



A CIBER report for the Strategic  
Advisory Board for Intellectual  
Property Policy

May 2009

# COPYCATS?



Digital Consumers in the Online Age



STRATEGIC  
ADVISORY BOARD  
FOR  
INTELLECTUAL PROPERTY  
POLICY

The CIBER team is: Robin Hunt, Peter Williams, Ian Rowlands and David Nicholas.

CIBER is based in the Department of Information Studies, Henry Morley Building, University College London, Gower Street, London WC1E 6BT.

[www.ucl.ac.uk/infostudies/research/ciber](http://www.ucl.ac.uk/infostudies/research/ciber)



## CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>6</b>
About this report	6
The background	7
Key CIBER findings	8
The scale of the 'problem' is huge and growing	9
There are myriad choices when consuming content and consumers are confused about what is legal	10
Attitudes and behaviours towards property in the online and physical worlds are very different	12
It has never, ever been easier to break the law	13
There are fewer cues to guide behaviour in the online world	14
Education isn't working, yet	14
There is a powerful idea that there is 'no victim', and so 'no crime'	15
Internet service providers and the consumer electronics industry: two elephants in the room	15
Policy implications	17
Recommendations for further research	18
Questioning a wider population base	18
Understanding digital convergence	19
Mapping the creative industry spectrum	19
Anonymity and surveillance	19
A longitudinal study of downloading behaviour	19
<b>THE EVIDENCE BASE</b>	<b>20</b>
The technological, economic and regulatory context	20
Technology and economics are highly intertwined concepts	20
UK households: some useful statistics	24
Downloading technologies that impact on IP	24
<i>E-commerce</i>	24
<i>File sharing</i>	25
<i>Streaming</i>	26
<i>Data warehousing</i>	28
<i>Sampling and blogs</i>	30
<i>Social media</i>	31
<i>E-mail and other Internet-based communication tools</i>	32
The legal framework	32
<i>Copyright industries and the law</i>	32
Digital consumer behaviour and attitudes	34
Broad characteristics of the literature	34
Key findings from the academic literature	36
<i>Downloading is an ethically confused activity</i>	36
<i>Personal and situational factors affect propensities to commit illegal content activity</i>	43
<i>Many people feel anonymous online and act as though no one is watching them when they misbehave</i>	49
<i>Peer pressure and the 'sharing culture' are major determinants of illicit online activity</i>	50
Economic factors	51
Factors inhibiting piracy	52
<i>Fear of punishment</i>	52
<i>Performance (of software)</i>	53
<b>REFERENCES AND BIBLIOGRAPHY</b>	<b>54</b>
<b>GLOSSARY</b>	<b>62</b>
<b>APPENDICES</b>	<b>66</b>
Appendix 1: Research methods	66
Appendix 2: Database sources consulted	69
Appendix 3: Analytical proforma used for the literature review	70
Appendix 4: Twenty nine ways to acquire content	71



## EXECUTIVE SUMMARY

### About this report

The CIBER report *Copycats? Digital Consumers in the Online Age* evaluates digital consumer behaviour and attitudes and their implications for intellectual property policy. Commissioned by the Strategic Advisory Board for Intellectual Property Policy (SABIP), it aims to provide a robust evidence base to help guide policy makers in this strategic area.

The report has two further objectives:

- To inform a SABIP workshop at which a selected group of attendees with a direct interest in the issue will consider the implications of consumer behaviour on IP and make recommendations for further areas of SABIP research;
- To highlight any further SABIP research that is required to ensure that all agencies of Government have the fullest understanding of the issues.

*Copycats? Digital Consumers in the Online Age* is thus a preliminary piece of research. It is unique in three respects:

- It represents an independent, systematic and evidence-based approach to the subject;
- It analyses a wide range of research across academic disciplines and content industries, and it includes some new case study material;
- It covers the most recent developments, up to April 2009, a fact that is critical in this fast-changing environment.

The research was conducted by means of:

- A comprehensive and systematic review of the internationally published research literature, which filtered and rated research by its validity and robustness;
- Selected interviews with major stakeholders, regulatory bodies and industry experts;
- An in-depth media analysis which provided the essential currency and identified future trends;
- An empirical exploration of the phenomenon of online downloading, sharing and the re-using of content: we went online and found out just how easy it is to file share on the Internet – in a multitude of ways.

More than four hundred reports and papers were identified and evaluated from the thousands published for the quality of their data – full bibliographic references may be found in the Main Report. In addition, eight people were interviewed, and the media analysis took place over the period January to April 2009.

## The background

The backdrop to our research on online consumer behaviour – and the impacts and implications this has on legal practice, the content industries, and governmental policy – is one of vast economic losses brought about by widespread unauthorised downloading and a huge confusion about (or denial of) the definition of what is and what is not legal and copyright protected. Industry reports suggest that at least seven million British citizens have downloaded unauthorised content, many on a regular basis, and many also without ethical consideration. Estimates as to the overall lost revenues if we include all creative industries whose products can be copied digitally, or counterfeited, reach £10 billion (IP Rights, 2004), conservatively, as our figure is from 2004, and a loss of 4,000 jobs. This is in the context of the ‘creative Industries’ providing around 8% of British GDP. And the situation is not solely a British problem, but a global one. Downloading culture, says Altschuller, (2009) “has forced society into a muddle of uncertainty with how to incorporate it into existing social and legal structures” and that “...music downloading has become part and parcel of the social fabric of our society despite its illegal status.”

This is not simply an issue of music and film downloads alone. Software losses were, for example, \$48 billion worldwide in 2007 (BSA, 2007); and in the UK the figure was approximately £1.25 billion. Indeed an exploratory CIBER investigation found vast quantities of films, music, software, e-books, games and television content available to download and share without cost. On one peer-to-peer network we found that at midday on a weekday there were 1.3 million users, sharing content. If each peer from this network (not the largest) downloaded one file per day the resulting number of downloads (music, film, television, e-books, software and games were all available) would be 0.47 billion items per year. If the figure for each individual is closer to five items per day, the lowest estimate of downloaded material (remembering that the entire season of the Fox television series ‘24’, or the complete works of the rock group Led Zeppelin can be *one* file) is around 2.4 billion files. And if the average value of each file is £5 – that is a rough low average of the price of a DVD or CD, rather than the higher prices of software or e-books – we have the online members of one file sharing network consuming approximately £12 billion in content annually – for free. These figures are staggering.

The new generation of broadband access at 50mbs can deliver 200 mp3 music files in five minutes, the unauthorised DVD of ‘Star Wars’ in three minutes, and the complete digitised works of Charles Dickens in less than ten. That is to say these items can be downloaded to consume, or uploaded for sharing. The problem is big: but neither research nor industry reports as yet have helped us to understand quite how big, as the data above illustrate. One thing is sure: in the future consumer electronics technologies are only going to get faster, have larger storage capacities, and develop more ways to access vast amounts of content from any place with a connection, fixed or wireless, at home, work, or on the move. In each of these evolutions the ability to up and download, share and copy unauthorised materials becomes increasingly easy. With cheap data storage now so prevalent we ask: are we witnessing the ‘death of the back catalogue’? Will it soon be commonplace to own the ‘canon’ of music, literature and film on a few domestic hard drives, or indeed high-capacity portable devices? Or will nobody bother because the content is always ‘out there’ somewhere to be downloaded for free when required? In either case what does this mean for business, intellectual property, and all types of creative industry?

Much of the academic and industry literature covered, even the most recent, considers the issue of illegal downloading as a behavioural and attitudinal problem of young people,



especially students. We have considered this evidence – often based on sample research groups comprising a few hundred students at a particular university – as helpful but narrow and historical. The downloading of unauthorised music and film files, to name but two types of digital content, has not decreased over the past five years, and indeed it has grown in many places. It is questionable whether all the activity of unauthorised downloading is undertaken by young people and students alone, because we have seen very little evidence about the broader base of digital consumers of all ages in relation to attitudes, behaviour and issues of intellectual property; and almost none about post-University consumers of unauthorised materials. Did all of the students studied in research about illegal software downloading in the 1980s stop their illegal behaviour? More importantly: who are the almost seven million UK citizens (Music Alley, 2008) that download unauthorised content? For the year 2007/08 there were approximately 2.3 million students in higher education, and 175,000 academic staff (HESA, 2009). Who are the others? Are they *all* school children?

After ‘Digital Britain’, a second major consideration was the frame of the research. Our initial remit did not cover it, but we quickly became aware of the importance of the behaviour and attitudes (and implications for IP) of digital consumers in non-Internet environments, most significantly when using mobile communications, digital television, portable consumption devices, and (sharing offline) data storage products with vast capacity – such as a terabyte hard drive that can hold 200,000 MP3 files, or approximately 200 DVD films. From the research to date we believe strongly that these myriad processes of digital convergence will also shape future behaviour and attitude towards IP.

## Key CIBER findings

The world of digital consumer is an environment, indeed a series of ‘eco-systems’ subject to rapid change; change that means many predictions about the future of the Internet and digital convergence (and how these are ‘consumed’) made even two, and certainly five and ten years ago seem quaintly dated – a fact that should be held in mind as predictions are made for the future of not just ‘Digital Britain’, but also the ‘Digital World’.

Within ten years we have seen the widespread domestic use of high-speed broadband and multi-channel (and often High Definition) digital television with the facility to time-shift, copy and view programmes on other devices, and to upload these files to websites such as YouTube; the arrival of wi-fi in the high-street, the library, the office, university and the home; the rapid expansion of open source and Creative Commons publishing; at least four iterations of file sharing technologies; the birth of mainstream blogging as a broad social phenomenon; the arrival of social media as a significant medium of authorship, sharing, and communication; the shift by the younger digital consumer towards the mobile phone as not just an aural communication tool, but also a medium for text messaging, music and video consumption, and as a gateway to post messages, photographs and other types of content to social media websites. Most recently the large expansion in use of ‘micro-blogging’ – to websites such as the text based Twitter and the image based Tumblr – has once again surprised many who suspected these services were a fad. Finally, the recent successful launch of the BBC’s authorised programme-streaming service, iPlayer (41 million downloads in December 2008; eight million in Christmas week (Guardian, 2009), and the music streaming service, Spotify (one million users signed-up within one month (Media Week, 2009) – which makes available around 15 million songs, either without payment but with aural advertising or without advertising for £9.99 a month – has demonstrated that new forms of business model may be possible in the world of ‘free things’. Unsurprisingly, the literature review we undertook does not grasp the enormity and the speed of these changes.



Each impacts centrally on intellectual property.

The challenge for IP policy makers is to judge and, where possible, measure the changing social behaviours and attitudes brought about by the myriad and rapidly evolving technologies and networks of the digital revolution, and map this against their economic, political and social objectives. We believe this cannot yet be achieved, as the conditions being established by the Internet, digital convergence and the imminent 'Digital Britain' final report are not fully understood.

Consider, for example, the economic arguments, as Picard and Toivonen state in *Issues in Assessment of the Economic Impact of Copyright* (2004).

*"From the economic standpoint, the objective of policy makers is to achieve the optimal point at which the maximum amount of wealth is created by copyright. The challenge is that optimal conditions are contingent on and a function of a number of changing social conditions, therefore no stable point of optimal copyright policies can be identified and maintained."*

We believe that this initial report will raise many questions about how new forms of research can be established to seek the optimal conditions for copyright, business, government, and the digital consumer – copycat or not – as the world becomes increasingly digital. The fundamental question is not how or why the downloading, copying and dissemination of unauthorised content takes place (our report seeks to answer those questions) but *who* does it, (and therefore, *who doesn't*), and can this behaviour be changed? And if it cannot be 'changed' what *does* need to change: the law, the business models, or the relationship between the creative industries and the public domain?

When we began our research many of these issues were important. In the subsequent three months many of them have become mainstream media and governmental concerns and priorities. Our research has attempted to synthesise relevant academic materials (though many of these describe a digital world that for many is fast receding) and pertinent media analysis. Ultimately, the best insights into this area came from empirical evidence: looking at what content is out there, discovering how easy it is to download and copy, and wondering just how widespread is the practice of unauthorised downloading and sharing.

Throughout this report we offer CIBER confidence ratings in our findings according to the weight of the evidence that we have assessed. Our ratings range from 1 (little evidence or unfounded speculation) to 5 (a very strong, almost incontrovertible, evidence base).

### The scale of the 'problem' is huge and growing

CIBER confidence rating: ★★★★★

*Strong, but not conclusive evidence: there are many unknowns about the figures*

In April 2009 we can state that between 44 and 79 per cent of global Internet traffic is taken up with file sharing, the lower figure is for America, the higher for Eastern Europe – though we have found no way of measuring how much of this traffic is the up or downloading of unauthorised, unlicensed or illegal material. Sixteen percent of UK online consumers are said to regularly file share, and whilst the figure is said to have remained flat in the recent past, various studies concede that the figures could be much higher. Academic research (Zentner, 2006) suggests that those who file share are at least 30% less likely to purchase music in

addition. The IFPI (2009) estimates that there were 890 million unauthorised music downloads in the UK in 2007 through file-sharing, in contrast to 140 million paid-for downloads: this is ratio of 6:1, and does not take into account any subsequent off-line sharing using disk burning or hard-drive transfers (or 'file shifting').

There are strong signs that some of this Internet-based but non-Web traffic may be migrating to the World Wide Web, where online data warehouses hold huge amounts of copyrighted material that can be accessed for free via a URL link from a website, and indeed, as we discovered, from new search engines which explore only the contents of a data warehouse, e.g. [www.RapidSearch.com](http://www.RapidSearch.com). One data warehouse, Rapidshare, is the 15<sup>th</sup> most accessed website in the world; another, Megaupload is 87<sup>th</sup>. Although published figures put the size of the UK's unauthorised downloading community at 6.7 million (2008) and upwards, none that we have seen break up these figures in terms of web-based and P2P-based file sharing.

The UK film industry told us in interview that there were just under 100 million illegal downloads of DVDs in 2007, and globally the film industry is said to lose around \$6 billion (or just over £4 billion) per year, and some research (Henning-Thurau et al., 2007) appears to demonstrate evidence that consumers' intention to pirate movies "causes them to forego theatre visits and legal DVD rentals and/or purchases."

*"Technology," states the University of Hertfordshire/BMR Music Experience and Behaviour report of 2008, "has made the entire global music catalogue available for them [today's youth] to test, try out, and own. They can copy thousands of music tracks and share them with others, around the world, with virtually no loss of quality, almost instantly, without parting with any of their own music. And they can do all this [...] for free." (University of Hertfordshire/BMR, 2008).*

We would add here that evidentially the same is also increasingly true for film, television, photography, writing, software and computer games – indeed any 'core copyright' industry. A cursory exploration of the Internet will find all these things, and more.

**There are myriad choices when consuming content and consumers are confused about what is legal and not legal**

CIBER confidence rating: ★★★★★

Very strong evidence

It is not simply that the Internet is a realm of information overload; it is also a medium of many consumption methods. This leads to high levels of consumer confusion, and also provides a vibrant source for excuses. Consumers can buy online using legal e-commerce sites; they can also gain access and download many types of content without paying using a variety of sources. They can download digital files, stream them, share them, upload them to digital lockers, use P2P to up- and download, 'rent' them, copy them to external drives and share them, record them in real time, and – using free widgets and/or applications – they can do most of the above on their mobile phone, or their Facebook page. And that is now.

The academic literature explores the consumer 'excuses' for many of these behaviours at length. We found the ideas of 'neutralisation theory' (e.g. Ingram and Hinduja, 2008) – one of several methodologies for rationalising unauthorised behaviour – a useful, but far from conclusive approach to creating a profile of the digital consumer. Neutralisation theory suggests four means by which people justify and rationalise their actions. These are:

*Denial of responsibility:* where factors apparently beyond an individual's control come into play – such as an urgent need for a piece of software, for example.

*Denial of injury or victim:* where no one suffers as a result of one's actions.

*Condemning the condemners:* assuming that those who criticise a behaviour engage in their own kinds of unauthorised activities or somehow deserve any injury – such as loss of earnings.

*Appeal to higher loyalties:* such as obtaining unauthorised material in order to help a family member.

There are also *de-individuation* theories (see e.g. Shang et al., 2008) that inform the issue of unauthorised downloading. 'De-individuation theories' suggest that individuals avoid responsibility for their actions because they are no longer aware of their own identity or 'self', or that of others when online. These kinds of behaviour include the ideas of being 'anonymous' online and of being totally immersed in a social network and thus excluded from the social 'norms' of the wider environment. There are parallels in the research on consumer behaviour inside large shopping malls.

None of these justifications explained the sheer volume of unauthorised materials that are being shared; leading us to consider the idea that unauthorised downloading has become a simple reflex for some digital consumers.

The complexity of methods by which digital consumers can access content is heightened by the likelihood that Internet Service Providers will shortly become part of what is called Network Led Services'. That is ISPs will link network access to some kind of broader consumer package that includes content. In this scenario, as with Sky Television, access to the medium comes with various levels of value added content such as free downloads, free telephony, or even subscription services. Such services will be or are also available on third and fourth generation mobile phones. In each case the downloading of one authorised file makes possible the sharing of an infinite number.

To the digital consumer the economic 'message' of 'Internet choice' is either confusing or a growingly accepted norm<sup>1</sup>. Users of Google can, for example, sign up for an email account that brings with it access to a variety of 'free' and legal services that historically would have had a cost attached: blogging software, Google Earth, Google Books, Google Maps, Google Scholar, word processing, and data storage have all at some time been products with a financial implication. Similarly, many hundreds of millions use 'free' social networking sites to communicate, share and create. Digital consumers can use Internet telephony without charge, where once phone calls – particularly international calls – had a high cost. They can also download software, often without cost. These are just a tiny example of the 'free things' that populate the Internet. The vast availability of 'free content' changes existing perceptions of ownership and utility.

---

<sup>1</sup> 'One key, defining principle of things that are "digital" is that they can be very easily copied, compressed and transmitted. In other words, "digital" and "free" (in every sense, not just the monetary sense) go together like Morecombe and Wise, fish and chips, or banks and bailout. This is something that the media, their ruling institutions, governments and regulators are all currently coming to terms with: once something is digitised, the ability over time to control it, charge for it, regulate it or contain it exponentially decreases.' (Bell, 2009).

One of the great concerns of industry from these perceptions is the ease with which digital content can be de-coupled by digital consumers from its original platform (and the advertising that supports it) and from its real-world revenue stream. Perhaps a Rights Agency will help in this area.

However, we would argue from the empirical evidence, that when the digital consumer also gains access to all types of unauthorised digital content through file sharing mechanisms of various kinds to use in any number of ways, they are doing so within an environment where the idea of choosing `free' is confusingly commonplace. This changes not only perceptions about ownership and sharing but – perhaps most crucially – value.

A recent survey (Human Capital, 2009) suggests that with digital consumers aged between 15-24 “70% do not feel guilt about downloading music for free from the Internet.” That: “61% of the age group do not feel they should have to pay for the music they listen to. This is more marked amongst the 15-19 year olds, of whom 69% do not feel they should have to pay.” And that finally: “On average 43% of the music owned and enjoyed by the age group has not been paid for. This increases to 49% for 15-19 year-olds.”

We have not seen research that considers older people and asks these same questions.

### Attitudes and behaviours towards property in the online and physical worlds are very different

CIBER confidence rating: ★★★★★

*Very strong evidence*

Technology has changed the way consumers access all kinds of information and content: how and where they buy it, how they use it, and what they do with it. In this new environment web-based search is central to the user experience of digital consumers, and Google has created a service in which `two click culture' is the norm. Speed and efficiency are central to finding content; broadband, wireless (wi-fi) and cellular networks make this possible at all times of day and night, and in all places.

In the physical world there are barriers to consumption: opening times, availability, the comparative difficulty in comparing prices and finding the best deal, and geography itself. In the online world no such barriers exist, indeed for many types of authorised information, content, and resources there is not even a cost barrier. For many industries - and here we highlight newspapers and other forms of news media as an example of a business which has `gone free' online for over a decade and is now experiencing severe economic difficulties in the physical world of print and paper (as is network television) - the consumer reality is that `digital is free', and `physical has a cost'. This mindset has inevitable consequences for the economic lifeblood of all content industries: music, film and software have in particular suffered greatly through a combination of technological possibility and opportunity, and much-changed consumer behaviour.

Social media, part of the digital mainstream for a relatively short period to date, is changing the nature of individual and group identity, and makes the sharing without cost of content, be it photographs, texts, music files, videos or applications *part* of the way in which social prestige is established, often in real-time. And this prestige is not based on saving money by not paying, but through reciprocal access to content. LaRose and Kim (2007) suggest that one of the reasons why industry efforts to curtail piracy is failing is that “downloading appears to be as much a social phenomenon as an economic one.”

We also note a recent piece of research – once again focused on a sample of students – that explores and questions the idea of the Internet as ‘a Safe Haven for Misbehaving’. Selwyn (2008) asserts that the Internet “may certainly be providing our respondents with more opportunities for *misbehaviour and deviance* [our italics], but it appears to be primarily giving individuals the opportunity to misbehave in ways in which they already do offline” – as Grabosky (2001) puts it, “a case of old wine in new bottles”. Later Selwyn states that whilst his data “confirm that the Internet is certainly a prominent context within which deviant behaviour takes place, they highlight the danger of individual users and authorities misreading the Internet as a cause of new misbehaviour, rather than a conduit for old misbehaviours.”

We strongly disagree, indeed would argue that there are now ‘two cultures’ – the digital and the physical world - which are evolving in different ways and require a far greater structural analysis from economic, information consumption, social and behavioural perspectives.

If all who undertake unauthorised downloading, uploading and sharing were prosecuted, up to seven million Britons would have a criminal record. If all content online was instead ‘free’ and downloading was de-criminalised could new business models such as sponsorship, advertising and the bundling of access with content pay for the variety, depth and quality of the content we current enjoy? And, if the culture of online behaviour does require IP laws to change just for specific industries, could such laws operate also in the physical realm?

The challenge, wrote Emily Bell, Director of Digital Media for the Guardian News & Media, “for the courts, the regulators, the distributors and the publishers of all manner of content is not to try to bind the digital inside the analogue rulebook, but to look beyond it for something that is quintessentially digital and fits this freer world.” (Bell, 2009).

#### It has never been easier to break the law

CIBER confidence rating: ★★★★★

Very strong evidence

There are several assertions we have heard in interview that ‘the media’ are to blame for the vast numbers of digital consumers who download unauthorised materials - as it reports on the issue and gives examples of the types of unauthorised services, such as LimeWire or Pirate Bay, that are available and thus provides a guidebook of ‘how to commit digital piracy’. We have been told in interview that Wikipedia’s definition of Intellectual Property is the number one reason people download, and have heard criticisms of the Guardian and the BBC for detailing how unauthorised downloading takes place. We question this: simple search enquiries for items such as ‘free music’, ‘illegal videos’, ‘get audio mp3 from YouTube videos’ return many pages of results from thousands of information sources. Consumers can quickly find methods to get free content (both legal and illegal), and in the case of file sharing and Peer-to-Peer (P2P) networking software how to download the application that is required. There is also the central issue of ‘practice’ and ‘peer pressure’ when within online social networks, which posits the implicit question: *If everyone is doing it that I know, how can it be wrong?* In the physical world a shoplifter requires skill, opportunity and nerve to steal one CD. Online 160 million CDs are available on the digital locker room, Rapidshare, alone (Music Ally, 2008). All that is required to access them is a computer, a connection, and the ability to search. In fact, all that is required is that one person has the computer: he or she can copy, without cost, as many files as his or her friends request.



### There are fewer cues to guide behaviour in the online world

CIBER confidence rating: ★★★

*The evidence base is somewhat inconclusive and contradictory here*

Put simply, online there are no 'shoplifters will be prosecuted' signs, or government health warnings. In the broader landscape new ethical standards (or their absence) are being established through peer-groups such as the differing types of communities that evolve around social media (Facebook, Blogger, YouTube, Pirate Bay, etc.)

The cues that shape consumer behaviour, and in particular the consumer behaviour of those who are post-education, are not yet fully clear. Some research suggests that peer pressures within social media used by young people may have more impact than traditional external factors, such as family, school or college. Others see connections between 'real world' ethical values and the online.

Some UK research indicates that up to 70% of those that do download unauthorised materials would 'cease pirating' if they received a letter from their Internet Service Provider warning them about their behaviour. We will be able to test these figures if the Government establishes a Digital Rights Agency with the power to work with ISPs in this manner. We note here part of the response of the ISP Talk Talk to the interim Digital Britain report on this idea. Broadly in agreement with the DBR proposal of an obligation "requiring ISPs to notify alleged infringers of rights (subject to reasonable levels of proof from rights holders) that their conduct is unlawful" Talk Talk (2009) add many provisos including: "Rights holders must actively, properly and effectively pursue their role in education, alternative services and prosecutions. Without this the effect of other initiatives (such as this) will be limited. More generally, it would be wholly unreasonable that an industry that has been the author of its own demise from illegal file sharing does not 'self-help' and take the lead role in tackling the problem."

At the same time new communities of creators are producing content for the online environment which is purposefully free: published as freeware, open source, a free app, under limited licence such as a Creative Commons agreement, or given away such as Google 'books', online newspapers, and software on CNET's download.com.

Finally, many of the services available to the digital consumer that create the opportunity to access unauthorised digital content are developing brand identity that is as powerful as those of large and legal corporations. Garland and Page (2008) are clear. They describe websites such as Pirate Bay, or P2P networks such as Limewire as "venues because they are destinations, and like any retail outlet (iTunes, HMV), they are popular because of their brand reputation, convenient location, superior value proposition, and ease of use [...]. They are considerably more widely used than iTunes, HMV, and all other retailers [...] combined." Ambiguous brand authority removes yet another ethical cue.

### Education isn't working, yet

CIBER confidence rating: ★★★★★

*Strong empirical evidence, although some findings are contradictory*

In terms of intention to engage in what is sometimes called 'digital piracy', that is the consumption of illegal copies of digital services, we have repeatedly found that despite the potential severity of the legal threat, and significant numbers of prosecutions of individuals who have undertaken such activities, the figures for unauthorised downloading remain extremely high. Effective models of persuasion have not yet worked in significant ways; and where they



have changed behaviour, (for example with the prosecution of the first generation of file sharing products, such as the original Napster application), new methods have evolved rapidly that create a new set of behaviours (for example, BitTorrent). If neither education nor legal threat has apparently succeeded to date in curbing the behavioural proliferation of unauthorised downloading, it would seem that using actions against a (relatively) small group of individuals to send a message to all digital consumers is not the (only) answer. Indeed it is argued by some that this failure to shift attitudes is because the underlying psychological model of the behaviour is not well understood. Research suggests that 'deterrence' strategies may work for some, but may "actually increase piracy tendencies in others" (Taylor et al., 2009). And it is these 'others' who actively argue that copying and sharing are not stealing; that downloading unauthorised materials is not a crime. IP laws suggest otherwise.

### There is a powerful idea that there is 'no victim', and so 'no crime'

CIBER confidence rating: ★★★★★

*Strong empirical evidence, although some findings are contradictory*

A main theme emerging from the literature is that the 'victims' of digital copyright infringement, or 'piracy' i.e. software developers, musicians etc. or companies, are perceived to be far removed from and impersonal to the copier. As such, the content creators and distributors are not thought to be harmed by the act of downloading or sharing. Logsdon, (1994), for example, found in a questionnaire study that respondents believe that "only a few individuals or companies will suffer at all" and copiers believed that "the probability that the act of copying software will cause harm is low...". Ingram and Hinduja, (2008) also studied this. Their findings indicate that the denial that anyone is harmed - and the denial there is a victim - significantly predicted at least moderate levels of piracy participation. Finally, many of Freestone and Mitchell's (2004) survey respondents felt that they were "doing no direct harm to sellers as they cannot see the direct economic consequences of their actions". The justification is made that they, consumers of content, are the victims of inflated software, music or movie prices, blaming 'industry' for keeping prices artificially high. This result was echoed by Levin et al. (2007) who found even when consumers were conscious of harm being done through the act of 'piracy' it had no impact on student respondents' intentions to download in the future.

### Internet service providers and the consumer electronics industry: two elephants in the room

CIBER confidence rating: ★★★★★

*Strong evidence, but inconclusive predictions for the future*

In recent months there has been much speculation that a Digital Rights Agency will force Internet Service Providers to reveal the extent of their knowledge about the behaviour of online consumers. In particular, to make available data about the consumption habits, and especially unauthorised uses, of their users when they are believed to be infringing copyright. We could find no published data about ISPs' knowledge of their own users' consumption patterns, and thus cannot estimate how big the issue of unauthorised downloading is. Nor is it clear how access to this data would be used by industry – and Government<sup>2</sup>. This is a large lacuna. In interview a spokesman for the Internet Service Providers' Association (ISPA) stated that there was no available research on unauthorised downloading that we could see. "It's not really the ISPs' concern," he said.

<sup>2</sup> Of the Home Secretary's proposal to build a database to store information currently held by internet service providers and telephone companies, Mr Thomas said: "A government-run database of the communications of all citizens, every phone call, every e-mail, every text, every internet use; a database of all those activities held by the Government would be a step too far for the British way of life." The Times, February 29, 2009 (Mostrous and Ford, 2009).

There is another elephant in the room. The consumer electronics industry has facilitated the downloading revolution through its hardware and software; without this industry there would be no widespread Internet, computers, digital televisions, cameras, and portable devices to name just a few examples. As part of this industry is, as defined by Picard and Toivonen, 'copyright dependent', that is to say:

*"Industries whose operations essentially depend on copyrighted works. Industries that would be considerably smaller without copyrighted works and other subject matter."*

it is clear that further research into new ideas (in terms of the hardware and software developments of these manufacturing industries) should be conducted as a matter of urgency. If the digital revolution has shown us anything it is that consumers have grown accustomed to increasing levels of personal control – over when, how, and where they consume types of content – and thus the products of the consumer electronics industries are a central, if sometimes forgotten part of the copyright eco-sphere. For Picard and Toivonen (2004) these include: "the manufacture and distribution of electronics (TV sets, radios, VCRs, CD players etc.), manufacture and distribution of computers, manufacture and distribution of musical instruments, photographic and cinematographic equipment."

## Policy implications

The Digital is Different. It is changing very basic assumptions about the idea of ownership, sharing, and copying content. New business models are needed, and serious questions are raised about the quality and breadth of content material that will be created without new thinking. CIBER confidence rating: ★★★★★

The potential criminalisation of up to seven million UK citizens has tremendous economic costs, and even if unauthorised downloading behaviour is changed in this country it is not yet clear that this is possible on a global scale. CIBER confidence rating: ★★★★★

The technology of the digital is about consumer experience, wherever and whenever. Expectations have been established for the consumer that include fast access to free information, the ability to copy and share such data, and the ability to consume this on a variety of platforms and devices. CIBER confidence rating: ★★★★★

There is a triangle of digital responsibility: between those that create and distribute content, those that consume, share and copy it, and those who manufacture the products that enable these exchanges. To date research and legal action has focused on the consumer – but not on the responsibilities of industry. Ethical reciprocity is not yet clearly defined. CIBER confidence rating: ★★★★★

The Consumer Electronics industry is copyright-dependent, yet is predicated increasingly on technologies that allow the infringement of these copyrights. Hardware and software applications will only become more efficient at these and many other communication processes. CIBER confidence rating: ★★★★★

Web access, like the products of the computer and software businesses, is also going to get better. As it does so more consumers will have the ability to download vast amounts of material, legally or not. Digital literacy education for all ages must include simple information on the complexities of downloading culture. Downloading and sharing *per se* is not wrong. CIBER confidence rating: ★★★★★

“...downloading appears to be as much a social phenomenon as an economic one.” (LaRose and Kim, 2007). The Internet is built on a paradox of privacy. Surveillance is easy and, as well as posting and sharing their own and others’ content, consumers are revealing their interests to third-parties such as advertisers all the time simply by being online. ISPs are the part of the Internet Triangle that knows what consumers do online, yet they – for obvious and understandable reasons – do not want to become the Internet Police. If they are forced to reveal consumers’ consumption and downloading habits will this impact on the actions that consumers take with the Internet in quite legal ways? And where does this process end? CIBER confidence rating: ★★★★★

Digital consumers do not think they will get caught downloading from the Internet. Digital Convergence, the evolutions in digital television, wi-fi, mobile phones, and other devices will further complicate the evidence base for prosecutions and add to data protection issues. Will mobile phone networks be made to hand over consumer data as well as ISPs? CIBER confidence rating: ★★★★★

If it is the case that many digital consumers believe there to be no victim when undertaking unauthorised downloading, is it also the case that, as Soham, 2008 states: "...consumers appear to employ a double ethical standard. Specifically, they expect high morals and spotless ethics from businesses and managers, but not from themselves." CIBER confidence rating: ★★★★★

By the time they reach further education, an active downloader may in the future have at least seven years of experience (and stored content to share).  
CIBER confidence rating: ★★★★★

Many digital consumers take for granted – indeed expect – free content of all kinds from the Internet to copy. We have a nascent, or perhaps, established, copycat culture.  
CIBER confidence rating: ★★★

It is quite possible that we are witnessing the 'death of the back catalogue'.  
CIBER confidence rating: ★★

## Recommendations for further research

We have discovered large and worrying gaps in the knowledge base and we need to remedy this urgently if policies and procedures are to be informed by the evidence. And if they are not there is a risk of industry and government decoupling from the digital consumer.

### Questioning a wider population base

Our research has identified a serious limitation in the current evidence base: on issues of online 'copyright infringement', university students are the only population that has been studied in any depth. We urgently need to broaden the scope of consumer research and involve a much more representative sample of the population. One possibility would be to conduct an online survey (undertaken in partnership with e-Digital Research, a leading e-marketing company which works with CIBER). The survey would be hosted on a number of major e-retail sites (major high street brands), and would probe issues of downloading in general, file sharing, and social uses of content.

Many of the questions that need to be asked are evident from the literature review we have undertaken; others emerge from our analysis of the current state of activities as informed by industry and technology research and reports. We would also undertake a series of focus groups to explore issues raised at the survey stage. We might consider covering the four demographics suggested in the recent Olswang (2008) research into digital convergence. These are: 'kids' (teenagers); the 'tech vanguard', (those with high 'self efficacy' who are early to adopt new technologies); the 'mainstream' (adults); and 'laggards' (those who do not yet have internet access, or certainly do not engage with e-commerce).

It would also be possible to undertake a parallel (or alternative) study based on British Library users or site visitors, as this would help to inform policy in terms of the academy, the library and their relationship to intellectual property.

## Understanding digital convergence

The terms of reference for our literature review did not include the digital world that exists beyond the Internet: in particular the nexus around digital convergence. Huge impacts on consumption are being enabled by mobile communications and digital television, and the evidence base is very weak in this important area. We recommend a short-term pilot project to examine the literature in the field, together with industry interviews and media analysis. This would follow the format of the first piece of research for SABIP, and take place within a similar time frame, possibly preparing the ground for a longer study. Without a full understanding of the 'digital consumer' online and 'offline' we cannot comprehend the full implications for intellectual property.

## Mapping the creative industry spectrum

Much of the research considered to date investigates specific industry sectors, most notably music, with the film industry following closely behind. But the issue of downloading has fundamental implications for all the creative industries, science and technology, as well as for government data. We are proposing a scoping exercise that maps our findings against the output of all these sectors to create a meaningful picture of online consumer behaviour in the context of the public domain and the cultural welfare of the country.

## Anonymity and surveillance

We have uncovered some very interesting academic research regarding consumer perceptions around feeling 'anonymous' online; we have also found many examples of media speculations and consumer fears about the idea of a surveillance culture in which government, with the assistance of the ISPs, know everything about our patterns of digital usage.

At the same time many of the nascent online business models rely centrally on the user giving away personal information in exchange for 'free things' (this is the model behind Google, Spotify, Facebook etc.). We suggest a pilot project to look at the literature around identity and identity construction, together with industry interviews and media analysis. This would give a more precise picture of digital consumers' attitudes towards privacy, surveillance, and the trade-off between them.

## A longitudinal study of downloading behaviour

Whether or not a 'Digital Rights Agency' is created in the short term, it seems clear that new forms of property protection will be explored by government and industry in an attempt to stem the flow of unauthorised downloading. We believe that a longitudinal study to look at such mechanisms before and after, and in the medium term. This would entail following a group of digital consumers over a number of years: preferably over five, but possibly three, depending upon the funding available. Again, the sample must take into consideration the broadest range of online demographics and we would suggest a panel of up to 200 users who would take part in surveys and focus groups, twice a year. This study would also be informed by a continuing literature review to explore similar regulatory and legal initiatives in other parts of the world.

## THE EVIDENCE BASE

The academic literature we considered can be split into three main areas: studies that consider the phenomenon of downloading (both authorised and unauthorised) content from a technology, business, marketing, legal and political aspect; studies that explore online behaviour – downloading behaviours within psychological, ethical and situational contexts in particular; and studies that consider online behaviour – the growth of social media and issues of ‘sharing’ within that framework, the implications for user generated content, methods of online identity construction, ‘problematic’ internet use, and other factors such as ‘self-efficacy’. The research covering the latter two areas was based often on small sample surveys; the first group of studies considered the issue from economic, network and case-history frameworks and perspectives. In several instances, as in the next section, the ideas discovered in the academic texts were tested against data sourced from non-academic materials.

The following sections describe some of the technological eco-spheres of the Internet that facilitates downloading of all kinds. These were those that we found in the first quarter of 2009. Without an understanding of what is possible through technology, and a snap shot of the economic realities and previous legal initiatives, it is hard to judge the behaviours and attitudes of digital consumers; and to assess the academic research that has attempted this objective.

Finally, the research undertaken and the interviews we undertook were highly informative about the economic impact of unauthorised downloading on specific industries, such as music, film and publishing. We did not find much evidence of cross-industry research which considered unauthorised online downloading behaviour in its entirety, from the copying and pasting of online news stories to the file sharing of entire television series or Office software packages, which we feel is a limitation as, unless IP laws are changed for specific industries, the general relationship digital consumers have to the Internet, where free things, from newspapers to cloud computing applications are available in a myriad of ways, will not be fully understood.

## The technological, economic and regulatory context

### Technology and economics are highly intertwined concepts

The technology scope of the online ‘piracy’ issue is well defined in the abstract to Nwogugu’s (2008: p140) paper:

*“Illegal online file-sharing has resulted in billions of dollars of losses for many companies and substantial lawsuits by trade groups and entertainment companies. Illegal downloads of digital content affect the economics, profitability and business models of companies in many industries such as entertainment, education, travel, media, investments/finance, and any business where knowledge or information has value.”*

Nwogugu illustrates some of the economic and technological considerations that require a full understanding before a deeper analysis of online downloading behaviour can commence.

The following section begins with Nwogugu’s areas of concern:

*“The cost of bandwidth; the availability of bandwidth; the cost of storage capacity; the costs of security; network congestion costs; pricing difficulties - determining the exact number of players and the number of times each digital content file is played; the cost of hardware for playing content - introducing specialised hardware will only increase the final cost of downloading digital content, and also increase complexity; the form of content that will be transferred - different companies have different file formats; the control of content; the cost of enforcing intellectual property rights--lawsuits, investigations, staff, etc.” (ibid: p140)*

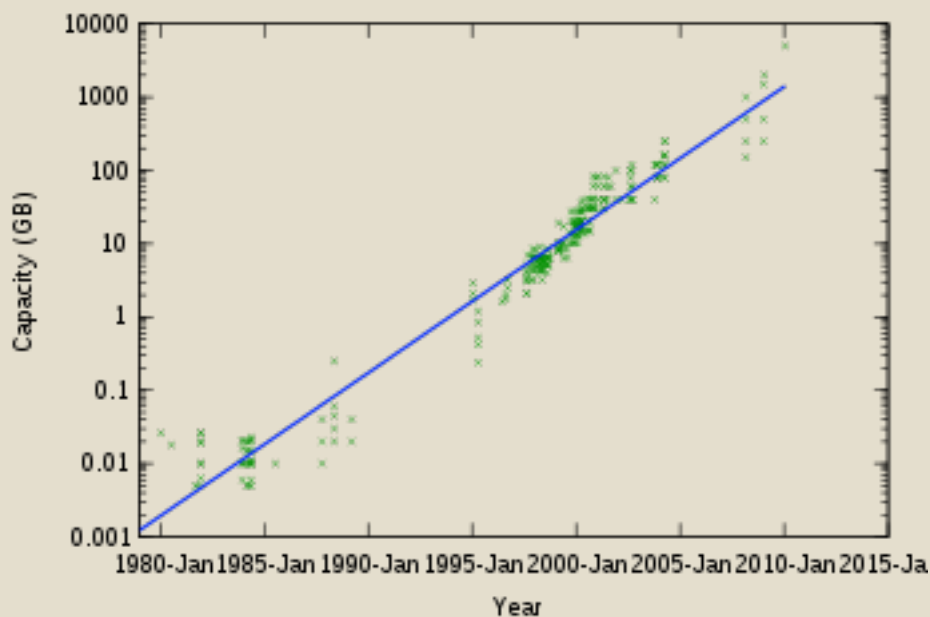


To consider some of these points further:

**Bandwidth:** from our interviews with the music industry<sup>3</sup> we have established that the cost of bandwidth to the consumer is falling through increased market competition, indeed it was suggested by some that Internet Services Providers (ISPs) will soon be forced for economic reasons to consider new kinds of business models which include value added services, such as providing content, as part of their offering. As far as the consumer is concerned, high-speed access is increasingly available, and getting cheaper. Next generation broadband based on fibre to the home will be expensive, and major investment is required. However, history suggests that it will arrive sooner than expected.

**Bandwidth availability:** 56% of UK homes currently have broadband access (ONS, 2009), and the suggestion of Lord Carter's interim Digital Britain report is that all households will have access by 2012. Virgin Media is just one ISP that is looking to launch a 50Mbps broadband service that will allow consumers to download 1.1Gb in five minutes. The UK Office of Statistics reported in December 2008 that: "19 out of 20 connections to the Internet are via broadband." (ONS, 2009).

**Storage capacity:** should be considered within the framework of Moore's Law (Moore, 1965): a long-term trend<sup>4</sup> in the development of computing hardware. The law argues that most measures of the capabilities of digital electronic devices, such as their processing speeds and memory capacity, *double* every two years. This has certainly been the case since the arrival of the personal computer in the 1980s. Currently, the average memory capacity of a personal computer is between 100 and 250 Gbs, with – as the illustration below demonstrates – 1,000 Gb not far off. At the same time the capacity of external hard drives has risen so that a one terabyte hard drive now costs around the same price, £150, as a 250 Gb hard drive cost two years ago. One terabyte of storage can hold approximately 200,000 MP3 music files.



**Network congestion costs:** from several interviews we understand that some technology drivers – such as Peer-to-Peer file sharing and Streaming – have had huge financial impact on ISPs's costs, and although there are unsubstantiated rumours that some service providers are 'throttling down' access because of the massive growth of online gaming, streamed television (and in particular the BBC's iPlayer), and the simple number of consumers online, we found no concrete evidence.

**Pricing difficulties** (determining the exact number of players and the number of times each digital content file is played): the removal of DRM from much of the music available to buy online, and in particular the market leader, i-Tunes, has taken place only recently<sup>5</sup> and thus the new freedom all

<sup>3</sup> UK Music, BPI

<sup>4</sup> Since the invention of the integrated circuit in 1958; though the trend was first documented by Gordon Moore in 1965. (Moore, 1965)

<sup>5</sup> Apple has changed the pricing structure of its iTunes store, with tracks now available for 59p, 79p or

consumers have to play music on any device, and to share this music to any other device, has not yet been explored in meaningful research. However, the 2008 University of Hertfordshire research (University of Hertfordshire/British Music Rights, 2008) into music downloading claims that 50% of its survey sample shared the content of their hard drives. And the sheer volume of global file-sharing traffic indicates that the number of times a digital content file is played (by a different consumer who has not paid for the right) is obviously very high. Whilst this does not immediately constitute a 'lost sale' – as consumers may simply be sampling content prior to purchasing it – the figure quoted by the IFPI of 95% of all downloaded music being unauthorised (the figure is 85% in the UK) is striking. The UK music industry postulates a "value gap" over the next five years of £1.2 billion in genuine 'lost sales.' Music Ally (2008) <sup>6</sup>

Currently it is illegal simply to file-shift from a computer to a disk, USB memory stick, or device (such as an i-Pod) if the user does not 'own' the 'original'. The ubiquity of CD and DVD burners (Glossary) suggests that even an authorised download is likely to be copied and shared many times: as presents, as part of a playlist, and for sampling. We have not found research that puts an average figure to the number of individuals that consume a single piece of content.

**The cost of hardware for playing content:** Introducing specialised hardware will only increase the final cost of downloading digital content, and also increase complexity. A good example of this is the early generation of E-Readers. Both the Amazon Kindle and the Sony E-book play only proprietary books. That is to say the E-books sold by Amazon for consumption on the Kindle cannot be played on every device, only the specific machine on which they are bought<sup>7</sup>. We can only speculate that, as with the earliest iterations of the Internet, where proprietary gated systems such as America OnLine and CompuServe followed a similar business model, closed, or 'non-generative' technologies that do not allow the consumer the flexibility to choose how they consume and use content they have purchased may ultimately be superseded by 'open' technologies (Zittrain, 2008). A very pertinent example of this is the recent decision by several music companies to remove DRM protection from the music tracks they sell.

**Controlling content:** As we will demonstrate in the next section controlling where content goes, who accesses, downloads and shares it, is no easy matter. Sharing between social networks, using CD burning, the exchange of USB sticks and hard drives, and embedding content into personal blogs are all simple activities, as is the posting of content to sites such as YouTube.

The technology to distribute the content is evolving faster than the ways that content is controlled.

Nwogugu (2009: p149) states that having undertaken a long analysis of anti-file sharing devices

*"Most existing anti-file sharing systems and content-control systems remain deficient, and sometimes do not comply with case law and statutes. The existing legal framework in most jurisdictions is not completely adequate to regulate the new and evolving models/systems of online file sharing. Illegal file sharing and content-control problems can be solved by: (1) relating economic issues and legal requirements to technological solutions and capabilities, and (2)*

---

99p. The price of an individual track depends on how recently it was released and Apple's agreement with the music label that it comes from. Additionally, Apple has said that all its music catalogue now comes without the controversial anti-piracy DRM (digital rights management) technology in the iTunes Plus format." (Web User, 2009).

<sup>6</sup> Music Ally P3 Working Group, "...imagining what might happen if music sales had continued a constant upwards trajectory." (Music Ally, 2008)

<sup>7</sup> In an interview with the Guardian Harper Collins Chief Executive, Victoria Barnsley was quoted on e—books and e-readers. "Publishers have not yet had their iPod moment, says Barnsley, a view echoed across an industry that seems somewhat frustrated by the digital avenues currently available. "The huge change will happen only when the hardware is there." The development of e-readers such as Amazon's Kindle (not yet available in the UK) or the Sony Reader (which is) suggests that the hardware is not far off. Sales of ebooks are already growing, and 200,000 copies of 100 Classic Book Collection - which allows Nintendo DS owners to read texts such as Sense and Sensibility and Treasure Island on the device - have been sold since December, Barnsley says (Frost, 2009).

*developing appropriate business models that create value and minimise economic losses for content distributors”.*

We have not been tasked to explore new business models for the Creative Industries, but are aware that SABIP, in its document, *Strategic Priorities* will be looking at this central issue in the coming months.

### UK households: some useful statistics

The Office of National Statistics (ONS, 2008a) provides much relevant data, and is worth quoting at length:

- In 2008, 16 million households in Great Britain (65 per cent) had Internet access. This is an increase of just over 1 million households (7 per cent) over the last year and 5 million households (46 per cent) since 2002. Estimates for Great Britain are provided to give a time series, as UK estimates are not available prior to 2006.
- Almost 16.5 million (65 per cent) UK households including Northern Ireland had access to the Internet. This was an increase of 1.2 million households (8 per cent) since 2007. The region with the highest level of access was the South East with 74 per cent. The region with the lowest access level was the North East with 54 per cent.
- Fifty-six per cent of all UK households had a broadband connection in 2008, up from 51 per cent in 2007.
- Adults under 70 years of age who had a degree or equivalent qualification were most likely to have access to the Internet in their home, at 93 per cent. Those individuals who had no formal qualifications, were least likely to have an Internet connection in their home at 56 per cent.

### Downloading technologies that impact on IP

There are several types of downloading methodologies, here are some:

E-commerce web-based downloads

File sharing using Internet, non Web-based, Peer-to-Peer networks

Files Streaming using Internet, non Web-based, Peer-to-Peer networks

File Streaming via the web

Web-based access to data-warehouses of digital content

Blog sites with linked content

Social Networks, in which exchanges of content are facilitated through messaging, by posting links, by embedding content, allowing content simply to be drag and dropped onto the desktop (e.g. text, photography etc)

Communication tools (mail, Instant Messaging, Drop Boxes)

Usenet, a decentralised bulletin board style medium of digital exchange

This section demonstrates the breadth and depth of the Internet based technologies that facilitate the sharing, copying, uploading and downloading of digital materials. We add here, once again, that the scope of our research did not cover digital television – or mobile phones, and many techniques for copying and disseminating materials using these technologies are not included here.

### E-commerce

The legal dimension to downloading. This decade has seen a great rise in digital sales of music and other media, with pioneering sites such as iTunes leading the way. Until recently digital files contained some kind of rights management protocol which limited the number of copies that could be made. This

practice is now less prevalent. The Office for National Statistics reported (ONS, 2008c) in November 2008 that Internet Sales by UK businesses using e-commerce rose by 30% in 2007 to £163 billion – which represented 7.7% of the total value of all sales by non-financial sector businesses.

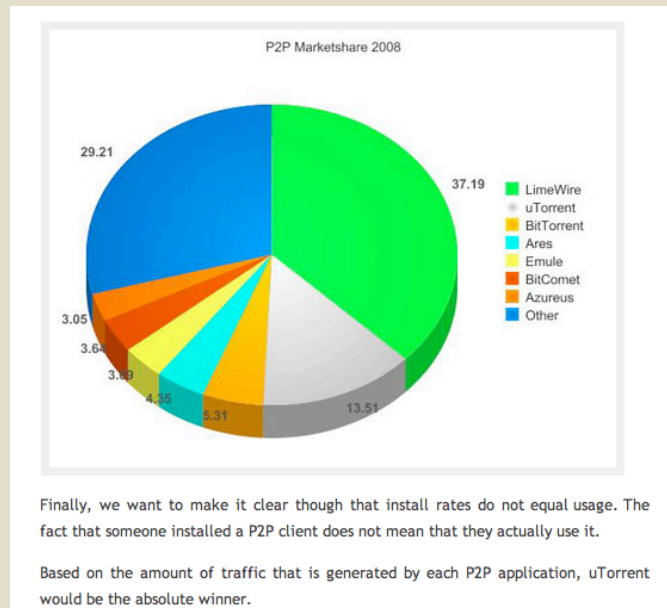
### File sharing

File sharing as we define it for this document is seen to have become an issue for major concern to the creative industries with the launch in June 1999 of Napster, the first mass peer-to-peer file sharing application.

File sharing is believed to be undertaken by around 16% of the overall UK Internet population (Music Ally 2008). As Clark (2007) reminds us “file sharing is not *per se* illegal”.

The latest data (Torrentfreak, 2008) on the ever changing P2P landscape we found shows that the number of Torrent users worldwide has more than doubled compared with 2007. The BitTorrent client is most popular in Europe - with an install rate of 11.6% of all PCs - and least popular in the United States, where 5.1% of all the PCs have installed uTorrent.





The data presented here (from Torrentfreak (2008) are based on a sample of over a million PCs (Windows only). Since 1999 there have been four generations of peer-to-peer sharing systems, through which vast amounts of unauthorised content has been shared. The rapid evolution in technological approaches has been put down to the legal actions against first and second-generation applications that closed them down. More recent technologies have to date remained in operation: the most noteworthy being BitTorrent, a completely legal technology that does, however, allow huge amounts of content to be shared and accessed. The evolution also demonstrates the speed with which new forms of technology are able to subvert business and legal initiatives.

The first-generation P2P networks comprised a centralised server and resources list, and thus companies offering the service was liable to be prosecuted for distributing copyright material. Now, however, there are only peer-to-peer connections. There is no main (or central) server. Examples of this set-up include Limewire, Gnutella, Kazaa, eMule, Kademia, FastTrack and Ares Galaxy.

The Third-generation P2P systems add a level of anonymity.

*“Traffic is routed through other network members' clients which function as network nodes. For example, A sends a file to B, then B gives the file to C. A and C do not become acquainted and thus are protected under most copyright laws. In many instances, these systems use virtual IP addresses which obfuscate A's, B's and C's location in the network, and also hide the key elements of culpability--the justification for these systems is that virtual IP addresses makes it very difficult to determine whether C requested the file, and whether A sent the file or if A just forwarded the file” (Nwogugu, 2008: p141).*

Examples of such systems include ANts P2P, Rshare; Freenet, I2P, GNUnet, Entropy, I2P (I2Phex, iMule, Azureus) and Waste.

In the fourth generation systems the content is sent in the form of streams over P2P networks (instead of being sent as files). Once again there is no central server involved in this type of system. The files being consumed, but not downloaded, are not transferred between users but the information is shared over streams in P2P networks. Thus the content is not stored on the consumer's computer, but rather is confined to an Internet connection and a host page. Examples of these services include: YouTube, Daily Motion and Spotify. We note here that from routine Google searches we found that there are many types of “recording” devices available as free software applications for PCs that enable this streamed content to be copied in real-time in the same manner as a digital television recorder (PVR) – or indeed, in a

previous generation, a radio-cassette recorder. There are also many applications<sup>8</sup> that allow the consumer to actively download a YouTube video, rather than watch it as part of a streaming process.

## Streaming

Streaming media is video or audio content sent in compressed form over the Internet that can begin playing as they are being downloaded to a computer. Users can pause, rewind or fast-forward, just as they could with a downloaded file, unless the content is being streamed live.

Examples are: BBC IPlayer, YouTube, Daily Motion & Spotify. Google Video Search provides a search facility across the range of video servers.

Streaming media is transmitted by a server application and received and displayed in real-time by a client application called a media player. A media player can be either an integral part of a browser, a plug-in, a separate program, or a dedicated device, such as an iPod. Frequently, video files come with embedded players. YouTube videos, for example, run in embedded Flash players.

Streaming media technologies have improved significantly since the 1990s, when delivery was typically uneven. However, the quality of streamed content is still dependent *upon the user's connection speed*. The stream is not meant to be downloaded by the digital consumer, thus while it is possible to view but not copy unauthorised materials the ability to file share should not be possible.

However, streaming video and audio *can* be recorded. This is from a website<sup>9</sup> found by a simple search with Google using the tag: 'record streaming video', and provides the following information:

*"Streaming Video doesn't work like other types of internet media - usually you can right click on a link or an image, and save it as a file to your PC. Streaming was invented as a way to deliver multimedia (audio and video) over the internet without overloading the web server. It also had the advantage of being hard to capture, making media pseudo-copy protected.*

*Today, there are a few wonderful tools that can capture all kinds of streaming video. The articles on this site tell you how to use the best software for capturing streaming audio and video"* (how-to-record-streaming-media.com, undated).

And once recorded, this content can be shared, re-uploaded, and played on a variety of off-line devices.

There are many unauthorised streaming services, showing films still in cinemas, contemporary television shows, free pornography – and live sports<sup>10</sup>. Of the latter the BBC recently reported that:

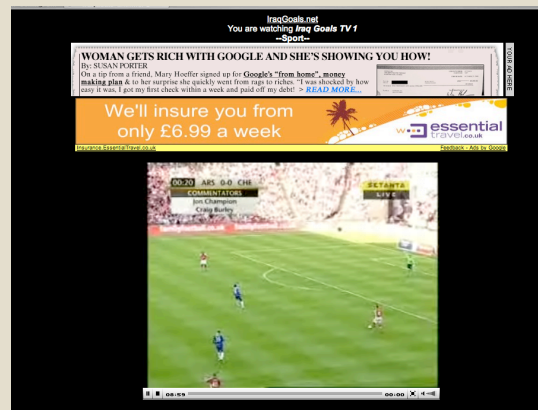
*"A new deal worth almost two billion pounds over three years has just been reached between the Premier League, and broadcasters Sky and Setanta, who will show live matches in the UK. But could it be the last big money deal that the game attracts? Millions of fans are circumventing subscription channels by watching illegally-streamed matches on the internet for free. Premier League lawyer Oliver Weingarten told the BBC that the most popular illegal sites attract up to a quarter of a million viewers for a single game. He confirmed that this could potentially have an effect on the price the league is able to demand for its product in future negotiations. "The long term consequences for the game are that it has the potential to devalue or dilute the rights value, and in turn that will dilute the product that we are able to turn out and the quality of player coming to the league."* (Dune, 2009: unpaginated)

<sup>8</sup> <http://Vixy.net>. The homepage reads: "Download online videos direct to PC / iPod / PSP. It's free!"

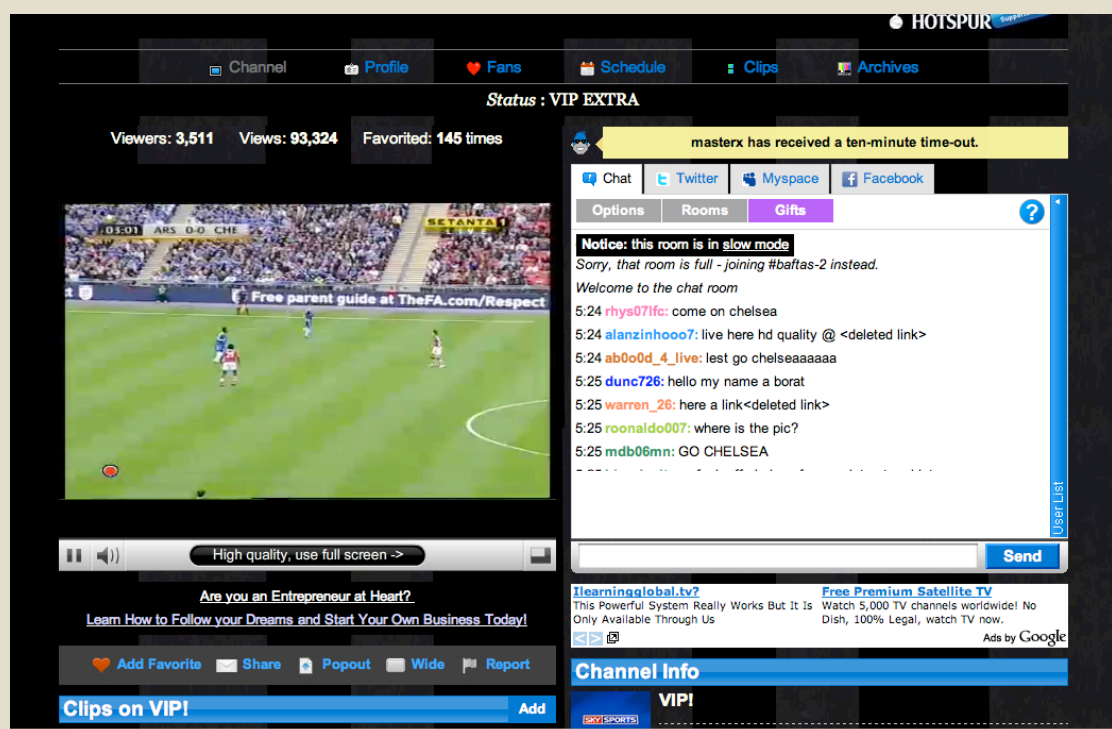
<sup>9</sup> <http://www.how-to-capture-streaming-media.com/index.php> (Accessed April 9, 2009)

<sup>10</sup> <http://www.free-football.tv>. Ciber note: on the day we accessed this website there were 25 live matches on offer, in England, Scotland, Europe, Asia and South America.





Live unauthorised streaming of the FA Cup semi final between Arsenal and Chelsea, April 18, 2009. The match was shown live by the pay-tv channel, Setanta Sports.



Another service offering the same match. The chat room on the right hand side of the screen featured many links to further unauthorised sites offering the same service.

While considering film and television streaming, the New York Times (Stelter and Stone, 2009: unpaginated) recently reported that:

*"People have swapped illegal copies of songs, television shows and movies on the Internet for years. The slow download process, often using a peer-to-peer technology called BitTorrent, required patience and a modicum of sophistication by users. Now, users do not even have to download. Using a search engine, anyone can find free copies of movies, still in theaters, in a matter of minutes. Classic TV, like every Seinfeld episode ever produced, is also free for the streaming. Some of these digital copies are derived from bootlegs, while others are replicas of the advance review videos that studios send out before a release."*

*"TorrentFreak.com<sup>11</sup>, a Web site based in Germany that tracks which shows are most downloaded, estimates that each episode of "Heroes," a series on NBC, is downloaded five million times, representing a substantial loss for the network. (On TV, "Heroes" averages 10 million American viewers each week"*

*"A wave of streaming sites, which allow people to start watching video immediately without transferring a full copy of the movie or show to their hard drive, are making it easier than ever to watch free Hollywood content online. Many of these sites are located in countries with lackluster piracy enforcement efforts, like China, and are hard to monitor, so media companies do not have a clear sense of how much content is being stolen."*

*"But many industry experts say the practice is becoming much more prevalent. "Streaming has gotten efficient and cheap enough and it gives users more control than downloads do. This is where piracy is headed," said James L. McQuivey, an analyst at Forrester Research. "Consumers are under the impression that everything they want to watch should be easily streamable."*

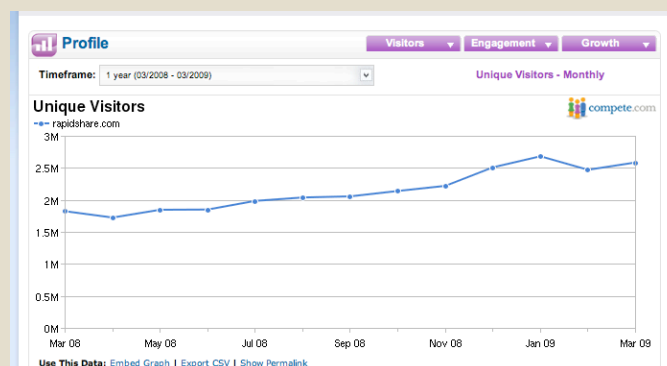
## Data warehousing

In the context of this report 'data warehousing' is used to describe the practice of uploading data to a remote server that can then be accessed by the uploader and others via a unique URL. This practice is also known as 'one-click hosting' and includes web services that allow digital consumers to free of charge easily upload one or more files from their hard drives (or from a remote location, a mobile phone etc) onto the one-click host's server.

As of 2005 these sites have drastically increased in popularity. Many music blogs, for example, have links to MP3 tracks or entire CDs, or collections of CDs, that have been uploaded to a data warehouse. From the data it appears that this type of file sharing does augment, and may even be taking over from P2P types of file sharing. The sites, and we describe several below, make money through advertising or charging for premium services such as increased downloading capacity, removing any wait restrictions the site may have or prolonging how long uploaded files remain on the site.

Rapidshare is a German-owned one-click hosting pay- and free-service website that operates from Switzerland and is financed by the subscriptions of paying users. It is one of the world's largest file-hosting sites with millions of files stored on its servers. According to Alexa, Rapidshare.com is currently the 15<sup>th</sup> most visited website globally. Rapidshare was reported to have stated in April 2008 that it has 5.4 petabytes of storage for users (Wikipedia, 2009).

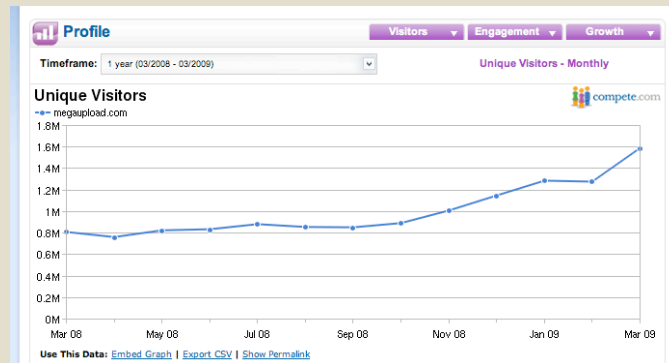
As of October 2008, the download limit was established for Premium (paying) Members at 2.66 Gb per day. The unused volume is automatically rolled over to the following day, up to a maximum limit of 12 Gb. If the complete download capacity is used up during one day, the premium-user is able to download another 2.66 gigabyte the following day (or after midnight CET).



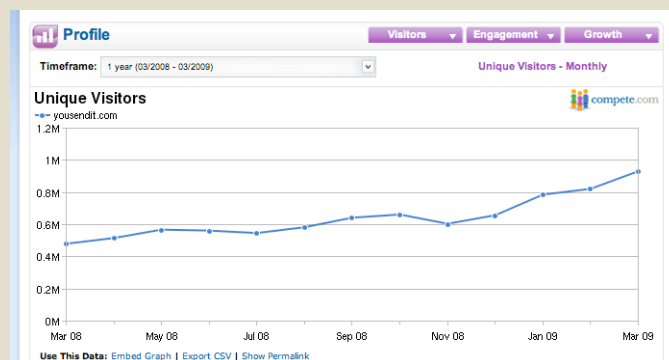
<sup>11</sup> <http://torrentfreak.com/>

**Megaupload** is an international one-click hosting website based in Hong Kong, and available in 18 languages. The domain *MegaUpload.com* attracted at least 10 million visitors annually by 2008 according to a Compete.com study (Wikipedia, 2009).

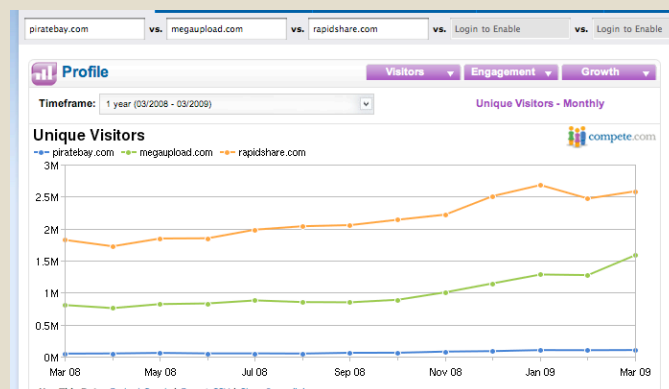
The basic service is available for free and allows users to upload files of up to 1024 MB. Free users cannot download files larger than 1Gb, however. Free registered users are offered 50 Gb of total file storage. Premium users are offered 1 Tb total file storage. After a successful file upload, the user is given a unique URL which allows others to download the file.

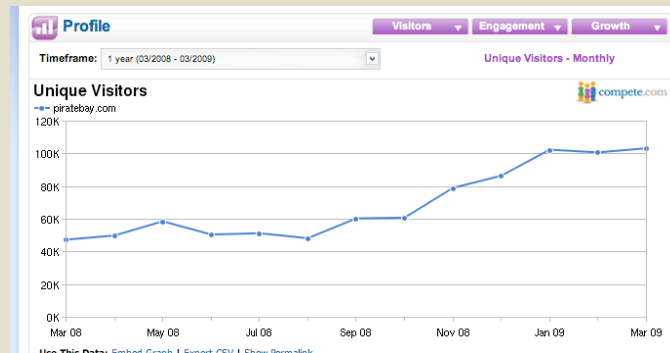


**YouSendIt** is a web-based digital content delivery service provided by YouSendIt, Inc. It lets users send, receive and track files on-demand. It is an alternative to sending large e-mail attachments, using FTP, and sending CDs or DVDs or tape or USB flash drive via courier. The sender can enter the recipients' e-mail addresses, attach the file and send it; the recipients receive an e-mail notification with a URL that lets them download the file. With more than five million registered users from 220 countries, YouSendIt once transferred over 40,000 Gb per day and over 500 million files to date.



A comparison of web traffic on the Megaupload, Rapidshare & the Pirate Bay websites from [www.compete.com](http://www.compete.com).

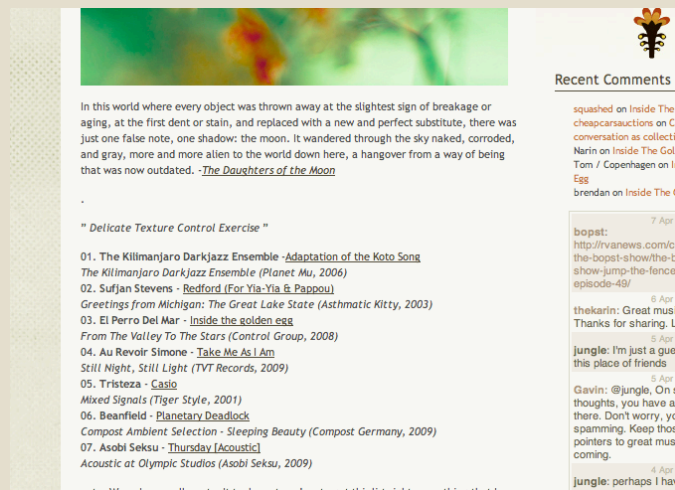




## Sampling and blogs

There are thousands of music blogs on the web, and many offer the opportunity to not only listen to music of all kinds, but also to download the music – which is often hosted in a data warehouse or One-Click hosting. These blogs are often informed with authoritative writings about their subject, and are thus enjoyable to read. Some are creating strong online brands. Hype Machine<sup>12</sup> is a search engine for these music blogs which adds links from the bloggers as they are posted, including links to available music files. Hype Machine can be thought of as a ‘Google’ for free music.

Sometimes the original music blog includes not just a link to access or stream the music for free, but also a link to an e-commerce site where digital consumers can purchase the piece of music. Below are two examples of music blogs, the third image shows the data warehouse link from where digital consumers can download the music. Note that on the data warehousing page linked to the music – a CD by Dave Brubeck and Paul Desmond – there is the facility to “embed” the music on a web page, to share it on websites such as Facebook, Digg and del.icio.us<sup>13</sup>.



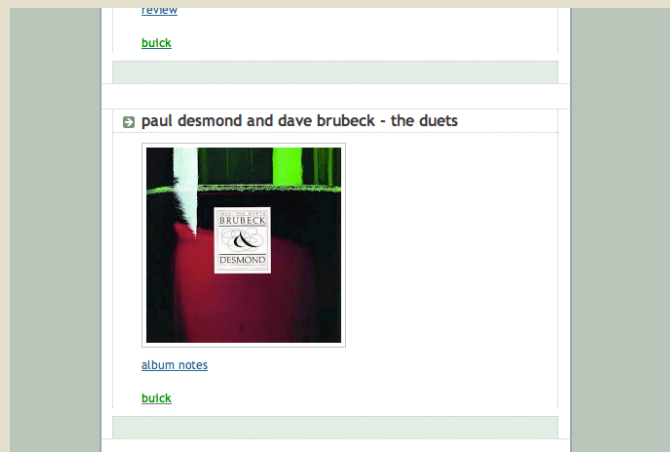
Above: a music blog with links: digital consumers can listen (i.e ‘stream’) or download the files.

<sup>12</sup> [www.hypem.com](http://www.hypem.com)

<sup>13</sup> <http://www.facebook.com/>

<http://digg.com/>

<http://delicious.com/>



In this case the `buick' link takes the digital consumer to the following page:



The link on the top left downloads the CD, the links on the right enable a variety of sharing techniques to be undertaken. Note there is both advertising sold by the data warehousing host, and that there is a complete absence of cues or signs that downloading or sharing is in any sense unauthorised.

## Social media

Within the scope of this document social media, and the social networking facilitated by these media, is defined as content created by people using accessible and scalable publishing technologies that allow the creator or publisher of content to reach wide audiences without any costs of distribution other than Internet access. We focus on the social networking that is possible via the Internet, though we are highly aware of similar networking and content creation opportunities made possible by mobile communications networks.

Examples of social media include Internet forums, weblogs (or blogs), podcasts, picture sharing websites, video sharing sites, wikis, social networking sites such as Facebook, MySpace or Bebo, `micro-blogs' such as Twitter and Tumblr.

The technologies that enable these kinds of social media include: blogging software, picture sharing software, social networking software, email and instant messaging systems, VOIP – or voice over internet protocol, and P2P file sharing software. A few examples of social media include Wikipedia (reference), MySpace (social networking), Facebook (social networking), YouTube (social networking and video sharing), Spotify, Second Life, Flickr, Twitter, Tumblr and MSN.

In various iterations these social media integrate technology, telecommunications and social interaction, allowing digital consumers to construct and share words, pictures, videos and audio, these forms of

creative content are sometimes called 'user generated content' (UGC). And this content is, of course, subject to IP.

The synthesis of technology and content, and the access to broadcast and receive content to and from a potentially global audience (the distribution method), allows for the creation of social identities and peer communities; the establishment of meaning among those that create, share and communicate; and this process may also be central in the formulation of both values and prestige to those who create, share and communicate.

We highlight the distribution possibilities of social media because unlike 'industrial media', industries such as publishing, television and film, photography and news media, these are achieved with technology that is either cheaply or freely available to digital consumers. The cost of admission to Facebook or MySpace; Twitter or Blogger is the provision of a user's email address, and a few other personal details. Later in this document we will explore the relationship between 'free things' and privacy.

A major distinction between social and Industrial media appears to concern the issue of accountability.

### E-mail and other Internet-based communication tools

Email, Instant Messaging (IM), and other forms of messaging protocols – such as those found within social networks, or indeed comment pages that form an interactive component to other types of Internet content have the facility to attach files, and whilst this is a far slower process than downloading a file from a website, or Peer-to-Peer network, it is possible – and does take place.

Usenet, a portmanteau of 'user' and 'network', is a worldwide distributed Internet discussion system. It evolved from the general-purpose UUCP architecture of the same name. The technology has an absence of central server and dedicated administrator, and is instead distributed among a large, constantly changing conglomeration of servers which store and forward messages to one another. This makes Usenet an ideal platform for the sharing of content.

### The legal framework

We were tasked by SABIP to consider online behaviour and attitudes, but felt it was necessary to understand some of the legal framework within which these behaviours and attitudes take place. We include in this section some of the responses found in the academic literature. During the period of this research we followed closely the increasingly intense public focus on the topic of 'illegal downloading' and 'digital piracy' in the USA, Europe and the UK. Ultimately - as government report, or law, was followed by media analysis, and ideas such as 'three strikes and out', or a tax on broadband access, or the establishment of a Rights Agency, were discussed, implemented or refined – and we note only that it is imperative that longitudinal research which considers the broad impact of any new legal positions on the nature of 'copycat' digital culture in terms of who, how and why is instigated soon so that some methods of measuring success or failure can be attempted.

### Copyright industries and the law

We found very helpful the definitions of Picard and Toivonen (2004: pp27-28), who define the copyright industries as:

***"Core copyright industries:*** industries that produce copyrighted works and other subject matter. Industry that would not exist without copyrighted works and other subject matter.

*Literature and press, music, theatre, film and video, photography, visual arts, radio and TV, software and databases, architecture, advertising, industrial design.*

*The task of these industries is to create, produce or distribute copyrighted works and other subject matter. All activities in these industries are tied to copyrighted works and other subject*



*matter. All the activities of these industries should be included in measures of the economic importance of copyright. [our italics]*

**Copyright-dependent industries:** *Industries whose operations essentially depend on copyrighted works. Industries that would be considerably smaller without copyrighted works and other subject matter.*

*The manufacture and distribution of electronics (TV sets, radios, VCRs, CD players etc.), manufacture and distribution of computers, manufacture and distribution of musical instruments, photographic and cinematographic equipment."*

Copyright-dependent industries are largely dependent on copyrighted works and other subject matter, producing either production or consumption goods for copyright protected material.

Here from our research we would add: Internet service providers (ISPs) and mobile phone manufacturers and network providers.

The distinction of copyright and copyright-dependent is central to an understanding of the technological framework to digital consumer's behaviours and attitudes: whilst it is the copyright based companies and industries who are suffering great financial losses, it is the copyright dependant industries who have and are creating the environment and the means by which these losses are being created.

Recording, saving, storing, sharing, networking, broadcasting and downloading are the legal activities made possible by products of the copyright dependent industries, not the inventions of criminal digital consumers. Perhaps an analogy can be made with the car or gun industries: both create the possibility for illegal types of consumer behaviours such as speeding or shooting without a licence. The fact remains that the ecology of digital convergence that is defined by the technological possibilities of the hard and software currently available to the digital consumer – is about empowering the individual to access content wherever they are, on whatever tool for consumption they possess. It is about time- and file-shifting; storing, re-using, and sharing content. Many of these activities break the law. But as Clark (2007 p402) writes:

*"Legal resolution of this conflict has been difficult to achieve, partly on account of the real or perceived inability of existing copyright law terminology to address new forms of unauthorised use, and partly because so many individuals who practice file sharing and downloading are difficult to identify and are often not worth suing.*

While Picard & Toivonen state, in *Issues in Assessment of the Economic Impact of Copyright* (2004):

*"From the economic standpoint, the objective of policy makers is to achieve the optimal point at which the maximum amount of wealth is created by copyright. The challenge is that optimal conditions are contingent on and a function of a number of changing social conditions, therefore no stable point of optimal copyright policies can be identified and maintained."*

And these social conditions now include increasing numbers of confused or entitled consumers who take downloading and file sharing to be acceptable, and normal. As Jordan and Bolton (2004: p) state: "Our data confirm, and casual observation also suggests, that individuals are unclear about the rights and wrongs of file-sharing and often unaware of the potential harm caused by copyright infringement. Individuals feel they have the right to time shift or space shift content they have legally acquired and that it is legitimate to make back-up copies and to use content in whatever format or on whatever platform they choose. We suggest that these 'rights' are deeply embedded and as such 'taken for granted' and that any attempts by copyright holders to change these rights are likely to be met with strong consumer resistance in many countries." (ibid: p111)