

# The Downloaders - Who They Are and What They Are Doing?

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**Abstract:** P2P technology has allowed millions to engage in interactivity and share music and video files with their peers. At the same time, it has created serious problems for traditional business models. In this paper we are scrutinizing the research, finding that there are no strong evidence showing a major negative effect on music sales from file sharing. However it is important to get to know more about the downloader's and try to establish a multidimensional view of their motives and behaviour. Here we are presenting the first results from an ongoing study that combines statistical analysis of longitudinal databases and in-depth interviews.

## 1. Introduction

In the late 1990s, MP3 became one of the most important Internet search objects, indicating that music played a dominant role in network content. In 2003, the file-swapping program Kazaa topped the Internet search list. Over 340 million copies of Kazaa's Fast Track software had been downloaded by December 2003. File-sharing or Peer-to-Peer activities (P2P), mainly involving audio/audio-visual products, have become the main driver of broadband traffic, accounting for over 50 percent of the capacity.

P2P technology has allowed millions to engage in interactivity and provided new methods for marketing intellectual property and knowledge related products. At the same time, it has created serious problems for traditional business models and modes of digital asset protection. New business models are appearing in the P2P environment, particularly in the music industry, a key area where early adoption of new technology has traditionally demonstrated important lessons for many other industrial sectors.

The preamble to the EU copyright directive of 2001 notes the need for "a fair balance of rights and interests between different categories of right holders, as well as between the different categories of right holders and users". This balance has not yet been attained, and the immediate future will see a continued battle between different parties putting the case very strongly for and against different forms of regulatory constraints.

In this paper we will present some results from the ongoing user study that is part of the EU supported project Music Lessons [1]. Who are the down loaders and what do they do when they are file-sharing music? There are lots of existing misconceptions here and not so much of knowledge. Knowledge that is necessary to attain a "fair balance" and a success when developing future business models for music. But first we will look closer at the discussion and earlier research about the effects of downloading on music sales.

### *1.1 Conflicting Results on the Effects of File Sharing on CD Sales*

When MP3 was developed in Europe and introduced 1992, few understood its importance for the distribution and storage of music. Once compressed, songs can be easily stored on a hard drive for playback on any Personal Computer and today also on musical CDs.

The music industry, represented by RIIA, was afraid that young peoples' sharing of music files would result in a decrease of music sales. At the same time, 1999, the new way to distribute music started to pass the big music companies and musicians started to publish single and whole albums in MP3 format. November 1999 Napster offered a downloadable program, free of charge, and a public accessible FTP-site that made it possible to download music from personal MP3 sites.

Downloading music for free became a tremendous success and after some time music sales started to level out. The music industry blamed Internet and they saw a direct causal negative link between file sharing and CD sales. But the evidence at the time of the trial against Napster was not yet convincing. The "Fine report" showed that sales fell in stores near a college campus compared to more typical record stores. College students were supposed to make up the main body of file sharing. But it was later shown that this was not an effect of file sharing as the sales fell in student shops the year prior to Napster as well as the year following its birth [2].

The earlier estimates of the amount of downloaded music seems however to have been exaggerated and there are still inconsistencies and low reliability in the measurements on the number of files being traded as well as the number of individuals using file-sharing networks. But there seems to be an agreement that there was a decline in file-sharing activities in US during 2003 followed by an increase during 2004 and 2005. [3]

### *1.2 Other Conditions Affecting Music Sales*

There are many conditions, besides file sharing, that can explain the CD decline. In US there was a recession in the economy during these years and among other proposed explanations to the sales drop have been high prices and fewer titles released. [4].

And if we consider CD sales from a longer perspective we can see that the CD as a format distributing music became more and more popular during the 90-ties with its optimum year 2000. And just as cassettes replaced records and cassettes were replaced by CDs we are now witnessing a new format change when CDs are beginning to be replaced by music DVDs and MP3s. The digital music market online has shown a strong increase (tenfold) during 2004 and that seems to be even stronger 2005 [5].

### *1.3 Econometric Studies*

Liebowitz [6] tried to explain the drop in CD sales using different economical sales figures. It could have been the economical recession that influenced the sales drop, or the high price or the reduced number of titles that were released during these years. But he could not find any statistical significant relations. File sharing could have had an effect, but then a minor one not yet strong enough.

Oberholzer & Strumpf [7] used observation of actual file sharing; tracked music downloads over 17 weeks in 2002 and matched the U.S. weekly sales data. Even high levels of file swapping seemed to translate into an effect on album sales that was "statistically indistinguishable from zero". They found that file sharing had a very limited effect. They estimated that five thousand downloads are needed to displace a single album sale.

An overall positive relation was the result of a study of Boorstin [8]. He studied 99 metropolitan areas and four age groups and found there was an increase in sales among older people but a significant decrease for younger people (15-24 years) and a small but not

significant decrease among the youngest. Overall there was a positive relation between Internet access and CD-sales and Boorstin's conclusion was that file sharing could not be the cause of the decline in record sales.

To make the relation between P2P and music sales even more complicated, there are great differences between countries when it comes to the development of music sales. In US, Canada, Germany, Denmark, Spain, Japan and Korea music sales has declined after year 2000, but in UK, Ireland, Turkey, Australia, Mexico and France sales has increased [9]. That proves once again that there exists no simple relation between P2P and CD-sales.

Peitz and Waelbroeck [10] used this variation between countries in a cross-section study of the 16 countries with the largest market for pre-recorded music. They found that music downloading could have resulted in a reduction in music sales in the early years between 1998-2002, but they concluded that there are other factors than music downloads that are responsible for the decline in music sales 2003.

Nevertheless, as it is said in a recent OECD-report [11], "it is very difficult to establish a basis to prove a causal relationship between the size of the drop in music sales and the rise of file sharing. Sales of CDs, as well as the success of licensed on-line music services are likely to have been affected to some degree by a variety of other factors, for example physical piracy and CD burning, competition from other, newer entertainment products and faltering consumer spending in some markets."

Even so, during the 1990s - through good times and bad - younger people steadily migrated away from buying records. In 1988, most purchases were by people younger than 25. But by 1998, most purchases were by people older than 30. And 1998 was still before audiences had heard of Napster.

#### *1.4 User Studies*

A common method to estimate the effects of file sharing is to directly ask those users of Internet who are practicing downloading and file sharing. Here follows results from some user studies.

1. RIIA report says that 23% do not buy CDs because of P2P. But the drop only for audiotapes, CD singles, vinyl records and music videos. CD sales up 3%. [12]
2. 14% say that they stopped buying, 34% buy more and 52% like before. So 86% of people downloading buy like before or more and 14% by less. [13]
3. 81% say their purchases remain the same or more. 19% buy less. 84% informs themselves on the net about music, their favourites and how to purchase. Half of them had purchased CD on the basis of this information a third have changed genre. [14]
4. A later study showed that among those who are downloading music monthly or more often, a majority (62 %) answered that the downloading had no effect on their purchase of music. 28% said that they buy less and 10% said that they buy more. [15] 72% of people downloading buy like before or more and 28% by less

So even if 3 of 4 down loaders say that they buy music like before or more, there seems to be a small but not negligible negative effect on sales. How strong this effect is in reality is difficult to say. It seems that this kind of self-estimation is not always in harmony with other independent measures

It is for example often said that those who use Internet watch less TV. And if we ask users, especially heavy users of Internet, they say that they watch much less television than before [16]. But looking at audience figures collected by people meters or other time use studies the decline of the TV audience after the introduction of Internet is not that strong or even in some countries, like Sweden [17], hard to find.

## 2. Objectives

The research objectives of the project MusicLessons are to deepen the understanding of how P2P technology will support new business models and to evaluate and compare threats and opportunities, providing a better basis for policy-making. This paper is focusing on the situation of users and presents some initial findings from the project.

- Who are the early adopters of P2P technology in terms of age, gender, income, education, occupation, kind of Internet connection, and other Internet activities? And what are the changes in patterns of music consumption?
- In what way are purchases of CD-records affected of file-sharing services?

The aim of the user studies is to establish a coherent picture of the users of file sharing services and their motives. In order to understand the effects of file sharing on the general pattern of music consumption, these activities will be positioned into a general media context. Special focus is here directed to heavy users of file sharing services.

## 3. Methodology

Two databases are analysed: one longitudinal, 2000 - 2004 (World Internet Institute) representative for the Swedish population (18 years and older). 2000 people are interviewed by telephone every year [18]. The other 2003 focused on Swedish students and university staffs (SUNET) [19] where a special emphasise was given to the use of file sharing.

The quantitative data from the statistical surveys is complemented by interviews with a selection of experienced users of file sharing devices. The interviews will add to the explanations about motives and effects that surveys only cannot provide.

## 4. Results

### 4.1 Down-loaders in the Population

In a country like Sweden where 2 of 3 have access to internet in their homes and many have had experience of internet more than five years, they do not use internet only for e-mailing and surfing; 59% of the internet users attach or download documents, 50% do the same with pictures, 15% download or upload music, 10% do it with video. If we look closer at music 13% of the internet users say they are practicing file sharing, that means 7,5% of the population or around 500 000 persons. That is a lot of people in a small country like Sweden. But still not as many down loaders like in U.S. where 27% of internet users (36 million) say they download and half of them have found ways outside of traditional peer-to-peer networks or paid online services to swap their files [20].

However, it is important to observe there are many different kinds of file shares, with different motives and intensity. Some people are file-sharing daily and others are doing it very seldom, but they are all taking part in file sharing. According to the results below half of the down loaders are file-sharing seldom or monthly and the other half weekly or daily.

<u>Frequency of downloading</u>	<u>Percentage of down loaders</u>
<i>Daily</i>	<i>20%</i>
<i>Weekly</i>	<i>31%</i>
<i>Monthly</i>	<i>17%</i>
<i>More seldom than monthly</i>	<i>32%</i>
	<i>100%</i>

Most of the down loaders are men (71%) compared to (29%) women. And there are more young people than old. This dominance of young men is increasing when file sharing becomes more frequent. Among daily down loaders 83% are men. Education level and

income does not seem to be very important but most file shares have a broadband connection (80%) even if there are down loaders with an ordinary telephone modem (20%).

	18-25	26-35	36-45	46-55	56-65	65+	Total
<b>Seldom</b>	21%	25%	29%	15%	8%	2%	100%
<b>Monthly</b>	23%	31%	31%	12%	4%		100%
<b>Weekly</b>	37%	30%	20%	11%		2%	100%
<b>Daily</b>	67%	20%	13%				100%

*Table 1. Download Frequency and Age Groups*

The down loaders are in several respects different from ordinary Internet users. They spend more time online; give Internet a higher value as information and entertainment source. They are in many ways active not only receiving but also sending away video, music files, pictures and documents. They are also buying more online than other users (51% compared to 23%). That is also true for music. 46% of down loaders buy music online compared to 32% among ordinary Internet users. Down loaders also listen more often to radio online and they are busy chatting and sending instant messages. (These differences holds even when age is constant). When it comes to music, down loaders (especially the daily down loaders) are very interested and spend more time a day listening to music (whatever format or technique) than other Internet users. Their Internet use restricts the time they spend watching TV and they say that their purchases from ordinary shops has declined.

It is sometimes said that file shares are poorer than others, but this is not confirmed in this study. There are no income differences between down loaders and others and among the youngest (18-25 years) there are no differences in education. The older down loaders are however somewhat more educated.

If we look a little closer at the daily down loaders - those who are responsible for most of the file sharing - we find that they are mostly young men, single or living together but not married. Half of them are students and the other half working. Typically they have an education in information science or a technical education from university or more practical mechanical schools. That means that they have an interest not only in music but also in computers and Internet technology.

#### *4.2 Down-loaders at Swedish Universities*

At universities file sharing is more widely spread. 34% are using file-sharing services compared to 7,5% in the Swedish population as a whole. The share of users is less, 6-7%, among teachers/researchers scientists and other staffs, which is very close to the average for the Swedish population as a whole. Among students the majority of file shares are 25 years or younger. This is particularly the case among the Kazaa users, a rather user-friendly program, and here the use is more equally distributed among men (32%) and women (20%).

#### *4.3 The Technical Component*

Among students and postgraduate students, the highest penetration of regular users of file sharing services is reported in computer sciences (67%) and engineering sciences (56%), the lowest penetration in arts (26%) and medical educations (23%).

This technical "bias" in user behaviour is confirmed by the self-reported PC technology skills where more than 60% of regular file sharers claim fairly skilled or very skilled in comparison to nonusers (30%). Practically everybody in the survey knows how to attach a

document to the email. The homogeneity disappears when it comes to the downloading of computer software and music files, as well as how to make a web page and set up a server.

#### *4.4 Internet at the University and at Home*

Most users are regularly downloading text files, and to a lesser degree, pictures. The use of other forms of downloaded material such as computer software, video and music files varies, and here the down-loaders are much more active. The impression from the statistics is that file shares better know how to take advantage of the possibilities of the Internet.

The main differences are found in the use of Internet at home. More than 50% of the file shares report more than 5 hours per week with Internet activities, a level that is reached by only 20% of the nonusers. Nonusers are also reporting that their main Internet use takes place during the normal working hours while file shares are more active during evenings, nights and weekends.

#### *4.5 On-line Activities*

Looking into other Internet activities the same pattern of use is repeated. The file sharers are to a greater extent using the web to get the latest news and they listen more to the web radio as well.

For personal contacts on Internet there are two tendencies. The use of email is widely spread among all groups and 9 out of 10 report use on a regular basis with very small differences. On the other hand, for on-line contacts as ICQ and chat services quite few (12-15%) of the nonusers of file sharing services are participating. The corresponding figures for file sharers are (34-67%).

Student file sharers also buy products and services on-line to a greater extent than the others. 28% of moderate file sharers are buying books and records on-line, compared to only 15% among the nonusers. For heavy down loaders the corresponding figure is 35%. The same observations are made for on-line services, like travel tickets and hotel booking.

#### *4.6 Observations*

The database analysis is generally characterised by differences of high statistical significance ( $\text{sign.} \leq 0.01$ ), which shows that the file sharing activity is a very good key to the understanding of peoples' use of Internet. From the data we can see that heavy users of file sharing services also are the most frequent on-line buyers of books and records, thus there is at least no negative correlation between downloading and sales that can be observed.

Although no questions were made in the survey about cultural preferences, we have no reason to believe that students of computer and engineering sciences in general would be more interested in music and films than e.g. students of art. Most people would guess the opposite. Nevertheless, the statistics demonstrate a much higher degree of downloading among students in technical sciences. The question to be made is if it is the music and film consumption that constitute the major goal of the downloading activities or if it is the downloading activity itself? The question will be discussed in the next paragraph.

#### *4.7 Results from Interviews with Experts*

On this highest level of using P2P networks for downloading it is not so much a question of content as a question of to be at the top among those with the highest rank. It is about power and capacity and speed. A lot of voluntary work is invested to make this work from the release group - who tries to get hold of a copy before the release of a record, a movie or a

game - to those connecting computers in order to get the maximum capacity for a fast delivery and spread in the network. It is here a question to act at "the scene" and to be able to offer diversity and quality. Huge quantities of music and film and TV-programs are uploaded and downloaded. Much more than it is possible to listen to or watch. This is more about competition and more like a game that takes energy and skills without any profit. A lot of creative work is also done to develop smart programs that can guarantee a fair exchange between peers.

Young boys, 14-15 years, taking part in these activities, do not have any money to buy all these film and music files. So there are not much of lost sales. Older heavy down loaders develop special interests in genres, like Japanese animated films with English subtitles, usually not found on the open market. They are also buying music online, mostly directly from the websites of their favourites, or after visiting a concert. They are also prepared to subscribe to get access to a music site with a wide variety of music if the price is right.

## 5. Conclusions

Today 70 percent of Swedes listen to music on a weekly basis. Two of three have access to Internet in their homes, and half of them know how to download music from Internet. 20 percent are regularly listening to music on Internet and 7 percent are using P2P technology. This percentage is growing quickly as the broadband connections are increasing. Among university students 34 percent are using P2P technology for music consumption.

Down loaders are in many ways active Internet users with high technical skills. File sharing is only one of many activities they use Internet for. Even if there are down loaders in all ages the majority of them, especially the heavy users, are young males.

If the annihilation theory was correct MP3 downloading would have resulted in a CD sales decline during 1999 and 2000, when Napster became popular, but that did not happen until later. And still later when an increasing number of people are taking part in file sharing there should be a continuous drop in sales but that did not happen. 2004 and 2005 sales are increasing but this time people more and more are not buying music in ordinary shops but online using the MP3 format. According to Pew (2005) 34% of current music down loaders say that they now use paid services [21]. In our studies corresponding figures are 46% (representative sample) and 28-35% among students. That is a higher percentage than among those who are not file shares. And as has happened before in media history, the new technology leads to a new market, not just a substitute market.

The econometric studies could not find any overall significant effects of file sharing on music sales, but some studies found effects among younger down loaders. The user studies showed also that there is a smaller group who say that they buy less music but the majority (80 - 85 %) answered that their purchases remain the same or more.

Music file sharing can then not explain the CD sales drop after year 2000. What happened, among other things, was a change of music format from CD to MP3 and the music industry was too late and not sensitive enough to respond to this change.

However, there seems to be some people, mostly young without money, that do not buy music but download. It is mostly not a lost purchase, even if the amount of music is huge in the networks, because they will not buy anyway. The music interests of these "Free riders" are also leaving their marks on the peer-to-peer networks where popular music for teenagers and younger kids are dominating [22].

The surveys give indications that there are several groups of people with different characteristics downloading and what is still needed is a more in-depth study in combination with a longitudinal user study where the individuals can be followed over time.

But file sharing should not only be considered as an additional media for music consumption. P2P technology will serve as an important tool for empowerment of individual music consumers. He or she will enter the role as an aggregator in the sense that

a personal collection of tunes may more easily be composed. There is also a potential for each consumer to become a supplier or mediator of music, including adding personal dimensions to standardised products. Translations of Japanese animated films are one such an example, producing subtitles for films that not yet have been released in a certain country in another one. The consumer may turn into aggregator in the ripping process, where e.g. a film or a TV-program is adapted for the unauthorised distribution on Internet.

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