

# EXPLORING ONLINE PIRACY INTENTIONS AND POSSIBILITIES FOR CONVERTING PIRATES INTO PAYING CUSTOMERS

Niklas Länsiö

Bachelor's Thesis

Instructor: Suzanne Altobello

Date of submission: 18.03.2018

## **Declaration**

By completing this cover sheet and declaration, I confirm that this assignment is my own work, is not copied from the work (published or unpublished) of any other person, and has not previously been submitted for assessment either at Aalto University, or another educational establishment. Any direct or indirect uses of material (e.g.: text, visuals, ideas...) from other sources have been fully acknowledged and cited according to the conventions of the Harvard Referencing System.



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### **Objectives**

The main objective of this study was to map out consumer intentions for online piracy so that businesses and intellectual property owners could take this information into consideration when designing services and products in a way that minimizes the negative effects of piracy.

### **Summary**

A quantitative questionnaire was conducted with 220 responses, most of which were from young Finnish students and computer game enthusiasts. The survey consisted of questions related to various aspects of online piracy and paying for digital content. The results were analysed using IBM SPSS 25. The results indicated that piracy is often not a pricing problem, but rather a service or product -related problem.

### **Conclusions**

It was discovered that converting pirates into paying customers is indeed possible. Consumers are more likely to pirate products if the legitimate version is not easily available, if they want to test the product before committing to a purchase, if the pirated version is superior, if they have low moral obligation against piracy and if they have pirated in the past. The findings also suggest that income is not a significant factor in determining piracy behaviour. Businesses and intellectual property owners should actively research why their products are being pirated and try to use the pirates as a source of valuable market insight for developing better products in the future.

Key words: ***Piracy, consumer behaviour, multimedia, software, entertainment, subscription services, copyright, intellectual property***

**Language:** English

**Grade:**

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## **1. INTRODUCTION AND BACKGROUND**

“In general, we think there is a fundamental misconception about piracy. Piracy is almost always a service problem and not a pricing problem. For example, if a pirate offers a product anywhere in the world, 24 x 7, purchasable from the convenience of your personal computer, and the legal provider says the product is region-locked, will come to your country 3 months after the US release, and can only be purchased at a brick and mortar store, then the pirate’s service is more valuable. Most DRM solutions diminish the value of the product by either directly restricting a customer’s use or by creating uncertainty.” This is a quote from an interview of Gabe Newell in 2011 when he was asked about his opinion on digital rights management software. For decades the consensus between intellectual property owners has seemingly been that piracy is a problem that needs to be fought against by making piracy as difficult as possible, hunting down those who do pirate and lobbying for laws that would prevent it. It has been believed that the main reason consumers pirate is mainly related to pricing since pirated products are essentially free but legitimate goods often have a cost attached to them. However, Newell has questioned the effectiveness of the aforementioned methods and suggests that piracy is in most scenarios a service problem and not a pricing problem. This thesis will attempt to analyse intentions to pirate and see if piracy can truly be combatted by improving legitimate services and in the process turn pirates into paying customers.

### **1.1. Research Problem**

The negative effects of online piracy are a problem that businesses and copyright holders want to minimize. Piracy is presumed to cost these businesses and copyright holders vast amounts of money per year, and different solutions for fighting against piracy have been attempted in the past by using digital rights management software for instance. The Denuvo Anti-Tamper Digital Rights Management Software is one of the most sophisticated anti-piracy measures in the computer game landscape and it was supposed to be “impossible to crack. Yet, games using Denuvo still make headlines in technology publications every so often because the restriction software was cracked (Birnbbaum, 2018). The pirates cracking

these products despite the restrictions have initiated a digital arms race between pirates and intellectual property owners. Developing these technologies takes up immense amounts of money and other resources only to get nullified after days or weeks after the release of the product, because the restrictions have been circumvented. It is in the best interest of intellectual property owners to find a more economically viable method for minimizing the losses caused by piracy. The main problem here is the challenging process of converting digital pirates into paying customers. A common underlying assumption with piracy has for a long time been that people pirate mainly because piracy is free and legitimate products cost money. However, in recent years industry professionals have become sceptical toward this assumption.

This thesis attempts to map out and research motivations and intentions for online piracy in a way, that the results can be used by businesses to design services that consumers would be happy to pay for instead of turning to piracy. A quantitative survey was chosen as the optimal approach to help shed light on the problem through measurability and ability to generalize. Also, due to the nature of the research, aspect of anonymity is important for getting more reliable responses. The survey responses are analysed and measured to draw conclusions and make predictions about online piracy behaviour in a way that they can be utilized in a service or product design process as a measure of minimizing the negative effects of digital piracy. It ought to be noted that due to the nature of quantitative surveys as a research method, the insights gathered might be limited and unable to thoroughly represent the total complexity of the underlying reasons behind some issues.

## **1.2. Research Questions**

1. Which factors affect the motivations and intentions for people to pirate digital content?
2. How can these motivations and intentions be taken into consideration in design processes to build products and services that pirates would be compelled to pay for instead of pirating?
3. Is piracy mostly merely a service problem instead of a pricing problem?

## **1.3. Research Objectives**

1. Map out factors that affect the motivations and intentions for piracy in a measurable manner.
2. Provide businesses with information on what kind of solutions can be attempted to minimize the amount of piracy and its negative effects to intellectual property owners.

## **2. LITERATURE REVIEW**

### **2.1. Introduction**

Internet piracy has been a major problem for intellectual property owners for decades. It is extremely difficult to accurately estimate the scale of the economic losses caused by piracy to these intellectual property owners. A report by Digital TV Research (2017) forecasts that these losses caused by online piracy will surpass \$50 billion by the year 2020. In the past internet piracy has been retaliated with attempting to make the pirating process more difficult by imposing new bills such as the Stop Online Piracy Act in the United States (SOPA) or by implementing Digital Rights Management software (DRM) into the digital media or software that is threatened by piracy. The effectiveness of these solutions has been questionable and for instance, in an interview with Gamespot, Chris Early, the Vice President of Digital Publishing at Ubisoft (2014) has expressed that DRM solutions will not be able to stop internet piracy. This begs the question of whether or not there are more effective ways of getting consumers to pay for the digital media and software they wish to access. This literature review attempts to shed light on features and characteristics within online media services and digital storefronts that some consumers may value to an extent where they would be willing to pay for the content they would have otherwise pirated.

### **2.2. Definition**

Symantec has divided software piracy into five different categories: counterfeiting, internet piracy, end user piracy, client-server overuse & hard-disk loading. This literature review will focus specifically on internet piracy, which Symantec has defined as piracy that occurs when software is downloaded from the internet through channels such as websites that make software available for free download, internet auctions that offer counterfeit software or through peer-to-peer networks that enable unauthorized transfer of copyrighted content. Needless to say, participating in piracy is widely considered to be unethical and harmful for the owners of intellectual property. The goal of this literature review and thesis is to shed

light on which features in online services make the consumers less likely to download copyrighted material.

### **2.3. Impact of Piracy & Relevance to Businesses**

The effects on the online piracy scene are difficult to accurately quantify. According to a recent report by Digital TV Research (2017), lost revenues as a consequence of internet piracy will surpass \$51,6 billion. There is no doubt about the fact that the existence of internet piracy results in lost revenue to copyright owners, however, these estimated numbers should not be taken at face value. Having a somewhat accurate number would require researchers to identify how many of the pirates would have bought the pirated media or software if it would have been impossible to download illegally. Multiplying the number of illegal downloads by the retail prices of these pirated products gives an inflated number because it does not take into consideration the products people would not have been willing to pay for even if the piracy option did not exist. In a report by The United States Government Accountability Office (2010), it is acknowledged that the estimation of the economic impact of intellectual property infringements is extremely difficult and that several studies have made gross assumptions to compensate for the lack of data. All in all, although it is difficult to accurately quantify the economic effects internet piracy has had on intellectual property owners, it can still be concluded that the impact is significant and presumably a net loss.

However, some research suggests that internet piracy has some positive effects also. A recent study from the faculty of Indiana University which suggests that "In certain situations, a moderate level of piracy seems to have a surprisingly positive impact on the profits of the manufacturer and the retailer while, at the same time, enhancing consumer welfare" (Antino et al. 2019). Existence of piracy pressures retailers and manufacturers to approach the optimal retail price more efficiently and that piracy injects "shadow" competition to the otherwise monopolistic market (ibid.). Choi & Perez (2007) observed that internet piracy has had a profound impact on the emergence and development of new business models and innovations. They propose that internet piracy has pioneered new technologies, pirate communities are a source of valuable market insight, piracy has contributed to new market creation and that it has either directly or indirectly spurred the creation of legit-

imate and innovative business models. Despite the indication of some positive impact to businesses, it is clear that it is in the best interest of intellectual property owners and retailers to ensure that internet piracy is not too widespread.

#### **2.4. Subscription-Based Streaming Services & Piracy**

In the recent years, owners of intellectual property have been utilizing new platforms to sell their software and media. Streaming services are one of these new channels and companies such as Netflix and Spotify have established themselves as leading content providers. Streaming service refers to a service where the customer can select media that will be broadcasted directly to their devices via the internet. Often these services have a subscription-based business model where the customer pays a monthly fee to access the media libraries of the service providers. These sorts streaming platforms have grown to become so large and popular that they have had a massive impact on the way people buy and consume media or software. A report by PricewaterhouseCoopers (2007) suggests that the power balance between software vendors and customers has drastically changed and these vendors can no longer dictate the terms of how they sell their products due to a number of economic, market and technological factors. Although the report is based on enterprise customers, the changes have most certainly had an effect on ordinary consumers as well. Intellectual property owners may feel like having to put their software or media to these streaming services is a burden, however, it can also be considered to be a potential remedy to internet piracy. A study by the European Commission (2015) claims that Spotify has reduced the amount of illegal music downloads. Although this comes at a cost of some people only streaming the song through Spotify even though they would have originally been willing to pay more for a specific album or a song. A report by Sandvine (2018) reveals that consumers are starting to turn away from streaming services due to so many different ones existing. This can be interpreted to conclude that consumers value the convenience of not having the media they want to consume be fragmented in multiple different services, but that they would rather pay for only a small number of subscription services at a time.

## 2.5. Consumer Intentions for Pirating

In an interview for the Cambridge Student (2011), Gabe Newell, the founder and CEO of Valve Corporation expressed his thoughts on piracy like so: "In general, we (Valve) think there is a fundamental misconception about piracy. Piracy is almost always a service problem and not a pricing problem. For example, if a pirate offers a product anywhere in the world, 24 x 7, purchasable from the convenience of your personal computer, and the legal provider says the product is region-locked, will come to your country 3 months after the US release, and can only be purchased at a brick and mortar store, then the pirate's service is more valuable. Most DRM solutions diminish the value of the product by either directly restricting a customer's use or by creating uncertainty." The quote by Newell indicates that in his opinion, some of the reasons behind online piracy lie for instance in restricted availability of legitimate products, convenience or DRM software that hurts the end user. The key takeaway from his insight is that for many pirates, the reason they download software and media illegally is not just because it is free, and that these people can be turned into paying customers if they are presented with a service that they deem valuable enough and provides access to the products when the consumer wants to access them. Newell mentions that one factor behind intentions to pirate can be spread release dates of a product for different countries. This statement can be proven to be true by for instance looking at the piracy statistics of one of the most highly anticipated movies of all time, Star Wars: Episode I - The Phantom Menace. The rampant piracy of the movie occurred mainly due to people in many countries having to wait up to over half a year for the film to start playing in their local theatres, which drove people to purchase bootleg copies of it before official release in their region (Bowen, 2005).

Cronan & Al-Rafee (2007) developed a model of digital piracy intention which looks at the intentions to pirate from a different perspective to Newell. The model consists of five different factors that presumably affect the intention for an individual to take part in internet piracy. The five hypotheses of the model were that people with favorable attitudes, higher subjective norms, high perceived behavioral control, past piracy behavior and low moral obligation have stronger intention to pirate digital material. All but the second hypothesis

were proven to be accurate. The methodology of their research was a questionnaire which was distributed to college students in the United States. While the research conducted by Cronan & Al-Rafee is valid, it is somewhat outdated. The landscape of the online piracy scene has changed drastically in the past 12 years and intentions have likely changed as a consequence. The proposed solutions are also likely not optimal for modern piracy either. For instance, it is suggested that the cost of CD burners should be increased to compensate the losses caused by digital piracy, which would likely not be an effective method nowadays due to technological developments. The final thesis will aim to have a more diverse group of respondents and reflect the results to those of Cronan & Al-Rafee while looking at the topic at hand from a slightly different perspective. The final thesis will also take into account technological advancements and changes in online piracy behaviour such as using streaming services akin to Popcorn Time for instance.

Occasionally some individuals will pirate a product for sampling purposes, meaning that they intend to purchase a legitimate version based on their impressions of the pirated version (Bhattacharjee et al. 2003). This sort of piracy is seemingly common for instance in the computer game landscape. The same research also suggests that the three main factors that shape piracy-related online behaviour are demographics, economic factors & technology. This somewhat old research does provide valuable insights into the piracy demographics of the early 21st century.

## **2.6. Demographics of Piracy**

Multiple studies suggest that some demographics tend to illegally download content more than others. Variables such as age, gender, race, aspirations, school grades and wealth have strong links with music piracy for instance (Gunter et al.). Thus, it can be useful for businesses to identify these groups so that effective online piracy prevention measures can be taken that are targeted effectively. The Global Online Piracy Study by the Institute of information law (2018) thoroughly researched the demographics related to internet piracy. The survey conducted consisted of 13 different sample countries and revealed that of those countries, piracy is most prevalent in Indonesia, Thailand and Brazil. However, as a percentage of total population Spain, Canada and Hong Kong have the most online piracy.

The study also points out that often times online pirates do not exclusively consume illegally downloaded media, and that the median consumption of legitimately obtained media is twice that of consumers that never pirate. While this statement points out an interesting statistic, a question regarding correlation and causality arises.

The link between piracy and purchasing power remains somewhat unclear. Online piracy has been proven to be strongly correlated with a lack of purchasing power (ibid.), however, there are outliers and for instance Singapore, the second wealthiest country in the world (Harrington, 2018) was listed by Wong (2016) as the country with the ninth most visits to online piracy sites per user despite the strong purchasing power of the Singaporean people

## **2.7. Ethics of Internet Piracy**

The ethics surrounding piracy are extremely complex. Piracy is often times equated to theft with the most well-known example of this being the “You wouldn’t steal a car” advertisement by the Federation Against Copyright Theft in 2004, which was shown on many DVDs. However, the difference between conventional theft and online piracy can be considered to be more nuanced. The main difference between act of internet piracy and stealing is that with piracy, the pirate is replicating the product instead of taking it away from another person. Also, digital goods tend to have high initial production costs, but near-zero reproduction costs (Bhattacharjee et al. 2003). These factors combined can make people think that piracy is more justifiable than stealing, and thus morally acceptable. Occasionally people justify pirating by claiming that they would not have bought the product either way, and thus, it would be a victimless crime (Singer 2012). Due to the subjective nature of ethics and different views people hold regarding the ethics of online piracy, it can be concluded that telling people not to pirate because it is not the right thing to do is likely an ineffective way of meaningfully reducing the amount of piracy.

## **2.8. Evolution of Internet Piracy**

Just like legitimate services, piracy platforms and the technology supporting them have developed over time. Counterfeit cds and dvds have been superseded by online platforms such as The Pirate Bay and Popcorn Time (IViR - Institute for Information Law, 2018). The risk associated with piracy is lower than ever before and it no longer requires a high level of technical expertise to take part in (Online Piracy, 2011). With the digitization of media, replicating copies of said media became easy and this phenomenon sparked massive growth in the amount of internet piracy (ibid.). The history and development shows, that online piracy is an ever-changing challenge for copyright holders around the world, and that methods against combating piracy need to evolve alongside piracy itself.

## **2.9. Conceptual Framework**

The following conceptual framework (Figure 1) aims to depict the consumer factors that influence online piracy behaviour in consumers. thought process when they have a desire to access a new digital product. The factors were chosen based on the hypotheses which are listed after the framework. The factors written in the boxes around the centre are all presumed to have some sort of impact on the piracy behaviour of individuals. Hypothesis 7 was deliberately left out of the framework as the assumption is that paying for and pirating digital content online are not mutually exclusive.

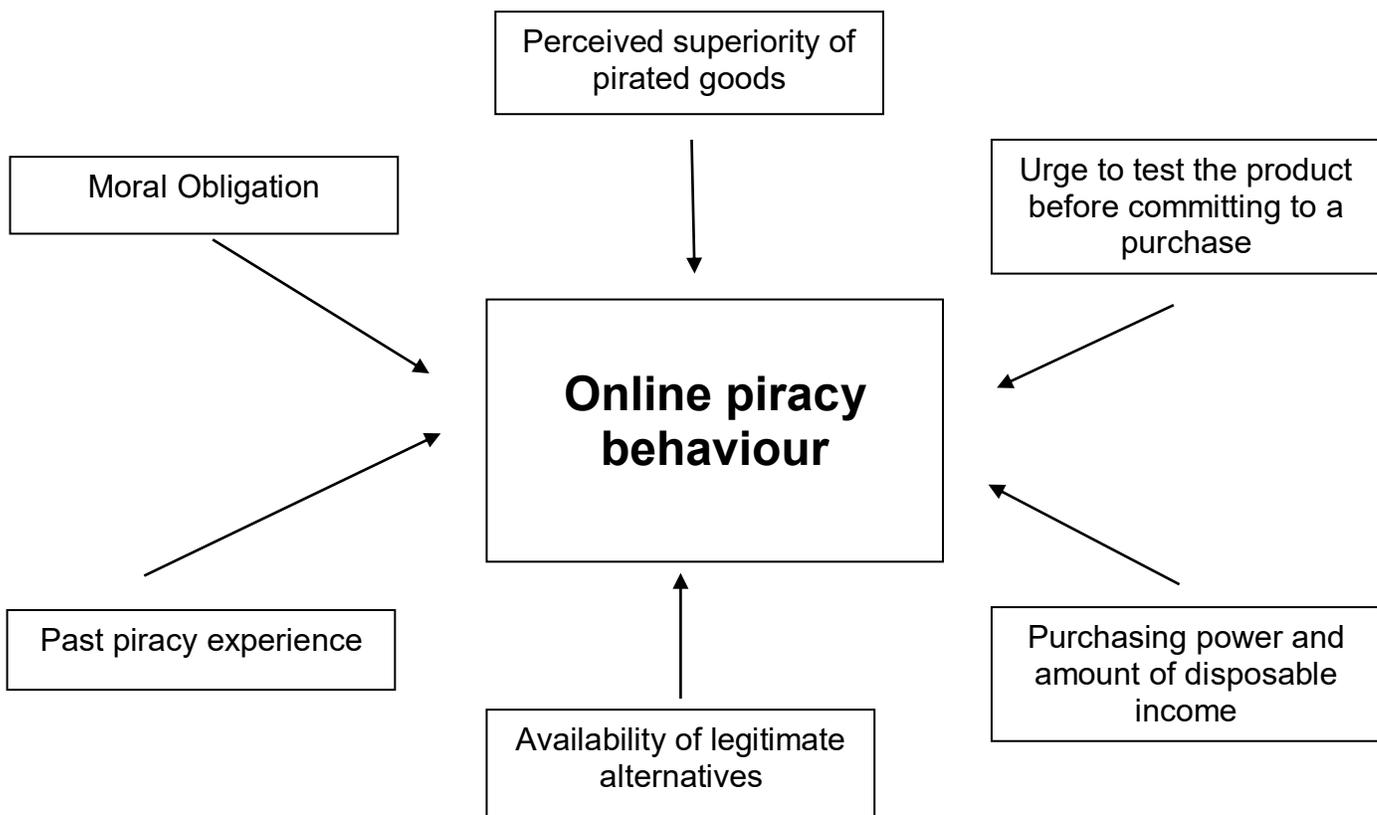


Figure 1 – Conceptual Framework

### **2.9.1. Hypotheses:**

Hypothesis 1: Consumers are more likely to pirate a product and not see it as unethical if pirating is the only way to access a product in their country for example

Hypothesis 2: Consumers are more likely to pirate a product if they have no moral obligations against online piracy or do not consider piracy unethical

Hypothesis 3: Consumers with not much disposable income and low purchasing power pirate more than those with disposable income and higher purchasing power

Hypothesis 4: Consumers who have pirated in the past and know how to do it are more likely to do so in the future than others

Hypothesis 5: Consumers are more likely to pirate a product if the pirated version is somehow superior to the retail version

Hypothesis 6: Some consumers may pirate the product to try it before purchasing legitimately

Hypothesis 7: Online piracy and paying for digital content is not mutually exclusive and pirates are also willing to pay for digital content.

The hypotheses will be tested using a quantitative questionnaire which will be statistically analysed in IBM SPSS 25.

### **3. DATA & METHODOLOGY**

#### **3.1. Data Collection**

The survey was sent to students in Aalto University School of Business via email and shared on relevant online forums and social media groups. The emails and posts that included the link to the questionnaire included a brief introduction about the contents and purpose of the research. The questionnaire aimed to reach a wide audience which would also include people of different nationalities, ages and other demographic factors. People were also encouraged to spread the link to the survey to their friends and family members.

The data collection process took 6 days to complete and the survey got 220 responses. No responses were deemed worthy of totally discarding. Some individual answers were modified removed. These were answers where the answer was made jokingly or otherwise unrealistically. Due to the amount of missing data being relatively low, no questionnaires were discarded for having missing data. The full questionnaire can be found attached in the appendix of this thesis.

#### **3.2. Survey Design**

Questions in the survey were designed to be quick and easy to answer to attract as many responses as possible while still being thorough enough to draw adequate conclusions. The design of the questions was made with the hypotheses at the end of the literature review in mind. There were 15 questions in total. The questionnaire was chosen not to begin with demographic questions to not seem contradictory with the statement in the beginning of the survey which states that no personally identifiable information will be collected.

In an attempt to explore the relationship of the amount of disposable income and online piracy behaviour, two questions regarding full-time work experience was chosen instead of asking for the respondents' income directly. The first question was a simple yes or no -question asking if the respondent works full-time. The second question was a numeric field where the respondents who had answered yes to the first question could specify their full-time work experience in years. The decision to ask about work-experience instead of

directly asking the estimated amount of disposable income was made presuming that it would be easier for the respondents to answer quickly and truthfully. Also, it was expected that a large proportion of the respondents would be young students, asking for their annual earnings for instance can be irrelevant.

The next questions inquired if the people answering are currently paying for any online subscription services that enable them to access digital content. This question was chosen to explore to what extent pirating content and being willing to pay for content are mutually exclusive if at all, to explore if the people pirating can potentially be converted into paying customers. The survey also included a follow-up question which asked to list which subscription services the respondents are paying for. This question was included so that the results can be compared to the results of another question which asks what kind of digital material the respondent has pirated in an attempt to determine if different kinds of digital material are more prone to being pirated than others.

Questions surrounding the intentions to pirate were included to assist in statistical analysis and predictions. Four of these were derived from previous research by Cronan & Al-Rafee (2007) so that the results from this survey could be compared to their previous research. In these questions the participants had to estimate how likely they will intend to, try to, feel tempted to and make an effort to pirate digital content. The respondents were also asked here if they think many of their friends pirate digital material. All of these questions had the five answer options ranging from “Definitely not” to “definitely yes”.

People were asked how much digital material they pirate compared to their peers. The question is inherently subjective but was chosen to be included regardless to explore the relationship with perceived amount of committed piracy and other attitudes and intentions related to piracy. The options for answering here ranged from “Significantly more” to “Significantly less” with the option “Same amount as my peers” being the middle option.

A basic Likert scale was used for nine statements where the respondent had to indicate their level of agreement with the statements. The first statement was “Online piracy is OK” in some situations”. This statement was used to build a construct of the level of moral obligation in the respondents together with the “Internet piracy is wrong” and “I would not feel guilty if I pirated digital material” statements. The statement “Pirated versions of digital media are often superior to legitimate versions” was chosen to explore if people who agree

with this statement are more likely to pirate digital material. Statement “I prefer piracy over legitimate purchases” was chosen for the same reason. Other statements that were included were “I would not want other people to think I pirate digital material”, “I would be able to easily pirate if I wanted to”, “I could see myself pirating a product to test if I like it and then buying it later” and “If legitimate versions are not available in my country, I am more likely to pirate a product”.

The relationship between piracy behaviour and income were asked in three different questions to explore the relationship thoroughly. The first question being “Do you think your online piracy behaviour would change if your amount of disposable income increased?” and the second question being the same one with the word increased replaced with decreased. Both questions were simple yes-no questions. The third one was an optional open-ended question where the respondents were given the option to explain more thoroughly how exactly their piracy behaviour would change if their income would change either way.

The last page of questions consisted of three demographic questions. The respondents were asked what their gender is, how old they are and where they are from. These questions were chosen to be included so that potential differences in answer patterns between different demographics could be detected.

### 3.3. Sample

Convenience sampling was chosen as the approach to gathering the responses for the research, which meant that the majority of answers came from young students. However, this sample can be considered adequate for a digital piracy related research project. Of the respondents, 65% were male and 28% female. The remaining 7% either preferred not to say or chose “other”. The gender answers have been visualised below in Figure 2. The large proportion of male respondents is likely a consequence of the survey gaining plenty of visibility in a male-dominated Facebook group about computer game and hardware discussions during the data collection phase. 90% of the respondents were Finnish and the remaining 10% consisted of people from various other countries such as Vietnam and Switzerland for instance.

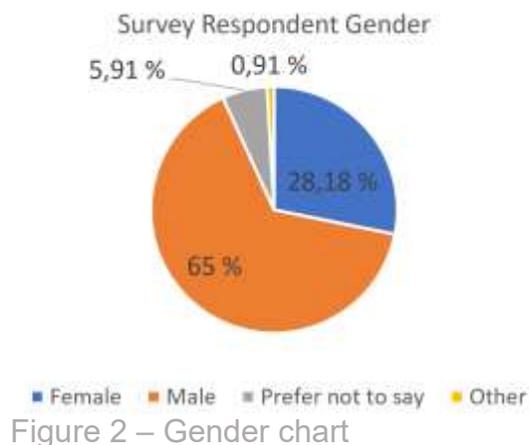


Figure 2 – Gender chart

The average age of the respondents for the questionnaire was 26, the median age being 23 with a standard deviation of 9,07. These numbers are explained by a significant proportion of the respondents being students or young gaming enthusiasts for instance. This also affected the proportion of respondents that worked full-time, which was 32%.

Of all respondents, 85% were reported to be paying for subscription services that enabled them to access some kind digital media. Most popular services among the people who had subscriptions were Netflix, Spotify Premium & and HBO. Services under the “Other” -option included subscriptions to services such as Ruutu+, Eurosport and World

of Warcraft. 80% of the respondents mentioned that they had pirated digital material in the past. The most common types of pirated media were movies, TV shows and music. The large number of student responses might explain why the difference in amount of pirated text books for school and other books is so large. The results for this question might also be skewed due to the traffic the survey gained from the aforementioned computer game enthusiast Facebook group. The answers to the questions regarding types of pirated media and paid subscriptions can be seen visualised below in figures 3 and 4.

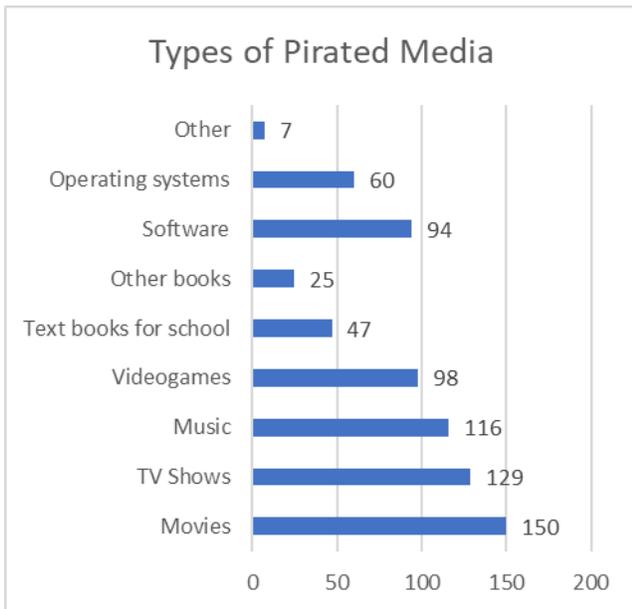


Figure 3 – Types of pirated media

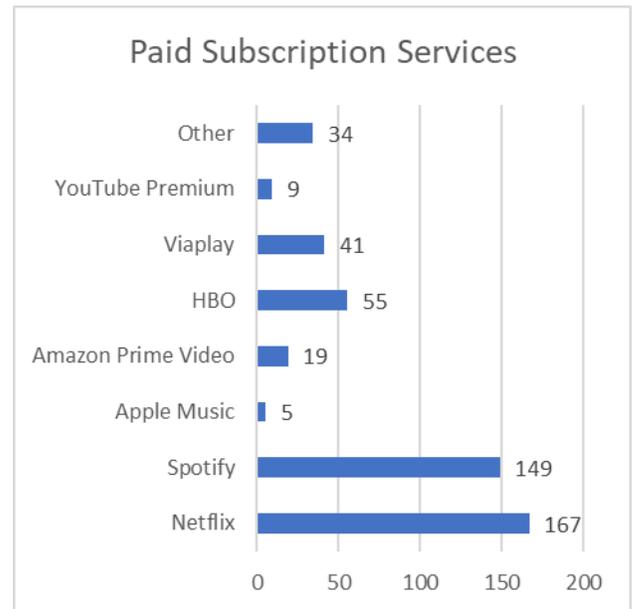


Figure 4 – Paid subscriptions

## **4. ANALYSIS**

The data from the questionnaire was collected so that it can be statistically analysed for inspecting the hypotheses further. The statistical analysis was performed using IBM SPSS Statistics 25 due to the comprehensive set of features, usability and availability to Aalto University students. Statistical analyses from the data available can be generalized beyond the sample presuming that a significant portion of internet pirates are young students and digital media enthusiasts.

### **4.1. Does Gender Affect Moral Obligation Against Online Piracy?**

On average, men have lower moral obligation and do not consider piracy as unethical or wrong as women. A subscale which was constructed from an independent the answers to “online piracy is OK in some situations”, “Internet piracy is ethically wrong” and “I would not feel guilt if I pirated digital material” -questions ( $\alpha = ,68$ ). The second variable was reversed for consistency. An independent sample T-test made for this subscale with gender as the variable reveals that men have a significantly higher score on this “no moral obligation” -scale with the mean score being 3,22 for men and 2,46 for women ( $t(df) = -5,30$  &  $p < ,00$ ). Due to the small sample size and the small proportion of responses from women, this analysis might not be completely accurate, however, the results are supported by previous research which suggests that women on average have higher ethical standards than men (Franke et al., 1997).

## 4.2. Relation of Piracy to Amount of Disposable Income

There were three questions in the survey surrounding estimated changes in online piracy behaviour in relation to changes in the amount of disposable income. The majority (57%) of respondents said that their piracy behaviour would change if their disposable amount of income. The remaining 43% consists of people whose piracy behaviour is not price-sensitive or did not pirate digital material to begin with. When the same question was asked the other way around, only 35% of people reported that their piracy behaviour would change if their disposable income decreased. In the third question people were asked an open-ended question about how their piracy behaviour would change if their amount of disposable income would increase or decrease, it was revealed that a large portion of the respondents mentioned that their behaviour would not change in either direction. The question was not mandatory, and it was answered by 95 people. 39 (41%) of these individuals mentioned that their piracy behaviour is not dependent on their income. Many of the people who thought that their behaviour would not change added that the main reason they pirate digital products is not the price, but rather things such as availability, convenience and superiority of pirated versions. This seems to align with the statement Gabe Newell made in 2011 where he suggested that piracy is not a pricing problem, but rather it is a service problem. The answers to the open-ended question also confirms that there are people who download computer games illegally with the intention of testing them before purchasing.

Would your online piracy behavior change if your amount of disposable income increased?		
	n	%
Yes	94	42,73 %
No	126	57,27 %

Figure 5 – Change in piracy if income increased

Would your online piracy behavior change if your amount of disposable income decreased?		
	n	%
Yes	77	35,00 %
No	143	65,00 %

Figure 6 – Change in piracy if income decreased

### 4.3. Does lower amount of disposable income predict future piracy intentions?

A future piracy variable was constructed as a subscale based on previous piracy activity, intentions to pirate, attempts to pirate, temptation to pirate and effort to pirate ( $\alpha = ,86$ ). A linear regression was calculated to explore if people who think the amount of disposable income reducing would have an effect on their piracy behaviour would be more likely to pirate in the future compared to others. No significant relationship was found between these two variables ( $R^2 = .006$ ,  $F(1,218) = 1.400$ ,  $p < ,238$ ) and thus, based on the data available it can be concluded that online piracy behaviour has no significant links to decreases in the amount of disposable income. The limitations of the sample still ought to be considered before generalizing this result to the total population.

### 4.4. Does Lack of Moral Obligation Predict Future Piracy Behavior?

#### Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	,513 <sup>a</sup>	,264	,259		,82326

a. Predictors: (Constant), No\_moral\_obligation

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37,130	1	37,130	54,784	,000 <sup>b</sup>
	Residual	103,697	153	,678		
	Total	140,827	154			

a. Dependent Variable: Future\_piracy

b. Predictors: (Constant), No\_moral\_obligation

## Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	,505	,225		2,248	,026
	No_moral_obligation	,535	,072	,513	7,402	,000

a. Dependent Variable: Future\_piracy

A simple linear regression was calculated to predict future piracy behaviour based on lack of moral obligation. A significant regression was found ( $F(1,153) = 37,130$   $p < .000$ ), with an  $R^2$  of ,264. Respondents' predicted piracy behaviour is equal to ,505 + ,535 (Lack of moral obligation). The amount of predicted future piracy increased by ,535 for each point of increased lack of moral obligation. The average score on the "No moral obligation" scale was 2,97, which indicates that the piracy behaviour of a large proportion of respondents is not restricted by moral obligation or ethics. The scale was constructed using the "online piracy is OK in some situations", "Internet piracy is ethically wrong" and "I would not feel guilt if I pirated digital material" -questions.

#### 4.5. Piracy and Availability of Legitimate Versions

The hypothesis exploring the relationship between piracy and product availability in the country of the respondent was explored by making the respondents indicate their agreement to the statement “if legitimate versions are not available in my country, I am more likely to pirate a product.” The results indicate that 71% of the people who responded would either agree or strongly agree that they are more likely to pirate a desirable product if it was not otherwise available. This suggests that there is a strong link between lack of availability and willingness to pirate digital content. However, the conclusions that can be drawn from this question alone are limited as the survey only inquired if the lack of availability for the consumers pushes them towards piracy only if legitimate versions are not available at all in their country. Availability in a larger context and its effect on piracy behaviour would have to be researched more thoroughly to provide better and more meaningful insights.

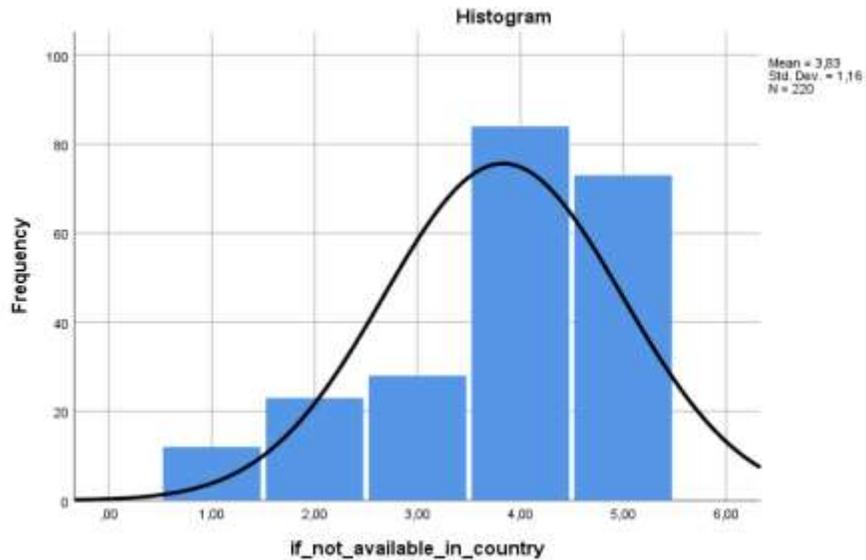


Figure 7 – Being more likely to pirate if legitimate version is not available in the country

#### 4.6. Does perceived ease and ability to pirate affect future piracy behaviour?

##### Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	,279 <sup>a</sup>	,078	,074		,88382

a. Predictors: (Constant), Would\_be\_able\_to

##### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14,355	1	14,355	18,377	,000 <sup>b</sup>
	Residual	170,290	218	,781		
	Total	184,644	219			

a. Dependent Variable: Future\_piracy

b. Predictors: (Constant), Would\_be\_able\_to

##### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,188	,218		5,451	,000
	Would_be_able_to	,232	,054	,279	4,287	,000

a. Dependent Variable: Future\_piracy

A simple linear regression was calculated to predict future piracy behaviour based on perceived ease and ability to pirate. A significant regression was found ( $F(1,218) = 18,377$ ,  $p < .000$ ), with an  $R^2$  of ,074. Respondents' predicted piracy behaviour is equal to  $1,188 + ,232$  (perceived ease and ability). The amount of predicted future piracy increased by ,232 for each point of perceived ease and ability. Perceived ease and ability were derived from the responses to the level of agreement to the statement "I would easily be able to pirate digital material if I wanted to". The Future piracy variable was constructed as a subscale based on previous piracy activity, intentions to pirate, attempts to pirate, temptation to pirate and effort to pirate ( $\alpha = ,86$ ). The analysis indicates that the perceived ability and ease to pirate correlates with predicted future piracy behaviour and explains 7,8% of the piracy prediction model.

#### 4.7. Does not wanting to others to think you pirate affect perceived amount of piracy compared to peers?

##### Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	,217 <sup>a</sup>	,047	,041		1,22083

a. Predictors: (Constant), Not\_wanting\_other\_knowing

##### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12,322	1	12,322	8,268	,005 <sup>b</sup>
	Residual	250,390	168	1,490		
	Total	262,712	169			

a. Dependent Variable: Piracy\_compared\_to\_peers\_rev

b. Predictors: (Constant), Not\_wanting\_other\_knowing

##### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,813	,351		8,020	,000
	Not_wanting_other_knowing	-,297	,103	-,217	-2,875	,005

a. Dependent Variable: Piracy\_compared\_to\_peers\_rev

When people were asked how much they think they pirate in comparison to their peers, it was discovered that only 12% of people think they pirate more than their peers, whereas 67% of the people think that they pirate less than their peers. This vast difference shown in the statistics might be due to social desirability bias for instance. To analyse this further, a simple linear regression was calculated to inspect if not wanting to others think that the respondents personally pirate was correlated with the perceived amount of pirating compared to peers. A significant regression was found ( $F(1,168) = 12,322$ ,  $p < .000$ ), with an  $R^2$  of ,041. Based on this prediction, perceived piracy compared to peers is decreased by ,297 points for every point in not wanting others to think that the respondent pirates.

#### **4.8. Are internet pirates willing to pay for digital content?**

An independent variable T-test was done to determine whether future piracy can be predicted on any level by the respondents paid digital content subscription habits. The test indicated that a significant relationship between these variables does not exist ( $p = ,539$ ). This implies that most people who pirate digital products are also willing to pay for services that enable access to digital content. Because pirating content and paying for digital media are not mutually exclusive, it can be concluded that pirates can be transformed into paying customers by providing them with the right service.

## **5. FINDINGS**

Multiple findings about intentions, motivations and factors that affect piracy were made. Many of the findings do seemingly support the comments made by Gabe Newell about how instead of piracy being a pricing problem, it is a service problem. The findings section will describe how the hypotheses made for the literature review are reflected in the results of the survey.

### **5.1. Hypothesis 1 – Consumers are more likely to pirate a product if the legitimate version is not available in their country**

This hypothesis appears to match with the results of the questionnaire. 71% of respondents agreed that they would be more likely to pirate products that are not available in their country. It should be noted that other measures of availability were not measured in this survey.

### **5.2. Hypothesis 2 – Consumers are more likely to pirate a product if they have low moral obligation against online piracy or do not consider piracy unethical**

Hypothesis 2 is also a match with the data gathered from the survey. Lack of moral obligation can be used to predict future piracy behaviour to an extent based on the constructs built from the variables in the survey. It was also apparent that men have lower moral obligation compared to women.

### **5.3. Hypothesis 3 - Consumers with not much disposable income and low purchasing power pirate more than those with disposable income and higher purchasing power**

Hypothesis 3 was rejected. The link between decreased purchasing power and predicted future piracy was not strong enough to be considered significant. The sample could however be considered to not be representative of the general population in Finland or globally due to the similarities in the profiles of the respondents.

### **5.4. Hypothesis 4 - Consumers that have pirated in the past and consider easy are more likely to pirate in the future.**

A link between past piracy behaviour and perceived ease and ability to pirate was found through regression analysis and the two do in fact correlate.

### **5.5. Hypothesis 5 – Some consumers are more likely to pirate a product if the pirated product is somehow superior to the retail version**

Hypothesis 5 was accurate. In the open-ended answers to how the respondents' piracy behaviour would change if their amount of disposable income were to change, multiple responses explained that the reason behind them pirating is related to for instance convenience or pirate services having more varied content.

### **5.6. Hypothesis 6 – Some consumers may pirate a product for testing purposes before purchasing legitimately**

This hypothesis does appear to be true as 55% of the respondents either agreed or strongly agreed that they could see themselves pirate a product for testing purposes. Again, this

number might not be reflective of the total population as pirating for test purposes has seemingly been quite popular among computer game enthusiasts, who formed a large proportion of the respondents to this survey.

### **5.7. Hypothesis 7 - Online piracy and paying for digital content is not mutually exclusive and pirates are also willing to pay for digital content.**

The tests performed concluded that a significant relationship between pirates and non-pirates in the amount of paid subscriptions does not exist. This implies that hypothesis 7 is accurate as people who pirate digital content also pay for it in addition to pirating it. However, this assumption does not take into consideration different types of digital content. For instance, some students might not feel like they are willing to pay for text books for school, but happily pay for a music streaming service subscription. The differences between different types of digital content and how prone they are to piracy needs to be researched further to make more educated conclusions.

## **6. IMPLICATIONS FOR INTERNATIONAL BUSINESS**

Consumption of digital media globally has experienced immense growth in the recent years and it is not showing signs of slowing down any time soon. For instance, in 2016 consumer spending on digital media content & technology grew by 8% to \$1,6 trillion (PQ Media, 2017). As the consumption and spending increase, interest in digital piracy will likely experience similar growth. It is in the best interest of businesses and intellectual property owners to take piracy into consideration when designing products and services to minimize the negative effects of the phenomenon. For instance, companies should aim to release their products globally in a short timespan to avoid massive amounts of people pirating said product due to it not being available in their country when they want to access it. However, most anti-piracy methods require resources such as time, money and personnel to work. Businesses and intellectual property owners need to be aware of how large the economic losses caused by piracy are and how much of these aforementioned resources need to be allocated to fight it. If a specific product is not particularly prone to digital piracy and the

cost of converting these small number of pirates into paying customers is big, the better option would be to ignore the pirates in this scenario and allocate the resources elsewhere.

## **7. LIMITATIONS**

The limitations of the conducted research are significant and should be considered when interpreting the results. Limitations regarding the homogeneity of the sample were apparent. Since a large proportion of the respondents were young Finnish males from Finland with a high interest in PC gaming, their piracy behaviour and attitudes are likely not completely reflective of the total population in Finland and abroad. It should also be noted that the researcher belongs to this same demographic and that unconscious biases may have influenced the way questions were chosen, worded and interpreted although objectivity was naturally pursued. As the researcher is not a native English speaker, there might have been slight mistakes in writing the questions which might have influenced the answers given.

Also, many of the questions in the form were simplified and some constructs and hypotheses were measured using only a single question. More nuanced questions and having more of them would create more insightful and useful data for companies and intellectual property owners to take advantage of. Due to the quantitative nature of the study, more detailed reasonings behind the answers were not collected. The results and implications had to be interpreted by the researcher as people had no option to explain their answers more in-depth.

## **8. SUGGESTIONS FOR FURTHER RESEARCH**

As this study focused on quantitative research and analysis, a qualitative study in the future on the same subject would be beneficial to help reach a better understanding of online piracy. Also, replicating this the research of this thesis or creating a similar one with a larger and more diverse population of age, nationality etc. could improve our understanding of piracy further.

Some forms of digital media and other content are likely to be more prone to being pirated than others. Different methods of combatting online piracy may be needed for these different forms of media and content. Thus, research that would explore the differences in piracy behaviour within certain types of digital content would assist businesses and intellectual property owners in making more informed piracy-related decision.

The accurate economic impact of piracy is still extremely difficult to estimate and often the reported economic losses of piracy are grossly overestimated (Bently et al.). Further research is needed that would consider the fact that one pirated copy of digital content does not necessarily equate to one lost sale. Being able to estimate the economic impact of piracy is crucial for businesses and intellectual property owners as they need to know how much resources can be spent on piracy prevention and if it is worth it to do so.

## 9. DISCUSSION

Most of the respondents (80%) reported that they have pirated digital material in the past. Based on this information, it could be concluded that most consumers are willing to pirate digital content under some circumstances. The approach to combating piracy suggested by this research is for companies to create services and products that minimize the amount of people that experience these circumstances that would make them willing to pirate, instead of focusing on creating obstacles and trying to prevent consumers from pirating, especially since 71,94% of the respondents agreed that they would easily be able to pirate a product if they wanted to despite the existence of DRM solutions and other anti-piracy measures in today's digital products.

Businesses and intellectual property owners should actively try to study how much their products are being pirated and what the underlying reasons are. Pirates can be a valuable resource for market and product development insights and listening to what they have to say can help in building better and more profitable products and services. Since the results demonstrated that for many pirates, the price is not the main factor behind decision to pirate products, the other factors can be examined to help convert pirates to paying customers. For instance, since some respondents reported that they pirate computer games for testing purposes, and that they would buy the game later if they liked it. This sort of piracy could possibly be combated by providing consumers with free trials and demo versions so that these consumers who would like to test the product would not have to turn to piracy.

Significant proportion of the respondents were shown to have low moral obligation against piracy, which might be interpreted to conclude that guilt tripping methods such as the infamous "you wouldn't steal a car" -advertisement (Federation Against Copyright Theft, 2004) have not been particularly effective in making people avoid piracy. Some consumers consider digital piracy to be equivalent to stealing, whereas some others may think that piracy is not as harmful because the product is replicated instead of taken away from an individual. Because these moral views can be extremely difficult for companies and intellectual property owners to change, spending resources on piracy prevention methods that are

based on the negative aspects of piracy might be inefficient. Instead, these businesses and intellectual property owners could try to come up with innovative ways to emphasize the positive aspects of paying for a product to the consumer.

The research conducted also indicates that most people who pirate digital goods also pay for subscription services that enable them to access digital media. This implies that many pirates do not pirate all the digital content that they wish to access, and that they are also willing to pay for these services. Because these pirates are presumably able to download the content they wish to access illegally, but pay for some subscription services, it can be concluded that internet pirates are willing to pay for digital content in some cases. This conclusion supports the notion that there is potential for converting pirates into paying customers.

Because the link between decreased purchasing power and predicted future piracy was not strong enough to be considered significant, it can be concluded that pricing and weak purchasing power are likely not the main factors behind piracy behaviour for many individuals. This finding supports the claims made by Gabe Newell in 2011. However, the results may be different in other countries or within Finland with a more diverse sample. However, the evidence is still quite strong as it is also supported by the previous point which demonstrates how some pirates are also willing to pay for content in some cases.

Past online piracy behaviour was also found to affect the probability of pirating in the future positively. This means that respondents who had pirated material online previously are more likely to do so in the future as well compared to others. Reliable comparisons to research by Cronan & Al-Rafee (2007) regarding the difference between past piracy behaviour between men and women were not possible due to the large majority of respondents being males. Respondents who claimed that they could easily pirate a product if they wanted to are also predicted to pirate more likely in the future.

The answers to the open-ended question asking how the piracy behaviour of the respondent would change if their amount of disposable income changed revealed that one reason for some people to pirate products is if the pirated version is somehow better than the legitimate version. Also, some people mentioned that they like to pirate products for testing purposes to determine if they want to spend money on the legitimate version afterwards. Both factors are presumably most common in computer game piracy, as most of the

times pirated versions of media such as movies are not in any way superior to legitimate versions and most people presumably do not pirate movies for testing purposes either.

## **10. CONCLUSION**

Based on the quantitative research conducted, it can be concluded that piracy is often a service or product problem instead of a pricing problem. The effectiveness of traditional approaches to piracy prevention such as implementing Digital Rights Management (DRM) solutions has been questionable and alternative options ought to be sought. Online pirates were found to also pay for digital content, suggesting that these consumers can be converted into paying customers if given the option to purchase a service or a product that they consider to be valuable. Convenience, availability and being able to test products before purchasing were all issues that were raised by the respondents. Ensuring that these characteristics exist in a digital service or product can help convert pirates into paying customers. This explains why for instance many online pirates are willing to pay for services such as Spotify or Netflix despite them pirating some of the other media that they consume.

Low moral obligation against piracy within an individual was shown to correlate with the likeliness of pirating in the future. People who do not consider piracy to be unethical or think that their reasons for piracy are valid are more likely to keep pirating in the future. The data also suggests that on average men have significantly lower moral obligation than women.

Past piracy behaviour was also shown to predict future piracy activity. People who had pirated in the past and experience that they could pirate a product easily if they wanted to do so are more likely to pirate in the future.

The respondents reported that they would be more likely to pirate digital content if the legitimate version was not available in their home country for instance. Thus it is important for businesses and intellectual property owners to not delay the release their products too much in different countries.

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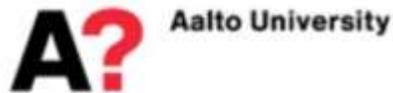
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## 12. Appendix



### Online Behavior Survey

This survey is undertaken as a part of a bachelor's thesis at Aalto University School of Business. The aim of the questionnaire is to analyse factors that affect consumers' intentions to take part in online piracy activities and to map out characteristics within digital services that may affect these intentions.

The collected data will be analysed and reflected with relevant academic literature to enhance our understanding of online piracy. The survey will approximately take 5 minutes of your time. By completing this survey you are giving consent to use any information provided as a part of the thesis.

Due to the nature of the topic, all answers will be kept anonymous and no identifying information will be asked or recorded.

If you have any questions regarding this research, please contact [niklas.lansio@aalto.fi](mailto:niklas.lansio@aalto.fi)

Do you currently work full time? \*

Yes

No

Next

## Online Behavior Survey

How many years of full time work experience do you have? \*

Previous

Next

Do you currently **pay** for (an) online service(s) that enable(s) you to access digital media such as music, movies or games. \*

Yes

No

Previous

Next

## Online Behavior Survey

Which online streaming media services do you have a paid subscription to? (check all that apply)

- Netflix
- Spotify
- Apple Music
- Amazon Prime Video
- Hulu
- HBO
- Viaplay
- YouTube Premium
- Other

Have you downloaded or streamed pirated material in the past?

(Pirated material refers to content which has been downloaded or streamed online through illegitimate avenues, such as The Pirate Bay or Popcorn Time, instead of purchasing legally) \*

- Yes
- No

Previous

Next

## Online Behavior Survey

Check the box that you consider most descriptive of your attitudes

	Definitely not	Likely not	Maybe	Likely yes	Definitely yes
I intend to pirate digital material in the near future *	<input type="radio"/>				
I will try to pirate digital material in the near future *	<input type="radio"/>				
I will feel tempted to pirate digital material in the near future *	<input type="radio"/>				
I think many of my friends pirate material online *	<input type="radio"/>				
I will make an effort to pirate digital material in the future *	<input type="radio"/>				

How much material do you think you pirate in comparison to your peers?

- Significantly more
- Slightly more
- The same amount as my peers
- Slightly less
- Significantly less

Check the box that you consider most descriptive of your attitudes

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Online piracy is OK in some situations *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pirated versions of digital media are often superior to legitimate versions *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet piracy is ethically wrong *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would not want other people to think I pirate digital media *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be able to easily pirate a product if I wanted to *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I could see myself pirating a product to test if I like it and then buying it later *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would not feel guilty if I pirated digital material *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer piracy over legitimate purchases *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If legitimate versions are not available in my country, I am more likely to pirate a product *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Do you think your online piracy behavior would change if your amount of disposable income increased?**

Yes

No

**Do you think your online piracy behavior would change if your amount of disposable income decreased?**

Yes

No

**How do you think your online piracy behavior would change if your amount of disposable income changes (either increase or decrease)?**

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## Online Behavior Survey

What is your gender?

- Female
- Male
- Prefer not to say
- Other

How old are you?

Where are you from? \*