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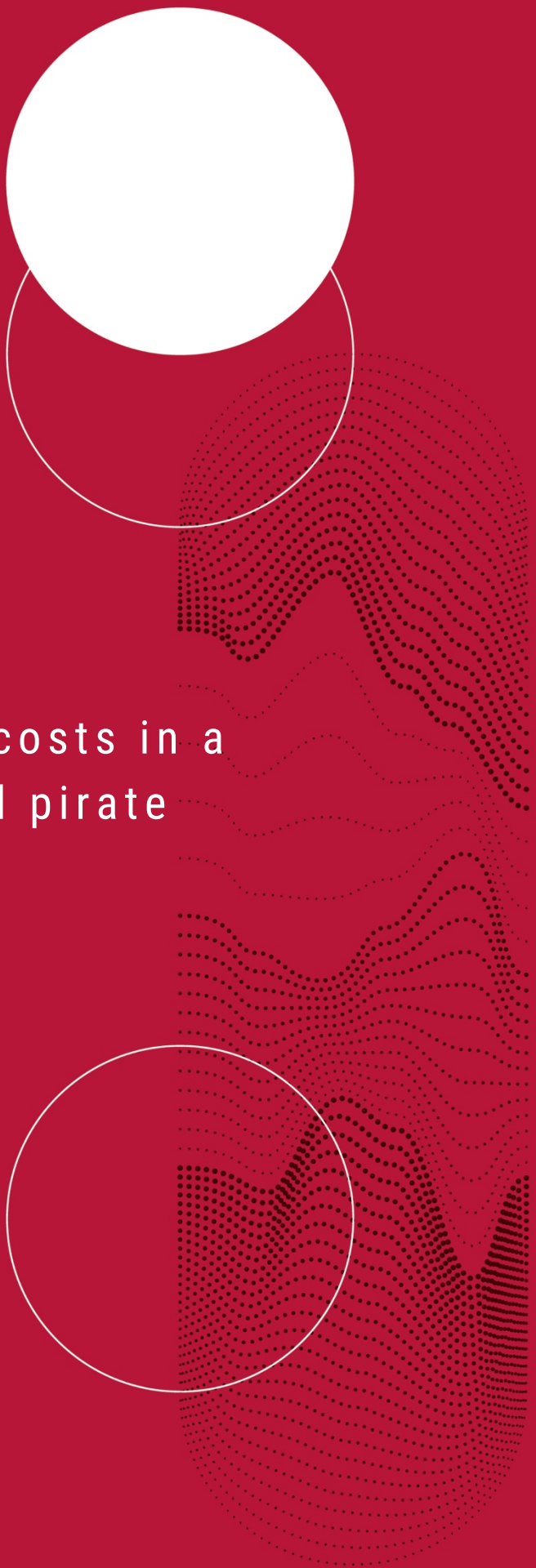

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Abstract

Despite a rich literature on switching costs in traditional markets, little has been said on the context of competition between pirate and legal providers. With a sizeable literature on the effects of piracy and its determinants, it is crucial to understand the specific barriers that may prevent consumers from diverting to unauthorised consumption in the first place. Basing on existing switching cost typologies, literature on piracy and new empirical evidence, I provide a first thorough categorisation of different switching costs in a market with legal and pirate providers. I discuss the implications for consumer retention strategies.

Keywords: Switching costs, piracy, competition, digital goods, file-sharing.

JEL: D4, L1, M2.

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1. Introduction

Numerous studies considered switching costs, their antecedents, impact on consumers' decisions and on producer strategies. This branch of literature comprises enough studies to construct typologies of the costs as well as meta studies of the identified factors. To the best of my knowledge, all of these existing studies consider a market with equal competitors (or at least in the sense of basic rules that govern their strategies or the market). However, digitalisation brought a new kind of competition, characteristic especially of creative industries – namely that of online piracy.

The competition from free and illegal providers brings a new dimension to the switching costs discussion. The pirate and legal providers differ in the types of associated costs as well as in terms of access to tools to manage them. It is thus crucial to expand the current scope of marketing literature to the switching costs in such contexts as well as the knowledge of how to tap them for the benefit of legal providers.

While some studies have already identified particular switching costs related to piracy, they have never framed them within the existing marketing literature on such costs. They have also rarely named them specifically as "switching costs". Finally, some cost types have so far received little to no academic scrutiny within the context of piracy. However, the existing body of literature suggests that piracy-specific switching costs do exist and can be of key importance in the event of temporary shocks to the attractiveness of unauthorised sources. Thus, efficient management of switching costs could curb piracy levels by preventing consumers from turning to piracy in the first place.

Building on the existing typologies of switching costs, I provide a framework for the case of competition with illegal providers. I start by summarising the main typologies created for the case of regular competition. I then propose how these typologies could be adjusted to a case of a pirate competitor. For each of the proposed costs, I provide evidence in the form of a literature review of existing studies of piracy that support its existence. For some of the costs I provide new empirical evidence based on the HIIT survey (Hietanen et al., 2007). Finally, in the conclusions I discuss how understanding of switching costs can contribute to new strategies for increasing the loyalty to legal providers and decreasing the attractiveness of piracy.

2. Switching costs typologies

As business models change, so do the switching costs between various players, as well as the available tools to affect these costs. Switching costs can be defined as "one-time costs facing the buyer of switching from one supplier's product to another's" (Porter, 1980). Burnham et al. (2003) add to this by stating that the switching costs do not have to be incurred instantly at the time of switching, with the example of learning costs that are temporary but incurred over longer periods of time. Moreover, as noted by e.g. Pick and Eisend (2014), switching costs can be perceived, anticipated and/or experienced. In other words, even wrongly suspected costs can act as switching costs if they create a temporary barrier for consumers to change providers. This, in the remainder of this article, I define switching costs as any real or perceived costs that can be reduced (immediately or with time) once the consumer decides to change providers.

The costs identified in prior literature can be categorised by their type. Jones et al. (2002) proposed a typology with six dimensions of switching costs in services: lost performance costs, uncertainty costs, pre-switching search and evaluation costs, post-switching behavioural and cognitive costs, setup costs and sunk costs. They also labelled these six dimensions in three broader categories: continuity costs associated with the termination of the previous relationship; learning costs associated with the process of becoming accustomed with the new provider; and sunk costs, that are psychological costs associated with the perception of the non-recoupable time, effort and money that was invested in the previous relationship.

Another categorisation has been proposed by Burnham et al. (2003), who distinguished between three main types of switching costs: the procedural, the financial and the relational. The procedural costs refer to costs associated with the time and effort necessary to switch between different providers. The financial costs are associated with material costs involved in performing the switch. Finally, the relational costs refer to relationships developed with the current provider and are thus mostly psychological in nature. Burnham et al. (2003) introduce a larger spectrum of cost facets that fit the three broader categories. These are:

- Economic risk costs are defined as uncertainty risks, associated with the possibility that adopting a new provider will lead to a negative outcome. Thus, uncertainty can be considered as a switching cost that disappears as the consumer gains insight on the new provider.
- Evaluation costs are associated with the time and effort related to the search and analysis needed to make an informed decision on switching.
- Learning costs are the costs related to the acquisition of knowledge or skills necessary to use a product (e.g. from a new provider) more efficiently.
- Setup costs relate to time and effort spent on establishing a relationship with the new provider or preparing a product for use.
- Benefit loss costs refer to potential benefits that the consumer had due to pre-existing relationships with the current provider (examples include loyalty programmes, discounts, etc.).
- Monetary loss costs are the costs associated with one-time fees that do not include paying for the product itself.
- Personal relationship loss costs are associated with psychological loss due to ending pre-existing relationships with people associated with the incumbent provider (e.g. customer service).
- Brand relationship loss costs relate to the breaking bonds and established relationships with specific brands or companies.

The typology has been acknowledged in later studies, including a meta-analysis of switching costs studies (Pick and Eisend, 2014). Also, for the purpose of their meta-analysis, Pick and Eisend (2014; following Polo and Sesé, 2009) distinguished between firm-related, buyer-related and market-related switching costs. Pick and Eisend (2014) then provided a more detailed list of antecedents of switching costs that integrated their review of existing literature and that fit within these three broader categories.

For the purposes of this study, I will follow the Burnham et al. (2003) typology as it is the most suitable for the case of an online pirate provider. While the Pick and Eisend (2014) approach can be easily applied to typical market competition, the 'firm-related' costs category is difficult to apply in the context of piracy. The following chapters show why the switching costs associated with piracy are unique to that form of content acquisition and as such allow for different types of tools to moderate them.

3. Switching costs of piracy

The existence of switching costs of pirate sources makes it imperative to prevent any temporary incentives to using these channels. For example, even short periods of reduced availability of content through an authorised source can permanently convert some of the consumers into pirates. Danaher et al. (2010) analysed the withdrawal of NBC TV content from the digital service iTunes. The researchers observed a huge boost in the unauthorised traffic for the said content immediately following the withdrawal. The effect was likely driven by the lack of legal digital alternative after the content disappeared from its usual distributor's catalogue. However, when after nine months the content was restored to the digital store, the researchers observed that the unauthorised traffic did not decrease. Moreover, it seems that the increase in the level of piracy consumption for NBC content exceeded the previous legal consumption. As authors explain, it is likely

that the withdrawal from NBC incentivised the consumers to try the pirate channels. Once they have learned how to use them (or overcame other switching costs), they were reluctant to return to the official channel after it returned. Moreover, they used the unauthorised channel in search of NBC content they would not have otherwise consumed. Thus, as the viewers were incentivised to incur those costs once, they then became more likely to use these channels again.

Much of the ongoing piracy is conducted by consumers with little or no prior piracy experience. For example, a report by SARI (2018) found that as many as 27% of pirates in Australia can be classified as "nervous newcomers". These pirates have only started accessing pirate sources. As such, they are more likely to search for sources through search engines, are more easily deterred by website blocking and are more likely to stumble upon illegal sources unintentionally (when performing legitimate searches). Millward Brown Digital (2013) support this, showing that first time visits to infringing websites are almost twice more likely to occur through searches than are visits from repeat visitors. These data suggest that a large share of pirates can be described as learners or circumstantial customers who stumbled upon unauthorised sources by accident.

Despite their importance, switching costs received little to no attention in the context of competition between the official and pirate providers. Few studies that point to them rarely define them as 'switching costs' and typically omit the existing switching costs literature. Moreover, in some of these studies, the switching costs are not the actual focus of the research. Hill (2007) looked at switching costs between product lines in a market with piracy. However, the authors did not consider the switching costs between the authorised and unauthorised sources, but rather looked at piracy as a potential tool affecting switching across legal providers.[1] In another partially related study, Bhattacharjee et al. (2006) consider costs of switching between legal and illegal channels but they describe the costs as fixed costs associated with searching. They show that the legal providers have an incentive to provide well-tailored and efficient search engines, which highlights that the legal and pirate channels might differ in terms of the effort required to use them. Notably, switching to a pirate provider does not necessitate abandonment of the legal channel. In fact, many consumers use both pirate and legal channels (e.g. Bode, 2018). However, overcoming the switching costs of piracy might be enough to displace part of the paid consumption at an individual level.

Building on the existing typology of Burnham et al. (2003), I provide a framework for the consideration of switching costs in the context of competition between legal and pirate providers. For each of the discussed costs, three issues are of particular interest. First, whether a specific cost actually exists in the context of piracy. If the consumers look for an unauthorised alternative but encounter barriers, it could affect their further decisions. Second, whether the consumers know about the existence of the cost. Otherwise, the cost would only carry a deterring impact if it was temporary but not fully incurred with the first use of an unauthorised channel. Notably, if a consumer believes that a specific cost does exist it is enough for it to be considered a switching cost as it might still be enough to deter them from looking for a pirate channel. Third, whether the cost is one-time or decreases over time. For the costs to be considered switching, they need to be temporary in nature and only act as a barrier for the initial switch to piracy.

[1] This effect would exist in the presence of strong network effects, whereas the switching costs arise as consumers become concentrated in the products of a specific producer. This constitutes an interesting point of view on complementarity between the purchased and pirated goods and that in some cases the providers might consider switching costs that increase as both paid and unpaid consumption increases. Indeed, Bill Gates of Microsoft recognised this back in 1998 and said: *"[About] 3 million computers get sold every year in China, but people don't pay for the software. Someday they will, though. As long as they are going to steal it, we want them to steal ours. They'll get sort of addicted, and then we'll somehow figure out how to collect sometime in the next decade."* (Grice and Junnarkar, 1998).

In the following discussion, I review the evidence for the existence of the specified costs. Moreover, I contribute new empirical analyses to prove (or additionally support) the existence of the costs not covered (or covered to a limited extent) by previous studies.

3.1. Procedural switching costs

3.1.1. Economic risk costs

Bettman (1973) discerned two faces of risk – the inherent risk and the handled risk. In his framework, the inherent risk describes the general risk associated with a consumption choice, while the handled risk is the actual individual risk incurred by a person. The handled risk is lower than the inherent risk, as it reflects the inherent risk reduced by information and knowledge of the consumer. Thus, if switching to a new provider is associated with a continuous risk, learning and know-how acquisition could reduce it – making it partially a switching cost. This implication is especially interesting in the context of illegal providers.

Acquiring content from pirate providers can be associated with a range of risks non-applicable to the authorised providers, going beyond uncertainty risk. This is mainly because of the legal issues associated with pirate distribution and limited capacity of delivering content. These risks can be partially (rarely fully) decreased with learning or deployment of additional computer protection – making them switching costs. The following risks can be associated with pirate sources: the risk of fake content (reduced by learning), risk of malware (reduced by learning and anti-virus software), risk of low quality (reduced by learning), legal risks (partially fixed and partially reduced by learning or specialised protection – e.g. VPN) and uncertainty risks (higher and ongoing for the pirate provider).

Risk of fake content

Acquiring content from pirate providers is associated with risks of acquiring fake content – i.e. with risks of misleading labels of the sought files. However, these risks get lower as pirates learn how to filter out the undesired copies during searches.

Most unauthorised sources operate as platforms – based on openness and lack of top-down moderation of content (allowing for crowd-moderation instead). This is partially because the service owners are usually few and tend to protect their identities or avoid direct responsibility for the actions of the users. Indeed, some website owners claim lack of awareness of the existence of infringing content at all (see Manner et al., 2009). This allows the users from all over the world to upload infringing content, which is what drives the traffic to the websites. Instead of own moderation, the services often offer self-regulatory mechanisms (i.e. they crowdsource the regulation from the users themselves). For example, at The Pirate Bay the uploaded content can be verified by the community and automatically taken down when it is reported by many users. Moreover, uploaders also acquire 'badges' that inform about their own reliability. Finally, some file-sharing networks adhere to guidelines developed by the Warez scene underground (or some variation of these rules). These regulations are developed by groups of anonymous uploaders and are regularly updated.[2] They include, i.a., detailed rules for naming, the formats or descriptions used and what should happen for duplicated content. Uploaders not conforming with these rules might find their uploads 'nuked' – i.e. rapidly downvoted or reported to the extent they get deleted (see e.g. Basamanowicz and Bouchard, 2011; Huizing and Wal, 2014).

However, these self-regulatory mechanisms are highly imperfect. Cuevas et al. (2013) found that in 2008-2010 app. 30% of the content at two major torrent websites was actually fake (i.e. different than the

[2] See: https://scenerules.org/ (accessed: 2019-03-14).

description). This share was driven both by malicious agents uploading primarily software files with malware and by antipiracy agencies conducting so-called torrent poisoning – i.e. uploading large numbers of fake files (mostly masquerading as new movies or TV shows) aimed at making piracy a less convenient option (see e.g. Christin et al., 2005 for an analysis of how poisoning disrupts file-sharing). Importantly, fake torrents were responsible for app. 25% of the downloads.

Consumers are also discouraged from piracy when they consider the unauthorised content to be likely different than its description. Cox and Collins (2014) found that those who considered P2P content to be ridden with misleading descriptions downloaded less unauthorised content.[3] To show this, the authors ran an ordered logit regression on piracy behaviour (measured by a categorical variable indicating how many music files or how many movie/TV series files the responders have downloaded), with the risk perception as an explaining variable. However, this relationship can partially reflect a two-way causality. On the one hand, those who perceive a higher risk of P2P will be less likely to download. On the other hand, those who have already downloaded a lot might be better informed or have learned how to mitigate the risks. At the end of this section I provide empirical evidence that it indeed is the case.

Risk of viruses or malware

Acquiring content from pirate providers is also associated with risks of viruses and malware – both at the time of browsing and when downloading files. Importantly, these risks are also lowered with piracy experience and can be further lowered by installation of anti-virus protection.

Most sources of infringing content earn money through advertisements, which more often than normally include malicious ads – so-called malvertising. This might be partially because of the industries' fight against the ad revenue channels of copyright infringing websites, which forces these websites to cooperate with non-verified and shady ad-providers. For example, an EY (2017) report places the digital ad revenue associated with infringing sources at $111 million in 2016, with a further $102-$177 million prevented by industries' fight with the piracy ad revenue channels. A bit older report by DCA (2015) places the 2014 ad revenues at more than $200 million. Moreover, DCA and RiskIQ (2015) estimates that in 2015 websites with infringing content generated app. $70 million of revenue from the malicious content. NUS Engineering (2017) reports that in the Asia-Pacific countries much of the software obtained through illegal channels contains malware and that all of the websites with pirated software that they tested had suspicious ads and misleading links (often leading to malware).

Pirate sources are indeed much more likely to infect computers with malware or viruses than other sources. DCA and RiskIQ (2015) found that internet users were 28 times more likely to be infected with malware when visiting websites with infringing content than when visiting other websites. Notably, this pertained to malware not included in the actually sought content – 45% of it came from drive-by downloads (i.e. which happened in the background while the visitor was browsing the website) and 55% from user-initiated downloads (e.g. by clicking at a misleading link or advert). However, traditional file-sharing requires you to save files to your hard drive, or run an installation app (e.g. in the case of software or video games). These can be associated with further risks of infecting own computer with malware. Indeed, Telang (2018) exploited a panel data set of 250 internet users and found that as the users doubled the time spent on infringing sites the number of malicious files that they downloaded to their computers increased by 20%. Also, Bossler and Holt (2009) found that piracy is one of the few self-reported online behaviours associated with increased risks of malware.

[3] Importantly, the two factors were aggregated with questions about potential risks of viruses and malware, but – interestingly – more people agreed with the statements of lower quality and bad descriptions than with the statements of malware risk.

Previous research has confirmed a link between the perceived computer risks of piracy and actual piracy behaviour. Hennig-Thurau et al. (2007) analyse the relationship between the perceptions of a variety of costs and actual file-sharing behaviour. They show that German moviegoers who considered sharing movies as risky for their computers were less likely to view pirated copies (although, surprisingly, they were not less likely to obtain them). Similarly, Koklic et al. (2014) analysed the relationship between the perception of personal risk (to own computer) and piracy behaviour in Slovenia, Italy, Sweden and UK and found that the risk perception was connected to lower piracy levels and lower intentions of piracy in each of these countries. Finally, Wolfe et al. (2008) found that the fear of getting a virus affects individual intentions to pirate.

Importantly, the nature of the risk is temporary as the risks are easily omitted by experienced file-sharers. Through a series of interviews, Holt and Copes (2010) show that the persistent pirates acknowledge the malware risks. However, the interviewees also acknowledged that with experience the risk disappears, as file-sharers learn how to recognise the malicious or fake content. As one pirate under the pseudonym of Konink indicated for the study:

"I've seen enough to know who good resources are and when someone is posting something fake, plus you can actually see what types of files are in the torrent before you download. There are minimal things newbs [inexperienced pirates] wouldn't recognize, but when you see it enough you just kind of know. (…)" – Holt and Copes (2010; pp. 639)

Risk of low quality

Consumers also face the risk of lower quality of the content, when acquiring it from pirate sources. LaRose et al. (2005) found that people who believe that they will have difficulties finding what they want and that the downloaded files would be of poor quality reported lower downloading activity. Cox and Collins (2014) also showed that this is indeed the case (those who perceived such a risk were less likely to download unauthorised content).

Legal risks

Another crucial kind of risks associated with piracy is the risk of getting caught and penalised. In most countries around the world, downloading from unauthorised sources is illegal and considered copyright infringement. In reality, the enforcement of specific laws is often difficult, and the actual risks are not very large. Still, the perceived risks are high enough to deter some of the consumers from piracy, while others decide on the setup of safety measures such as VPN to eliminate the risks.

The use of law to punish the pirates or deter the potential ones has evolved over the years. Sag (2016a) conducted a thorough study of the copyright litigation between 1994 and 2014 in the US, and later extended it to include 2015 (Sag, 2016b). Sag (2016a) notes some major changes in the litigation over the studied period. Specifically, he observes two spikes of "John Doe litigation" which are focused on targeting anonymous file-sharers. He describes the strategy as basically consisting of six key steps (as quoted from Sag, 2016a):

1. "Observe the unlawful use of BitTorrent (or other similar filesharing tools).
2. Identify the Internet protocol addresses of unauthorized downloaders.
3. File a John Doe lawsuit.
4. Seek a court order compelling Internet service providers to provide individual account holder information matching the Internet protocol address.
5. Contact account holders and threaten to seek very large awards of statutory damages.
6. Settle as many claims as possible."

Sag (2016a, 2016b) notes that the first spike in John Doe litigation focused on education and deterrence of the public, but the second spike was associated purely with monetizing online infringement. In a large

majority of the more recent suits the subject of the matter is pornography (an increase from 70% in 2010 to 88% in 2014, and back to 68% in 2015). Moreover, the number of John Doe suits increased yearly (from 77 in 2010 to 2,930 in 2015), but the actual number of John Does (i.e. defendants) decreased drastically (from 43,124 in 2010 to 6,700 in 2014[4]), with the suits increasingly targeting individuals rather than large groups. Finally, in 2010 the plaintiff with the highest share of John Doe suits was responsible for app. 13% of the cases, but by 2014 the top was taken by Malibu Media, LLC with a share of 81% of the cases (and of 68% in 2015). These factors mark significant changes in how the law is used against the infringers.

The volume of suits is low in a nationwide context, but some consumers perceive the risk as much higher. According to a rough calculation by Mokey (2009) the chances of getting caught for sharing music over the whole 5-year period of 2003-2008 were as low as 1 in 1,629. Moreover, the recent cases were majorly related to pornographic content and not cultural content in the sense of music, movies, TV shows or books. However, for the risk of punishment to act as switching costs, it is sufficient for it to be perceived as high and to affect individual behaviour. Indeed, the actual low risk of ending up in court may well constitute the temporary nature of the switching cost, if the consumers who started file-sharing learn that the risks are not high and can be further mitigated. Finally, the perceived risks of getting sued might be higher than the actual ones.

One reason for the perceived risks to be relatively high is that media tend to overpublicise any acts of law enforcement towards file-sharers or industry lawsuits towards consumers. While lawsuits actually occur only for a handful of pirates, they immediately make headlines all over the internet – especially if the demanded damages seem disproportional to the offense or if the identity of the offender sparks controversy. For example, in 2012 a single mother in Minnesota was fined with $220,000 of damages for having downloaded and shared 24 songs – a case that lasted six years. At the start of the case and at its end, the story made headlines in: Computerworld, The Guardian, Goldstein Report, Manchester Digital, Macworld, Rolling Stone and many other outlets[5] including non-English ones[6]. In another prominent story, a dad in Germany was fined almost €1,000 in 2017 because his 11-year-old son downloaded an audiobook.[7] Notably, file-sharing and responsibilities among family members in Germany spark much controversy and made headlines in more than one case (see e.g. Jones, 2017). Still, in yet another story, a 25-year old student of Boston University was ordered to pay $675,000 for having downloaded and shared 30 songs (the fine was later reduced tenfold to $67,500). The story circulated on the web but also made its way to TV (see a transcript[8] mentioning the student's TV appearance in CNN, 2009).[9] Thus, the consumers might feel that the risks are greater than in actuality. Indeed, some studies showed that media coverage affects public perception by overpromoting uncommon factors. For example, Rizzica and Tonello (2015) showed that additional media coverage of corruption in Italy, was associated with higher corruption perception and lower trust in justice. In a different context Mastrorocco and Minale (2018) found that a decreased exposure to TV channels with high levels of

[4] A later study by Sag and Haskell (2018) shows that the number of cases fell to 1,362 in 2016, though the number of targeted defendants equalled 6,483.

[5] These and a number of different sources can be easily found by performing a search through the Google search engine of the phrase "$220,000 woman minnesota songs" (conducted: 2018-06-15).

[6] For example, it made headlines in Polish PC World, Dziennik Internautów and appeared on the first page of the printed Dziennik. The case and the three sources were described in Polish in a blog post by VaGla (2007).

[7] See Ernesto (2017b).

[8] The actual video can be found on YouTube but it is not cited here as the video does not seem to be uploaded with the knowledge of the copyright owners (CNN).

[9] Sag (2006) makes a case that pursuing such individuals (and not only heavy uploaders) might actually be a reasonable approach for the recording industry.

crime reporting alleviated individual concerns about crime. It also made the TV viewers concerns about crime more strongly rooted in reality. Thus, media coverage of the controversial lawsuits might increase perceived risks of penalisation for piracy.

Moreover, the 2010s saw the rise of the so-called 'copyright trolling'[10] whereas some companies (or agents) started to use copyright as a way of making money. In a landmark case in 2010, Righthaven LLS purchased rights to old news articles with the purpose of suing those who had already reproduced them without permission (Weiss, 2010). Copyright trolling involves filing lawsuits without the actual intention of going to the court. Instead, the copyright holders often prefer smaller and quick settlements. Copyright trolling is often associated with threats of higher fines if a case goes to the court and the settlement is not made. Reportedly, Righthaven LLS demanded as much as $75,000 from the infringers but agreed to small fees instead of going to court (Polonsky, 2012). Finally, copyright trolling is often associated with pornography-related cases that additionally pressure the offenders to settle so as to not make the socially stigmatising case public (Rosen, 2013; Alderfer, 2014). Notably, many of the copyright trolling demands are dismissed by the plaintiffs themselves. The dismissals happen for various reasons, as reported by Andy (2014) who accessed a leaked report of Malibu Media stating the circumstances of dismissals, including insufficient evidence. Thus, the numbers of court cases might reflect the actual risks of being targeted by the profit-seeking copyright holders. However, this mass approach to litigation might increase the perceived risks of legal trouble.

Indeed, some consumers consider the risks of punishment as large enough for them to affect their piracy behaviour. The literature supporting this relationship is quite vast. Chiou et al. (2011) used a vignette study to show that college students in the US and Taiwan associated higher risks of getting caught for downloading with more negative attitudes toward piracy and lower intentions of downloading (at least in a hypothetical situation where they were assessing the point of view of a person in the scenarios). Chiou et al. (2005) also showed that the perceived risk of prosecution had a negative impact on the attitude towards downloading, in a sample of high-school learners in Taiwan. Similarly, Zhang et al. (2009) find that the perceived certainty of getting caught was negatively related to past piracy behaviour, though there was no relationship with the perceived severity of the potential punishment. On the other hand, Morton and Koufteros (2008) found a significant relationship with the perceived punishment severity among females, but not among males and not with perceived punishment certainty. Chiang and Assane (2008) also show that female students react more strongly to the perceived legal risks of piracy, though they find a relationship with individual behaviour for both genders. Many other studies point to a relationship with perceived legal risks, e.g.: Lysonski and Durvasula (2008), Wingrove et al. (2011), Borja and Dieringer (2016) for music piracy. Admittedly, Hennig-Thurau et al. (2007) found no relationship between the perceived legal risks of movie file-sharing and actual behaviour, but the study is in minority in this regard.

Notably, the perceived risks of prosecution decrease with experience in file-sharing. Zhang et al. (2009) find that the relationship between perceived certainty of punishment and piracy behaviour is actually driven by digital piracy self-efficacy, whereas those who find it easier to commit piracy also tend to perceive the risks as lower. The HIIT survey data also support these findings (see below).

Switching cost nature of the risk costs

To further verify whether the discussed risk costs can be considered switching costs, I use the dataset previously analysed by Cox and Collins (2014) – the HIIT survey data (Hietanen et al., 2007). Cox and Collins (2014) showed, e.g., that the relationship between the perceived risks of piracy and own level of piracy is

[10] The term 'copyright trolling' corresponds to an earlier term of 'patent trolling' that referred to an analogous pattern of behaviour in the context of patents.

negative. However, the actual relationship between the two variables can work both ways if risk can be considered as a switching cost. Indeed, if the perceived risk of piracy becomes lower with additional experience in piracy then the level of piracy usage likely also reflects the prior experience which is negatively correlated with the perceived risks.

Table 1. Ordered logit regressions of perceived risks associated with P2P content

Risk of:	(1) Fake content	(2) Viruses	(3) Malware	(4) Low quality
Music files downloaded:	*(base level: none)*			
- Less than 10 albums	0.03	-0.08	0.02	-0.10
- Over 10 albums	0.14	-0.20	-0.13	-0.22*
- Over 100 albums	-0.09	-0.30**	-0.33**	-0.46***
- Over 1,000 albums	-0.26*	-0.62***	-0.59***	-0.69***
Movies/TV episodes downloaded:	*(base level: none)*			
- Less than 10 movies or TV episodes	-0.04	-0.06	-0.06	0.11
- Over 10 movies or episodes of TV series	-0.25**	-0.39***	-0.28**	-0.04
- Over 100 movies or episodes of TV series	-0.29**	-0.64***	-0.42***	-0.17
- Over 200 movies or episodes of TV series	-0.65***	-0.87***	-0.73***	-0.42***
Frequency of P2P usage:	*(base level: I have never used P2P)*			
- Once every six months or rarely	-0.22*	-0.57***	-0.62***	-0.21*
- Once a month	-0.79***	-1.03***	-1.15***	-0.71***
- Once every two weeks	-0.89***	-1.17***	-1.29***	-0.83***
- Once a week	-0.95***	-1.09***	-1.22***	-0.87***
- Several times each week	-1.09***	-1.27***	-1.48***	-0.95***
- Every day	-1.45***	-1.46***	-1.80***	-1.42***
Observations	5,409	5,409	5,409	5,409

*Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The explained variable takes the values from 1 – Disagree to 5 – Agree. The four dimensions included in the columns reflect statements about risks associated with P2P content: "The files downloaded from P2P file-sharing sites often contain something else than the file description indicates" (Fake content), "The files downloaded from P2P file-sharing sites often contain viruses" (Viruses), "The files downloaded from P2P file-sharing sites often contain malware" (Malware), "The files downloaded from P2P file-sharing sites have often poor quality" (Low quality). All regressions include control variables for: gender, year of birth, education level dummies and income categories.*

Source: own calculations on HIIT (Hietanen et al., 2007) data.

To disentangle these two potential effects, I conduct a set of ordered logistic regressions to explain the perception of risks associated with file-sharing. However, I include two distinct pieces of information on consumer piracy as explaining variables. First is the current piracy behaviour described as the frequency of the P2P usage. The second is the past experience in piracy, expressed as the numbers of previously downloaded files (separately for movies and music). Including both these factors allows me to disentangle the current views on piracy from the overall experience in piracy. As the dataset includes both heavy pirates with large experience and heavy pirates with little prior experience, I am able to verify the relationship of risk perception with the level of know-how, while controlling for the current approach to piracy.

Consistently with the notion of handled risk of Bettman (1973), I find that the perceived risks associated with piracy get lower with past piracy experience. Table 1 shows the regression results for the risks of fake content, malware and viruses and low quality. The frequency of P2P usage has a stronger relationship with the perceived risks than the numbers of downloads, but those also retain a significant relationship. Thus, a higher level of piracy experience is associated with lower perceived risks associated with P2P content, even when controlling for current propensity for piracy.

Table 2. Ordered logit regressions of perceived legal risks associated with file-sharing

Risk of:	Punishment	Getting caught	Punishment (heavy users)	Getting caught (heavy users)	Punishment (joint)	Getting caught (joint)
Music files downloaded	(base level: none downloaded)					
Less than 10 albums	0.25**	-0.20	0.41	0.29		
Over 10 albums	0.33***	-0.20	0.59*	0.28		
Over 100 albums	0.27**	-0.42***	0.45	0.01		
Over 1,000 albums	0.33**	-0.57***	0.47	-0.18		
Movies/TV episodes downloaded	(base level: none downloaded)					
Less than 10 movies or TV episodes	-0.01	-0.05	0.03	-0.42		
Over 10 movies or episodes of TV series	0.05	-0.16	-0.17	-0.51		
Over 100 movies or episodes of TV series	-0.05	-0.19	-0.37	-0.63*		
Over 200 movies or episodes of TV series	0.06	-0.29**	-0.28	-0.70**		
Frequency of P2P usage	(base level: I have never used P2P)					
Once every six months or rarely	-0.69***	-0.18			-0.54***	-0.27**
Once a month	-0.89***	-0.36**			-0.74***	-0.45***
Once every two weeks	-0.80***	-0.30*			-0.66***	-0.43***
Once a week	-0.94***	-0.36**			-0.80***	-0.49***
Several times each week	-1.01***	-0.42***			-0.87***	-0.57***
Every day	-1.23***	-0.60***			-1.07***	-0.74***
Minimum level of downloads	(base level: no music files and no TV episode files downloaded)					
At least "less than 10 albums" and at least "less than 10 movies or TV episodes"			-		0.08	-0.23**
At least "over 10 albums" and at least "over 10 movies or episodes of TV series"			-		0.20**	-0.28***
At least "over 100 albums" and at least "over 100 movies or episodes of TV series"			-		0.12	-0.50***
Over 1,000 albums and over 200 movies or episodes of TV series			-		0.20	-0.73***
Observations	5,409	5,409	2,251	2,251	5,409	5,409

*Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Punishment" explained variable takes the values from 1 – Disagree to 5 – Agree and refers to a statement "I can get caught and punished for using P2P file sharing sites". The "Getting Caught" explained variable takes values from 0 to 6 and indicates the number of actions that the responder indicated as associated with lower probability than the probability of getting caught when file-sharing through P2P. The actions in the survey were: "getting caught shoplifting", "getting caught free riding on public transportation", "getting a parking ticket", "winning the jackpot in lottery", "getting caught speeding" and "getting caught not paying television licence fee". Thus, the number of the indicated actions reflects the relative perceived risks of getting caught, associated with file-sharing. All regressions include control variables for: gender, year of birth, education level dummies and income categories.*

Source: own calculations on HIIT data (Hietanen et al., 2007).

As a robustness check I have recalculated the regressions with a subsample of responders who reported using P2P to download or share at least several times a week. It is clear for this group that they are heavy P2P users, but they might differ in the length of previous experience. The results can be found in columns (1)-(5) in Table A1 in Appendix. In short, the relationship between the number of downloaded files and risk perception remains negative, although it becomes less significant, which is expected for a smaller consumer sample. I additionally conduct the regressions with an aggregate measure that comprises the minimum level on a scale from 1 to 5 from both the music and movie download number categories. These regressions show much higher significance levels than those in columns (1)-(5), likely because the movie and music download numbers are correlated (Cramer's V coefficient of 0.33).

I run similar ordered logit regressions as in Table 1, for variables associated with perceived legal risks. The results are presented in Table 2. Interestingly, the data indicates no specific relationship between the perceived risk of punishment and experience in downloading (the estimate indicates lower perceived risk of punishment among those who never downloaded music files, but no consistent differences among those who downloaded some files). However, the data also shows a clear relationship between the level of experience and perceived risk of getting caught. This outcome is largely in line with the current approach to piracy, whereas consumers are more likely to become subjects of copyright trolling than to be sentenced and

punished for their activities. As before, the results are also replicated for heavy P2P users only and for joint categories for numbers of music and movie files ever downloaded (columns 3-6 in Table 2).

The listed risk costs might be considered at least partially as temporary and can therefore act as barriers. The risks of uncertainty can be quickly overcome once the consumer learns how to navigate the file-sharing networks in a way to avoid malicious content and to only use the verified, safe websites. Similarly, much of the perceived risk of penalisation can be reduced once the consumer realises that they were not caught for all the prior acts. Finally, if consumers decide to protect themselves (e.g. by using VPN services), the actual risk gets severely diminished.

3.1.2. Evaluation costs

Consumers switching to unauthorised sources need to find a suitable source for their content. Depending on the type of the good, these can include file-hosting websites, torrent-hosting websites, streaming websites, or stream-ripping websites, etc. Some may find it preferable to use stream-ripping software or plugins instead. The decision may not be obvious and also depend on the available catalogues, size of the associated community (networks), the amount of (suspicious) adverts, existence of other requirements (e.g. registration, fees) or quality of the content.

A significant part of pirate traffic comes from internet searches, especially among the less experienced pirates. According to a report by MUSO (2017), approximately 35% of the traffic to file-sharing sites comes from internet searches. This suggests that indirect searches are a constant part of using the pirate channels. Notably, some reports claimed that the share is actually lower – app. 15% (Masnick, 2011; Google, 2016). However, these numbers often focused on the most known infringing websites (like the notorious Pirate Bay), which might be memorable enough to skew the results in favour of direct traffic. Moreover, these results look at the pirate population in general, neglecting the importance of search tools for learning pirates. Indeed, a report by Millward Brown Digital (2013) suggests that in 2010-2012 the first-time pirates were twice as likely as repeat pirates to have found content by using search engines. The first-timers were also much less likely to use direct entry to websites with unauthorised content (i.e. going directly to a particular URL address). Similarly, SARI (2018) report shows that 70% of first-time pirates in Australia use search engines to discover unauthorised sources. This proves that those switching to the unpaid channels incur search and evaluation costs before sticking to any particular source.

The search costs associated with pirate sources have gone up in the recent years with some countries and service providers taking active measures to make access to infringing websites more difficult. For one, the largest search engine (Google) downranks unauthorised sources in its search results. Ernesto (2014) documents that torrent site owners confirmed a drop of traffic following the introduction of Google downranking. In fact, Google claims that demoting a file-sharing website results on average in an 89% drop of visitors going to that site from Google Search (Google, 2016). Sivan et al. (2015) also show that the placement of authorised and unauthorised sources in search results might significantly affect the users' choices and the SARI (2018) report also supports this. Moreover, some countries started actively blocking infringing websites. Danaher et al. (2019) showed that the website blocking in the UK greatly decreased piracy levels and increased sales. Similarly, INCOPRO (2018) found a large decrease in traffic to infringing websites following the blocking in Australia. Undoubtedly, these measures are especially effective for the first-time pirates with no prior experience in circumventing blocks and little knowledge of the unauthorised alternatives.

3.1.3. Learning costs

In the context of the unpaid channels, the learning costs are closely connected to the previously described switching costs associated with risks. This is because learning by doing decreases some of the perceived risks of piracy. Still, some learning costs stand out on their own.

Acquiring content from pirate providers may involve learning about the technical particularities of file descriptions or file-sharing itself. For example, it involves learning how to recognise high-quality content based on parameters such as resolution, bit rate, compression technology or based on the file formats and sizes. They also involve learning how to discern the actual content from fakes or mislabelled items. Some sources might also require learning about how the networks operate (e.g. the meaning of seeders and leechers in P2P networks) and how to effectively search for content. Additional learning might be required to use specific file-sharing related software (e.g. the µTorrent for torrents or stream-ripping apps) or media playing software (e.g. media players like VLC or Winamp) or even how to search for complementary content like correctly synchronised movie subtitles.[11]

Previous research supports the notion that some learning-by-doing exists among unpaying consumers and that the level of know-how is related to the consumption behaviour. Hennig-Thurau et al. (2007) showed that the individual search costs (defined as the perceived level of cumbersomeness of downloading through file-sharing networks and copying from others) are also associated with less individual downloading. Indeed, Brynjolfsson et al. (2004) showed that in a legal setting of an online comparison-shopping service, consumers incur significant costs when browsing through the search results. Importantly, Hennig-Thurau et al. (2007) also showed that the search costs in the file-sharing context are greatly lower for those with larger file-sharing experience. Table 3 shows that learning-by-doing decreases the perceived difficulty of searching for content at pirate sources. Finally, numerous studies found some association of computer or internet proficiency with acts of piracy (e.g. Zentner, 2006; Andersen and Frenz, 2010) or with intentions to participate in piracy (e.g. Phau and Ng, 2010 for software; Phau et al., 2014 for movies; Hinduja and Ingram, 2009, Holt and Morris, 2009 or Popham, 2011 for music; Taylor et al., 2009 for music and movies) or an association between the perceived ease of acquiring unpaid content and the intentions to download (e.g. Cronan and Al-Rafee, 2008). Digital skills are clearly related to how difficult it is to learn using the unpaid channels. Thus, learning constitutes a switching cost with its extent moderated by digital proficiency.

[11] As an example of why learning costs are much different for authorised and unauthorised sources, consider a case of a movie consumer and the Netflix streaming service. Netflix offers guidelines for usage, a user-friendly interface and data-driven recommendations. This is because Netflix competes with other services and has the incentive to be as alluring as possible. Moreover, Netflix uses its vast amount of data to optimise its users experience. Once a person registers, they only need to click on a specific movie title, and then – if need be – switch on the subtitles or change the language. The movie will load automatically in a highest available quality – based on the subscription type and current connection speed. On the other hand, a person wanting to download the movie through torrents would have to first enter a specific torrent-hosting website and search for the title, while assessing the results of the search. In principle, the user would need to filter out the files with few seeders (sharing people), low quality, potential fake labelling or viruses and unwanted audio languages. They would then have to put the file (or magnet link) to their software of choice that performs the actual file-sharing. Finally, when the file is downloaded, they would sometimes need to enter a different website to find subtitles that match the specific version of the movie they downloaded (these can differ based on compression methods). Additionally, if the user wanted to minimise legal risks, they would also need to incorporate some kind of privacy protection like a VPN channel. All these additional steps require some degree of learning. Obviously, an unauthorised streaming service or a Kodi box might be a more relevant reference to Netflix. Indeed, this would eliminate some of the learning costs (e.g. on how to operate software), but not all. Learning how to search, avoid viruses or low quality content and to protect own privacy would still remain.

Table 3. Ordered logit regressions of perceived risks associated with P2P content

Risk of:	Difficult finding
Music files downloaded:	(base level: none)
- Less than 10 albums	-0.14
- Over 10 albums	-0.21
- Over 100 albums	-0.56***
- Over 1,000 albums	-0.84***
Movies/TV episodes downloaded:	(base level: none)
- Less than 10 movies or TV episodes	0.11
- Over 10 movies or episodes of TV series	-0.21*
- Over 100 movies or episodes of TV series	-0.31**
- Over 200 movies or episodes of TV series	-0.54***
Frequency of P2P usage:	(base level: I have never used P2P)
- Once every six months or rarely	-0.22*
- Once a month	-0.89***
- Once every two weeks	-1.06***
- Once a week	-0.98***
- Several times each week	-1.29***
- Every day	-1.45***
Observations	5,409

*Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The explained variable takes the values from 1 – Disagree to 5 – Agree. The explained variable reflects a statement about the risk of having difficulties with finding proper content via P2P networks: "It is difficult or more difficult to find files from P2P file-sharing sites than from legal stores". The regression includes control variables for: gender, year of birth, education level dummies and income categories.*

Source: own calculations on HIIT (Hietanen et al., 2007) data.

Some of the learning costs are associated with learning about the techniques of ensuring own anonymity. Larsson, Svensson, de Kaminski, Rönkkö and Olsson (2012) found in a survey of The Pirate Bay users that the more frequent file-sharers are more likely to use VPN protection, while most of other file-sharers would like to improve their anonymity. This partially explains the results from Table 2 showing that the more experienced file-sharers perceive the risk of getting caught as lower. Moreover, Larsson, Svensson and de Kaminski (2012) showed that the usage of anonymity services has increased between 2009 and 2012 among Swedish file-sharers. Finally, there was a significant increase in the usage of online anonymity services among Swedish frequent file-sharers, directly after the Intellectual Property Rights Enforcement Directive was implemented in Sweden (Larsson and Svensson, 2010). These findings highlight that anonymity is an important issue for file-sharers, but that ensuring it (e.g. through the use of VPNs) is not straightforward.

3.1.4. Setup costs

The setup costs are well-documented in the non-piracy-related research studies of switching costs. The setup costs in the context of piracy relate to the same kind of effort as associated with switching to a new legal provider, with the potential difference of the scale of such costs. For a legal provider of content, the setup costs might require registration and/or software/app installation. For an illegal provider, the potential costs include: registration at websites or forums, installation of software required to acquire the content (e.g. µTorrent for torrents, browser plugins or other apps for stream-ripping, media players for downloaded content), establishment of VPN protection (another registration and software installation) or anti-virus protection (software installation).

3.2. Financial switching costs

3.2.1. Benefit loss costs

Some of the benefit loss costs typically used in competition between legal providers do not relate to the competition with the pirate ones. For example, when switching to pirate sources one might lose discount benefits, but that is obviously offset by the fact that the piracy channel is free.

However, some types of goods include identifiable non-financial benefits relevant in this context. For one, some providers offer continuous support to their customers. A very relevant example might be that of software or video games. A consumer can purchase a game at a digital platform (for example STEAM), which then allows them to download the game from the client software. At any time, the game publisher issues a patch update that addresses errors in the game code or new features and expansions, the game owner can simply update their game through the client or even from the in-game menu itself. However, such auto-update systems typically require for the video game to be a registered, authorised copy. As such, an owner of a pirate copy might find difficulties with similar updates. For one, as they download the game, they also often need to download a crack (a file that allows to bypass the game's Digital Rights Management system). Afterwards, whenever an update, patch or expansion is released, they would need to download it from an outside source and often again apply a newer version of the crack. Moreover, some software or video game producers offer support in case of technical issues but also only if they can identify the specific copy as a legal purchase. Similarly, some software might offer a direct support in the form of a support line for customers, unavailable for unverified users. Also, some services like mobile apps have the advantage of distribution through the official in-app store channels, while any similar apps for unauthorised content would be taken down and difficult to install. In these examples the authorised providers provide non-financial benefits in the form of convenience-of-use and direct support.

Moreover, some producers include additional incentives for the purchasers. Examples include access to forums, forum badges, or special achievements tied to the platforms used for accessing content. For example, Hamari (2017) showed that gamification of a service in terms of adding a 'badge' system, might increase user engagement. Many crowdfunding platforms focus on providing the backers or patrons with access to restricted content like posts and updates viewable only by backers. While the content of the updates might be easily shared beyond the platforms, the backers often also gain the ability to comment on the product and interact with the creators themselves. This provides the paying customers with potential influence on the creative process.

Finally, the authorised providers can offer services that are by definition non-replicable by the pirate providers. The large platforms like Spotify or Netflix take advantage of the network effects and the data at their disposal to provide accurate content recommendations. This kind of service enhances the experience of users, as the algorithms can introduce consumers to previously unheard-of creators who match their tastes. Sinha and Mandel (2008) found that in hypothetical scenarios, responders would have higher willingness to pay for using a service with a recommendation engine. Similarly, Dörr et al. (2013) showed that music pirates who tend to search for music recommendations on the internet have better attitudes toward services like Spotify. In contrast, infringing websites cannot track their users' behaviour without effectively discouraging them from usage. Hence, switching from a legal provider to a pirate provider might cause an important loss of the recommendation system and user experience benefit.

3.2.2. Monetary loss costs

Monetary loss costs are rarely attached to the pirate provider. Typically, monetary loss costs could be associated with the purchase of a device necessary for the consumption of the associated products (e.g. PCs, video game consoles, e-readers, etc.). However, such devices typically allow for the consumption of both authorised and unauthorised media. One possible exception are the "Kodi" boxes, whenever they are purchased with the aim of accessing unauthorised content. In such cases, the cost of buying a box would be considered a monetary loss cost – a one-time cost necessary to incur, though not directly related to the product (movies and series) itself.

3.3. Relational switching costs

Relational costs might be especially prevalent in the pirate/legal provider context, where switching to the former is associated with the violation of law and potentially of social norms. Burnham et al. (2003) distinguished two facets of these costs.

3.3.1. Personal relationship loss costs

Personal relationship loss costs are typically associated with people that the customer interacts with, like the current provider's employees. However, in the digital context these costs could be associated with the community of users of a particular service or with content creators. While it is difficult to exclude someone from an online community, cases might involve the customer-restricted forums or discussions. In such cases, switching to pirate providers would be directly associated with cutting the means of interaction with a group of fans, as well as with the creators themselves. Park et al. (2009) show a variety of reasons to belong to Facebook groups, including the need to socialise and be a part of community, as well as self-status seeking (e.g. the feeling of pressure to belong). Similar reasons might prevent the paying consumers from abandoning their access or sense of belonging to online fan communities. Hampton-Sosa (2017) shows that music streaming services can lower the piracy intentions by including community building features.

Moreover, the social norms and the attitudes of family and friends might affect the retention in paid channels. Previous studies have linked switching to piracy with social risks and moral stigma. Of particular importance are the costs that occur only once and not with each use of pirate sources. Such costs can be e.g. associated with damage to self-image or reputation that does not just disappear with a subsequent purchase from a legal provider. For example, Tan (2002) showed that persons who believed that their family, relatives or associates would look down on them or lose their respect if they found out that the person bought pirated software, had lower intentions to do so. Peace et al. (2003) combined three factors related to subjective norms, with two of them describing beliefs that people important to the responder would look down or disapprove of them committing software piracy. They find significant negative relationship of those beliefs with the intentions to pirate. Similarly, Jeong et al. (2012) defined moral awareness risk as a combination of social risk factors (belief that a responder would lose social status if family/friend found out about music downloading) and psychological risks (downloading from pirate source causing tension, damage to self-image, etc.). They found that it is very strongly related to individual piracy and also that the perceived overall risk associated with piracy does not increase with the amount of content pirated – suggesting a fixed risk cost that might act as a barrier. Many other studies show the importance of subjective norms, though they often combine items that refer to one-time costs (e.g. loss of status or respect) with items that refer to costs taken into account with each pirate download (e.g. friends think it is wrong) – e.g. Levin et al. (2007), Yoon (2011).

3.3.2. Brand relationship loss costs

The key advantage of official providers is that they can leverage the legality of their activities to increase fan engagement and loyalty to the brand. Indeed, artists and companies are much more likely to run an official Facebook page or a Twitter channel than owners of unauthorised services who need to maintain their anonymity. This is reinforced by the fact that the customers also cannot use the official channels to talk about the unauthorised use without risking detection.[12]

Some of the research studies found no relationship between the attitudes towards artists/industry and piracy intentions. Chiou et al. (2011) found no relationship between being a fan of an artist and the attitudes and intentions regarding downloading their songs. However, their study asked students to read scenarios about another person – Allen, identified as a fan of Linkin Park (in some scenarios) and to answer about the attitudes and intentions from his point of view. Such framing raises concerns that the students found it difficult to relate to Allen, especially if the responders had other, actual feelings regarding Linkin Park. Wingrove et al. (2011) found no relationship between the individual respect for the music industry and piracy frequency. Also, Lysonski and Durvasula (2008) found no relationship between downloading and the beliefs about its impact on artists and the industry. Notably, part of the study of Lysonski and Durvasula (2008) and the study of Wingrove et al. (2011) ask about the music industry as a whole and the music industry is often perceived as not representing the artists and only business interests. This might translate into a much lower responder attachment.

On the other hand, many research studies show that feelings and attachment toward artists as well as fan engagement are significantly related to both pirate and purchasing behaviour. Chiou et al. (2005) found a relationship between idolisation and attitude and intention of purchasing pirated CDs and a relationship between the perceived proximity with an idolised artist (i.e. the feeling of responsibility regarding any negative impacts) and the intentions of downloading their music. Frick et al. (2014) show that user engagement and artist broadcasting are positively related to sales but that user engagement is negatively related to piracy. Similarly, Turri et al. (2013) showed that affective commitment to an artist (e.g. emotional attachment) is connected both to a higher purchase loyalty and lower intention toward digital piracy of this artist's music. Chen et al. (2015) show that personal (rather than automated) posts by artists at a once-popular social media platform MySpace had a positive effect on sales. Henig-Thurau et al. (2007) show that moral costs defined as beliefs that file sharing is unfair to the filmmakers, unethical and harmful (three aggregated items), negatively affect both the downloading behaviour and the subsequent consumption behaviour of the downloaded content. Finally, Krawczyk et al. (2014) found that piracy behaviour is judged as more unethical when it concerns a TV series created by a friend of the perpetrator. This indicates that a higher level of interaction with the artists might strengthen the relationship between the user and the provider, which translates into both a higher propensity to purchase and a lower to download without paying.

4. Conclusions

As creative industries entered digitalisation, they have been challenged by the unfair competition from pirate sources. Empirical research has identified numerous types of switching costs and highlighted their role in customer retention. The empirical research mostly finds negative effects of the unauthorised consumption on sales. While switching costs have been typically used to understand competition between legal providers, they

[12] In a related and telling case, FBI launched an investigation against Facebook user who uploaded a copy of the Deadpool movie to the social media platform. This ended in an indictment and a guilty plea (Ernesto, 2018c).

can be also leveraged to decrease the appeal of pirate channels – decreasing the outflow of consumers or at least ensuring they do not start substituting part of the legal consumption with an unpaid one.

Turning the focus from combatting piracy to managing switching costs is especially important as much of the unpaid consumption is conducted by first timers. However, existing research suggests that for many consumers the first switch to piracy results in reduced consumption from legal providers in all further periods. Thus, increasing switching costs associated with piracy constitutes a way for providers to curb unpaid consumption at its inception.

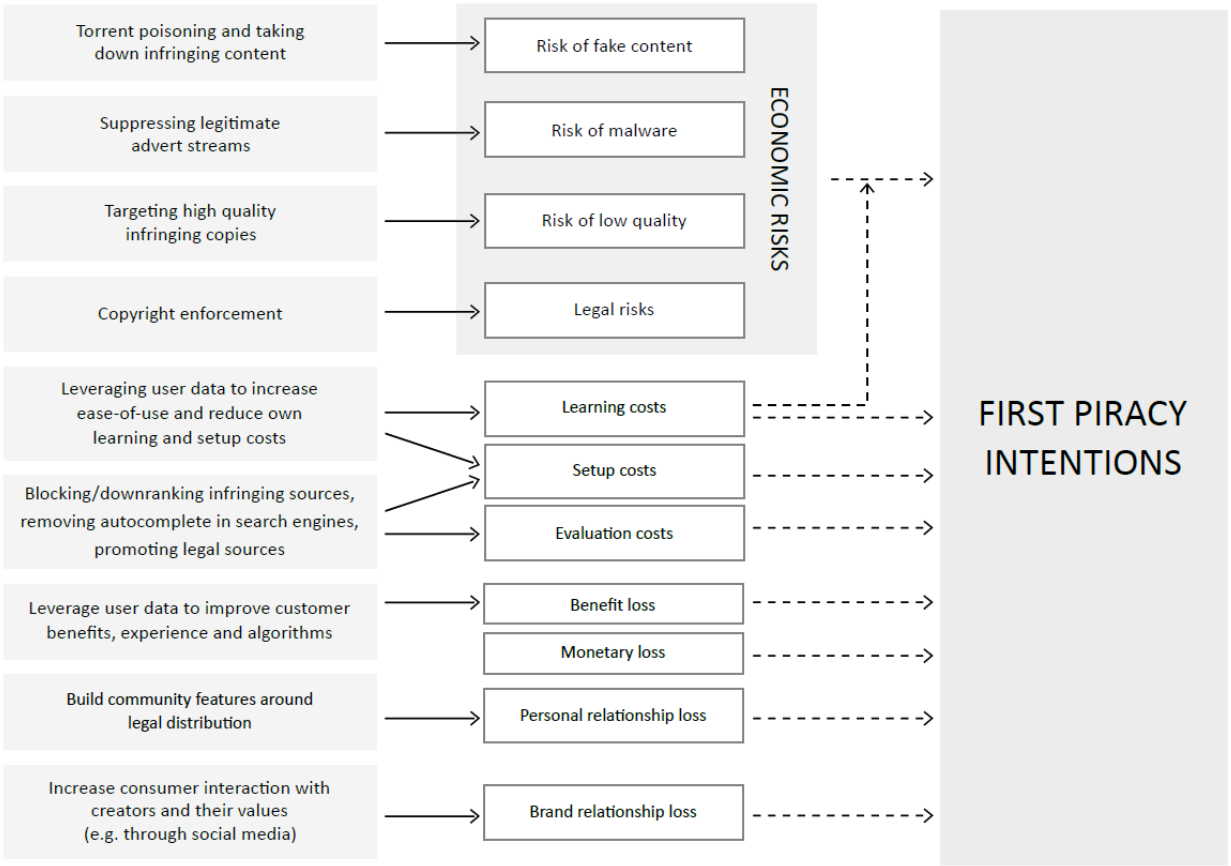
Based on the existing literature and switching costs typologies created for competition between legal providers, I propose how this typology can be extended to cover competition with illegal providers as well. To do so, I present a thorough literature review proving the existence of piracy-specific switching costs. Moreover, I provide new empirical evidence on existence of several further switching costs associated, among others, with the risks of using the unpaid channels. The resulting framework is the first to cover all kinds of switching costs in the context of competition between legal and illegal providers.

Based on the previous literature, the legal providers and governments might use several strategies to increase the switching costs related to pirate channels. They can increase the risks associated with piracy by actively polluting the available content in unauthorised sources, hampering ad stream revenues (forcing the pirate providers to allow for malicious adverts), deleting infringing content when possible, and boosting law enforcement on infringers. Moreover, switching costs might be increased by raising the difficulty of finding a pirate source and using it, e.g. by website blocking, or downranking in search engine results. The legal providers have a unique advantage in the form of access to vast amounts of data – allowing them to use it to increase user experience and content recommendation algorithms. They can use it to provide additional benefits in the form of better service to their customers. Finally, the legal providers can invest in increasing brand awareness and relationship between the consumers and both the brand and the creator. Interactions and community-building around the product might further increase the switching costs to piracy. Figure 1 presents the developed typology of switching costs of piracy channels along with example measures that could be used to increase them.

Still, the exact array of measures affecting switching costs depends on the considered source of piracy and type of content in question. Different switching costs apply to torrent-hosting services than to streaming services than to Kodi-like boxes than to content accessible directly through browsers. Peer-to-peer networks like torrents remain the main sources for large-sized content like video games, but music is more likely to be downloaded from services like YouTube via streamripping and TV shows are more likely to get streamed directly. Accordingly, different tools are available to providers of the specific types of content and different measures can be applied to bolster fan engagement (e.g. a game development studio can form a different kind of community and engagement than a solo musician with a social media account). Thus, the weight attached to managing particular switching costs should depend on the particular context.

Finally, while the developed framework shows specific costs and highlights the tools to increase them, other factors should be considered as well. In particular, while some actions might increase the switching costs, they might also harm the relationship with the consumers. Mainly, the activities focused on negative interaction like copyright enforcement or torrent pollution might antagonise some of the consumers who use both legal and illegal channels for their consumption. Indeed, numerous reports show that many of the heavy illegal source consumers also purchase much content (e.g. Bode, 2018). As such, positive measures should be prioritised, including leveraging options unavailable to illegal providers like user data-based algorithms and experience, or building a relationship with non-anonymous creators.

Figure 1. Typology of switching costs and examples of how they can be leveraged to reduce switching from legal providers to piracy sources.



Source: *own elaboration based on Burnham et al. (2003), literature review and own research.*

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Appendix A

Table A1. Ordered logit regressions of perceived risks associated with P2P content in a sample of heavy P2P users

Risk of:	(1) Viruses	(2) Wrong descriptions	(3) Difficult finding	(4) Poor quality	(5) Malware	(6) Viruses	(7) Wrong descriptions	(8) Difficult finding	(9) Poor quality	(10) Malware
Music files downloaded	*(base level: None)*					-				
Less than 10 albums	-0.14	-0.30	-0.21	0.13	0.10					
Over 10 albums	-0.09	-0.17	-0.25	-0.06	0.14					
Over 100 albums	-0.06	-0.37	-0.55	-0.32	-0.01					
Over 1,000 albums	-0.42	-0.61	-0.86**	-0.57	-0.34					
Movies/TV episodes downloaded	*(base level: None)*					-				
Less than 10 movies or TV episodes	-0.21	-0.04	0.57	0.43	-0.31					
Over 10 movies or episodes of TV series	-0.55*	-0.04	0.49	0.22	-0.48					
Over 100 movies or episodes of TV series	-0.82**	-0.03	0.46	0.20	-0.52					
Over 200 movies or episodes of TV series	-1.06***	-0.50*	0.03	-0.24	-0.95***					
Minimum level of downloads	-					*(base level: No music files and no TV episode files)*				
At least "less than 10 albums" and at least "less than 10 movies or TV episodes"						-0.43	-0.34	0.28	0.04	-0.33
At least "over 10 albums" and at least "over 10 movies or episodes of TV series"						-0.49*	-0.20	0.20	-0.10	-0.33
At least "over 100 albums" and at least "over 100 movies or episodes of TV series"						-0.75***	-0.53**	-0.17	-0.46*	-0.69***
Over 1,000 albums and over 200 movies or episodes of TV series						-1.13***	-0.92***	-0.69**	-0.91***	-1.07***
Observations	2,251	2,251	2,251	2,251	2,251	2,251	2,251	2,251	2,251	2,251

*Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The explained variable takes the values from 1 – Disagree to 5 – Agree. The five dimensions included in the columns reflect statements about risks associated with P2P content: "The files downloaded from P2P file-sharing sites often contain viruses" (Viruses), "The files downloaded from P2P file-sharing sites often contain something else than the file description indicates" (Wrong descriptions), "It is difficult or more difficult to find files from P2P file-sharing sites than from legal stores" (Difficult finding), "The files downloaded from P2P file-sharing sites have often poor quality" (Poor quality), "The files downloaded from P2P file-sharing sites often contain malware" (Malware). The regressions are on a sample of frequent P2P users (i.e. those who indicated using P2P at least several times a week). The explaining variable of interest in columns (6)-(10) takes the minimum of the from the music and movie/TV episode files downloads numbers. All regressions include control variables for: gender, year of birth, education level dummies and income categories.*

Source: own calculations based on the HIIT data (Hietanen et al., 2007).

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