The percentage of Internet users in Europe that occasionally download or stream music, films, series, books or games illegally has decreased between 2014 and 2017. The decrease is greatest for music, films and series. Meanwhile, expenditure on legal content has increased since 2014. This follows from the Global Online Piracy Study that the Institute for Information Law (IViR) of the University of Amsterdam published today.

Together with Ecorys, IViR conducted consumer surveys among nearly 35,000 respondents, including over 7,000 minors, in 13 countries in Europe (France, Germany, the Netherlands, Poland, Spain, Sweden), the Americas (Brazil, Canada) and Asia (Hong Kong, Indonesia, Japan, Thailand). The survey deals with the acquisition and consumption of music, films, series, books and games through the various legal and illegal channels that exist nowadays. The illegal channels studied are downloading and streaming from illegal sources.
The study was made possible by financial support from Google and builds on previous studies by IViR and Ecorys for the Dutch Government and the European Commission. In the latter, a comparable survey was used in six European countries, as a result of which time trends can be studied and there is the unique opportunity to follow a few thousand respondents over time. For the countries outside Europe, such a comparison over time is not possible.

The study aims (i) to provide factual information about the \textit{state of authorised and unauthorised acquisition and consumption of content}; (ii) to assess the \textit{underlying motives} and mechanisms and the \textit{link with enforcement measures} and legal supply; (iii) to assess the \textit{effect of online piracy on consumption from legal sources}.

\textbf{Legal analysis}

\textit{Comparative legal research} was performed on the basis of questionnaires on the legal status of online copyright infringement and enforcement, completed by legal experts in the 13 countries. It was found that, despite some legal uncertainty, the majority of acts studied are qualified as direct copyright infringement by users or give rise to liability for intermediaries. Moreover, ISPs are often subject to injunctions and duties of care even when they benefit from safe harbours. On the whole, copyright holders have a vast arsenal of legal enforcement measures to deploy against end users and ISPs. There is a trend in many countries toward copyright enforcement through civil or administrative measures aimed at blocking websites that provide access to infringing content. Notices to infringers and to platforms hosting or linking to infringing content with the aim of removing/blocking such content are likewise regularly used, the latter in the context of notice-and-takedown systems. Criminal measures are less popular.

Still, despite the abundance of enforcement measures, their perceived effectiveness is uncertain. Therefore, it is questionable whether the answer to successfully tackling online copyright infringement lies in additional rights or enforcement measures, especially if these will not lead to additional revenue for copyright holders and risk coming into conflict with fundamental rights of users and intermediaries. Instead, it might be sensible to search for the answer to piracy elsewhere – in the provision of affordable and convenient legal access to copyright-protected content.

\textbf{Growing markets}

Sales data for music, film and video, books and games reveal that across all content types and formats, per capita income appears to be an important driver of expenditures. However, above an annual income level of € 30,000 per capita, this relationship no longer seems to apply and national preferences dominate income effects. Figure 1 illustrates this for recorded music. Zooming in, it is clear that physical sales are in continuous decline for almost every content type and in almost every country. Despite the decline in physical sales, the increase in digital sales led to \textit{net growth for total recorded music, audio-visual content, books and games}.
between 2014 and 2017. Expenditures on live concerts and cinema visits are growing.

**Figure 1 Legal music sales and income per capita**

Survey outcomes

The percentage of the Internet population consuming content from legal sources varies between 61% in France and 93% in Indonesia (Figure 2). In most European countries, this percentage decreased somewhat between 2014 and 2017 – primarily due to a decrease for physical carriers – while total legal consumption volumes grew.

Consuming content from illegal sources – online piracy – is most prevalent in the Internet populations of Indonesia, Thailand and Brazil, followed by Spain and Poland (Figure 3). As a percentage of total population, Spain, Canada and Hong Kong are the top three countries for piracy, while piracy is the least common in Germany, Japan and Indonesia, the last due to low Internet penetration. Between 2014 and 2017, the number of pirates decreased in all European countries except Germany.

**Figure 2**
Acquired or accesses any content type legally (last year)

<table>
<thead>
<tr>
<th>Country</th>
<th>2014 (% of Int. pop.)</th>
<th>2017 (% of Int. pop.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRA</td>
<td>68%</td>
<td>61%</td>
</tr>
<tr>
<td>DEU</td>
<td>82%</td>
<td>81%</td>
</tr>
<tr>
<td>NLD</td>
<td>84%</td>
<td>81%</td>
</tr>
<tr>
<td>POL</td>
<td>84%</td>
<td>70%</td>
</tr>
<tr>
<td>ESP</td>
<td>78%</td>
<td>81%</td>
</tr>
<tr>
<td>SWE</td>
<td>84%</td>
<td>79%</td>
</tr>
<tr>
<td>GBR</td>
<td>84%</td>
<td>79%</td>
</tr>
<tr>
<td>BRA</td>
<td>85%</td>
<td>84%</td>
</tr>
<tr>
<td>CAN</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>HKG</td>
<td>93%</td>
<td>71%</td>
</tr>
<tr>
<td>IDN</td>
<td>71%</td>
<td>80%</td>
</tr>
<tr>
<td>JPN</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>THA</td>
<td>80%</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3
The per capita consumption volumes per legal and illegal content channel that follow from the survey do not always match these developments: for most countries and content types, an increase in the per capita volume of illegal content consumed is observed, despite a decreasing proportion of the population engaging in online piracy. This implies that the issue of piracy is gradually becoming confined to a smaller group: fewer people consume more on aggregate via illegal channels.

It might be tempting to argue that an increase in the use of certain enforcement measures against obviously illegal platforms has contributed to the decreasing number of pirates in Europe. However, a lack of evidence concerning the effectiveness of most enforcement measures and the strong link between piracy and the availability and affordability of content suggests otherwise: Figure 4 shows that at a country level, online piracy correlates remarkably strongly with a lack of purchasing power. Higher per capita income coincides with a lower number of pirates per legal users.

*Figure 4 Pirates per legal content user vs. per capita income (in constant prices)*
Moreover, pirates and legal users are largely the same people: demographically, pirates resemble legal users quite closely, although on average they tend to be somewhat younger and more often male. More importantly, for each content type and country, **95% or more of pirates also consume content legally** and their **median legal consumption** is typically **twice** that of **non-pirating legal users**. Nevertheless, price remains the primary motivation for using illegal channels.

**Displacement of legal sales**

This study confirms earlier studies in finding statistical evidence that **illegal consumption of music, books and games displaces legal consumption**. However, the displacement coefficients are surrounded with substantial **uncertainty**. Separating these results between minors and adults suggests that displacement occurs for adults and not for minors.

The results for **music** indicate that illegal consumption primarily displaces legal downloads and physical carriers. The effect on streaming is not statistically significant. For live concerts and music festivals, a **positive** sampling effect is found. For **audio-visual** content, no such sampling seems to occur for the cinema, which suffers from statistically significant displacement, as do digital streams. No significant effects are found for physical purchases and digital downloads. For rentals, a marginally significant positive coefficient is found. For **books**, the results are contrary to those for music and audio-visual in the sense that large and statistically significant displacement rates are found for books bought in print and borrowed from the library. These
displacement rates may be overstated by people who have shifted from consuming print books to digital and others who have not. For **games**, the effect found for free games is particularly high, but the coefficients found for the other channels are also statistically significant. Just like for books, the large coefficient for free games may be overstated.

Using time-structured data for **blockbuster films**, an average displacement rate was found of – **0.46** of first legal views by first illegal views. This effect is smaller in Japan and the Netherlands and larger in Thailand and Brazil. The largest effect occurs on cinema visits. From these estimations, it is possible to calculate an upper bound for the relative **sales loss** of total film views per channel and per country. Overall, a maximum of about **4.1%** of all legal blockbuster views is displaced by illegal views.

An analysis of individual changes in consumption for respondents in six EU countries **between 2014 and 2017 reveals significantly positive correlations**. Apparently, substitution effects – ‘Shall I buy or shall I pirate?’ – occur on the spot. Over a longer time span, improvements in the availability from legal channels are dominant and changes in personal preferences affect legal and illegal consumption alike.

**The Global Online Piracy Study, a report with annexes and a Legal Background Report can be downloaded from [www.ivir.nl](http://www.ivir.nl).**

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