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**The Piracy Phenomenon:**  
*Creation, Protection, Dissemination*

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## An Introduction to ATINER's Conference Paper Series

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Dr. Gregory T. Papanikos  
President  
Athens Institute for Education and Research

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**The Piracy Phenomenon:  
*Creation, Protection, Dissemination***

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**Abstract**

Piracy has considerably grown since the advance of information and communication technologies (ICTs), such as the Internet.

Particularly, movie piracy causes direct losses to copyright owners and also affects other industries because of the indirect and induced effects. On the other side, not only the Internet is an effective tool for piracy: it has also evolved both as a platform for independent artists to showcase their talent and exploration for consumers of unknown movies mostly neglected by legal distribution channels.

In this paper we both apply different economic approaches and use data survey on movie piracy in order to demonstrate piracy's effects on the sector involved and on the society and the economy as a whole. Using both IPSOS collected data (2009) for piracy and official statistics for theatrical and DVD sectors (2009), we estimate the direct loss due to movie piracy in Italy; moreover, in line with the analytical framework of social cost benefit analyses (SCBAs), we discuss the implications of movie piracy on social welfare.

The results could be useful for both product manufacturers and policy makers to understand how to minimize piracy's costs and how to recover pirates.

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## **Introduction**

Unlicensed consumption of movie has considerably increased since the development of digital distribution channels and the advancement of network structures, such as the Internet.

In this paper we apply different economic approaches in order to analyze the effects of movie piracy on the sectors involved and on the economy and the society as a whole.

The results could be useful for both product manufacturers and policy makers to understand how to minimize piracy's costs and how to recover pirates.

The remainder of the paper is organized as follows: section 2 will review the relevant literature; section 3 will present methodology and descriptive statistics from our data set; section 4 will show the results of the analysis and will conclude.

## **2. Literature review**

Scientific research into the impact of file sharing has focused primarily on the implications for music recordings and the music industry: this may be explained by the fact that this phenomenon was first seen in the world of music. The fewer economic studies into the relationship between movie piracy and DVD sales or cinema visits than in music sector can be explained also by the fact that the film and video market continued to grow and that changing user behaviour or online piracy have not affected the film sector in the same way as the music industry (Oberholzer-Gee et al., 2009).

The scientific literature describes various mechanisms that could influence the relationship between unlicensed consumption of films and physical format buying, but the outcomes are still ambiguous (Bellaflamme, 2011; Holm, 2003; Peitz et al., 2006).

The phenomenon of movie piracy, particularly the digital ones, has been especially debated on its implications for the rights holders' sales and profits: the key question is whether piracy precludes buying physical formats or whether there is overlap between the two (MPA&LEK, 2006; Oxford Economics, 2009, 2011).

Moreover, in the large body of economic research on copyright, one of the activities that has especially emerged is the measurement of the economic contribution of industries that are associated with copyright protection: the results are used to investigate the hypothesis that "copyright is a powerful source of economic growth, creating jobs and stimulating trade" (WIPO p. 2, 2003; van der Noll, Poort, 2011).

In this direction, the Oxford Economics Report (2009) estimates the total economic impact of copyright theft of the UK audiovisual sector, distinguishing direct, indirect and induces effects due to piracy: the direct revenue loss to audiovisual industry amount to 531 £ million and the employment impact is 15.710 jobs lost .

The IPI Policy Report on ‘True Cost of Copyright Industry Piracy to the U.S. Economy’ (2007) measures the lost economic output, jobs and employee earnings that represent the economic consequences of copyright piracy. Because of that piracy the U.S. economy loses \$58 billion in total output annually and 373.375 jobs .

The results of the Tera Consultants Report (2010) show that the retails losses due to audiovisual piracy in UE27 amount to 5340 M€ and direct and indirect job losses are 134.400.

Van Eijk et al. (2010) discuss the effects of unauthorized file sharing on music, films and games: in this study unauthorized file sharing can be seen as a lack of effective copyright protection. The paper shows that unauthorized file sharing has positive, neutral and negative effects on sales.

Exceptions and limitations of copyright on creative production boost the incentives for creation and creative authors may benefit from those, also depending on the product and business model considered (van der Noll, Poort, 2011): this theoretical insight has been corroborated by Akker et al. (2010). The study estimated the value added generated by industries in the European Union relying to some extent on exceptions and limitations to copyright at € 1.1 trillion or 9.3% of GDP in 2007. These figures are based on an analysis of 35 industries that either use exceptions or limitations as an input in their production process or derive their demand from exceptions or limitations.

In line with the literature reviewed, in this paper we calculate direct loss due to movie piracy in terms of revenues in the Italian movie sector. Moreover, using the same set of data we apply the welfare-theoretical approach (in line with the method used in social cost benefit analyses) as analytical framework to outline some positive implications due to digital piracy. The original contribute of this paper refers to the original set of data used to analyze the effects of piracy

### **3. Methodology**

The empirical reality of piracy is described using data from a representative survey of 2.038 individuals in Italy. Data survey were collected by IPSOS from 4th to 7th February 2009 by CAPI methodology (Computer Aided Personal Interview): the sample is broadly representative of the Italian population aged 15 upwards in terms of its socio-demographic characteristics (gender, age and geographical area). The respondents who got involved in any form of piracy (661 “pirates”) have successively been in depth interviewed, with a main focus on their attitude, their motives and knowledge about the issue.

The survey explores the three types of piracy:

- Physical piracy: buying counterfeit or home copied DVDs.
- Digital piracy: electronic distribution (downloading/streaming/peer2 peer/digital copies) from unofficial sources.
- Secondary piracy: borrowing or viewing an illegal copy – as opposed to making or buying one.

### 3.1. Data survey results

32% of the sample has got pirated movies in the last 12 months. Pirates have a close profile to the analyzed sample of population for gender (little higher male prevalence), provenience and town size. The most relevant socio-demographic variable is the age: pirates are mainly represented in the 15-34 age range, whereas their presence decreases in the over 45-54 age range.

Data survey reveal that physical piracy has an incidence of 17%, especially as to counterfeit DVDs. Digital piracy involves 21% of the respondents: altogether 27% of the sample has been involved in at least one form of direct piracy (physical or digital), though secondary piracy involves 22% and 16%, respectively for borrowing and viewing material illegally copied by others.

On average, each pirate got 21 movies in the last year: as data reveal (see Table 1) the digital piracy is responsible for the biggest volume of titles that are pirated.

**Table 1. Estimates of pirated movies in Italy**

	Average nr. of pirated movies	Incidence	Italian pirates for each type	*Total number of pirated movies
Counterfeit DVDs	7,9	15%	7.620.000	60.120.000 (17%)
Home copied DVDs	6,4	8%	3.999.000	25.630.000 (7%)
<i>Physical piracy</i>				<i>85.750.000 (24%)</i>
Download	8,8	8%	4.300.000	37.890.000 (11%)
Streaming	3,8	4%	2.238.000	8.420.000 (2%)
Peer to peer	16,6	8%	3.948.000	49.870.000 (14%)
Digital copies	6,5	15%	7.922.000	51.810.000 (15%)
<i>Digital piracy</i>				<i>147.990.000 (42%)</i>
Borrowing unofficial	5,4	22%	11.241.000	60.480.000 (17%)
Viewing unofficial	7,3	16%	8.299.000	60.580.000 (17%)
<i>Secondary piracy</i>				<i>121.060.000 (34%)</i>
<i>Total Piracy: 354.800.000</i>				

Exploring the main drivers underneath the purchase, the download of pirated movies and the rationale for engaging with illegal activities, the results show that the most important motivations to piracy are both the high availability of titles that pirates would not have seen otherwise and the wish to see all the films they have lost in the cinema. Also costs and time saving reasons play an



important role in the explanation of the individual extent of movie piracy. Among the different types of pirates, only digital pirate has an increasing piracy trend compared to the past; both the physical and the secondary pirates show a decreasing piracy trend, stronger for the physical phenomenon.

Survey data suggest that illegal and legal movies consumption go hand in hand, with no sign of full substitution of buying by pirating. There is evidence that the Italian pirates make use of films also through channels that involve fee<sup>1</sup>; moreover who consume unpaid for film typically have a legal consumption of movies higher than non-pirates (Table 2).

**Table 2. Legal movie consumption: non pirates vs pirates**

	Non pirates (%)	Pirates (%)
Cinema	49	74
Rented DVD	28	56
Bought official DVD	26	51
Borrowed official DVD	22	64
Viewing official DVD	6	36

The survey also found that many consumers (37%) are unaware of what is and is not permitted in terms of uploading and downloading and the techniques used (peer-to-peer, newsgroups, etc.).

The evidence that pirating and buying are not mutually exclusive does not give the answer to what consumers would do if piracy did not exist or became impossible (van EIJK et al., 2010).

Theoretically there are three possible relationships between unlicensed consuming and buying (Huygen, 2009):

- 1) unlicensed consuming as a complement to buying (sampling effect), (Liebowitz 2006);
- 2) unlicensed consuming as an alternative to buying (substitution);
- 3) unlicensed consuming as only way of consumption.

To understand to which extent each form of piracy cannibalised Cinema/DVD sales etc., or not, the survey investigated what the pirates would do if they could not access pirated material.

As a result, some 29% of viewers of pirated films indicated that they would not view the material at all if it wasn't available in an unauthorised form. A substantial number, 24%, indicated that, in the absence of piracy, they would have viewed the material in some ways that do not necessarily involve payment (e.g. borrowing DVDs). The remainder, 47%, indicated that they would have viewed the material through various paid formats (i.e. cinema, DVD sales, DVD

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<sup>1</sup> In the last 12 months pirates have gone to cinema (74%) at least once, have rented official DVDs (53%), have bought official DVDs (48%), have borrowed or received as gift official DVD (59%), have watched films at someone else's place (31%).

**Table 3: What pirates would do if they could not pirate movie?**

In the cinema	22%
Bought official DVD	5%
Rented DVD	16%
Downloaded from official web site	1%
Pay per view TV	1%
Satellite TV/digital cable	2%
Borrowed DVD	8%
Viewed DVD someone else bought etc.	4%
Free TV	12%
Wouldn't have watched (None of these)	29%

The sheer variety of the replies suggests that there are many reasons and drivers for pirating: some of these reasons are tying in with product categories and some with consumers' different situations and focus (Hyugen et al., 2009). Based on the information provided it is possible to estimate the financial impact of piracy on legal channels' revenues.

The financial impact of piracy on industry revenues is currently calculated to be €537 million: this reflects the estimated revenue loss from users who would have viewed the material through paid and legal forms if they hadn't had access to pirated content.

These direct losses to copyright owners represent only part of the negative economic consequences due to piracy. Changes in supply or demand in one industry can in fact affect supply and demand in other industries: higher movie industry revenues will have multiplier impacts on the entire economy (MPA&LEK, 2006). With an effective €537 million gain in revenues, the movie industry increases its demand from other sectors of the economy (e.g. marketing, accommodation, retailing, business services etc.): they are the so-called 'indirect and induced' effects (Oxford Economics, 2009; 2011).

Allowing for induced and indirect effects provides an indication of the economy-wide spread of the losses initially created by the movie sector. On the other side there are some positive implications due to piracy. Digital piracy has significantly enhanced access to a wide and diverse range of products, mostly neglected by legal distribution channels: many consumers download films that they would never have bought because of unfamiliarity (Brynjolfsson et al., 2006; Das, 2008; Piktar, 2008). Moreover piracy both meets and satisfies a movie demand that is not driven by purchasing power (Mandel et al., 2009).

## **4. Theoretical framework**

### **4.1. A static analysis of digital piracy direct effects**

One clear conclusion that emerges from the analyses and findings from the survey data is that there is no one-on-one correlation between pirated download/purchase/viewing and sales. Unlicensed consuming does not always happen at the expense of a purchase: in some cases the pirates would have never bought the film.

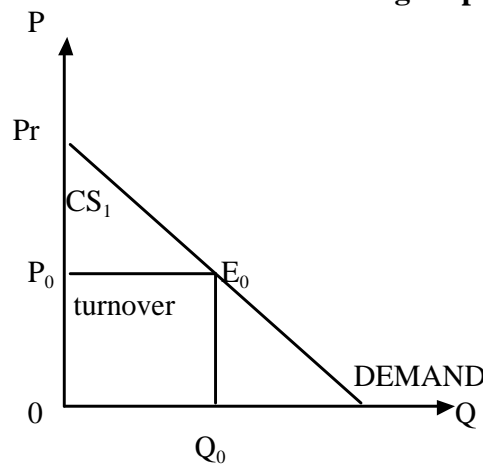
Given this result, we can describe the economic scope of movie piracy and its short-term effects, adopting the welfare-theoretical approach (in line with the method used in social cost benefit analyses) as analytical framework.

This approach is useful to outline some positive implications due to digital piracy to various parties of society, not yet completely investigated in economic terms.

In the adopted model we only consider the digital piracy phenomenon: this assumption is not so far from the reality of piracy because of the increasing broadband penetration and the volume of pirated digital movies<sup>1</sup> (Rob and Waldfogel, 2007).

In Figure 1 we describe the movie demand (i.e. in the market where are bought DVDs<sup>2</sup>) in the absence of movie digital piracy.

**Figure 1. Movie demand in the absence of digital piracy**



The diagonal line represents the demand (D) for DVDs in relation to price. In a situation where there is no file-sharing activity, a  $Q_0$  number of DVDs will be sold at price  $P_0$ , resulting in a turnover of  $P_0 \times Q_0$  (the  $0P_0E_0Q_0$  rectangle ‘turnover’). Given the characteristic costs of movie industry (high fixed costs and low marginal costs), in the stylised situation the gains for the producer – the producer surplus – roughly equal turnover<sup>3</sup>. Consumers benefit by paying the actual price  $P_0$  instead of the higher price they would be willing to pay: the consumer surplus is represented by the triangle  $P_0P_rE_0$  ( $CS_1$ ) in the graph. The

<sup>1</sup> Estimates of the volume of global unauthorised download traffic vary strongly, but all signs are that this involves many billions of files per year, constituting a substantial share of international Internet traffic.

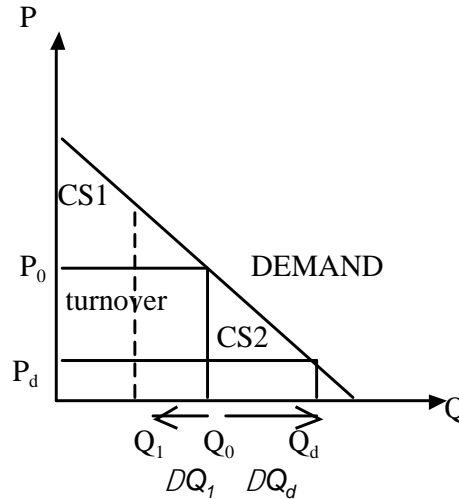
<sup>2</sup> The assumption is a simplification because the price of DVDs is different for catalogue and new releases. For our purposes the assumption does not affect the results.

<sup>3</sup> In order to determine the absolute producer surplus, the fixed costs need to be subtracted from total revenues. In the current approach we consider the simplified hypothesis without consequences on results.

creation of welfare in the economy is defined as the consumer surplus plus the producer surplus ( $P_0P_rE_0 + 0P_0E_0Q_0$ ).

Now we assume that consumers have the opportunity to download the product. The Figure 2 illustrates this hypothesis.

**Figure 2. Movie piracy in the presence of digital piracy**



The horizontal line  $P_d$  (download price) represents the costs (in terms of effort and time) of file sharing. Far more consumers ( $Q_d$ ) are interested in the movie at this lower price and consumption of the DVD increases by  $\Delta Q_d$ : in fact, the consumers who initially were not prepared to pay the higher price now can consume the product. At the same time, however, some of the consumers who are willing to pay to view the movie may now download the movie, resulting in a reduction in demand for it by  $\Delta Q_1$  (substitution). In this stylised example this reduction would amount to a total of  $\Delta Q_1 + \Delta Q_d$  consumers downloading the DVD, resulting in turn in lost revenues for producers (in this case this is equated with a lower producer surplus) of  $\Delta Q_1 \times P_d$ . This welfare is not lost but goes directly into the pockets of consumers who choose to download rather than to buy, thus creating additional consumer surplus. More importantly, additional consumer surplus is created and represented in the graph as the triangle between demand  $D$ , the initial vertical line  $Q_0$  and the download costs,  $P_d$ . This is a new surplus compared with the initial situation and constitutes welfare gains to society.

In the stylised static analysis described, the substitution effect resulted in a redistribution of welfare (producer surplus became consumer surplus) with a net effect on the total welfare. Moreover file sharing both meets and satisfies a movie demand that is not driven by purchasing power creating welfare gains for society.

#### 4.2. Application

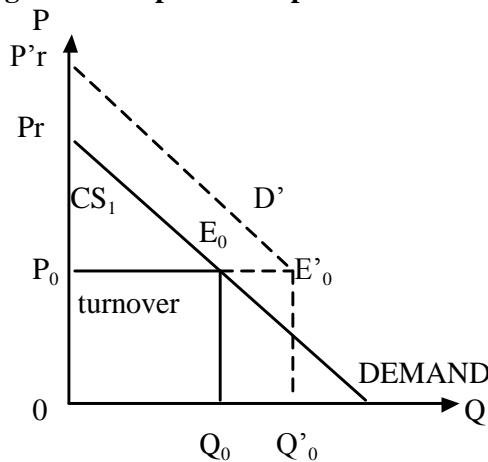
Even if our data set is not suitable in order to estimate the value of welfare effects in terms of consumers surplus<sup>1</sup>, from the above analysis we can draw some important results, both in economic and in cultural terms.

From the selected approach it results that to the extent that piracy results in a decline in sales, we see a transfer of welfare from producers to consumers, with no net welfare effect: this could be theoretically applied to the 47% of our sample. This percentage reflects the estimated revenue loss from users who would have viewed the material through paid and legal forms if piracy did not exist or became impossible.

In the 47% of our sample we also find individuals that declare to pirate with the aim to sample the content: in this situation, some of them will return back to the legal option. Such sampling behavior does not detract from physical format sales and might create legal demand: consumers could decide they wish to own a film after sampling it.

In such cases file-sharing websites might increase the diversity of the supply these consumers have access to: many consumers download films (as other creative contents) that they would never have bought because of unfamiliarity. If this sampling effect<sup>2</sup> or other positive effects<sup>3</sup> were to dominate, demand would even increase on balance and both the consumer and the producer surplus would rise, as described in the figure below (Fig. 3).

**Figure 3. The positive impact of file sharing**



<sup>1</sup> We do not have the data on the willingness to pay by our consumers' sample.

<sup>2</sup> The positive impact of file sharing on sales, mainly attributable to sampling, results in a lower degree of substitution.

<sup>3</sup> Among others, file sharing allows consumers to pool their demand resulting in increased demand; it enhances the popularity of products boosting demand driven by a lack of purchasing power (network effect); moreover file sharing enhances willingness to pay and demand for related products (complementary demand).

In other cases file sharing does not necessarily replace buying. It may, for example, meet demand driven by a lack of purchasing power (in which case sales are not affected): this could theoretically regard at least 24% of our sample, where we find individuals that declare they would have seen the movie by means that not involved payment, in the absence of piracy.

On balance, society as a whole reaps welfare gains, as the loss in turnover is made good by revenues generated by a group of consumers who would never have bought the product if pirating was not possible: for example, 29% of our sample would not have seen the movie at all if piracy did not exist or became impossible.

What does movie piracy represent for those consumers? It appears to be the only way for movie consumption.

We can suppose that these individuals are not particularly interested in watching movies (and this distinguish them from the latest consumers' category)<sup>1</sup>.

Strictly economically speaking they do not affect, as the latest consumers' category, the legal market size, both in terms of sales and revenues. On the cultural side, we can only observe that piracy gives them the opportunity to entertain their free time by consuming movie: so piracy has led new audiences to video viewing and illegal distribution has encouraged consumption of movie contents.

## **5. Results discussion and conclusion**

In economic terms, piracy involves direct effects, in terms of revenue losses; moreover the losses suffered in the movie sector are able to establish further negative induced and indirect effects on the whole economy, with consequences on output, jobs, value added (GDP) and taxes (Siwek 2007; Oxford Economics, 2009). On the other side, free downloading might benefit the perceived diversity of supply and stimulate a wider-ranging demand (Piktar et al., 2008). Moreover online film services and video-sharing sites have also created a strong demand for new video software and services (i.e. video hosting, editing and delivery).

The key question is if, and eventually how, it is possible to fight piracy, both reducing negative economic consequences and maintaining the perceived benefits on social welfare in terms of consumers' surplus (economic aspect) and diversity of supply (cultural aspect).

By the conducted analysis we draw some remarkable results, useful to better understand movie piracy phenomenon and actively face it, both in an industrial and in a public perspectives.

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<sup>1</sup> It is also supposable that they are not active pirates but representative of the secondary phenomenon.

### 5.1. What can movie industry actively do?

Even if the film industry still performs well with existing business models via its strategy of release windows (in particular in terms of DVD sales and cinema visits), the film industry has most to learn from the music industry's experience<sup>1</sup> as buying films may increasingly be substituted by file sharing.

Nevertheless the rapid adoption of new technologies, the basic structure of the film distribution has not changed significantly over the time: despite the potential for Internet distribution of films is really large (also in terms of cost savings), digital distribution of licensed online content has not yet taken off (Cook, 2004).

The Table 4 shows the size and composition of the three biggest film markets in 2006: data demonstrate the relative importance of DVD sales and the still relatively minor contribution of revenues from online film distribution<sup>2</sup>.

**Table 4. Major film market revenues, 2006 (excluding TV market), in million USD**

	United States	European Union (14)	Japan
DVD sales and rental	24100	9353	6059
Box office revenues	9490	7026	1736
Online film	23	25	292

Source: OCSE, 2008

Despite the initially slow uptake, the number of online film suppliers is increasing<sup>3</sup>. Nevertheless the online legal supply is yet limited and not diversified, both for range of titles available and for price discrimination models. The majority of existing sites aim at specific national markets, and there is no European video provider able to offer access to the rich library of films of various European countries. However, overall even major Internet market participants have difficulties offering a rich film catalogue and mostly target the United States market.

Therefore remaining problems are limited catalogues and the geographic market segmentation that dominate Internet distribution.

So for many movie consumers, piracy represents a way to satisfy a movie's demand not yet well satisfied by legal alternative sources: the illegal supply is perceived as wider than the legal one. Survey data suggest that some pirates are involved in this illegal activity as response to an inefficient online and physical

<sup>1</sup> The rise and development of file sharing in the music business has been most extensively documented.

<sup>2</sup> While online film revenues are expected to grow, projected values up to 2010 are still relatively small. For the EU14, the share of online movie downloads in total revenue (excluding TV licensing) is expected to rise from 0.1% to 7% (Screen Digest et al., 2007), equivalent to the share of online music distribution in many European countries in 2006.

<sup>3</sup> In Europe, the number of Internet sites providing Video-on-Demand (VoD) doubled in 2007 with France, Germany, the Netherlands, and Spain leading.

distribution system, both for the wide range of available titles and for the time of movies' release (little exposure time, high concentration, small choose). This result confirms the hypothesis that the current online distribution systems do not succeed in reaching the audience and providing a legal alternative for the movies that are illegally (but effectively) distributed on the Internet (Pitkar, 2008): high and prompt availability, huge size of available titles, easy to use tools, ready-to-use software to pirate and low risk to be caught. Moreover, the Internet encourages exploration of unknown movies mostly neglected by legal distribution channels: so some users know that some movies exist but again they can't get hold of them legally.

The described situation could regard at least the 47% of our sample, where we find consumers that are willing to pay to see a movie.

In order to change these pirates' behavior, it could be useful to change the current movie distribution system, especially the online one, at least in terms of range of available titles and a supply in real time.

Given bandwidth constraints and the fact that the current infrastructure may be unable to deal with the increasing volume of video content (especially high-definition content), the distribution of films over peer-to-peer networks is an alternative and is being trialled by well known sites as BitTorrent, Jaman, Vuze, Guba, Joost, etc. (OECD, 2008). More extensive film catalogues over a single platform covering film of different origin (including European and Asian productions) would be a competitive advantage (OECD, 2008).

Moreover Internet business models could be competitive in terms of price both with offline distribution methods and with e-commerce DVD rentals and sales.

According to the movie industry perspective, on line distribution movie channels could try to capture demand driven by a lack of purchasing power through an attractive and convenient movies' supply: appropriate priced online distribution models, strong price discrimination, availability of extra services and free copies are all instruments able to recover at least some of the pirates in the 24% of our sample, where we find individuals that declare they have seen the movie by means that not involved payment, piracy being absent. Moreover for those individuals it could be useful to increase the perception of the non-financial costs of piracy: education, law and public policies have a strong role to play about that.

Yet the challenge is to capitalise on the dynamics of the digital age by responding to the new reality created by users and by reinventing business models; so the movie business will have to work actively towards innovation on all fronts.

New models worth developing, for example, are those that seek to achieve commercial diversification or that match supply and end-user needs more closely: demand would even increase on balance and both the consumer and the producer surplus would rise.



## 5.2. What can public policy do?

Efforts by governments to stop piracy have largely focused on strengthening intellectual property enforcement regimes to more effectively deter the production and trade of pirated products. Activities aimed at tackling the consumer demand- side of the piracy phenomenon have not yet received the same level of attention or resources.

As governments fully understand the factors that drive consumers to pirate illegal products, they will undertake appropriate policy initiatives to stop the demand for pirated products.

Of course there is no universal way to fight piracy and, moreover, it is necessary to consider that some time has to pass before obtaining results. The solution involves, among other things, tougher legislation, education of consumers as to the economic and social consequences of piracy and effective anti-piracy campaigns.

With the aim to change the attitude to piracy, governments have to recognise the need to communicate more effectively with their constituents that piracy is not victimless crime – but instead inflict serious harm on people, the economy, jobs and their communities.

Moreover, as we said before, it could be useful to increase the perception of other non-financial costs of the illegal behaviour: by increasing the non-financial costs of illegal behaviour, regarding the gains, the attraction of piracy may be diminished (Becker, 1968). These non-financial costs are for example (Danaher et al. 2010) both the moral cost of piracy and the cost of risk if caught and punished: while the first is a main long run purpose that implies public policies involvement by different means (including educational programs and anti-piracy advertisement campaigns, BASCAP 2009), the second one could be an effective short run deterrent, useful as intermediate tool.

Past experiences have shown that the effect of enforcement tends to be only temporary: on the top of the priorities there must be the purpose to educate and motivate consumers to legal movie consumption.

Piracy has to become a key priority in governments' cultural policy also in order to strengthen the country's innovative power and competitive edge.

### Limitations and future research

We note that there are several limitations associated with this study.

At the beginning we don't analyze possible refinements in copyright design. Then, we consider only the static short-term economic and cultural effects of movie piracy. Dynamic efficiency considerations on welfare, behavioural changes and adjustments to business models needed to be further considered. As this is an industry in flux, developments and new adopted business models need to be monitored on an ongoing basis to understand which business models will work best in the movie industry.

Governments could gain a better insight into the development of file sharing also through systematic data collection.

Moreover our evaluation of welfare takes supply as given, even if downloading has surely important effects on it. This is an important area for further research.

## References

- Akker, I., Noll, R. van der, Poort, J. & Tewes, F. (2010). Economic contribution of EU industries relying on exceptions and limitations to copyright. (SEO-rapport, 2010-30). Amsterdam: SEO Economisch Onderzoek. <http://www.ccianet.org/CCIA/files/ccLibraryFiles/Filename/000000000398/FairUseEUstudy.pdf> [25 June 2012]
- BASCAP. (2009). *Research Report on Consumer Attitudes and Perceptions on Counterfeiting and Piracy*. ICC initiative. Available at [http://www.iccwbo.org/uploadedFiles/BASCAP/Pages/BASCAP-Consumer%20Research%20Report\\_Final.pdf](http://www.iccwbo.org/uploadedFiles/BASCAP/Pages/BASCAP-Consumer%20Research%20Report_Final.pdf) [25 June 2012]
- BASCAP. (2011). *Estimating the global economic and social impact of counterfeiting and piracy*. ICC initiative. Available at <http://www.iccwbo.org/uploadedFiles/BASCAP/Pages/Global%20Impacts%20-%20Final.pdf> [25 June 2012]
- Brynjolfsson, E., Hu, Y.J., Smith, M. D. (2006). 'From Niches to Riches: Anatomy of the Long Tail.' *Sloan Management Review*. 47(4): 67-71.
- Cook, D. A., Wang, W. (2004). 'Neutralizing the piracy of motion pictures: Reengineering the industry's supply chain.' *Technology in Society* 26: 567-583.
- FAPAV-IPSOS. (2009). *La pirateria video in Italia*.
- Holm, H. J. (2003). 'Can Economic Theory Explain Piracy Behavior?' *Topics in Economic Analysis & Policy* 3: 1-15.
- Huygen, A., Natali, H., Poort J., Rutten P., van Eijk N. (2009). 'Ups and downs. Economic and Cultural Effects of File Sharing on Music, Film and Games'. *TNO Information and Communication Technology Series*. Available at [http://www.governo.it/Presidenza/antipirateria/audizioni/audizione\\_ALTROCONSUMO\\_allegato2.pdf](http://www.governo.it/Presidenza/antipirateria/audizioni/audizione_ALTROCONSUMO_allegato2.pdf) [25 June 2012]
- MPA&LEK. (2006). *The Cost of Movie Piracy*. New York. Available at <http://austg.com/include/downloads/PirateProfile.pdf>
- Oxford Economics (2009). *Economic impact of legislative reform to reduce audiovisual piracy*. Final Report. Available at <http://www.allianceagainstiptheft.co.uk/downloads/reports/Great%20Expectations%20Economic%20impact%20.pdf> [25 June 2012 ]
- Oxford Economics, Ipsos Media (2011). *Economic consequences of movie piracy, Canada Report*. Available at <http://www.scribd.com/doc/52258548/IPSOS-OXFORD-ECONOMICS> [25 April 2011].
- Pitkar, K., Rajpathak, S., Motwani, T., Mahendiran, A. (2008). 'Minimizing Revenue Loss Due to Piracy: An Early Internet Release of Motion Picture'. University of Colorado, Boulder. Available at <https://drachma.colorado.edu/dspace/bitstream/123456789/276/1/Digikast.pdf> [10 April 2011]
- Siwek, S. E. (2007), *The True Cost of Copyright Industry Piracy to the U.S. Economy*, Policy Report 189, IPI Center for Economic Growth. Available at <http://www.ipi.org/IPI%5CIPublications.nsf/PublicationLookupMain/A2C29ADF66FD941186257369005A052D> [15 November 2011]

- TERA Consultants (2010). *Building a Digital Economy: the importance of saving jobs in the EU's creative industries*, International Chamber of Commerce/BASCAP. Available at <http://www.droit-technologie.org/upload/dossier/doc/219-1.pdf> [25 June 2012]
- UK FILM COUNCIL (2004). *Film theft in the UK Anti-Piracy Task Force: an analysis and recommendations for action*. London. Available at [www.ukfilmcouncil.org.uk/media/pdf/j/4/Film\\_theft\\_in\\_the\\_UK.pdf](http://www.ukfilmcouncil.org.uk/media/pdf/j/4/Film_theft_in_the_UK.pdf) [25 June 2012]
- van der Noll R., Poort J. (2011). Assessing the Economic Contribution of the Copyright-Based Industries Remarks and alternatives. SEO-report nr. 2010-63
- van Eijk N., Poort J., Rutten P (2010). Legal, Economic and Cultural Aspects of File Sharing, «Communications & Strategies», 77, 1st Q., p. 35,. [http://www.ivir.nl/publications/vaneijk/Communications&Strategies\\_2010.pdf](http://www.ivir.nl/publications/vaneijk/Communications&Strategies_2010.pdf) [25 June 2012]
- World Intellectual Property Organization (2003). *Guide on Surveying the Economic Contribution of the Copyright- based Industries*. Geneva: 2003. Available at [www.wipo.int/copyright/en/publications/pdf/copyright\\_pub\\_893.pdf](http://www.wipo.int/copyright/en/publications/pdf/copyright_pub_893.pdf) [25 June 2012]