                              | boring        | 1 2 3 4 5 6 7 | interesting       |  |
| 3.                              | relevant      | 1 2 3 4 5 6 7 | irrelevant        |  |
| 4.                              | exciting      | 1 2 3 4 5 6 7 | unexciting        |  |
| 5.                              | means nothing | 1 2 3 4 5 6 7 | means a lot to me |  |
| 6.                              | appealing     | 1 2 3 4 5 6 7 | unappealing       |  |
| 7.                              | fascinating   | 1 2 3 4 5 6 7 | mundane           |  |
| 8.                              | worthless     | 1 2 3 4 5 6 7 | valuable          |  |
| 9.                              | involving     | 1 2 3 4 5 6 7 | uninvolving       |  |
| 10.                             | not needed    | 1 2 3 4 5 6 7 | needed            |  |

**Original PII scale (Zaichkowsky 1984) reduced to five items (Mittal 1995):**

| To me (object to be judged) is: |                   |               |                     |  |
|---------------------------------|-------------------|---------------|---------------------|--|
| 1.                              | Important         | 1 2 3 4 5 6 7 | Unimportant         |  |
| 2.                              | Of no concern     | 1 2 3 4 5 6 7 | Of concern to me    |  |
| 3.                              | Means a lot to me | 1 2 3 4 5 6 7 | Means nothing to me |  |
| 4.                              | Matters to me     | 1 2 3 4 5 6 7 | Does not matter     |  |
| 5.                              | Significant       | 1 2 3 4 5 6 7 | Insignificant       |  |

**PDI purchase decision involvement scale (Mittal 1995):**

1. In selecting from many types and brands of this product available in the market, would you say that:  

|   |               |  |
|---|---------------|--|
| I would not care at all<br>as which one to buy. | 1 2 3 4 5 6 7 | I would care a great deal<br>as to which one to buy. |
|---|---------------|--|
2. How important would it be to you to make a right choice of this product?  

|                       |               |                      |
|-----------------------|---------------|----------------------|
| Not at all important. | 1 2 3 4 5 6 7 | Extremely important. |
|-----------------------|---------------|----------------------|
3. In making your selection of this product, how concerned would you be about the outcome of your choice?  

|                       |               |                      |
|-----------------------|---------------|----------------------|
| Not at all concerned. | 1 2 3 4 5 6 7 | Very much concerned. |
|-----------------------|---------------|----------------------|

**FCB involvement scale (Ratchford 1987):**

|   |               |  |
|---|---------------|--|
| Purchase decision is very important                     | 1 2 3 4 5 6 7 | Purchase decision is unimportant                         |
| Decision requires a lot of thought                      | 1 2 3 4 5 6 7 | Decision requires little thought                         |
| There is a lot to lose if you<br>choose the wrong brand | 1 2 3 4 5 6 7 | There is little to lose if you<br>choose the wrong brand |

The PDI and FCB are very similar in their wording, but the PDI scale uses the expression “concerned”. The meaning of this expression is close to “worry”, but is more fitting in a situation where the person is active towards mitigating any source of “concern” whereas a person who “worries” is markedly passive towards the source of worry. The closest Finnish language expression is “huolestunut” which has more connotations towards “worry” than “concern”. In contrast to PDI, all of the FCB scale items translate to Finnish without difficulty.

The final involvement measures used in this thesis are the 10-item PII product class involvement scale and the 3-item FCB purchase decision involvement scale. My Finnish translations of the scales are shown in Table 4.

Table 4. Finnish translations of the PII and FCB scales of involvement. Adapted from Zaichkowsky (1994) and Ratchford (1987).

| <b>PII</b>                                |                            |   |   |   |  |
|---|----------------------------|---|---|---|--|
| Minulle (arvioinnin kohde) on:            |                            |   |   |   |  |
| 1.  | tärkeä                     | 1 | 2 | 3 | 4 5 6 7 yhdentekevä  |
| 2.  | pitkästyttävä              | 1 | 2 | 3 | 4 5 6 7 kiinnostava  |
| 3.  | relevantti                 | 1 | 2 | 3 | 4 5 6 7 irrelevantti   |
| 4.  | jännittävä                 | 1 | 2 | 3 | 4 5 6 7 tylsä  |
| 5.  | ei merkitse minulle mitään | 1 | 2 | 3 | 4 5 6 7 merkitsee minulle paljon                                     |
| 6.  | houkutteleva               | 1 | 2 | 3 | 4 5 6 7 luotaantyöntävä  |
| 7.  | kiehtova                   | 1 | 2 | 3 | 4 5 6 7 arkipäiväinen  |
| 8.  | arvoton                    | 1 | 2 | 3 | 4 5 6 7 arvokas  |
| 9.  | mukaansatempaava           | 1 | 2 | 3 | 4 5 6 7 merkityksetön  |
| 10.                                       | tarpeeton                  | 1 | 2 | 3 | 4 5 6 7 tarpeellinen   |
| <b>FCB</b>                                |                            |   |   |   |  |
| Ostopäätös on erittäin tärkeä             |                            | 1 | 2 | 3 | 4 5 6 7 Ostopäätös on yhdentekevä                                    |
| Ostopäätös tehdään tarkkaan harkiten      |                            | 1 | 2 | 3 | 4 5 6 7 Ostopäätös on helppo ja nopea                                |
| Jos valitsen väärin, voin menettää paljon |                            | 1 | 2 | 3 | 4 5 6 7 Jos teen väärän valinnan, sillä ei ole juurikaan merkitystä. |



Figure 3. Common products placed in the FCB grid. Source: Ratchford (1987)

## 2.4 Models for adoption of new technologies

While this thesis examines the role of involvement and tangibility in consumers' willingness to pay for digitally distributed products, it must be taken into consideration that digital distribution is still a relatively new technology. Therefore, consumers' beliefs, perceptions and attitudes about new technologies, and how they may influence consumer behavior, must be discussed.

According to Venkatesh et al. (2003) the underlying concept of user acceptance models is that actual use of information technology is contingent on 1) individual reactions towards the technology which lead to 2) intentions of using the technology. In this fundamental model, there is a feedback loop, where actual technology use influences individual reactions, which then influences use intentions. Finally, the circle closes when actual use is realized as a result of usage intentions (Figure 4.)

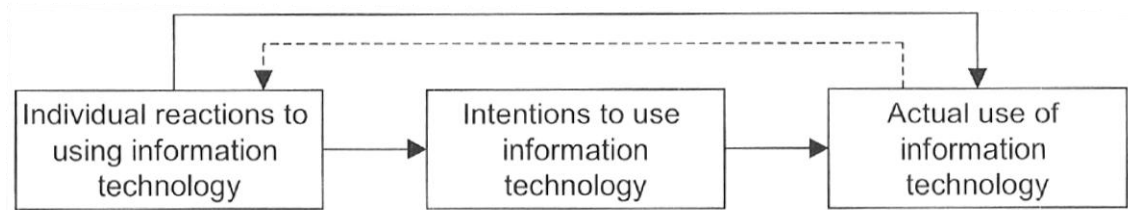


Figure 4. Fundamental concept of user acceptance models. Source: Venkatesh et al. (2003)

There is a large body of research on information technology acceptance and consequently many competing models and theories exist. Based on the observation that many of these theories have common themes, there has been at least one attempt to create an integrated, unified view on IT acceptance: the Unified Theory of Acceptance and Use of Technology (UTAUT) –model by Venkatesh et al. (2003). In their study the authors empirically show that the UTAUT model significantly outperforms all the eight individual models it is built upon. UTAUT is however quite complex and due to operational constraints cannot be used in its entirety in the empirical part of this thesis. Nevertheless, it demonstrates the complexity of technology acceptance and shows what may be missing, if a study relies on a single model.

In the UTAUT model, there are three determinants of usage intention: *performance expectancy*, *effort expectancy* and *social influence* (Figure 5). The fourth determinant, *facilitating conditions* influences use behavior directly (i.e. not through use intentions). The model also includes four moderators: *gender*, *age*, *experience* and *voluntariness of use*. These moderate the influence the determinants have on technology use intentions and use behavior.

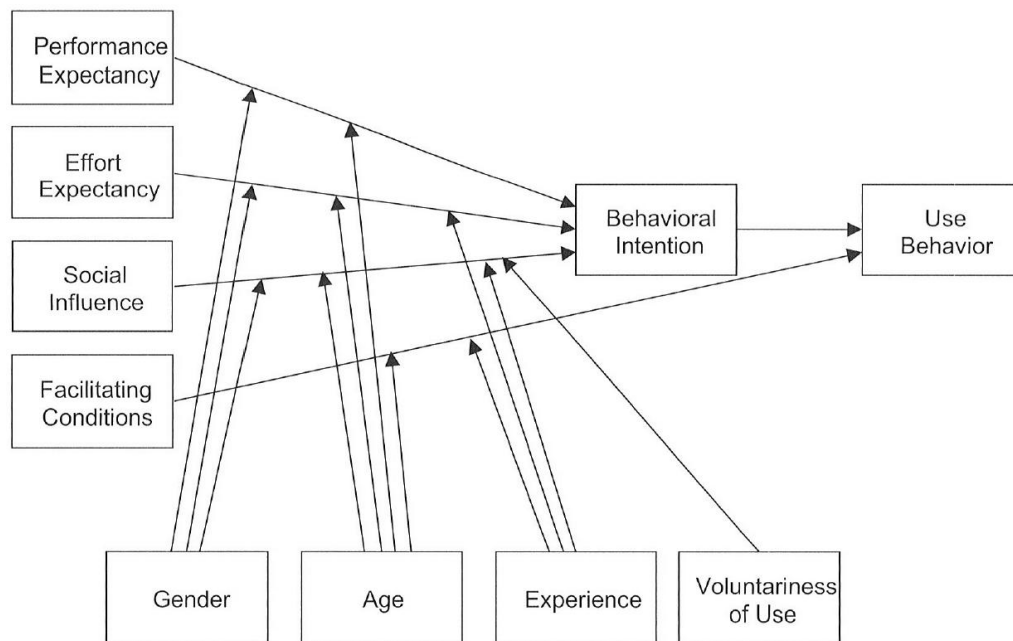


Figure 5. UTAUT model of technology acceptance and use. Source: Venkatesh et al. 2003

While the UTAUT model has focus on technology acceptance in organizational settings, the principles of the model are in my view applicable to other technology acceptance situations as well. Even though I do not intend to fully implement the model, it is a thorough conceptual foundation for any technology acceptance related research.

For a different view on technology acceptance, one can consider a prominent model included in UTAUT: the Technology Acceptance Model (TAM). While TAM was originally created for work related technology acceptance situations, its fundamental ideas are applicable to various technology acceptance contexts.

The two main concepts of the original TAM model (Davis 1989) are 1) perceived usefulness and 2) perceived ease of use of the technology in question. The author hypothesizes that these two are the main determinants of technology acceptance (Figure 6.). There have been two

revisions to this model: TAM2, which suggested new determinants for perceived usefulness (Venkatesh & Davis 2000) and TAM3, which integrated new determinants for perceived ease of use with TAM2 (Venkatesh & Bala 2008).

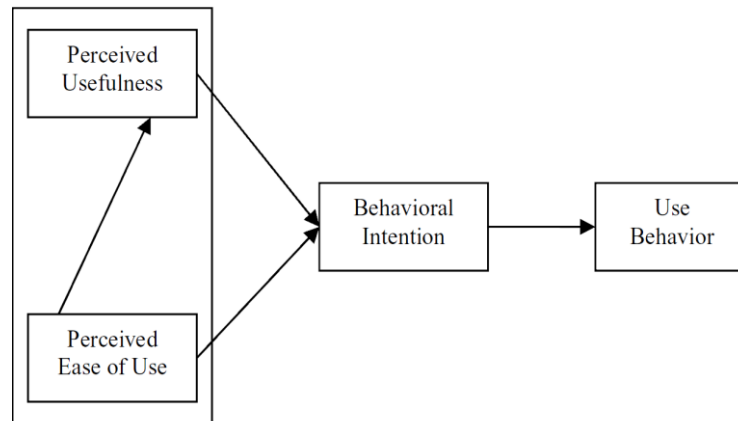


Figure 6. The original TAM model. Image adapted from Venkatesh & Bala (2008)

TAM2 suggests the following determinants for perceived usefulness: 1) Perceived Ease of Use, 2) Output Quality, 3) Job Relevance, 4) Subjective Norm, 5) Image, and 6) Result Demonstrability (Venkatesh & Davis 2000). Also, *experience* and *voluntariness* are introduced as moderators. The meanings of the first three determinants are self-explanatory. Of the remaining three, *Subjective Norm* refers to the extent to which people perceive using the technology a norm in their social network. *Image* refers to individuals' perceptions of enhanced social status as a consequence of the technology usage. *Result Demonstrability* means the degree to which an individual believes that the consequences or results of using the technology are tangible, communicable or observable.

TAM3 (Venkatesh & Bala 2008) adds the following determinants of perceived ease of use into the framework: 1) Computer Anxiety, 2) Perceived Enjoyment, 3) Belief of Computer Self-Efficacy, 4) Perception of External Control, 5) Computer Playfulness, and 6) Objective Usability (see Figure 7). Again, the first three determinants are self-explanatory. Of the remaining three, *External Control* means beliefs that organizational and technical resources exist to support the technology. *Computer Playfulness* refers to the degree of individual cognitive spontaneity in technology interactions. Finally, *Objective Usability* refers to objective comparisons of systems based on actual effort levels required to complete specific tasks.



It is obvious that the TAM model and its extensions have very strong focus on information systems acceptance in organizational contexts. Even though the model may not be originally intended for non-job related contexts, taking account of the ideas of TAM should help in the construction a research model for any technology adoption related study.

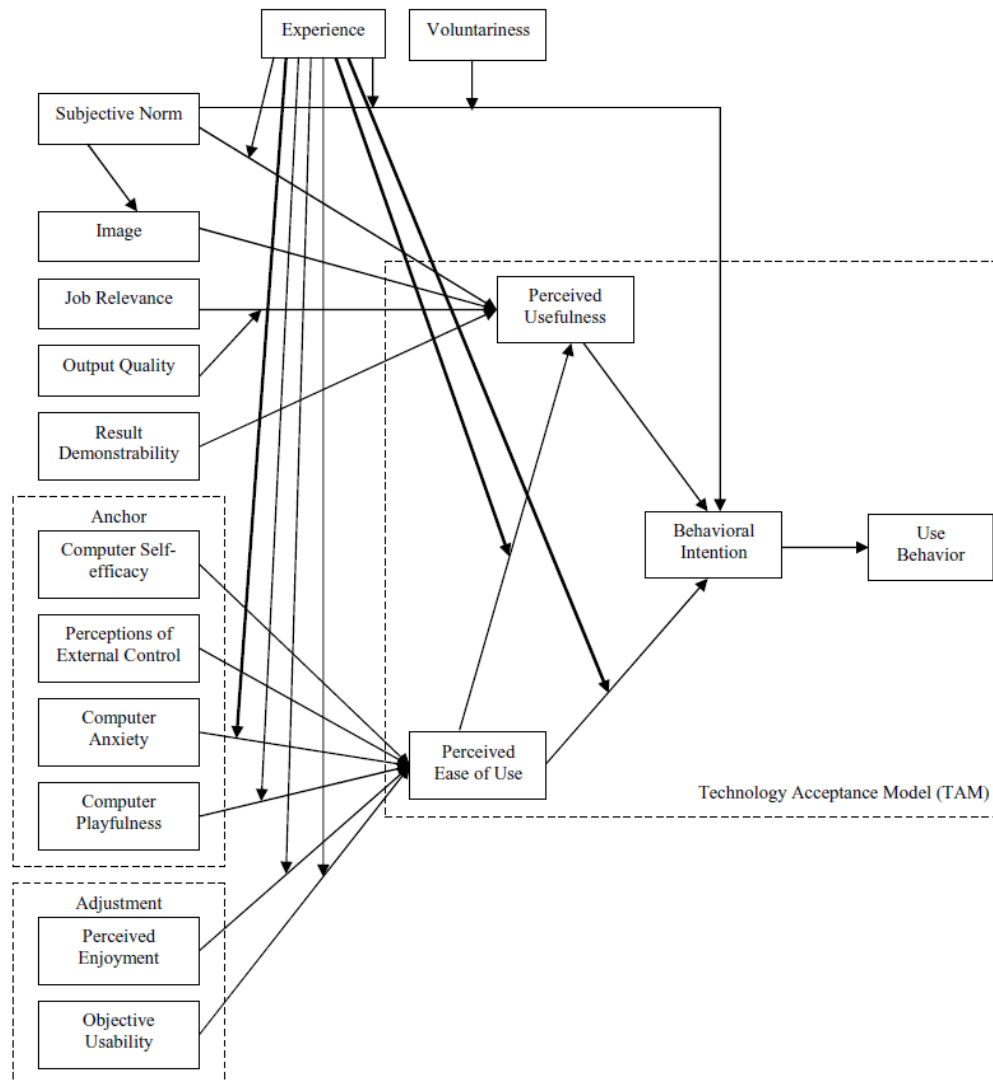


Figure 7. The TAM model with TAM3 extensions. Source: Venkatesh & Bala (2008).

## **2.5 Measuring willingness to pay for digitally distributed goods**

The purpose of this section is to review literature regarding the academic construct of willingness to pay (WTP). First, I will take a general look at this construct and the ideas behind it. After establishing a conceptual background, I will take a look at how past research has implemented measures of WTP in the context of digitally distributed goods. The ultimate goal of this chapter is to select a proper measure of WTP in the context of digitally distributed video game goods, which will be used in the empirical part of this thesis.

### **2.5.1 The disparity between willingness to pay and willingness to accept**

Before continuing to WTP studies, there is an important conceptual differentiation that must be first made. This is the differentiation between willingness to pay (WTP) and willingness to accept (WTA). Although in classical economic theory the two are assumed equal, empirical research has proven that most of the time there is a substantial disparity between the two, WTA being usually greater than WTP (Horowitz & McConnell 2002 and Sayman & Öncüler 2005).

Per definition willingness to pay means the amount of money a person would be willing to give in order to obtain a certain good. Respectively, willingness to accept refers to how much money a person would want in return, if he or she were to give that same good away. There exists an abundance of studies that examine the relationship of the two. In a typical simple study setting a person is given an item and then asked how much he or she would be willing to pay for it. This is the simplest method of measuring WTP. Respectively, to assess a person's WTA, the subject is given the item and then offered money to give it back. The amount the subject accepts is his or her WTA. (Horowitz & McConnell 2002)

The above conceptual differentiation clarifies WTP as a construct, but it has limited practical relevance in the case of digitally distributed goods. Because consumers have no legal way of selling digitally distributed goods unless they have created the goods themselves, WTA is only likely to lead to cognitive dissonance in this context. Therefore WTA serves mainly a pedagogical purpose here, helping to understand WTP.

Unlike WTA, willingness to pay is highly relevant to digitally distributed goods. There are many recent studies that examine consumers' WTP in the context of music downloads, online movie rental services and in the case of digitally distributed PC software. The following section reviews the methodologies used and lessons learned from studies that examine WTP for digitally distributed goods.

### **2.5.2 Approaches to measuring WTP**

The various methods of WTP measurement can be categorized according to the directness of the approach, and whether an incentive is included in the method to promote a more genuine response from the subject. In direct approaches, the respondents explicitly state or choose their price whereas in the indirect methods the respondent's valuation is inferred from induced economic decisions. In incentive-aligned methods the respondents typically use real money in real transactions in order to reveal a truer WTP. The non-incentive aligned methods in contrast only use hypothetical questions and no actual money or transactions are involved in the study.

Currently, the most prominent methods of indirect WTP measurement are contingent valuation (CV) and conjoint analysis (CA). When incentives are involved, researchers typically use experimental auctions such as the Vickrey auction and the Becker–DeGroot–Marschak auction mechanism (BDM auction). These methodologies are shown categorized in Table 5.

There are many different ways to implementing an auction to measure WTP, but the academically most often used auctions are the Vickrey and BDM auctions. The Vickrey auction is a sealed-bid auction, where participants bid without knowledge of other participants' bids. The highest bid wins the auction, but the winner only pays the sum of the second-highest bid. In contrast, in a typical BDM auction bidders simultaneously submit a single bid, which is then compared against a price randomly drawn from a price distribution that exceeds the anticipated maximum WTP. Subsequently, all bidders that submitted a WTP higher than this selling price win a unit of the auctioned item and pay the generated selling price (Noussair et al. 2004).

In addition to the above WTP measures, researcher can directly ask respondents how much they would be willing to pay for a given good. The problem with such a simple and direct measure of WTP is that there is no incentive for the respondent to give a "true" answer. Consequently, the respondents WTP will be overestimated (Park & MacLachlan 2008). To alleviate this problem, several indirect and incentive-aligned methods have been developed that attempt to extract a more genuine response.

Table 5. Methods of WTP measurement

|  |
|--|
| <p><b>Non-incentive aligned:</b></p> <ul style="list-style-type: none"> <li>- direct questions</li> <li>- contingent valuation (indirect)</li> <li>- conjoint analysis (indirect)</li> </ul> <p><b>Incentive aligned:</b></p> <ul style="list-style-type: none"> <li>- direct auction mechanisms (Vickrey, BDM)</li> <li>- incentive aligned conjoint analysis (indirect)</li> </ul> |
|--|

Contingent valuation (CV) is a method that has been popular when estimating WTP in situations where no actual market prices exist. Many examples of such research settings can be found in healthcare where researchers are interested in estimating the value patients perceive in treatment alternatives. Other applications include for example valuation of environmental issues and public goods. The validity of CV has been questioned because of its reliance on hypothetical questions. When using CV, the responders have little incentive to reveal their true WTP, which leads to overestimation (Grunert et al. 2009). In the context of this thesis, CV is not a good method candidate since the aim is to measure WTP for a good that has actual market prices.

Conjoint analysis (CA) is a method where respondents are given a number of choice tasks and their WTP is then inferred from the responses using statistical analysis. In a typical CA study respondents are first presented with a number of predefined product descriptions. Then, respondents are requested to choose the product which they prefer the most. The number of

these choice tasks depends on how many product attributes and attribute levels there are in the study. Finally the subjects' utility function, preferences and WTP can be estimated based on the choice task answers.

CA is widely used in marketing science especially now that technology allows dynamic web based conjoint questionnaires. The method is usually hypothetical like CV and as such may overestimate WTP (Grunert et al. 2009). Furthermore, the method can be very heavy for the respondent if the study design is not very carefully planned, and the number of attributes kept small. It is however possible to create an incentive-aligned conjoint analysis, but this requires an experimental study setting (Ding et al. 2005).

The main strength of experimental auction methods such as the BDM mechanism and the Vickrey auction is that they involve a strong incentive for revealing true WTP. Participants use real money and make real bids on items they will actually win or lose in the auction. While it has been shown that the use of real money is not necessary (Grunert et al. 2009) it seems that an incentive aligned methods produce more realistic estimates of WTP than non-incentive-aligned methods (Wertenbroch & Skiera 2002 and Ding et al. 2005). Based on recent research experimental auctions seem to be the most accurate way to measure WTP. The problem however is that they have high operational requirements, as participants must meet in a research facility to take part in the auction. Also, it is debatable whether an auction setting is relevant to a normal purchase situation (Wertenbroch & Skiera 2002 and Grunert et al. 2009).

### **2.5.3 Choosing a suitable WTP measure for digitally distributed goods**

For a better grasp on WTP measure implementation in the context of digital goods, I have done a small scale meta-analysis of recent WTP research relevant to digitally distributed goods. The results of this analysis are collected in Table 6. Based on the way researchers have approached WTP measurement in these studies, it seems that many researchers still consider a direct question a sufficient measure of WTP.

Out of the eight relevant recent studies I was able to find, three implemented a direct question in monetary value as a WTP measure (Chiang & Assane 2009, Fetscherin & Lattemann 2007 and Sandulli & Martín-Barbero 2007). In all three studies, the respondents were asked to simply quote their purchase price for the product or service in question. None of the authors

gave any special grounds for measuring WTP this way, and none discussed any possible shortcomings of this type of WTP measurement. Fetscherin and Lattemann (2007) referred to anonymity and data entry risk reduction when discussing study methodology, but these factors would apply to any proper web survey. Based on the above observations, it seems that a direct question is a workable method, especially when operational requirements of the study must be kept low and respondents have limited incentive to answer the study.

Interestingly, in a study by Ye et al. (2004) the authors used a direct Likert scale question for WTP measurement. The intent was to compare general willingness to pay for a number of online services, in contrast to measuring cash WTP, as was done in the previously mentioned studies. While an interesting approach to WTP measurement, this method is not suitable for this thesis, because we only have two products we intend to compare: the physically distributed game and the digitally distributed game. Because the products do have established market prices, it is logical to use a measure that provides a monetary estimate of the respondent's WTP.

While the auction methods (BDM and Vickrey) are often considered cumbersome and operationally heavy, researchers have found ways to combine the incentive benefits of auctions with the operational ease of web surveys. For example Lopes & Galletta (2006) measured willingness to pay for an online service by arranging a simple Vickrey auction among web survey participants. On the other hand, Nysveen & Pedersen (2006) applied the principles of a BDM auction in a hypothetical situation. Authors of both studies decided to use an auction method in order to mitigate WTP overestimation.

In a study of consumer loyalty and WTP in the Japanese digital content market, Kim and Sugai (2008) opted for a choice based conjoint analysis survey approach. The authors based this method choice on the freedom of attribute combination the method offers. According to the authors, the possibility of choosing "none" in a conjoint survey brings the choice situation closer to a real life purchase decision.

In the context of digitally distributed goods, piracy should always be a factor. Taking this into account Sinha & Mandel (2008) parallel digitally distributed music with public goods. The authors suggest that like public goods, peer-to-peer pirated music is a nonrivalrous, nonexcludable good. Based on this notion, the authors chose contingent valuation as their

method of measuring WTP – contingent valuation being a method especially well suited to studying public goods. Because the focus of the study was on piracy, this was a very well-founded choice.

In the context of this thesis, which will use a web survey to gather the data for analysis, there are two operational constraints that limit the method choice of WTP measurement. First, the respondents are mainly teenagers, so the survey must be kept relatively short and easy to answer to ensure a sufficient number of responses. Consequently, conjoint analysis (CA) cannot be used, because in my experience most respondents unfamiliar to the method find the method frustrating and pointless. Contingent valuation (CV) is also relatively heavy for the respondent, and the focus of this thesis is not on piracy. Because I aim to compare the difference between WTP for the same good delivered digitally and physically, the survey would likely become too long if CV or CA was used.

The second operational constraint in this thesis is the limited availability of operational resources. Arranging an auction requires the inclusion of a real incentive. This thesis is a study on WTP for video gaming goods, and it may be challenging to find an incentive that would appeal equally to all respondents. Also, since many of the respondents are teenagers, it is logical to assume many respondents would not participate in the auction simply because they don't have the money available to participate.

Based on the above analysis of recent WTP studies, the remaining feasible method alternatives for this thesis are online Vickrey auction and the direct question. Due to the above mentioned operational constraints, I have chosen to implement an incentive aligned survey, with a direct question as the measure for WTP. The respondents will be directly asked to quote their willingness to pay for a product, and an incentive will be used to promote truer responses over the whole survey. Both this incentive and the survey design are discussed in Chapter 3.

Table 6. Meta-analysis of recent WTP research on digital goods

| <b>Study</b>                     | <b>Subject</b>   | <b>WTP measure</b>                                     | <b>Reason for choice of measure</b>   |
|----------------------------------|--|--|---|
| Chiang & Assane (2009)           | Estimating consumer WTP for digital music                                  | Direct question in survey                              | (None given)  |
| Kim & Sugai (2008)               | Consumer loyalty and WTP in the Japanese digital content market            | Choice-based Conjoint analysis survey                  | Freedom of attribute combination. Possibility to choose "none" as a response.   |
| Sinha & Mandel (2008)            | Consumer WTP for legal music as an indirect measure of tendency for piracy | Contingent valuation (double-bound dichotomous choice) | Resemblance to actual purchase decision. Piracy focus of study parallels music with public goods for which CV is a good choice. |
| Fetscherin & Lattemann (2007)    | Consumers' WTP for digital music   | Direct question in web survey                          | Anonymity and data entry risk reduction   |
| Sandulli & Martín-Barbero (2007) | P2P users' WTP for a digital song at online music stores                   | Direct question in web survey                          | (None given)  |
| Lopes & Galletta (2006)          | Consumers' perceptions of and WTP for online content                       | Online implementation of Vickrey auction               | Mitigation of overestimating WTP  |
| Nysveen & Pedersen (2006)        | Consumer WTP for web-based movie services                                  | Hypothetical BDM auction in survey                     | Incentive benefits of measure   |
| Ye et al.(2004)                  | Consumer WTP for fee-based online services                                 | Direct Likert scale measure                            | Direct ranking of online services   |



## **2.6 Video game piracy**

In this section I will first take a look at the recent state of video game piracy. Then, I will examine various anti-piracy strategies in the entertainment industry. Finally, I will review recent research findings regarding consumer attitudes towards piracy and how they may predict consumer behavior.

### **2.6.1 Current developments in video game piracy**

While there is a general consensus that the video games market is inflicted by piracy worldwide, it is difficult to find reliable quantifications of the phenomenon, or a proper estimate on the economic impact piracy has on the industry. The general problem of quantifying piracy is highlighted by a recent report by the United States Government Accountability Office (GAO 2010). According to the report, three widely cited estimates of U.S. industries' losses attributable to piracy are impossible to track back to any originating data or research methodology. Despite this lack of validity in current estimates, the authors are unanimous in their view that piracy is a real threat for many industries involved in the creation of intellectual property.

The difficulties in measuring the prevalence and economic impact of piracy are understandable: the illegal nature of piracy itself makes any quantification attempt a challenge. At the supply level, professional pirates go to great lengths not to be detected at all. Then again, at the demand level it may be impossible to reliably quantify the amount of private piracy exchanges between friends, or within gamer subcultures that exist on the internet. Furthermore, typical approaches such as extrapolating lost sales based on the number of e.g. illegal downloads are in my view not much better than an educated guess. Thus I suggest that any quantifications of piracy and its impacts should be taken with a grain of salt.

The Entertainment Software Association (ESA) which is a U.S. association serving the business and public affair needs of companies that publish video games, has a global anti-piracy program. According to the ESA website ([www.theesa.com](http://www.theesa.com)), the purpose of this program is “*to attack and reduce global entertainment software piracy*”. This involves monitoring and tracking piracy activities on the internet, and actively reporting any detected illegal activity to the police and the involved internet service provider (ISP). Through this

program, thousands of physical pirated games are confiscated, dozens of professional pirates are caught, and millions of downloads are detected each year.

For a measure of magnitude on internet video game piracy, one can consider the results of an ESA commissioned peer-to-peer (P2P) piracy study, which was carried out in December 2008. According to ESA (2010b), this study estimated the total number of P2P downloads for 13 popular video game titles during a single month. Downloads in 223 countries, regions or territories were estimated on two popular P2P protocols (BitTorrent and eDonkey). Based on the study, the total number of downloads for this one December only was 6.9 million individual illegal downloads, out of which 4.7 million were attributable to the two most popular game titles. According to ESA, this figure far exceeded the games' legitimate respective sales for the period. The respective number of physically sold pirated games remains unknown.

The ESA annual report also ranks countries based on the amount of illegal P2P downloads, and discusses ISP responsibility in allowing illegal P2P traffic. According to this report, Italia, Spain and France are the top three countries considering the sheer volume of P2P piracy. In this ranking Italy, Spain and France were accountable for 40% of all tracked downloads (17.1%, 15.1% and 7.9% respectively) (Figure 8). Furthermore, the report points out that ISP attitude towards piracy in these countries is lenient – the report goes as far as to naming several individual ISP's as *supporting* P2P game piracy. One must however take note that all ESA figures come from privately funded reports – not from peer reviewed articles – and the reports tell almost nothing about the exact research methodology and made assumptions.

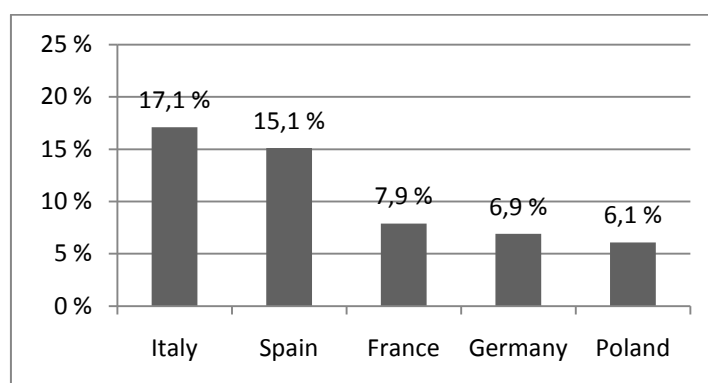


Figure 8. Leading countries in illegal download count according to ESA (2010b)

Video game consoles are an interesting product category regarding piracy, because all of the major console platforms are closed and proprietary, enabling many different anti-piracy strategies and technologies. Interestingly, when I started working on this thesis, PlayStation 3 remained the only console of its generation that had not been breached by pirates. During the process of writing this thesis, the situation changed as the platform was finally “hacked” in spring 2010, slightly over three years after its launch in 2006. At the time of writing this, the competition between Sony and pirates continues: Sony attempts to minimize piracy impacts with new firmware and software updates to the platform, while pirates continue to discover and abuse new weaknesses in the PS3.

While finding reliable scientific studies on the prevalence of video game piracy is a challenge, there is more than anecdotal evidence supporting the notion that piracy significantly impacts the industry. It also seems that there are differences between gaming platforms – the PC platform and dedicated portable game devices (such as Sony PSP and Nintendo DS) being the most inflicted platforms (Baldwin 2010).

So far all significant home gaming consoles have sooner or later been subject to piracy. However, because modern game consoles use proprietary technologies, they offer possibilities for advanced anti-piracy strategies in addition to those available to for example the music and movie industry. All these strategies are briefly examined in the next section.

### **2.6.2 Anti-piracy strategies in the entertainment industry**

There are many strategic approaches copyright holders can take to mitigate the piracy problem. In a recent study on the causes, consequences and strategic responses to digital piracy, the authors identify seven general strategic possibilities: 1) taking a permissive disposition towards piracy, 2) countering piracy with free samples, 3) pricing the legal good more attractively e.g. lower, 4) offering extra value to legal buyers, 5) switching business models to something less vulnerable, 6) embracing the pirates’ technology e.g. P2P and finally 7) emphasizing the perceived ethical and moral issues in participating with piracy (Hill 2007). I will discuss each of these approaches shortly below.

First, taking a permissive stance towards piracy may be beneficial, if the product has strong positive network effects (Hill 2007). This suggests that for information goods such as

productivity software the network benefits gained from allowing piracy may outweigh related negative impacts – but in most cases this is not a sustainable strategy. For most video games, it is difficult to imagine any such network effects. However, as the relative importance of online gaming grows, network effects may become relevant to some degree. Because modern online gaming platforms are proprietary, it is easy to exclude pirated games from the game's online component by using unique id numbers. This way, pirating the game has a positive network effect: potential buyers get to play a degraded demonstration of the game and get an idea of the game's online potential. To play the game as it was meant – online – the user must buy the game.

The second strategic approach of providing free samples is more easily applicable to video games than being lenient towards piracy. This strategy is widely used in the video game industry: limited, free demonstration versions of games are available to download on all modern gaming platforms. In some cases, users are able to “upgrade” the free version from within the game user interface, which minimizes any effort required from the user to purchase the full game.

The third strategy of pricing the product aggressively in highly pirated markets is based on the assumption that some pirates perceive inequity between the market price, the perceived value of the product, and the financial success of the legal copyright holder (Hill 2007, Chiou 2005). Assumedly, lowering the asking price to remove this perceived equity gap would result in pirates turning to legal consumers. This strategy however raises questions related to global markets: consumers more and more have the opportunity to purchase goods globally, hence upholding significant price differences between market areas would be challenging. Assuming pirates are very price conscious, it is debatable whether such artificially set pricing could in fact increase pirates' perceptions on inequality. Furthermore, it seems naïve to assume professional pirates would not be able to compete with price, regardless of how low the legal price is set.

The fourth strategy – offering something extra to consumers who buy the legal product – is also applied in the video game market. Again demonstrating the strength of the proprietary distribution platform, legal owners have the possibility of downloading various extensions for their game (“downloadable content” i.e. DLC) which is not available through traditional distribution channels. Some of this content is free, some can be purchased. According to

video game consumer media, some game publishers are considering extending this strategy beyond simple game additions. It seems probable that in the near future an increasingly larger part of the game experience will require some form of proof of purchase, or product activation via the internet.

Fifth, business models may be applied that are less vulnerable to piracy. This strategy has already been discussed previously under distribution strategies. Here, it suffices to say that subscription or rental based on-demand business models seem to eradicate most piracy related issues – as long as pirates are unable to breach the on-demand encryption and authentication technologies. In my view however, innovative business models in the context of video games serve a different consumer need than the traditional models. It seems unlikely that subscription services could entirely replace traditional business models in the entertainment industry.

The sixth strategy emphasizes the observation that entertainment industries were late to respond to the pressures of peer-to-peer (P2P) technologies. In hindsight, some of the obvious benefits of P2P networks (diversity of selection, nearly immediate availability) should have been embraced much more quickly by the entertainment industry. Effectively, this is a situation where a disruptive innovation obliterates existing business models and the only viable strategic option is to take full advantage of the disruptive technology (Hill 2007).

The seventh and final strategic option is to openly and aggressively pursue anti-piracy activities so that consumers perceive a high risk/benefit ratio in piracy. This strategy is implemented actively in the entertainment industry as many trade associations actively seek out and report pirates to appropriate authorities. While this approach is considered effective in developed countries (Hill 2007), it may be more important to focus on proactive, preventative issues in developing economies. Establishing strong intellectual property legislation, and working towards a social consensus that disapproves piracy early on should be a key goal in developing economies (Hill 2007, Vitale 2010).

In addition to the above strategic suggestions, companies implement technical anti-piracy strategies such as various forms of copy protection, digital rights management, encryption and also degradation of P2P file sharing networks. As an implementation of the degradation strategy, most public P2P file sharing networks are flooded with “polluted files” i.e. files that

are named attractively, but contain nothing of value (Sandulli & Martín-Barbero 2007). Because piracy communities are quick to identify polluted files on P2P networks, the effectiveness of this strategy is questionable at best.

### **2.6.3 Consumer antecedents of digital product piracy**

To explain why consumers obtain pirated products, researchers have examined antecedents such as negative and positive incentives (Sinha & Mandel 2008), satisfaction with existing legal products, ethical evaluations and risk perceptions (Chiou et al. 2005) and also macroeconomic factors and judicial effectiveness (Holm 2003). Furthermore, Fetscherin & Lattemann (2007) have suggested a categorization of key purchase behavior factors for digital goods as socio-demographic, economic, experience and usage related, cultural, risk and technology related factors.

According to Sinha & Mandel (2008) consumers who perceive a higher risk of getting caught downloading illegally, are not consistently less likely to participate in piracy. The authors suggest that the effect of higher risk is contingent on individual risk aversion, and therefore the threat of punishment and shame from piracy can only have limited effect on consumers. However, there are contradictory views on the matter – for example Chiou et al.(2005) did find risk perceptions a significant predictor of intent to pirate. It is probable that the impact of risk perceptions on piracy behavior is contingent on other factors such as cultural or sub-cultural norms as well as individual risk aversion.

Value judgments may be more important drivers of piracy than risk perceptions: according to Sinha & Mandel (2008), Holm (2003) and Chiou et al.(2005) consumers who perceive higher value in the legal product are significantly less likely to pirate. This is in line with the suggestion by Hill (2007) that offering legal consumers something unavailable to pirates is a strong strategy for a digital good market inflicted by piracy.

The ethical disposition of a consumer may influence piracy behavior, but research findings are conflicting. For example, having a positive general sense of ethically and morally acceptable behaviors has been shown both as a statistically significant (Gopal et al. 2004) or insignificant (Al-rafee & Cronan 2006). Interestingly, consumer perceptions of reasonable

profits made by the entertainment industry may have an important role in piracy (Chiou et al. 2005, Hill 2007), perhaps greater than the general ethical disposition of the consumer.

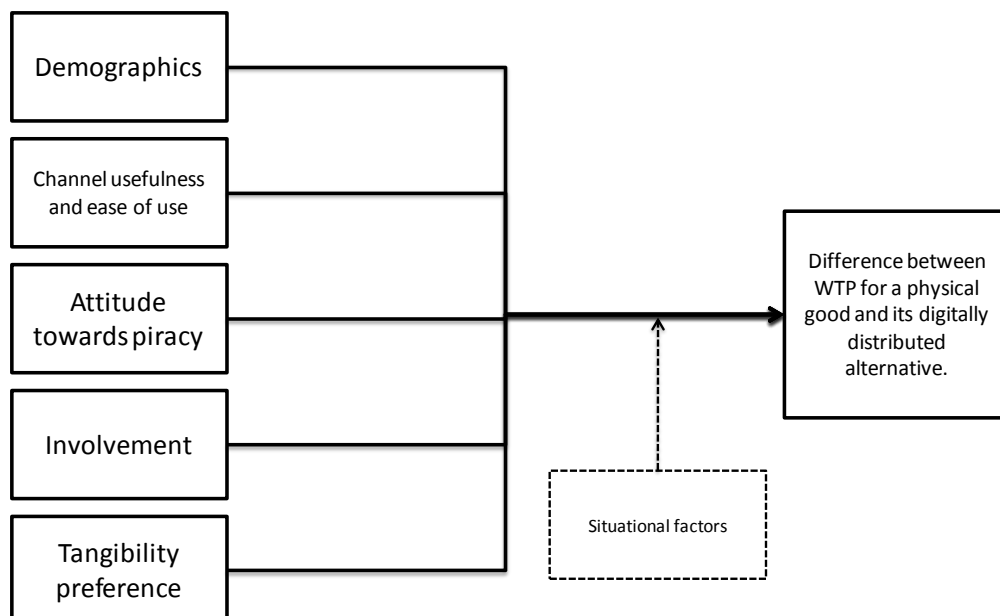
The opportunity and technical ability to pirate may also significantly predict actual piracy behavior. It is in my view logical to assume that the availability of broadband networks and individual technological savvy itself predict piracy behavior – a person might illegally download entertainment simply because the person knows how to, and has the means readily available.

Cultural and macroeconomic considerations such as gross national income per capita and the effectiveness of a country's judicial system can explain a substantial part of the variation in piracy behavior between countries (Holm 2003). Interestingly, a recent study by of video game piracy in the Philippines (Vitale 2010) emphasizes the fact that piracy usually involves subcultures, within which behavioral norms may be very different from generally accepted cultural norms. The author suggests that for a developing country such as the Philippines, piracy is largely a question of social norms and changing this is possible only through education.

Based on the above discussion it may seem that besides judgments of value, macroeconomic issues and cultural norms, research on piracy behavior lacks consensus on the relative importance of the antecedents of piracy. Nevertheless, for the empirical part of this thesis, the assumption is made that the general attitude a consumer shows towards piracy is significantly linked to his or her probability of downloading illegal content and therefore also to willingness to pay for digitally distributed video game goods. The operationalization of this attitude towards piracy is explained in Chapter 3.

Based on the above literature study, the empirical part of this thesis will apply a research model where the difference between WTP for a physically distributed video game and its digitally distributed alternative is assumed to be determined by the consumer's involvement with video games and his or her preference for the tangible. This WTP disparity is further influenced by the consumer's demographics, attitude towards piracy, and perception of usefulness and the ease of use the digital distribution channel (Figure 9).

Inarguably such situational factors may impact a consumer's perceptions of value for the purchase alternatives. For the purposes of this study, an attempt of anchoring such situational variables is made: the respondents are given a standardized situation, and asked how much they would pay for each alternative assuming that situation.



- 54 -



Based on the research model, I present the following research hypotheses:

**H1: Involvement is positively correlated with the WTP disparity**

As earlier research has shown, consumers who are highly involved with a product category may perceive higher value with the physically distributed product compared to the digitally distributed one. I hypothesize that this is also the case with video games, possibly due to perceptions of unauthenticity, risk and issues with enthusiast collections that the intangible alternative involves. This hypothesis represents the factors influencing WTP which are related to perceptions of personal importance of video games as a product category.

**H2: Tangibility preference is positively correlated with the WTP disparity**

Like involvement, tangibility preference is also hypothesized to be positively correlated with a perception of higher relative value for the physically distributed alternative. This hypothesis represents consumers' valuation of matters related to the benefits of the physical media such as physical lending, physical portability and gifting in contrast to the convenience benefits of the intangible media.

**H3: Attitude towards piracy is negatively correlated with WTP**

This hypothesis suggests that a positive attitude towards piracy has a negative impact on WTP for both digitally and physically distributed games. However, it is noteworthy that the importance of piracy as a moderator may be dependent on the video gaming platform, because there are significant differences in pirated software availability and ease of use between the current gaming platforms.

**H4: Willingness to pay for the physical product is always higher than willingness to pay for the digitally distributed alternative**

This hypothesis suggests that consumer perception for value is always higher for the physical alternative, if the video game is otherwise exactly the same. A hypothesized reason for this is that the value of gained intangibility benefits never outweighs the value of lost tangibility benefits in this context.

### 3. Data and methods

This chapter first describes how the research model presented in Chapter 2 was operationalized into a survey. Second, this chapter explains how the survey was piloted. Finally, the collection process for the final data is described, and the preparation of the survey data for analysis is explained.

#### 3.1 Survey design and items

This is an incentive aligned web survey, where participants are offered an incentive of monetary value to elicit truer responses. A lottery among participants is arranged, and they are told that to be eligible for the prize, they must take proper time and care in answering. Participants who “speed-run” through the survey or give obviously contradictory answers, are excluded from both the study and the lottery.

This survey has the following measures:

- background variables
- willingness to pay for a physically distributed video game
- willingness to pay for the same game digitally distributed
- open question to allow short explanation of WTP disparity in own words
- involvement
- tangibility preference
- attitude towards piracy
- perception of usefulness and ease of use of a digital distribution platform
- key tangibility and intangibility benefits

The WTP items and the open ended question are placed in the beginning of the survey in order to avoid unwanted anchoring. The actual survey items, and the logic on how they were operationalized, are discussed below. Screen captures of the web survey form (in Finnish) are shown in Appendix 1.

For the purposes of this study, the following **background variables** are gathered: *age*, *income level* and *education level*. These variables have been shown to be relevant in previous studies, especially in relation to WTP and piracy.

As an additional background variable the respondents are asked “*For which gaming console you mostly get games for?*” This question is asked because of piracy, pricing and digital distribution platform differences between the three platforms. The question also anchors the participant on a single platform.

**Willingness to pay** is measured using a direct question. First, the respondents are asked their WTP for a physically distributed game:

*“Assume you have decided to buy a new game. You will buy the game from your usual supplier and on the platform you mostly get games on. The game comes as a typical game disc, with the usual box and game manual. How much would you be willing to pay for the game?”*

The purpose of this question is to measure the participant’s willingness to pay for a physical video game in a typical purchase situation. No claims about the quality or nature of the game are made – the intention is to get a reliable WTP for a normal game purchase.

Next, the participants are asked their WTP for the same game digitally distributed:

*“Assume you have decided to buy the same game as a digital download on your gaming console. How much would you be willing to pay for the game?”*

The **involvement** measure used in the survey is a reduced version of the PII and FCB scales of involvement, adapted and translated to Finnish from Zaichkowsky (1994) and Ratchford (1987). Due to challenges in translating all of the PII items to Finnish, the PII measures have been reduced to seven from the original ten (see Appendix 1).

For **tangibility preference**, an adaptation of a measure by Styvén (2009) was used. The measure consists of three statements that focus on different aspects of tangibility preference. The statements are evaluated by the participant on a 7-item Likert scale. Here, reverse scored items are marked with an asterisk (\*).

*“It is important to own video games in a physical format.”*

*“The game box and game disc are more real and genuine than a download.”*

\* *“I would prefer to store my games only as digital files on my console.”*

For the measurement of **attitude towards piracy**, I have used a 4-item measure of my own design. This measure takes into account the perception of ethical fairness, piracy related risk, piracy opportunism and online services as a part of the gamer subculture. Again, a 7-item Likert scale is used for the measure.

*“Video game piracy is unfair to game developers.”*

*\*“It is impossible to be caught and punished for playing pirated console games.”*

*\*“If I could play pirated games on my console, I would.”*

*“Consoles playing pirated games should be banned from all online services.”*

To measure perceptions of the **usefulness** and **ease of use** of console game download services I have made an adaptation of c-TAM, which is a consumer oriented version of TAM (Bruner & Kumar 2003). Compared to TAM, c-TAM adds a hedonic dimension alongside usefulness and ease of use to better suit consumer technology contexts:

*“The download service is easy to use”*

*“Using the download service is fun”*

*“It is useful and practical to buy games using the service”*

The final survey item introduces a set of statements regarding the **relative benefits of the physical and intangible distribution format**. Participants are asked to choose and rank three statements that they find most important.

*“The game cannot be scratched or lost”*

*“I can resell the game I bought”*

*“The game store has as large a selection as possible – including old and rare games”*

*“I can lend or give the game I bought to a friend”*

*“I don’t have to carry the game with me, if I want to play it outside of home”*

*“I can buy the game at home and start playing it right away”*

*“I can give the game as a gift to a friend”*

*“I can make a collection of the games and show it to my friends”*

*“I can be sure that I can still play the game I bought many years from now”*

*“(Other, please state)”*

### 3.2 Survey pilot

The survey was piloted on a public web forum ([www.fillarifoorumi.fi](http://www.fillarifoorumi.fi)). The pilot was open for approximately 24 hours, during which time 19 responses were recorded. The pilot participants were asked to comment on the forum if they found anything out of place or difficult about the survey. Based on participants' comments, one simple mistake in a question wording was corrected.

A single participant commented on an item in the involvement measure. He said that the adjective "arvoton" was difficult to evaluate because the word can refer to either monetary or ethical value. The original English language item ("worthless") has a strong monetary value connotation. Revising this item to "kelvoton" was considered, but this translation would have referred more to utilitarian worth and content quality than value, and is not a fitting adjective for describing a class of products. Thus the original translation was kept.

Out of the 19 participants, 15 commented on their WTP disparity. Reviewing these comments, it was noticed that one participant apparently did not understand that the WTP questions referred to buying the exact same game in physical and digitally distributed form. The participant commented on his WTP disparity:

*"Downloadable games usually have much less game content than games that come on a physical media. The game console doesn't have enough memory to hold many games, and you have to store them somewhere."*

Based on this, the wording of the second WTP question was revised with a clearer emphasis on the game being the same. However, this single participant was a Wii platform gamer, and the Wii Shopping Channel has a much more limited supply of full games to download. This platform characteristic will be considered in the full survey analysis.

Out of the 19 recorded responses, 17 were fully completed. One participant only answered to the first page of the survey and one participant did not complete the last page of the survey. Neither participant commented on why they didn't complete the survey fully. I designed the survey so that the final question takes slightly more effort to answer, but it is clear to the participant that this is the last question. To me, this success rate was acceptable and did not require any changes to the survey design. On a side note, the survey web service

([www.surveymonkey.com](http://www.surveymonkey.com)) can be slightly congested at times – especially exiting the final survey page can take a few seconds. This feature of the service may have some negative impact on response rates.

The distribution of responses on all pilot survey items was heterogenic, and therefore all survey items provided data that can bring value to the analysis. Based on the pilot, only the above mentioned minor changes to the survey were made. As a final improvement, gender was added to gathered background variables.

### **3.3 Data collection process**

The final survey was published on a Finnish console gamer magazine's web forum on September 12<sup>th</sup> and closed on September 19<sup>th</sup> 2010. During the 7 days it was open, a total of 215 replies were recorded.

As an incentive, one free console game was drawn between participants who were registered users of the web forum. Only magazine subscribers were able to register to the forum, and the draw was arranged so that each participating registered user had a single, equal chance of winning. This proved to be an effective incentive, as it only took two days for the first 164 responses to come in.

On average, participants spent 7 and half minutes answering the survey. The distribution of time spent within the survey further indicates that respondents took reasonable care and time completing it (Figure 10) – distribution mean is 7.57 minutes with a standard deviation of 3.66.

Out of the 215 respondents, 26 did not provide a username despite they were specifically asked to provide it. Because non-subscribers could read the forum, but not participate in discussions, it is probable that these responders were gamers who don't subscribe to the magazine. Out of these 26 replies, 5 were discarded as obviously unusable. In contrast, there were not any obviously discardable responses from the registered users. This also suggests that participants eligible to the incentive took reasonable care answering the survey.

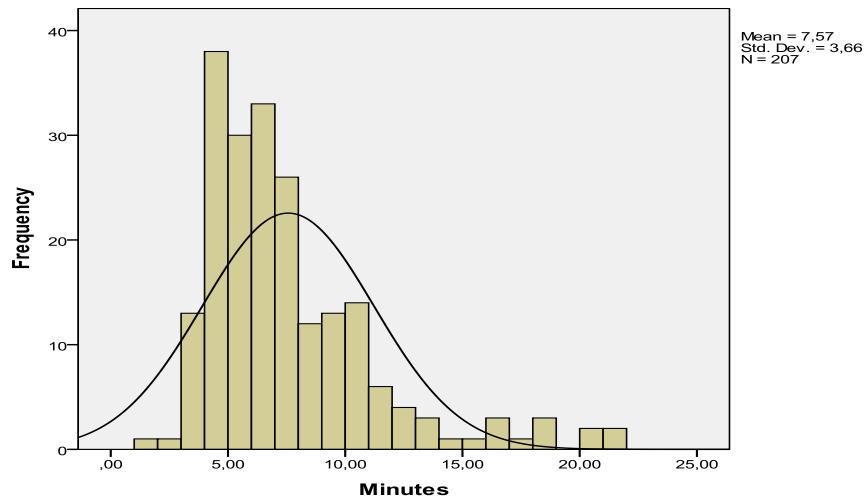


Figure 10. Distribution of time spent filling out the web questionnaire

## **4. Findings**

This Chapter describes and analyses the collected data in three steps. First, I will take a look at the distributions of each variable. Second, I will analyze participants' responses to the open question about their reasons for any WTP disparity. Third, I will perform a statistical analysis of the data. This analysis includes an examination of correlation and a multiple linear regression analysis.

### **4.1 Description of the data**

The first important observation regarding the collected sample is that the participants are almost solely male: out of the 210 respondents, only 3 (1.4%) were female. This reflects the fact that the sample was collected from a population of console game enthusiasts, as intended. At this time it must be noted that while the ESA reports that 40% of all U.S. computer and video game players are female (ESA 2010a), their statistic counts a person who occasionally plays solitaire on PC as a video gamer. Consequently, the ESA statistic is heavily skewed towards casual PC and web browser gaming. This thesis however focuses on the core demographic of console video gamers – consumers who actively play and buy console games.

Out of all participants, 115 (54.8%) reported the PS3 as their main platform, 86 (41.0%) chose the Xbox 360 and only 9 (4.2%) chose Nintendo Wii. This distribution is in line with the purpose of the thesis, which is to shed light on the purchasing behavior of video game enthusiasts in the context of modern game console distribution services.

Considering the console platforms, it is good to remember that the current digital distribution service on Nintendo Wii isn't meant for games that are available on retail - and that the console has no hard drive. The platforms on Xbox 360 and PS3 however do support full retail games.

While the importance of the casual gaming demographic is of increasing importance, this thesis and this collected sample examine the traditional core demographic of console gamers and console game buyers. In this light the above distributions are appropriate and suitable for the purposes of this thesis.



## Age, income and level of education

The age of the participants was quite widely distributed. The average age was 20 years, with standard deviation of 5.1 (Figure 11). The youngest were 12 years of age, and the oldest was 47. This maximum age was an outlier, but based on his replies this was a legitimate answer from a long time video game hobbyist. Distribution mode was nineteen years.

Based on the age distribution, it is logical that respondents' education mainly was primary level (39%) or secondary school level (51.9%). Only 9.1% of participants had a tertiary level education i.e. they were at the higher vocational or university level. Consequently, the great majority had very low income: 56% earned less than 200 euros per month (Figure 12).

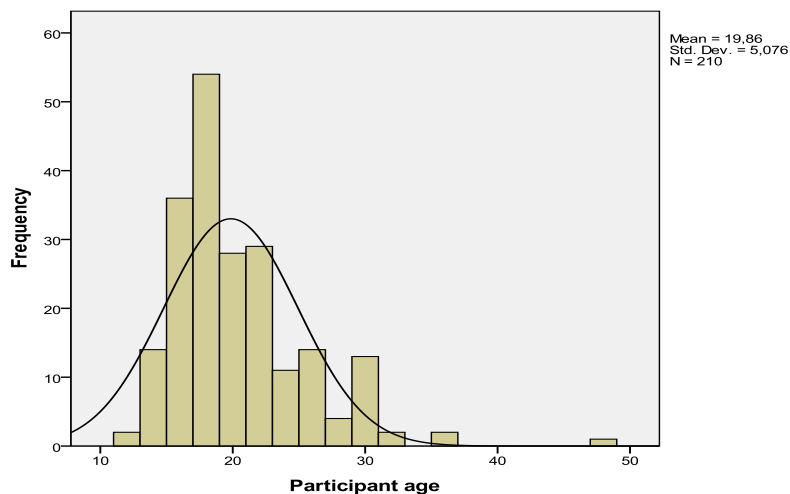


Figure 11. Distribution of survey participant's age

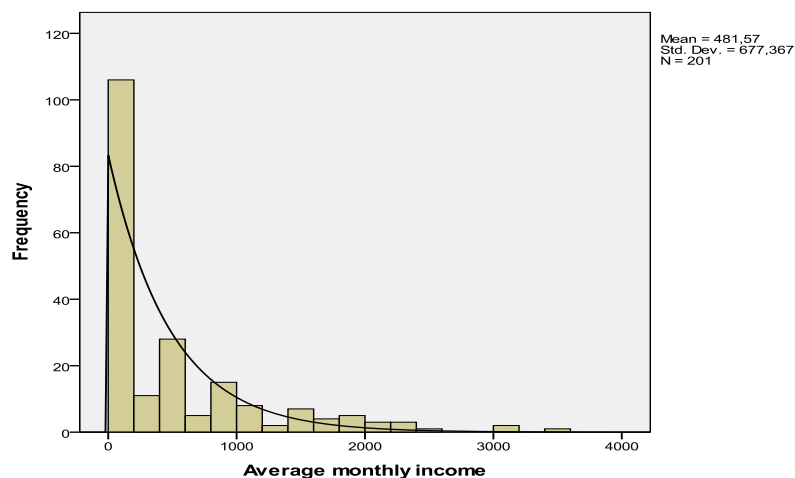


Figure 12. Distribution of survey participants' monthly income

## **Willingness to pay and the WTP disparity**

Participants' willingness to pay for a physically distributed video game was on average 54 euros and 60 cents (standard deviation 12.07). Correspondingly, the average WTP for a digitally distributed game was only 32 euros (standard deviation interestingly larger: 14.55). Both variables were heterogeneously distributed and the distributions resembled the normal distribution (see Figures 13 and 14). This enables further analysis on WTP, which is a main goal of this study. Regarding WTP, there was no statistically significant difference between PS3 and Xbox 360 users.

The disparity between the above WTP items was on average 22 euros and 55 cents (standard deviation 15.05). When expressed as the relative difference between physical and digital WTP, the average was that WTP for a digital product was 40.6% lower (standard deviation 23.6 percentage units) (Figure 15). An interesting observation at this point is that contrary to hypothesis 4, not all participants perceived higher value in the physical game than in the digitally distributed one. For 25 participants (11.9%) the value was equal. Furthermore, two participants (1%) were willing to pay slightly more for a digitally distributed version. This observation is discussed in more detail in Subchapter 4.2.

## **Involvement**

Two involvement measures were used: product class involvement (PCI) and purchase decision involvement (PDI). The distributions of individual question items were heterogenous, and therefore usable for variance analysis purposes.

The PCI and PDI are calculated as aggregate sums of the individual survey question items. First, each response was recoded from a 7-item Likert scale into a value between -3 and 3. Then, both PCI and PDI were calculated as a sum value of these recoded statement responses. The resulting theoretical measurement range was +/-21 for PCI and +/- 9 for PDI. If the data had been collected from the general population, such involvement measures should return a normal distribution approximately around zero.

As was expected, in this sample both distributions were not normal around zero. Instead, both showed that most participants were highly involved with video games. Mean PCI was 14.2

(standard deviation 4.7) (Figure 16) and mean PDI 3.6 (standard deviation 3.5) (Figure 17). Distributions on both measures seem sufficiently heterogenous to facilitate further analysis.

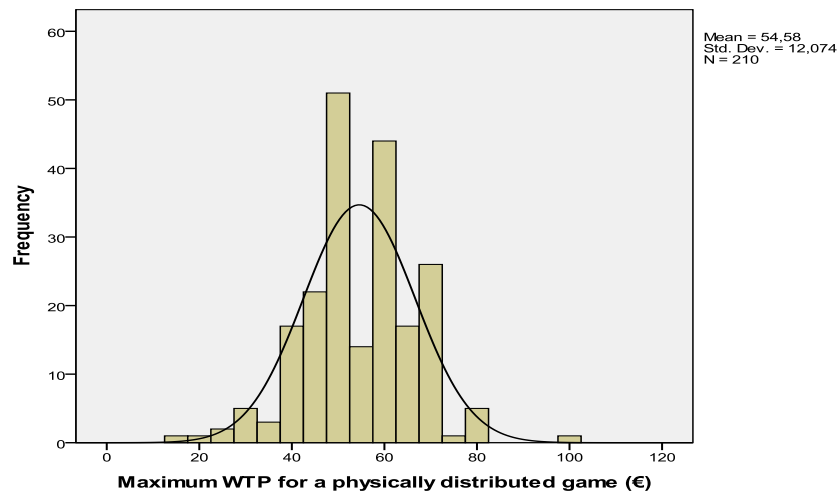


Figure 13. Distribution of the maximum willingness to pay for a physically distributed game

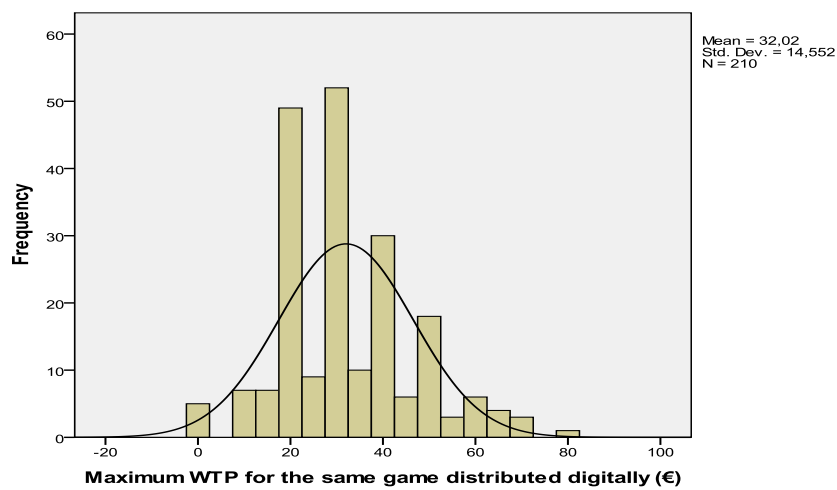


Figure 14. Distribution of the WTP for a digitally distributed version of video a game

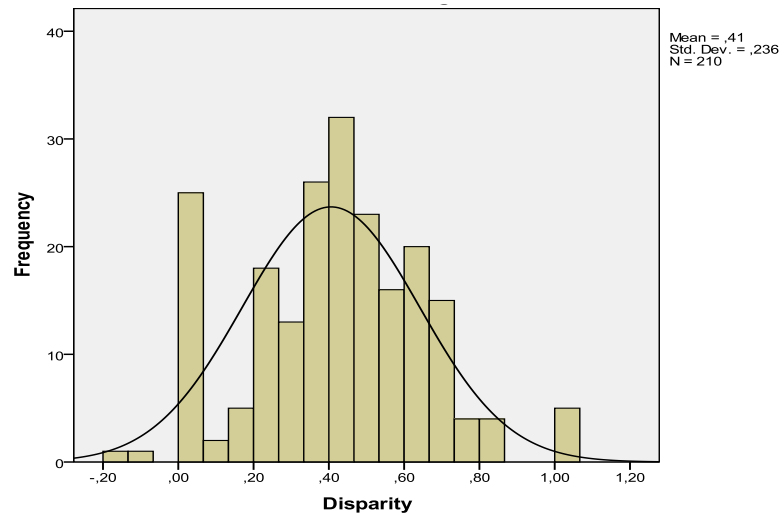


Figure 15. Distribution of the WTP disparity between physical and digital alternatives

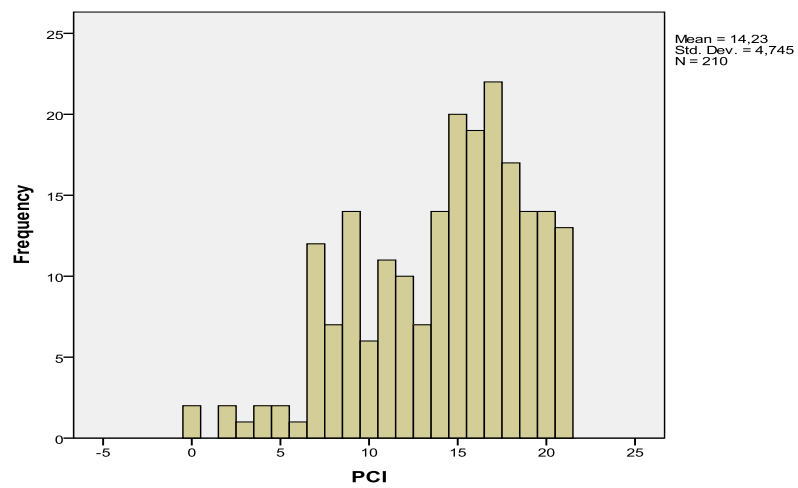


Figure 16. Distribution of product class involvement (PCI)

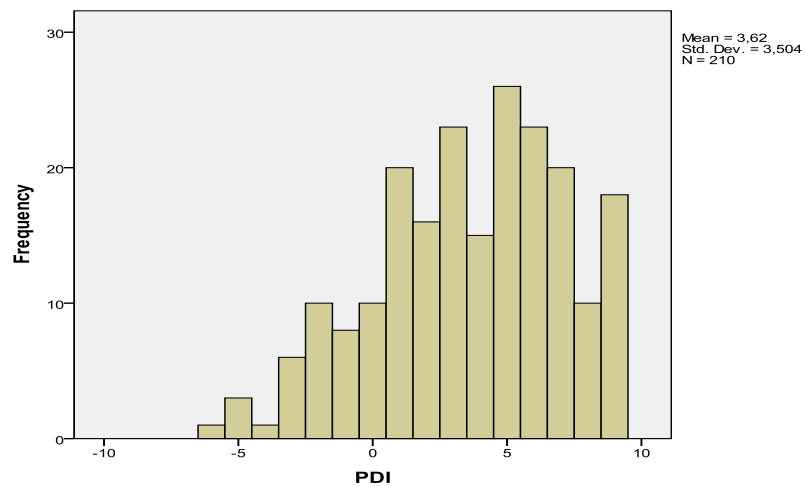


Figure 17. Distribution of purchase decision involvement (PDI)

### **Attitude towards piracy**

This measure (PIR) was also an aggregate of Likert scale statement evaluations. For this measure, the theoretical score range was  $\pm 12$ . In this sample the attitude towards piracy was dominantly negative: PIR mean was -6.8 with a standard deviation of 4 (Figure 18).

Considering further analysis, the distribution was heterogenous, with observations between both the minimum and maximum of the measure.

### **Perception of digital distribution channel ease of use, usefulness and fun**

The measure for digital distribution technology acceptance is an aggregate score (EUF) ranging from -9 to 9. In this sample, general perceptions of digital distribution services were positive: the mean EUF was 5.7 with a standard deviation of 2.98 (Figure 19). Distribution was clearly not normal, but skewed to the right suggesting a dominantly positive attitude towards digital download services on video game consoles. Again, distribution is heterogenous enough for further analysis.

### **Tangibility preference**

For tangibility preference (TP) the measure was again an aggregate score between -9 and 9. For this measure, the distribution was heterogenous and skewed to the right, indicating the dominance of high preference for the tangible in the sample (Figure 20). The mean TP was 5.7 with standard deviation of 3.6. Like the other aggregate measures, TP also is suitable for further statistical analysis within the sample.

### **Perceived importance of the benefits of tangibility and intangibility**

The final choice task was to choose three distribution format related benefits out of 10 that are most important to the participant. Answering this question required slightly more effort than the previous choice tasks. Out of the 210 participants, 12 did not answer this last question. It is possible that they at this point realized they were not eligible for the incentive, and therefore stopped answering.

Out of all the mentioned distribution form benefits, the most popular one was *“I can be sure that I can still play the game I bought many years from now”*. This alternative was chosen as the most important by 46% of participants (Table 7). Otherwise the distribution was relatively even, with being able to resell the game being the runner-up (12.1%).

The four most often chosen benefits make up 82% of all responses. Interestingly, two are benefits of the physical media (ability to play years from now, ability to resell game) and two are benefits of digital distribution: cannot be scratched or lost (11.6%) and, large selection in store i.e. the Long Tail effect (11.6%).

Because the participants were asked to choose three most important benefits, we can also calculate a weighted average for the perceived total importance of each benefit. In Table 8, each benefit mentioned as most important has been weighed by a factor of three, and each benefit mentioned as the second important has been weighed by a factor of two. This method gives a better view on the perceived total importance of all benefit alternatives. As a result, the same five benefits remain the most important, only their order is changed.

Table 7. Percentage of benefits chosen as the most important (N=198)

| %    | n   | Benefit  |
|------|-----|--|
| 46,5 | 92  | I can be sure that I can still play the game I bought many years from now          |
| 12,1 | 24  | I can resell the game I bought   |
| 11,6 | 23  | The game store has as large a selection as possible – including old and rare games |
| 11,6 | 23  | The game cannot be scratched or lost   |
| 7,6  | 15  | I can make a collection of the games and show it to my friends                     |
| 4,0  | 8   | I can lend or give the game I bought to a friend                                   |
| 3,5  | 7   | I can buy the game at home and start playing it right away                         |
| 1,5  | 3   | (Other, please state)  |
| 1,0  | 2   | I don't have to carry the game with me, if I want to play it outside of home       |
| 0,5  | 1   | I can give the game as a gift to a friend  |
| 100% | 198 |  |

Table 8. Weighted importance ranks of distribution media benefits (N=198)

| Rank | Benefit  |
|------|--|
| 367  | I can be sure that I can still play the game I bought many years from now          |
| 193  | The game store has as large a selection as possible – including old and rare games |
| 154  | I can make a collection of the games and show it to my friends                     |
| 141  | I can resell the game I bought   |
| 119  | The game cannot be scratched or lost   |
| 99   | I can lend or give the game I bought to a friend                                   |
| 44   | I can buy the game at home and start playing it right away                         |
| 40   | I can give the game as a gift to a friend  |
| 19   | I don't have to carry the game with me, if I want to play it outside of home       |
| 12   | (Other, please state)  |

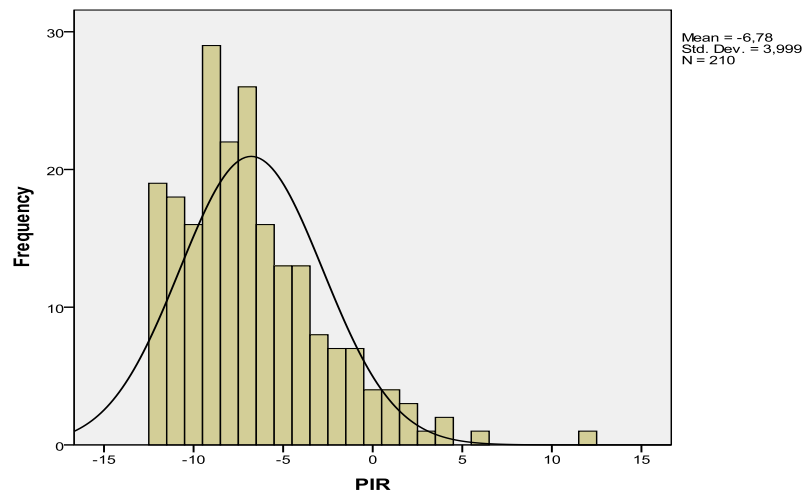


Figure 18. Distribution of attitude towards piracy (PIR)

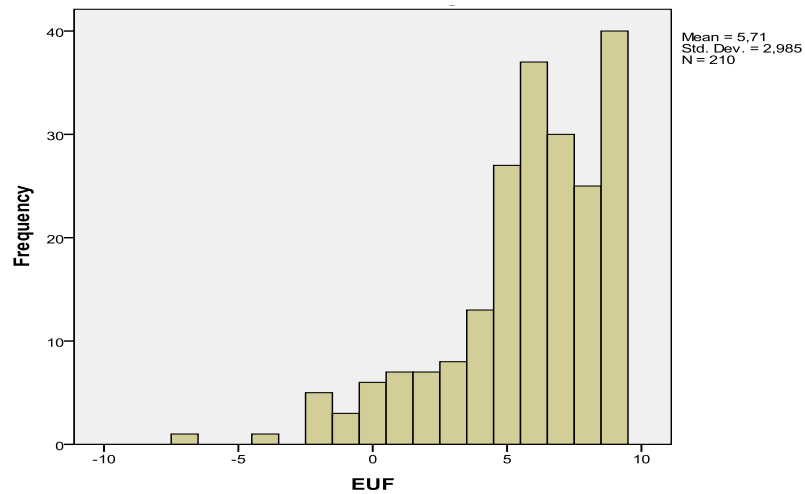


Figure 19. Distribution of the technology acceptance measure (EUF) in sample

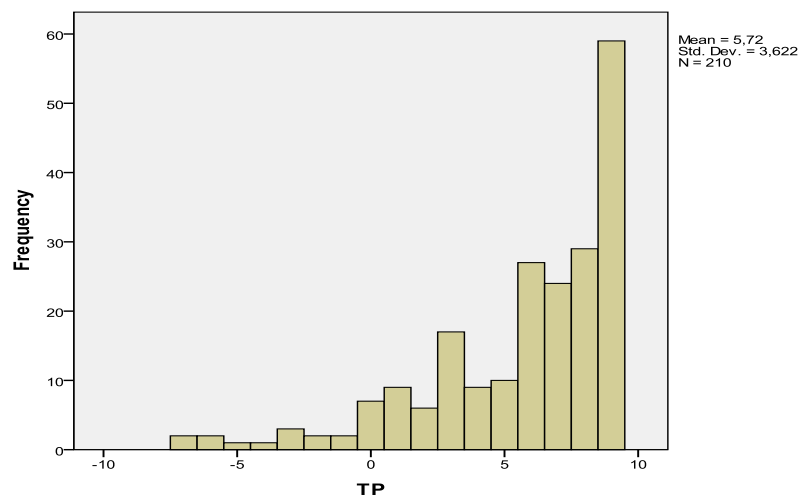


Figure 20. Distribution of the tangibility preference measure (TP)

## 4.2 Self-assessment of reasons for WTP disparity

At the beginning of the survey, participants were asked to quote their maximum WTP for a physically distributed game. Then they were asked what they were willing to pay if they bought the same game through a digital distribution service. Finally, if there was any difference between the two sums, they were asked to briefly explain why. This question was presented in the first page of the survey, for maximum spontaneity in the replies.

Out of the 210 participants, 185 (88.1%) perceived a WTP disparity, and only three of these participants did not explain their view. Thus, there were 182 brief explanations given to the WTP disparity. As was previously mentioned, two participants perceived the digitally distributed alternative more valuable and the rest (n=183) perceived more value in the physically distributed version.

Although they were the great minority, the two explanations for a **higher digital distribution WTP** deserve to be examined:

*“The price in a store can be lower, because you have to make the effort and go to that store yourself. You get the download right away, so that could cost a bit more.”*

*“Five euros should compensate for my time and effort of acquiring a physical copy. Although a digital copy takes less effort from the publishers, I still think they are equal in value. But I don’t like those condescending clerks at [retail stores] and would rather give my money directly to Sony and Media Molecule.”*

This shows that a portion of consumers may perceive high value in the ease and convenience of acquiring a copy of the game. It seems that in addition to convenience, these participants mainly consider the entertainment value of a game in their value judgment, and other qualities of the distribution media are largely negligible to them. This is a very consumerist approach: the game is impulsively bought, consumed and then forgotten or even discarded. The good’s worth is in its entertainment value, and how readily that entertainment is available.

Out of all participants 25 (11.9%) reported an equal WTP for the physical and digital alternatives. They were not requested to explain this valuation. However, when there is no difference between the two prices, it is possible that this happens for the reason mentioned above: the consumer perceives the goods worth only in its value to entertain and other



judgments are secondary or negligible. Arguably the WTP equality can also occur because the consumer values the net benefit of each distribution alternative equal.

### **Explanation of higher WTP for the physical alternative**

This subsection reviews explanations for the perception of higher value in the physically distributed alternative. Representative answers are discussed, and a simple quantitative categorization of the answers is done at the end.

The majority of the explanations were simple statements of preference for the tangible – usually this was a quick comment about having a physical game box, disc, or manual. It was also typical to simply state that a tangible product feels better, or is more fun, or that a digital download doesn't feel right or valuable. Most of these answers did not elaborate on the details of why they experience the alternatives differently:

*“You can pay more for a physical game because it comes with the disc, manual and the box”*

*“It's fun to own the game with the box and everything”*

*“A digital product isn't as satisfying as a physical product.”*

*“It's fun to look at the box and browse the game manual. Later you can return to that moment just by seeing the game box in sitting in your bookshelf”*

Aftermarket related issues were the second common category. Here, respondents made references to the physical game having resale value, or that reselling a digital download is impossible. Often in this context the respondent also mentioned the possibility of lending or gifting the game:

*“A disc version gives me something concrete for my money, and I can resell the game at a later time, if I don't care about it anymore”*

*“A digital copy has no consumer resale value.”*

*“If I don't like the game I can sell it or give it to a friend. You can't do that with a digital download.”*

*“Having a physical copy of the game makes it possible to collect, borrow, resell or just simply admire them”*

The third common response category was issues related to collecting games, such as being able to display and admire a game collection. A few respondents referred to physical games having collectors' value that may grow over time:

*"I like to collect games. Physical game boxes on the shelf always get me on a good mood! You can't say that for data on a hard drive."*

*"I'm a collector, so I want that game box on my shelf. Buying the game gives me a type of satisfaction I can't get from a download purchase. Being able to actually put my paws on the game really adds to its value for me."*

*"A download has no collector's value whatsoever."*

*"... the game's collector's value may grow as years pass."*

Many respondents referred to issues related to ownership of the game such as a digital download not feeling like you truly own the game. Respondents also expressed worry related to being able to play the game years from now, or perceived risk in storing their games on a hard drive:

*"Downloaded games feel 'rented'. Game consoles don't live forever, and a download service might not be in use years a few from now. The right a consumer has to lend or resell the physical game is important, because you own the game. I'm not against downloadable games, but I think that the difference in price is fully justified."*

*"A download is just a file on the hard drive – I don't feel like I own it, it's more like I just have a permission to play the game. If I don't have a physical game I can't exchange or sell it, when I don't need it anymore."*

*"Even though you usually can re-download your digital purchase for free, there's nothing to guarantee that the download service is still available 10 years from now. I still play a lot on my old consoles (N64/PS2) so the chance to just grab a game from my shelf and start playing is really important to me."*

*"If my console breaks I fear I'd lose all my games. That's why I always buy games from a retail store rather than downloading them."*

In a few replies references were made to higher distribution channel and production costs for the physical version. Responders felt that an equal price is not justified, because digitally distributed games have fewer channel intermediaries.

*“ ... in the physical version the manual, box, disc and importing cause more costs, so it’s robbery to ask the same price for a download. ”*

*“If the game comes on a disc, the production costs are higher than for a download”*

One respondent pointed out that the current reality of game pricing and availability is not in favor of digital distribution. He also made a valid argument about payment options: currently you either need a credit card or have to separately buy “virtual money” to be able to use digital distribution services:

*“If it was actually possible to buy games from Playstation Store on launch day, I might buy from there if games were about 10 euros cheaper compared to Finnish mail-order stores. But this isn’t the case: it takes a long time for games to become available for download and at that time, retail prices usually are equal or lower. Besides, I have to buy a PSN card before I can download anything, so why not mail-order for a lower price.”*

Interestingly, respondents also found that physical games have social relevance beyond being a collector’s item:

*“A new game box on a table or in a shelf (same goes for movies and music as well) is a good way to break the ice when visitors come over. This doesn’t work with files on a hard drive.”*

Issues related to the practicalities of downloading a game were also mentioned. A few respondents felt that downloading a game takes too long compared to the time and effort required buying the physical version:

*“Usually you can get the game easier and sometimes even quicker by buying it from a retail store. I think buying game downloads is somewhat difficult, so they can’t replace retail stores – at least not yet.”*

A total of 292 references were quantified from the explanations. The three most often occurring categories were simple references to a preference of the tangible (34.6%), aftermarket related issues (17.1%) and collecting related issues (16.4%) (Table 9).

Table 9. Quantification of self explanations for WTP disparity

| %    | n   | Explanation category                          |
|------|-----|---|
| 34.6 | 101 | Simple preference of the tangible or physical |
| 17.1 | 50  | Aftermarket                                   |
| 16.4 | 48  | Collecting related issues                     |
| 8.2  | 24  | Channel costs                                 |
| 7.2  | 21  | File storage risks and issues                 |
| 6.2  | 18  | Lending, gifting and portability              |
| 5.8  | 17  | Long term ownership                           |
| 2.7  | 8   | Downloading too slow                          |
| 1.7  | 5   | Other   |
| 100  | 292 |   |

### 4.3 Statistical analysis

In this Section I will perform statistical analysis on the data. First, I will take a look at the covariation of the study measures with willingness to pay. Second, multicollinearity is examined for the variables that explain WTP in the model. Third and final, a multiple linear regression analysis is performed.

#### 4.3.1 Correlation of study measures with WTP measures

Before going further with the statistics, it is worthwhile to take a look at how the study measures correlate with WTP. After all, it would make no sense to start building a regression model if the assumed coefficients don't correlate with the WTP measures.

First, nearly all of the variables have statistically significant correlation with willingness to pay for a digitally distributed game (WTP\_D). Only the piracy measure (PIR) and purchase decision involvement (PDI) are not correlated at the 5% or 1% level (Table 10). The significance associated with the PIR measure is particularly weak ( $p=0.896$ ).

Second, looking at the WTP disparity correlations, we can see that product class involvement (PCI) becomes not significant in addition to PIR and PDI (Table 11). In the case of WTP disparity, all three measures are not significant at the 5% level.

Surprisingly, none of the measures correlate significantly with willingness to pay for a physically distributed game (Table 12). This lack of correlation persists when the main console platform of the respondent is taken into account. Thus, it is not due to differences in pricing between consoles. Obviously, WTP for a physical game is explained by variables not included in this study. Thus, further analysis efforts will focus on WTP\_D and the disparity.

Table 10. Correlation of study variables with WTP for a digitally distributed game

|                           | WTP_D | AGE   | INC   | PCI  | PDI  | TP    | EUF  | PIR   |
|---------------------------|-------|-------|-------|------|------|-------|------|-------|
| WTP_D Pearson Correlation | 1     | -,256 | -,194 | ,150 | ,067 | -,384 | ,216 | -,009 |
| Sig. (2-tailed)           |       | ,000  | ,006  | ,030 | ,337 | ,000  | ,002 | ,896  |
| N                         | 210   | 210   | 201   | 210  | 210  | 210   | 210  | 210   |

Table 11. Correlation of study variables with WTP disparity percentage

|           |                     | Disparity | AGE  | INC  | PCI   | PDI   | TP   | EUf   | PIR   |
|-----------|---------------------|-----------|------|------|-------|-------|------|-------|-------|
| Disparity | Pearson Correlation | 1         | ,235 | ,214 | -,096 | -,110 | ,407 | -,175 | -,038 |
|           | Sig. (2-tailed)     |           | ,001 | ,002 | ,165  | ,113  | ,000 | ,011  | ,589  |
|           | N                   | 210       | 210  | 201  | 210   | 210   | 210  | 210   | 210   |

Table 12. Correlation of study variables with WTP for a physical game

|       |                     | WTP_P | AGE   | INC  | PCI  | PDI   | TP    | EUf  | PIR   |
|-------|---------------------|-------|-------|------|------|-------|-------|------|-------|
| WTP_P | Pearson Correlation | 1     | -,101 | ,014 | ,107 | -,058 | -,035 | ,135 | -,032 |
|       | Sig. (2-tailed)     |       | ,146  | ,839 | ,121 | ,401  | ,618  | ,051 | ,643  |
|       | N                   | 210   | 210   | 201  | 210  | 210   | 210   | 210  | 210   |

### 4.3.2 Multiple linear regression analysis

To be fit for regression analysis, the variables that explain WTP must not significantly correlate with each other. To test for this requirement, a correlation matrix was calculated for the background variables. The tested variables were age (AGE), monthly income (INC), product class involvement (PCI), purchase decision involvement (PDI), tangibility preference (TP), technology adoption (EUf) and attitude towards piracy (PIR).

Based on the initial correlation matrix (Table 13) AGE was significantly correlated with INC ( $\rho=0.636$ ,  $p<0.01$ ) and PDI ( $\rho= -0.188$ ,  $p<0.01$ ). The first correlation is not surprising: it is only logical that income correlates with age in this sample. After all, most participants were primary and secondary level students. To avoid multicollinearity, INC and PDI are removed.

The technology adoption measure EUf correlates significantly with all remaining variables, and is also removed from regression analysis. This leaves AGE, PCI, TP and PIR.

The remaining piracy attitude measure PIR has significant correlation with both TP and PCI. Regrettably this means that the piracy measure will also have to be removed from regression analysis. This leaves AGE, PCI and TP for the linear model. Using these variables, multicollinearity issues are completely removed (Table 14).

A further recommendation regarding linear regression analysis is that all variables are normally distributed. In this sample AGE and INV fill this requirement, but TP does not. This is however not an absolute requirement.

Table 13. Initial regression variable correlation matrix

|      |                     | AGE     | INC     | PCI     | PDI     | TP     | EUFG    | PIR     |
|------|---------------------|---------|---------|---------|---------|--------|---------|---------|
| AGE  | Pearson Correlation | 1       | ,636**  | ,074    | -,188** | ,045   | -,103   | ,030    |
|      | Sig. (2-tailed)     |         | ,000    | ,285    | ,006    | ,518   | ,138    | ,670    |
|      | N                   | 210     | 201     | 210     | 210     | 210    | 210     | 210     |
| INC  | Pearson Correlation | ,636**  | 1       | ,013    | -,250** | ,099   | -,148*  | -,021   |
|      | Sig. (2-tailed)     | ,000    |         | ,854    | ,000    | ,162   | ,036    | ,773    |
|      | N                   | 201     | 201     | 201     | 201     | 201    | 201     | 201     |
| PCI  | Pearson Correlation | ,074    | ,013    | 1       | ,168*   | -,043  | ,266**  | -,190** |
|      | Sig. (2-tailed)     | ,285    | ,854    |         | ,015    | ,533   | ,000    | ,006    |
|      | N                   | 210     | 201     | 210     | 210     | 210    | 210     | 210     |
| PDI  | Pearson Correlation | -,188** | -,250** | ,168*   | 1       | ,010   | ,158*   | -,021   |
|      | Sig. (2-tailed)     | ,006    | ,000    | ,015    |         | ,881   | ,022    | ,759    |
|      | N                   | 210     | 201     | 210     | 210     | 210    | 210     | 210     |
| TP   | Pearson Correlation | ,045    | ,099    | -,043   | ,010    | 1      | -,143*  | -,152*  |
|      | Sig. (2-tailed)     | ,518    | ,162    | ,533    | ,881    |        | ,038    | ,028    |
|      | N                   | 210     | 201     | 210     | 210     | 210    | 210     | 210     |
| EUFG | Pearson Correlation | -,103   | -,148*  | ,266**  | ,158*   | -,143* | 1       | -,270** |
|      | Sig. (2-tailed)     | ,138    | ,036    | ,000    | ,022    | ,038   |         | ,000    |
|      | N                   | 210     | 201     | 210     | 210     | 210    | 210     | 210     |
| PIR  | Pearson Correlation | ,030    | -,021   | -,190** | -,021   | -,152* | -,270** | 1       |
|      | Sig. (2-tailed)     | ,670    | ,773    | ,006    | ,759    | ,028   | ,000    |         |
|      | N                   | 210     | 201     | 210     | 210     | 210    | 210     | 210     |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Table 14. Final regression variable correlation matrix

|     |                     | AGE  | PCI   | TP    |
|-----|---------------------|------|-------|-------|
| AGE | Pearson Correlation | 1    | ,074  | ,045  |
|     | Sig. (2-tailed)     |      | ,285  | ,518  |
|     | N                   | 210  | 210   | 210   |
| PCI | Pearson Correlation | ,074 | 1     | -,043 |
|     | Sig. (2-tailed)     | ,285 |       | ,533  |
|     | N                   | 210  | 210   | 210   |
| TP  | Pearson Correlation | ,045 | -,043 | 1     |
|     | Sig. (2-tailed)     | ,518 | ,533  |       |
|     | N                   | 210  | 210   | 210   |

## Linear regression of the WTP for a digitally distributed game

A multiple regression analysis for the monetary WTP for a digitally distributed game was performed. Based on this analysis, a linear model where AGE, PCI and TP are predictor variables, can explain 21.6% of the variance in the WTP for a digitally distributed game (WTP\_D) (Figure 22).

The model fits the data well: the regression results show that the model itself is statistically significant ( $p < 0.001$ ). Furthermore, all coefficients are statistically significant: AGE and TP at the 1% and PCI the 5% level. The resulting regression equation can be written as:

$$WTP\_D = 48.046 - 1.469 \times TP - 0.719 \times AGE + 0.467 \times PCI$$

In this model, a person's age and preference for the tangible both decrease WTP for a digital version of a game, and product class involvement increases WTP for a digitally distributed game.

Model Summary

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | ,477 <sup>a</sup> | ,227     | ,216              | 12,885                     |

a. Predictors: (Constant), PCI, TP, AGE

ANOVA<sup>b</sup>

| Model |            | Sum of Squares | df  | Mean Square | F      | Sig.              |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1     | Regression | 10054,357      | 3   | 3351,452    | 20,186 | ,000 <sup>a</sup> |
|       | Residual   | 34202,524      | 206 | 166,032     |        |                   |
|       | Total      | 44256,881      | 209 |             |        |                   |

a. Predictors: (Constant), PCI, TP, AGE

b. Dependent Variable: WTP\_D

Coefficients<sup>a</sup>

| Model |            | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
|       |            | B                           | Std. Error | Beta                      |        |      |
| 1     | (Constant) | 48,046                      | 4,547      |                           | 10,566 | ,000 |
|       | AGE        | -,719                       | ,176       | -,251                     | -4,077 | ,000 |
|       | TP         | -1,469                      | ,247       | -,366                     | -5,958 | ,000 |
|       | PCI        | ,467                        | ,189       | ,152                      | 2,478  | ,014 |

a. Dependent Variable: WTP\_D

Figure 22. Results of the multiple regression analysis on WTP\_D



## Linear regression of the WTP disparity

I also did multiple linear regression with WTP disparity percentage as the dependent variable. Based on this analysis, a linear model where AGE, PCI and TP are predictor variables, can explain 21.1% of the variance in the WTP disparity (Figure 21).

Again, the model fits the data well: ( $p < 0.001$ ). However, out of the three coefficients, PCI ( $p = 0.122$ ) is shown not statistically significant, and the model might be improved by removing this coefficient.

Based on the results of the analysis, a linear model for the WTP disparity can be written as a regression formula:

$$\text{Disparity} = 0.120 + 0.026 \times TP + 0.010 \times AGE - 0.005 \times PCI$$

Here, a person's age and preference for the tangible enlarge the difference between WTP for physically and digitally distributed versions of a game. Product class involvement may decrease this difference, but the statistical significance of the coefficient in this model is low.

Model Summary

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | ,471 <sup>a</sup> | ,222     | ,211              | ,20943                     |

a. Predictors: (Constant), PCI, TP, AGE

ANOVA<sup>b</sup>

| Model |            | Sum of Squares | df  | Mean Square | F      | Sig.              |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1     | Regression | 2,582          | 3   | ,861        | 19,623 | ,000 <sup>a</sup> |
|       | Residual   | 9,035          | 206 | ,044        |        |                   |
|       | Total      | 11,617         | 209 |             |        |                   |

a. Predictors: (Constant), PCI, TP, AGE

b. Dependent Variable: Disparity

Coefficients<sup>a</sup>

| Model |            | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
|       |            | B                           | Std. Error | Beta                      |        |      |
| 1     | (Constant) | ,120                        | ,074       |                           | 1,623  | ,106 |
|       | PCI        | -,005                       | ,003       | -,096                     | -1,554 | ,122 |
|       | AGE        | ,010                        | ,003       | ,225                      | 3,642  | ,000 |
|       | TP         | ,026                        | ,004       | ,393                      | 6,385  | ,000 |

a. Dependent Variable: Disparity

Figure 21. Results of the multiple regression analysis on WTP disparity

## 5. Discussion and conclusions

The goal of this master's thesis was to examine the role of tangibility preference and involvement in consumer's willingness to pay for digitally distributed video games (VG). Besides taking a quantitative approach to WTP and its determinants, consumers were given an opportunity to explain in their own words, why they perceived a value difference between physically and digitally distributed versions of a game.

This chapter summarizes and discusses the key results of the thesis. Furthermore, the strengths and weakness of the study are examined, and suggestions for further research are given.

### 5.1 Research hypotheses

According to previous research, high involvement may be associated with a higher perception of value for the physical product. However, in this study neither product class nor purchase decision involvement was significantly correlated with the WTP disparity percentage. Thus, hypothesis 1 is rejected:

*H1: Involvement is positively correlated with the WTP disparity (rejected)*

While the involvement measures were not correlated with WTP disparity, product class involvement (PCI) was significantly and positively correlated with WTP for a digitally distributed version of a game. This observation was statistically significant in the sample at the 5% level ( $\rho=0.150$ ,  $p=0.030$ ).

Based on the above result, it seems logical to assume that PCI and WTP\_D are also correlated with adoption of digital distribution. In this sample, this was indeed the case, as WTP\_D and both involvement measures (PCI and PDI) were significantly and positively correlated with the technology acceptance measure EUF.

Thus, it is safe to say that being highly involved with video games is associated with a positive attitude towards video game digital distribution. Furthermore, both high involvement and acceptance of digital distribution are associated with higher willingness to pay for a digitally distributed version of a game.

The second hypothesis suggested that preference for the tangible should associate with a higher perception of value in the physical game compared to the digitally distributed alternative. In this sample, this was true and thus hypothesis 2 is accepted:

*H2: Tangibility preference is positively correlated with the WTP disparity (accepted)*

Out of all study variables, this correlation was the strongest ( $\rho=0.407$  and  $p<0.001$ ). This very strong correlation persisted also regarding willingness to pay for a digitally distributed game ( $\rho=-0.384$  and  $p<0.001$ ). This suggests that for many video game consumers, lost tangibility benefits play a major role in their willingness to pay for digitally distributed game, and they perceive that the value of these lost benefits is higher than that of gained intangibility benefits.

The nature of tangibility preference was examined in more detail and it was found that issues related to aftermarket value and physical collecting play an important role in consumers' value perceptions. There also was a surprising contradictory result: when respondents were given tangibility/intangibility related benefits to prioritize, the issue of long term ownership was perceived as the most important by nearly half of the participants. However, this issue was rarely given spontaneously. When asked for an intuitive reason for any WTP disparity, only 6% made an explicit reference to long term ownership.

The third hypothesis was that a positive attitude towards piracy would be negatively associated with willingness to pay. In this sample however, the piracy attitude measure had no statistically significant correlation with any of the WTP items. Thus hypothesis 3 is rejected.

*H3: Attitude towards piracy is negatively correlated with WTP (rejected)*

Because this result was surprising and contrary to most past research on WTP for digital goods, it raises questions regarding the validity of the PIR construct. To be sure, I tried different variations of the construct, leaving out items that might have been difficult to interpret, but no configuration of the PIR measure had significant correlation with WTP. It is possible that there is a fundamental bias within the sample: PIR distribution was heavily skewed to the right as only 7.7% of participants had a positive attitude towards piracy. It is possible that this sample of highly involved game enthusiasts was not suitable for examining the influence of piracy, as there were so few piracy-inclined individuals in the sample.

The fourth hypothesis was that the perceived value of lost tangibility benefits would always outweigh the perceived value of gained intangibility benefits, resulting in a consistently higher WTP for the physically distributed version of the game. In this sample, this was not the situation and hypothesis 4 is rejected:

*H4: Willingness to pay for the physical product is always higher than willingness to pay for the digitally distributed alternative (rejected)*

Contrary to the hypothesis 11.9% of respondents perceived an equal value, and 1% reported higher WTP for the digitally distributed alternative. This is an important result: it shows that there is a significant consumer segment who (value-wise) consider digital distribution an equal alternative to traditional physical distribution in the context of video games.

In addition to the above mentioned research hypotheses related results, it was found that the consumers' age and income level are significantly correlated with willingness to pay for a digitally distributed game. Both correlated negatively with WTP\_D, and positively with the disparity – however it must be noted that age and income also correlated very strongly with each other.

The negative correlation age has with WTP intuitively suggests that older gamers who grew up playing physically distributed games may be less accustomed to digital distribution. This assumption however is not supported in this sample: age was not significantly correlated with tangibility preference or technology acceptance.

Another key result is that tangibility preference and involvement did not correlate in this sample. This implies that a simplified view of highly involved video game enthusiasts as collectors who appreciate the physical distribution media is false, and that there are different consumer segments within that population.

## **5.2 Strengths and limitations of this study**

The main strength of this study is my opinion in the quality of the collected data. Taking an incentive aligned approach and conducting the web survey in a closed community resulted in high data quality: there were very few untrustworthy responses. It was easy to discard obvious spam answers from the data, and the response collection service enabled advanced filtering based on e.g. response time. Duplicate detection was also easy because the system recorded the IP address of the respondent.

Furthermore, proper time and effort spent was spent on choosing how to measure the desired constructs. This was especially important for WTP, involvement and tangibility preference, which were the three main interests in this study. Looking back, the piracy and technology acceptance measures should have been more thoroughly tested before implementation. Both were constructed based on previous research, but had not been used in empirical research before.

While the chosen population (subscribers of a video game magazine) and sampling methodology (convenience sample) readily provided accurate data, the problem with this sample was that it was biased towards video game enthusiasts. The results cannot be generalized to the whole video gamer population, but instead represent the “hard core” of console video game enthusiasts. While this property of the data stands in the way of wider generalization, it is in my opinion also a strength because it helps understand a single highly important consumer segment better.

Looking back, it would have been beneficial to record a few additional background variables such as current actual usage of digital distribution services and amount of games bought in a given time frame. Had there been more time available, the survey could have been conducted on more than one web forum – possibly on the web forum of another Finnish gamer magazine or even a public gamer forum. However, considering data quality, public web forums are challenging. For example in this study, the only discarded responses were made by nonregistered users.

Despite the above mentioned weaknesses, this study has filled its purpose, which was to help understand console gamers’ perceptions and valuation of digital distribution.

### **5.3 Suggestions for further research**

Based on the experience gained from this thesis, further studies would benefit from expanding research focus from console game enthusiasts to the broader gamer population, so that the casual gamer segment was included. Reaching the casual gamer segment is however a challenge, and probably requires a more qualitative approach. Furthermore, collecting high quality quantitative data that adequately represents all Finnish console gamers or console game buyers is resource consuming, but it could be done for example in collaboration with a major video game retail distributor.

Issues related to the consumer value of tangibility benefits and intangibility benefits are worth further study, as is the consumer adoption of digital distribution technologies. In this research area, advances in on-demand digital entertainment should provide new research opportunities in the near future.

## REFERENCES

- Al-Rafee S., Cronan T. (2006) Digital piracy: factors that influence attitude toward behavior. *Journall of Business Ethics* 63(3);237-259
- Bakos Y. & Brynjolfsson E. (1999) Bundling information goods: pricing, profits and efficiency. *Management Science* 45(12);1613-1630
- Baldwin A. (2010) The state of game piracy: which platform is hardest hit and how? <http://oxcgn.com/2010/03/23/the-state-of-game-piracy-which-platform-is-hardest-hit-and-how/> Retrieved 12.9.2010
- Berry L., Clark T. (1986) Four ways to make services more tangible. *Business* 1986;53-55
- Bockstedt J., Kauffman J., Riggins F. (2006) The move to artist-led on-line music distribution: a theory based assessment and prospects for structural changes in the digital music market. *International Journal of Electronic Commerce* 10(3);7-38
- Bowditch G. (2008) Grand Theft Auto producer is Godfather of gaming. *Times Online*. <http://www.timesonline.co.uk/tol/news/uk/scotland/article3821838.ece>. 1.4.2010
- Bruner G. & Kumar A. (2003) Explaining consumer acceptance of handheld internet devices. *Journal of Business Research* 58(5);553-558
- Brynjolfsson E., Hu Y., Smith M. (2006) From niches to riches: anatomy of the long tail. *MIT Sloan Management Review* 47(4);66-71
- Burkart P. (2008) Trends in digital music archiving. *The Information Society* 24; 246-250.
- Chiang E. & Assane D. (2009) Estimating the willingness to pay for digital music. *Contemporary Economic Policy* 27(4);512-522
- Chiou JS., Huang C. & Lee H. (2005) The antecedents of music piracy attitudes and intentions. *Journal of Business Ethics* 57(2);161-174
- Davis F. (1989) Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly* 13(3);139-339
- Ding M., Grewal R., Liechty J. (2005) Incentive-aligned conjoint analysis. *Journal of Marketing Research* 17;67-82
- Eggert A. (2006) Intangibility and perceived risk in online environments. *Journal of Marketing Management* 22;553-572

ESA (2010a) Essential facts about the computer and video game industry. *The Entertainment Software Association*. <http://www.theesa.com>. Retrieved 15.4.2010

ESA (2010b) Annual report fiscal year 2009. *The Entertainment Software Association*. <http://www.theesa.com>. Retrieved 11.9.2010

ESRB (2010) Frequently asked questions about the ESRB. *Entertainment Software Rating Board*. <http://www.esrb.org/ratings/faq.jsp>. Retrieved 15.4.2010

Featherman M., Valacich J., Wells J. (2006) Is that authentic or artificial? Understanding consumer perceptions of risk in e-service encounters.

Featherman M., Wells J. (2010) The intangibility of e-services: effects on perceived risk and acceptance. *The Data Base for Advances in Information Systems* 41(2);110-131

Fetscherin M. & Lattemann C. (2007) Motives and willingness to pay for digital music. *Proceedings - 3rd International Conference on Automated Production of Cross Media Content for Multi-Channel Distribution*

Freiden J., Goldsmith R., Takacs S., Hofacker C. (1998) Information as a product: not goods, not services. *Marketing Intelligence & Planning* 16(3);210-220

GAO (2010) Intellectual property – Observations on efforts to quantify the economic effect of counterfeit and pirated goods. *United States Government Accountability Office report to congressional committees April 12, 2010*. [http:// www.gao.gov/products/GAO-10-423](http://www.gao.gov/products/GAO-10-423) retrieved on 9.9.2010

García C., Olea J., Ponsoda V., Scott D. (1996) Measuring involvement from its consequences. *Psicothema* 8(2);337-349

Gopal R., Sanders G., Bhattacharjee S., Agrawal M., Wagner S. (2004) A behavioral model of digital music piracy. *Journal of Organizational Computing and Electronic Commerce* 14(2);89-105

Grunert K., Juhl H., Esbjerg L., Jensen B., Bech-Larsen T., Brunso K., Madsen C. (2009) Comparing methods for measuring consumer willingness to pay for a basic and an improved ready made soup product. *Food Quality and Preference* 20;607-619

Helberger N., Kerényi K., Krings B., Lambers R., Orwat C., Riehm U., Van Gompel S., Dufft N. (2004) Digital Rights Management and Consumer Acceptability: A Multi-Disciplinary



- Discussion of Consumer Concerns and Expectations. <http://www.indicare.org>. Retrieved 15.4.2010
- Hill C. (2007) Digital piracy: causes, consequences and strategic responses. *Asia Pacific Journal of Management* 24(1);9-25
- Holm H. (2003) Can economic theory explain piracy behavior? *Topics in Economic Analysis & Policy* 3(1); article 5
- Horowitz J. & McConnell K. (2002) A review of WTA / WTP studies. *Journal of Environmental Economics and Management* 44; 426-447
- Ishii H. (2008) Tangible bits: beyond pixels. *Proceedings of the second international conference on tangible and embedded interaction*
- Kim D. & Sugai P. (2008) Differences in consumer loyalty and willingness to pay for service attributes across digital channels: A study of the Japanese digital content market. *Telecommunications Policy* 32; 480-489
- Kirk D., Sellen A., Taylor S., Villar N., Izadi S. (2009) Putting the physical into the digital: issues in designing hybrid interactive surfaces. *Proceedings of BCS HCI 2009, Cambridge University Press*
- Larssen A., Robertson T., Edwards J. (2007) The feel dimension of technology interaction: exploring tangibles through movement and touch. *Proceedings of the 1st international conference on Tangible and embedded interaction*
- Laurent G. & Kapferer J. (1985) Measuring consumer involvement profiles. *Journal of Marketing Research* 22(1);41-53
- Lopes A. & Galletta D. (2006) Consumer perceptions and willingness to pay for intrinsically motivated online content. *Journal of Management Information Systems* 23(2);203-231
- McCourt T. (2005) Collecting music in the digital realm. *Popular Music and Society* 28(2);249-252
- Mittal B. (1989) Measuring Purchase-Decision Involvement. *Psychology & Marketing* 6(2);147-162
- Mittal B. (1995) A comparative analysis of four scales of consumer involvement. *Psychology & Marketing* 12(7);663-682

- NCR (2010) NCR brings digital entertainment to airport travelers with first major kiosk deployment. [http://www.ncr.com/about\\_ncr/media\\_information/news\\_releases/2010/april/20100421\\_mod.jsp](http://www.ncr.com/about_ncr/media_information/news_releases/2010/april/20100421_mod.jsp) Retrieved 21.5.2010
- Nysveen H. & Pedersen P. (2006) Willingness to pay for web-based movie services. *SNF-Report NO. 13/06. Institute for research in economics and business administration, Bergen, Norway*
- Noussair C., Robin S., Ruffieux B. (2004) Revealing consumers' willingness-to-pay: a comparison of the BDM mechanism and the Vickrey auction. *Journal of Economic Psychology* 25;725-741
- Park J. & MacLachlan D (2008) Estimating willingness to pay with exaggeration bias-corrected contingent valuation method. *Marketing Science* 27(4);691-698
- Peter J. and Olson J. (2008) Consumer behavior and marketing strategy. 8<sup>th</sup> international edition; Singapore; McGraw-Hill/Irwin
- Premkumar G. (2003) Alternate distribution strategies for digital music. *Communications of the ACM* 46(9);89-95
- Ratchford B. (1987) New insights about the FCB grid. *Journal of Advertising Research* 27(4);24-38
- RKMA (2010) The 2010 leisure market research handbook. *Richard K. Miller & Associates.*
- Sandulli F. & Martin-Barbero S. (2007) 68 cents per song: a socio-economic survey on the internet. *Convergence: The International Journal of Research Into New Media Technologies* 13(1); 63-78
- Sayman S. & Öncüler A. (2005) Effects of study design characteristics on the WTA-WTP disparity: a meta analytical framework. *Journal of Economic Psychology* 26;289-312
- Shapiro C. & Varian H. (1998) Versioning: the smart way to sell information. *Harvard Business Review* 76(6);106-114
- Sinha R. & Mandel N. (2008) Preventing digital music piracy: the carrot or the stick? *Journal of Marketing* 72;1-15
- Stott A. & Taneja A. (2009) An evaluation of multiple perceptions of digital rights management. *Lecture Notes in Business Information Processing* 36; 80-88

- Styvén M. (2007) The intangibility of music in the Internet Age. *Popular Music and Society* 30(1);53-74
- Styvén M. (2009) The need to touch: exploring the link between music involvement and tangibility preference. *Journal of Business Research* (Article in press, unpublished as of 29.4.2010)
- Venkatesh V. & Bala H. (2008) Technology Acceptance Model 3 and a research agenda on interventions. *Decision Sciences* 39(2);273-315
- Venkatesh V. & Davis F.D. (2000) A Theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science* (45)2;186-204
- Venkatesh V., Morris M., Davis G., Davis F. (2003) User acceptance of information technology: toward a unified view. *MIS quarterly* 27(3)425-478
- Vitale J. (2010) Video game piracy in the Philipines: a narrowly tailored analysis of the video game industry and subculture. *Pace International Law Review* 22(1);297-329
- Wertenbroch K. & Skiera B. (2002) Measuring consumer' willingness to pay at the point of purchase. *Journal of Marketing Research* 39;228-241
- Ye L., Zhang Y., Nguyen D., Chiu J. (2004) Fee-based online services : Exploring consumer's willingness to pay. *Journal of International Technology and Information Management* 13(2);133-141
- Zaichkowsky J. (1985) Measuring the involvement construct. *Journal of Consumer Research* 12(3);341-352
- Zaichkowsky J. (1994) The personal involvement inventory: reduction, revision and applications to advertising. *Journal of Advertising* 23(4);59-70
- Zeithaml V., Bitner M., Gremler D. (2006) Services marketing – integrating customer focus across the firm. 4<sup>th</sup> Edition; New York; McGraw-Hill/Irwin

# APPENDICES

## Appendix 1. Screen captures of the web survey form

PS3- , Xbox 360- ja Wii -pelaajakysely

1 / 4

Tervetuloa! Tässä kyselyssä on neljä sivua, ja sen täyttämiseen kuluu noin viisi minuuttia. Ole hyvä ja vastaa kaikkiin kysymyksiin aidon mielipiteesi mukaan. Kaikki vastaukset käsitellään luottamuksellisesti, eikä mitään yksilöiviä tietoja luovuteta kolmannelle osapuolelle.

Taustatietosi

Ikäsi

Kuukausiansiosi keskimäärin

Sukupuolesi

Koulutuksesi

Mille pelikonsolille hankit pelejä eniten?

Oleta, että olet päättänyt ostaa uuden pelin yllä valitsemallesi konsolille. Hankit pelin sieltä mistä tavallisesti teet peliostoksia, ja se on tavallinen pelijulkaisu: pelilevy koteloineen ja ohjekirjoineen.

Kuinka monta euroa olet valmis maksamaan pelistä enintään?

Olet päättänyt, että lataatkin SAMAN PELIN pelikonsolisi verkkopalvelusta (Playstation Store, Xbox Live Marketplace, Wii Shop Channel).

Kuinka monta euroa olet valmis maksamaan pelistä enintään?

Jos vastasit kohtiin 4 ja 5 eri summan, kerro lyhyesti miksi pelit ovat mielestäsi eriarvoiset:

PS3- , Xbox 360- ja Wii -pelaajakysely

2 / 4

Alla on joukko adjektiveja ja väittämiä. Ole hyvä ja valitse, kuinka hyvin kukin kohta sopii mielestäsi konsolipeleihin.

|  | Täysin samaa mieltä   |                       | En osaa sanoa         |                       | Täysin eri mieltä     |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Pelit ovat minulle/mielestäni tärkeitä                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ... pitkästyttäviä   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ... tarpeellisia   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ... kiehtovia  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ... arvottomia   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ... jännittäviä  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ... merkityksettömiä   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pelin ostopäätös on minulle erittäin tärkeä                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Teen ostopäätöksen tarkkaan harkiten                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Jos ostan väärän pelin, teen ison virheen                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| On tärkeää omistaa peli konkreettisenä pelilevynä            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pelilevy on aidompi asia kuin ostettu pelilataus             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Säilyttäisin pelini mieluiten vain pelikonsolini kovalevyllä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

### PS3- , Xbox 360- ja Wii -pelaajakysely

3 / 4

Alla on joukko piratismia koskevia väittämiä. Ole hyvä ja valitse, kuinka hyvin väittämät vastaavat omaa mielipidettäsi asiasta.

|  | Täysin samaa mieltä   |                       |                       |                       | En osaa sanoa         |                       |                       |                       | Täysin eri mieltä     |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Piratismi on epäilemättä pelistudioita kohtaan   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| On mahdotonta saada mitään rangaistusta siitä, että pelaa piraattipelejä pelikonsolillaan  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pelaisiin piraattipelejä pelikonsolillaan, jos minulla olisi siihen mahdollisuus           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pelikonsoli, jolla pelataan piraattipelejä pitäisi sulkea ulos kaikista online-palveluista | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Ajattelee ladattavien pelien kauppaa sillä konsolilla, mille hankit pelejä eniten (Playstation Store, Xbox Live Marketplace, Wii Shop Channel). Kuinka hyvin allaolevat väittämät mielestäsi kuvaavat tätä online-palvelua?

|   | Täysin samaa mieltä   |                       |                       |                       | En osaa sanoa         |                       |                       |                       | Täysin eri mieltä     |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Pelien ostaminen ja lataaminen on helppoa                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pelien online-kauppaa on hauska käyttää                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pelien online-kauppa on hyödyllinen ja käytännöllinen palvelu | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

### PS3- , Xbox 360- ja Wii -pelaajakysely

4 / 4

Alla on erilaisia pelien omistamiseen ja kuluttamiseen liittyviä asioita. Ole hyvä ja lue ensin kaikki kohdat läpi, ja valitse sitten kolme sinulle tärkeintä asiaa:

|   | 1<br>(Tärkein)        | 2                     | 3                     |
|---|-----------------------|-----------------------|-----------------------|
| Peli ei voi naarmuuntua eikä kadota   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Voin lainata tai antaa pelin kaverilleni  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pelikaupassa on mahdollisimman laaja valikoima - myös vanhoja ja harvinaisia pelejä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Voin myydä ostamani pelin eteenpäin   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Peliä ei tarvitse kuljettaa mukana, jotta voisi pelata muuallakin kuin kotona       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Voin ostaa pelin kotoani ja pelata sitä heti ostettuani                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pelin voi antaa lahjaksi ystävälle  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Voin tehdä peleistä kokoelman ja esitellä kokoelmaani muille                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Voin olla varma, että voin pelata ostamaani peliä vielä monen vuoden päästäkin      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Muu asia (täsmennä vastauksella)  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Muu asia:

Jos haluat osallistua arvontaan, ilmoita alla Pelaaja-foorumille rekisteröity nimimerkkisi. Muista myös kirjoittaa PELAAJA-LEHDEN FOORUMILLE nimimerkilläsi lyhyt viesti tämän kyselyn threadiin (esim. pelkkä "Osallistuin!" riittää). Tämä järjestely estää nimimerkkisi luvattoman käytön arvonnassa.

Pelaaja-foorumin  
nimimerkkisi

Kiitos ajastasi! Hyvää syksyä ja hyviä pelejä!