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Abstract

This empirical paper explores the complex problem space of unauthorised music file sharing, providing insight into collaboration activities in online communities. As many consumers now access their music through unauthorised file sharing, it is interesting to consider what makes such communities so attractive. This paper presents the debates surrounding music piracy/file sharing, using a critical perspective to consider 'another way of doing things'. The arguments in this paper are based on a doctoral study involving 30 interviews, 3 focus groups, and 120 days of participant observation within an underground music file sharing community. Actor-network theory is useful in identifying the controversies in this complex problem space, encouraging a reconceptualisation of file sharers and the information systems they create. These new insights contribute to the literature of information systems development within the context of online communities.

Keywords

Ethnography, actor-network theory, online communities, music file sharing.

INTRODUCTION

Unauthorised music file sharing (often termed piracy) is a much-discussed topic in contemporary society (Andersen and Frenz, 2007; Johnson, Mcguire and Willey, 2009). Sharing our works and the works of others through technology such as the Internet is unprecedented in human history. Concerns about changing ownership and the control of cultural works were raised with the revolution of the printing press many centuries ago, and now a revolution on the Internet is raising similar concerns. Never before has the situation been so complex.

The move to digital technologies with the compact disc, coupled with growth of the daily use of internet technologies, means that the music recording industry face new challenges about how to best distribute their music online. At the same time, consumers now have more choice than ever about where to get their music. There are commercial online stores like iTunes who provide digital music for a flat fee; there are mobile phone plans that include unlimited streaming of music; and there are sites which allow you to listen to music for free e.g. MySpace. There have been suggestions that the music recording industry's business models for the digital distribution of music are somewhat out of date (Premkumar, 2003), so alongside these legal options for accessing music, there are also a plethora of systems available for accessing unauthorised (usually illegal) music, including public file sharing systems like LimeWire (preceded by Napster and Kazaa), and also more secretive underground (private) communities which the research subjects referred to in this paper were members of.

The music recording industry is the term used to refer to individuals and organisations involved in creating, recording and distributing authorised music, and it operates on an economy of scarcity, an economy that allows those in power to have ownership over 'knowledge' (music) and to allow access to it *when*, *where* and *how* they say. These power relations changed with the advent of Napster a decade ago and its various incarnations since, which have given consumers more choice in accessing music at their convenience, and according to the price they are willing to pay (Poblocki, 2001; Sandulli, 2007). In the case of unauthorised file sharing, this cost may appear to be free, however there are hidden costs associated (Sag, 2006).

There have been suggestions that one of the reasons for the decline of music sales is due to the development of peer-to-peer networks (Sandulli, 2007), however this paper argues that underground music file sharing communities existed before public file sharing systems like Napster, and long before commercial stores like iTunes. However very little is known about then, but there is empirical evidence to suggest they are widely used to distribute music (Beekhuyzen and von Hellens, 2009; Biddle, England, Peinado and Willman, 2002; Thomas, 1993). This paper discusses this complex problem space; unauthorised music file sharing, and the collaborative systems that support this activity.

This paper argues that there is a lack of understanding of file sharing systems used for music and other forms of media. The discussion of this paper argues that social inequality is being preserved by the status quo in regard to unauthorised file sharing, which leads to a seemingly lack of critical thought on the topic and the systems which support such activities. This marginalising of file sharers is often achieved through the use of language (terms such as 'pirates' and 'piracy'), even though most file sharers use downloaded content for personal use and not for commercial gain. File sharers are also increasingly marginalised through the criminalisation of file sharing activities in many parts of the world. The problem is that with this social inequality comes a lack of interest in studying systems used largely for illegal activities, even though the technologies and activities that support such communities are highly sophisticated and can offer new ideas for future online music systems.

This paper is based on a larger doctoral study (Beekhuyzen, 2009). While this paper does not advocate the illegal theft of music, it does however propose a reconceptualisation of the concept of 'piracy' to undemonise file sharing activities and those labelled as 'pirates', and to consider instead what can be learnt about community participation and access to music in a virtual environment from file sharers. It is argued that it is not productive to ignore an important group of users involved in a widespread activity that will not go away if we simply ignore it, or prosecute those involved. Therefore this research is significant and relevant as it fills a gap in the information systems literature on file sharing systems, and more generally online music systems.

LITERATURE REVIEW - UNAUTHORISED MUSIC FILE SHARING – A COMPLEX PROBLEM SPACE

Thomas (1993: 32) argues that critical ethnography is "grounded empirically in prior evidence of a variety of debilitating social conditions that provide the departure point for research". Thomas gives the examples of rates of alcoholism, unemployment and divorce as social conditions prompting investigative research. It is argued in this paper that discourse around the 'piracy' debate and the dominance of a particular ideology (from the majority of the music recording industry) has led to similar debilitating social conditions. Altschuller and Benbunan-Fich (2009) also make this link between the widespread disobedience of the prohibition of alcohol in the US in the 1920s in which they say society was (and is now) repelling its own behavioural guidelines. They argue that a "fierce struggle ensues between society and its conscience" (Altschuller and Benbunan-Fich, 2009). Therefore it is appropriate to start the discussion in this paper by defining 'piracy', and then by discussing the motivations for partaking in unauthorised music file sharing activities.

Firstly it is important to clarify the term 'piracy'. Defined by Yar (2005) it refers to an infringement of copyright manifested through the *unauthorised* copying and distribution (often for commercial gain) of copyrighted content; an act deemed malicious against the creators of the content. In essence, 'piracy' is the act of unauthorised file sharing; however there is little evidence that those who participate in unauthorised file sharing do so for a commercial gain. Confusion surrounds the use of both terms. In this paper, the term 'unauthorised file sharing' refers to sharing and copying music files for personal use, and the term piracy is considered to refer to unauthorised file sharing for commercial gain.

There is little agreement in the 'piracy' debate. Unauthorised file sharing is becoming more common amongst Internet users and reports from the International Foundation for the Phonographic Industry and others around the world report say that digital sales are increasing each year. There are arguments in the literature that file sharing decreases sales (Liebowitz, 2006; Quiring, von Walter and Atterer, 2008), however there are also substantial research projects reporting that sales actually increase as a result of sampling (try before you buy) (Andersen and Frenz, 2007; Gran and Molde, 2009). It has been argued that the money 'lost' through substitution would never have existed anyway (file sharers would not have purchased). This conceptualisation of the impact of file sharing on the industry is characterised as *sampling* and *substitution* (Andersen and Frenz, 2007).

It is important to put such activities in a historical context. Adomavicius, Bockstedt, Gupta and Kauffman (2008) present a timeline of changes in digital music technologies. Note: the launch dates are US-based and not Australian based. The Australian iTunes online music store opened on the 25th of October 2005, and the iPhone was launched in Australia on the 11th July 2008.

Year	Event
1989	German MP3 patent
1996	US MP3 patent
1998	First portable MP3 player (32 MB)
February 1999	Sub Pop distributes MP3 music
May 1999	Napster founded
May 2000	Transactional watermarking developed
January 2001	Apple iTunes music applications released
July 2001	Napster injunction
October 2001	10 GB Apple iPod introduced
March 2002	20 GB iPod for PC introduced
April 2003	40 GB iPod introduced
October 2003	Dell DJ introduced iTunes online music store opens
September 2004	MSN online music store opens
May 2005	Yahoo online music store opens
October2005	First iPod with video capabilities
September 2006	iTunes starts selling full length movies
August 2006	160 GB 1.8 inch HDD introduced
July 2007	iPhone (MP3 player/phone) introduced
September 2007	160 GB Video iPod introduced

Table 1: Time Line of Digital Music Technologies (Adomavicius et al., 2008)

As it was suggested in the previous section, underground music file sharing communities have had a longer history than Napster, which was the first time most of the public had heard of file sharing (in 1999). These private communities (or underground) communities were created soon after the MP3 was patented in Germany in 1989, to meet a need: a system to share music files for personal use. These systems were built *for* users *by* users (Biddle et al., 2002)[1]. These users were highly skilled technical people with an understanding of networks and Internet protocols.

The values of developers are built into information systems (Benbasat and Zmud, 2003), with ideas of open formats and no restrictions on communicating and sharing built into such unauthorised file sharing systems. In opposition, the values built into online stores such as iTunes are quite different, with a focus on the monetary transaction, rather than the experience of the interaction.

Understanding the Impact of Unauthorised Music File Sharing
Examining the music downloading habits of more than 1,900 Internet users, Gran and Molde (2009) found that illegal music connoisseurs are significantly more likely to purchase music than the average, non-peer-to-peer-loving user[2]. Those who said they download unauthorised music for 'free' bought ten times more legal music as those who never download music illegally.

The results from the Norwegian study are in line with a recent report from the Canadian branch of the Recording Industry Association of America (RIAA), the Canadian Record Industry Association (CRIA). In their survey of 2100 participants, they also found that contrary to reports in the media and in the literature, file sharing tends to increase rather than decrease music purchasing (Andersen and Frenz, 2007). They discovered that file sharing is not the primary reason why people are not buying music, with 73 percent of respondents to the CRIA's survey reporting that they bought music after they downloaded it illegally. This fits with the effect of *sampling* in the literature, which is characterised "both by individuals downloading music in order to listen to it before buying it, as well as by individuals downloading music that is not available in stores" (Andersen and Frenz, 2007).

The complementary effect to this in the literature is that of *substitution* (also called *competition* (Quiring et al., 2008). Substitution is the primary concern for the music recording industry as it relates to "individuals downloading music *instead* of purchasing it" (Andersen and Frenz, 2007). The extent that substitution impacts on sales is not well understood, particularly when you consider that "5,000 downloads are required to replace one album sale" (Oberholzer and Strumpf, 2004). Even for those skeptical about this figure, it is clear that one downloaded file does not equal one 'lost' sale, a claim regularly purported by the music recording industry. Lessig argues that the "physics of piracy of the intangible are different from the physics of piracy of the tangible". He gives an example at the core of his argument, "when you take an MP3 from a computer network, there is not one less CD that can be sold" (2004: 35).

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[1] It is difficult to find credible sources on the history of underground file sharing communities
[2] http://www.bi.no/Content/Article____74866.aspx#

This may seem surprising due to the rhetoric[3] (Edmondson, 1984) regularly presented by the music recording industry that music sales are down as a result of file sharing. Harvard Law Professor and originator of the Creative Commons approach to licensing digital content, Lawrence Lessig (2004) believes that the exact impact of file sharing is difficult to ascertain, he argues it is "certainly much more difficult than the current rhetoric around the issue suggests". Although the Norwegian report is still to be published academically, it does provide a different perspective to the mainstream thinking, in a similar way the report on the Canadian situation does (Andersen and Frenz, 2007).

There are also arguments that external factors may have contributed to the decline in physical music sales over the past decade. These include "the downturn in the global economy, changing tastes in key music buying demographics, competition from new media including the internet, DVDs and video games, as well as a general decline in the quality, variety and value for money of recorded music" (Sag, 2006). Sterne (2006: 97) argues that CDs artificially boosted sales for the music recording industry in the 1980's and early 1990's, especially in back catalogues where baby boomers replaced their vinyl LP collections with CDs. He argues further that recording industry profits sagged before the introduction of the compact disc, and that the boom ran out in the mid 1990's. However some economic scholars believe there is little or no support for such claims (Liebowitz, 2007).

Motivations for Unauthorised File Sharing

In the study of Spanish P2P users, Sandulli (2007) found that there are six drivers of P2P consumption. It is argued in this paper that these are also drivers which influence decisions about whether to purchase. These drivers are price, quality, choice, convenience, flexibility, discovery, and community. Sandulli also summarized the main reasons consumers do not pay for downloads, and these include monetary reasons, opposition to the music recording industry, and beliefs that prices are too high. Vlachos, Verchopoulos and Doukidis (2003) also identified choice, and additionally they also found content quality was an important motivator.

Becker and Clement (2006) identify reciprocity as one of the key drivers for offering files in public file sharing systems. As there is no mechanism ensuring users share back in public systems, there has been research as to what motivates those to share in these situations, exploring those that choose not to free-ride. Wasko and Faraz (2005) also examine the motivations for contribution behaviours in community environments, and this is discussed further in Beekhuyzen and von Hellens (2009). However it is important to note that there are mechanisms for mandating sharing back in underground file sharing systems so these motivations are not necessarily relevant to the discussion in this paper.

Lessig argues that people use file sharing networks for four primary reasons: (2004: 37)

- As substitutes for purchasing content: users who download instead of purchasing (A).

- To sample music before purchasing it: sharing could increase the quantity of music purchased (B).

- To get access to copyrighted content that is no longer sold or that they would not have purchased because the transaction costs off the Net are too high (C)

- To get access to content that is not copyrighted or that the copyright owner wants to give away (D).

From the perspective of the law, Lessig argues that only (D) sharing is clearly legal. From an economic perspective, only (A) sharing is clearly harmful (as mentioned earlier in the distinction between substitution and sampling). (B) sharing is illegal but plainly beneficial, and (C) sharing is illegal, yet good for society (since more exposure to music is good) and harmless to the artist (since the work is not otherwise available).

Understanding the ways in which ethical positions around new media are negotiated and articulated is a challenge for researchers. Faced with new technologies that increasingly involve the need to make moral choices, accessing and listening to music can be a minefield as it is often not clear if an online activity is legal or illegal (often websites selling unauthorised content will claim to be legal). Blythe and Wright (2008) refer to the Apple iPod example, technology which is "packaged with moral injunctions: the final layer of its justly celebrated packaging bare the words 'Don't steal music' in four languages". This example highlights the changing nature of music and its relationship to technology.

It has been argued that information and communication technologies enable transcendence of the constraints of physical separation, called *the death of distance*. Oh, Curley and Subramani (2008) argue based on their experiment of 104 university students, computer mediated technologies significantly reduce the physiological distance of remote others. Along similar lines, Blythe and Wright (2008) identify a number of justifications for the act of downloading unauthorised content from their empirical study. These include:

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[3] Rhetoric in this paper does not mean insincere, instead it refers to the Aristotelian sense to the art of persuasive and effective speech (Edmondson, 1984).

1. Corporations are ripping off consumers (and artists – a distinction was made). *Therefore 'I' am fighting injustices of consumers.*
2. Manufactured 'pop music' is not worth paying for. *Therefore 'I' am fighting a form of justified resistance*
3. The wealth of bands/artists is 'ridiculous'. *Therefore 'I' do not need to pay anymore to them because they have enough money and they enjoy doing it.*
4. Copying is a part of *my* (the consumers) technology biography. *'I' have always recorded from TV and made mixed tapes. Therefore its just "petty theft".*
5. Digital content is intangible, therefore copying it does not remove the original in the same way it does in the physical sense. *Therefore it is a victimless crime.*

The justifications given in their study fall into two categories; either its not wrong to file share (1 & 2 above), or if its not wrong, then its not important (3, 4 & 5 above). Most that engaged in some form of file sharing confessed in the study to fearing the consequences of their actions; this is an influencing factor in the decision to pirate or purchase, also confirmed by Sag (2006).

It is useful to draw on discussions of ethics in the literature to further understand file sharing motivations. In a recent study of Facebook, Light, McGrath and Griffiths (2008) make the clear separation between technological and social aspects of online engagement. The authors argue that technology is an actor that is often downplayed or ignored; moral behaviour is attached to both the technological and the social, the former often not given attention in the literature. They argue that objects have both agency and morality, and that the moral nature of technology needs more attention. This argument is particularly relevant when considering the point made that the "ways in which users control the what, how, and with whom of sharing are dictated by the tools they use for sharing" (Voida, Edwards, Newman, Grinter and Ducheneaut, 2006).

Light et al. (2008) use descriptive ethics to understand an online 'meeting place' community (Facebook). According to their use of the approach "it is concerned with people's attitudes and beliefs about morality". As such, they argue that more empirical research is needed to better understand people's perceptions of right and wrong in the Internet environment.

Back in 1996, Richard Rubin wrote a really useful article to better understand this dichotomy (Rubin, 1996). In a similar argument to the one later picked up by Light et al. (2008), he suggested that some of the reasons for unethical behaviour online relate directly to the characteristics of the technology themselves. He presents what he has identified as the "seven temptations":

1. Speed – the download occurs in the blink of an eye

2. Privacy and anonymity – most acts occur in the privacy and perceived anonymity of home

3. Nature of the medium – the copy is not actually removed from the original source

4. Aesthetic attraction – the goal is to conquer, to be clever

5. Increased potential victims – there is a growing audience and thus opportunity to access unlawful content

6. International scope – there are no borders on the Internet

7. Power to destroy – some have malicious intent.

Rubin convincingly argues that these characteristics of technology promote a moral distancing between the act and the moral responsibility for the act. Essentially moral distancing in this context refers to the ability of an individual to rationalise, remove oneself or ignore ethical considerations (Rubin, 1996). Blythe and Wright (2008) agree that it is the intangible nature of the digital content and the act of multiplication when copied rather than depletion of the original source that has most people unconvinced that it is wrong, or that it has far reaching effects. Often being referred to by the music recording industry as 'stealing', they argue that this "construal fits neither with religious, legal or historical concepts of theft" (2008).

QUESTIONING THE RHETORIC – A CRITICAL ANALYSIS

Although not focused on music, Smith and Telang's empirical study explores the impact movie broadcasts have on DVD sales and what they term "Internet piracy" (2009). They conducted an analysis of movie releases to DVD, over the air movie broadcasts, and the movie's subsequent availability on public file sharing networks. Their research questions highlight the important arguments about the effects of unauthorised free music on sales in paid channels, in addition to exploring the effect of legitimate free distribution on paid channels.

Beginning from the perspective that movies studios are struggling to compete with free in a similar way as the

music recording industry, and that file sharing significantly impacts digital sales, they also found quite the opposite. They found that neither type of free content (authorised and unauthorised) analysed in their study reduced demand for paid content. Instead, movie broadcasts on over-the-air networks resulted in a significant *increase* in both DVD sales at Amazon.com and illegal downloads for those movies that were available on BitTorrent at the time of their broadcast.

These findings are similar to sales figures presented by the Australian government agency *Screen Australia* which reported Channel 9's Underbelly (series 2) and ABC's Summer Heights High in the top 3 *Australian TV drama titles on video (DVD, Blu- ray and VHS), ranked by sales value* in 2008[4]. In fact, Summer Heights High is reported to be the biggest selling television series DVD in Australian history (Australian Broadcasting Commission, 2008). These very popular Australian shows were also available for free download from the TV network's website and/or iTunes immediately after airing, however their availability for no cost alongside paid options appeared not to deter physical sales.

Smith and Telang (2009) account for this trend by arguing that giving away content in one channel can stimulate sales in a paid channel if the free content is sufficiently differentiated from its counterpart. As a result, they encourage creative artists to use product differentiation and market segmentation strategies to compete with freely available copies of their content. However it is important to note that Smith and Telang's focus is on movies which are said to be somewhat prone to single-use consumption, as opposed to music which is consumed many times. The study by Smith and Telang also confirms that the presence of pirated content does not necessarily cannabilise sales for movies available for purchase, which could also be applicable to music. Instead, they suggest that free and paid products appeal to separate customer segments. In this paper, a similar argument is made that the same is true for music: free can compete with sales, and free and paid appeal to different consumer markets.

This discussion leaves few clear conclusions. What is clear is that there is lack of agreement over the extent of the effect of file sharing of music sales. Even though some scholars and the music recording industry argue very strongly that file sharing is the sole cause of declining sales, there is enough empirical evidence to strongly question this. What it does suggest however is the need for more empirical research to better understand file sharing. From this perspective, the following sections propose a reconceptualisation of file sharing through considering 'another way to do things'.

METHODOLOGY

Ethnography implies the investigation of culture; critical ethnography is a type of reflection examining the interrelationship between culture, knowledge and action. Critical ethnographers "describe, analyze, and open to scrutiny otherwise hidden agendas, power centres, and assumptions that inhibit, repress, and constrain" (Thomas, 1993). Thomas (1993), in his extensive work on critical ethnography, agrees with Schutz (1972) that we live in a 'taken for granted' reality; one that is often too confusing, too powerful, or too mysterious to look below the obvious. He argues that, "it is not always easy to see clearly, let alone address, the fundamental problems of social existence that we confront daily". This paper argues that file sharing has become one such fundamental problem, made considerably more important with the recent criminalisation of unauthorised file sharing activities.

The term *controversies* is a concept from actor-network theory (Callon, Latour and Rip, 1986) and it is used in this paper as a tool for analysis to identify points of difference, or problems in the file sharing context. Complementing the use of actor- network theory in this paper is a critical research approach, which focuses on the oppositions, conflicts and contradictions in contemporary society (Doolin and Lowe, 2002). In this paper, actor-network theory is used with a critical spirit, providing the concepts and tools to enable an understanding of the marginalised subculture of underground file sharing communities. In line with actor-network theory traditions for empirical research, four main *controversies* were identified during the analysis of the data in this the doctoral study (Beekhuyzen, 2009) They are listed below (it is important to note that *controversies* are not necessarily controversial). This paper discusses the fourth *controversy* in more detail.

1. Changes in music distribution channels have an influence on how music is accessed and used – pirate vs. purchase ideologies, complex relationships between stakeholders, the move to digital music, legal cases/issues/interventions

2. Legal online music distribution does not appear to meet the needs of many users – quality, cost, choice, convenience, interoperability, value.

3. Technical competence is an influence on choices about which technology to use for music access, and

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[4] See http://www.afc.gov.au/gtp/mrvideotvdramatop20.html

general acceptance/non-acceptance/awareness restrictions such as Digital Rights Management

4. Community life/culture including the every day activities of file sharers is relatively unknown – roles, rules, rituals, norms, values, ideologies, and language

To summarise the ethnography, tertiary students are the music consumers at the centre[5] of this study, contributing to sixteen interviews and three focus groups with 2-4 people. Six musicians and eight music recording industry stakeholders also informed the study through interviews. A key feature of ethnography is spending extended time in the 'field' so observations of the technology enabled Roswell (a pseudonym) underground community over 120 days also contributes to an understanding of everyday online music access and use. The data for the doctoral study was collected in 2007/2008. More details about the data collection can be found in Beekhuyzen (2009). Some of those interviewed belong to underground communities like Roswell. This paper provides illustrative quotes from these interviewees. All participant names used are pseudonyms.

Identifying Controversies using Actor-network Theory
Detailed accounts of how different researchers apply actor-network theory to empirical data are rare. The ANT approach to analysis and interpretation used in this paper is in line with the approach outlined in the collection of articles in *Actor- network theory and organizing* (Czarniawska and Hernes, 2005: 9; Hernes, 2005: 117). The ANT approach used in this paper is discussed in more detail in Beekhuyzen, von Hellens and Nielsen (2010).

To understand power relations using ANT, emphasis needs to be given to examining *controversies* to see how particular struggles or controversies become resolved and/or appear as black boxes, i.e., taken for granted - not needing any explanation. Within ANT research, it is argued that it is only when particular controversies are examined that the black boxes begin to open to show the complex chains of actor-networks, which are normally concealed by the black box effect. Without an examination of the black boxes, the investigation remains rather uncontroversial.

When mapping the music actor-network, it was necessary to consider the relationships between the actors. The mapping process revealed a number of issues that contribute to the *controversies* around file sharing, many of which were based on power relations. For instance, the use of language such as the term 'pirates' to refer to those who file share, is a manifestation of the power relation between the music recording industry and music consumers. In this instance, the music recording industry use their position of power to vilify those they consider to be against their ideologies for distributing music online. They exercise this power in the mainstream media.

FINDINGS - RECONCEPTUALISING MUSIC FILE SHARING

New spokespeople have emerged in the transitioning actor-network as a result of changing practices in music distribution. These include consumer organisations like Electronic Frontiers Australia (EFA), as well as underground music file sharing communities which themselves became a new obligatory passage point. When asked about the use of the term 'piracy' in the media to refer to file sharers, the EFA responded that some believe it is a prejudiced term used to extreme levels to "portray the people that they are arguing against in a very unfavourable light that essentially anyone who would infringe their copyrights is somehow beyond the power, and is equivalent to an international war criminal".

Although underground communities are not concerned with creating music, they play an ever-growing role in the distribution of music on the Internet, and many of them use the same open source peer-to-peer software for their infrastructure. This actor- network is in constant transition, and it has now reached a point of irreversibility; where it is no longer possible for the actor- network to return to its previous state before the Internet. Thus it is important to learn more about music file sharing communities, those who participate, and their motivations.

Underground music file sharing communities are a reality, even though most people do not know they exist. They are hidden from public view, making them somewhat elitist to those who are allowed to join; "it's kind of like an underground on the Internet, that only a select few have access to. Not a public trading area. So you contribute to this area. Like you get their stuff and everyone else gets your data" (Jason); "you couldn't get to the URL without knowing the correct paths and stuff like that, it is pretty well hidden" (Gates). The only time the public hears about these communities is when they make the news after getting caught by the authorities, "The only thing you can really find out is when they were busted. There is a bunch of groups of people that get together...A group of people are taken down, when they get exposed" (Jason). Their history is not well known, but they have been around for longer than iTunes and other commercial online stores, "I've been doing this close to 10 years now" (Rusty). Some say that it is now harder to get access than ever before, "Many years ago it used to be not as secure where there were public channels to get into. Now they have all been privatised, really high

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[5] Two ex-tertiary students were included as a reference point

security on their servers, unless you actually know people in there, you can't get in" (Jason).

It is important to distinguish between underground private communities and public file sharing which happens through applications such as LimeWire, and through public torrent communities like thepiratebay.org, "there is kind of another view that the public thinks they are looking at that. So going online where everyone can access torrents, you think you are looking at that level (the top level of file sharing), but you are really looking at a small part of that" (Jason).

Uncovering the Underground scene – Motivations for Unauthorised File Sharing

As mentioned earlier in the literature review, there are a number of motivations for choosing to file share, or to buy. The reasons discussed by those who are members of underground communities are: to make a political statement, for the almost unlimited choice in content and the regularly updated content, and obviously because it is free (except for the hidden costs mentioned earlier). They are also attracted by the desire for quality, and "because they love music" (Rusty). However they also find such communities appealing because they encourage daily rituals and a 'meeting place' to gather and listen to your favourite music, and to talk about it with like-minded technically savvy individuals. File sharers also argue that they are encouraged within the community to spend money on musicians they like in addition to their downloading activities.

Underground music file sharing communities exist for the sharing of mostly unauthorised digital content. Individuals participate in these communities for a number of reasons; to make a political statement, "I'm happy to be a part of something that is taking a shot back at the disgusting practices of the music industry. I think that someone has to make a stand" (Rusty). But despite common views of the subculture, participants are encouraged to purchase music, "They encourage you, if you like it to buy it, if you don't like it okay, you sample it...to keep the artists around you've got to pay them, so if you do like their songs, obviously go and buy it" (Jason).

Others do so because of the almost unlimited choice in music content, "So one (community) is say maybe like a huge a huge headquarters for music and movies. Another site might have TV, games, Playstation games. You have unrestricted access on one site you have got to send things to the other site to actually gain credit on that site" (Jason). Members of underground music file sharing communities are significantly motivated by the variety of content on offer, "That thing (community) has like everything" (Rusty); "It (the community) has everything, every single...if you have the right access, you can get any single thing you want. Live recordings from actual shows. Just much more material than you could ever get in a store, that all these DJ's have access to" (Jason).

The community aspect is something missing in almost all commercial music information systems, and for some, this is very important as it forms part of their daily ritual to check what new music is available, "everyday I wake up and I go to this FTP first thing in the morning it's like my lifeline...and I check what's just been released through the scene... yesterday this is what got released in terms of metal through the scene (showing)" (Rusty). New content is added to 'the scene' each day, and new content is filtered down to underground communities daily, "this channel is pretty good with keeping up with alternative rock coming out, and all the stuff is high speed. This is the more public end of the MP3s scene...these days though I cant really get as much as I used to be able to since all my courier access went out the window. Because I just haven't had the time to do that. It's more like basically for someone who has no life. You have to have a lot of time. Its MP3 to MP3 transfer, so you have to connect one FTP on one side of the client or the FTP...its at high speed and basically being a courier that's pretty much where it comes from, and so that is what I rely on for stuff. Its not mainstream...they've got the new POD album up here which hasn't been released yet..." (Rusty).

Talking about music is also an important part of sharing music, "there are all the forums in IRC where you can discuss...and it's good to find other people who care as much about the high quality music. So there is definitely a market there for it, it's just how a company decides to take advantage of it" (Gates).

DISCUSSION - ONLINE COMMUNITIES FOR MUSIC DISTRIBUTION

This paper extends the work of Thomas (1993) who investigated the 'computer underground' 17 years ago, and it agrees with his description; "the computer underground reflects a highly complex mosaic of interest, motives, and skills and possesses a language and a set of values, information-processing techniques, and norms that shape its cultural identity".

The data revealed that those participating in underground music file sharing communities have a shared goal of accessing high quality music, and most involved argue that they love music. The shared values and interests of members are what connect them in this subculture. Joining an underground file sharing community requires entry into what is considered a trust and reputation network. As such, gaining access to one of these communities can be quite difficult, as the moderators first need to believe they can trust the new member. Then it is important for the member to actively participate on a regular basis, and reciprocate by sharing music back

within the community in order to build a reputation. The reputation is indicated by a ratio (percentage uploaded/downloaded) which is often associated with a member's 'status' in the network.

The time spent by members in underground file sharing communities varies from the (somewhat) casual member who may spend a couple of hours a week interacting within the community (choosing new content to download) to the 'hard core' members who spend time in the forums, chat rooms, and adding new content to the site on a daily basis. Some take on roles as couriers and system administrators requiring them to spend many hours on their 'hobby'. Regardless of how much time is spent in the 'meeting place' part of the community, members need to keep their computers running and *seeding* the content for many hours a week. Depending on downloading habits, as much needs to be shared back as downloaded; the more shared back, the higher the ratio, and thus the more important one appears in the 'economy of cool' (discussed in Beekhuyzen (2009).

Through the community rules in underground communities, rituals of active participation and reciprocity are enforced, see Beekhuyzen and von Hellens (2009). Wasko and Faraj (2000) argue that such rituals are important for community sustainability. Whittaker, Isaccs and O'Day (1997) define five characteristics of communities, which they argue active participation and reciprocity are two of the core but debateable attributes of communities. During the analysis of the data for this study, these community characteristics were mapped to concepts from actor-network theory to reveal that active participation and reciprocity in underground music file sharing communities is essential not only to them appearing as a 'community' (Preece, 2000) but they are essential for the sustainability of the community in the long term. This research extends the work by Whittaker et al (1997) by confirming the importance of these characteristics in an underground community environment. It is important to note that active participation and reciprocity are not evident in any significant way in public file sharing 'communities', and this is one of their main points of difference to underground file sharing communities.

The findings in this paper extend the work by Andersen and Frenz (2007), and Gran and Mold (2009) that many individuals participating in underground file sharing communities regularly purchase music, either on CD, in digital form, or by going to live shows and purchasing merchandise. This study also proposes that members of underground music file sharing communities are generally not necessarily malicious (Becker and Clement, 2006); instead they can be likened to the original hackers (Thomas, 2002) who often did things 'just because they could', and to reap rewards (including status) for their altruistic acts. Even though there is often contempt by these consumers for the music recording industry, usually this does not extend to musicians. All file sharers in this study believe that musicians do need to be rewarded for their creations, with many feeling that musicians do not receive much money from sales of recordings, so they justify that they are really only taking the money from the music recording labels, as they still spend money on the musicians in other ways (live shows, merchandise etc). This supports Sag's (2006) *normative value* argument, which captures the extent to which users feel good or bad about how the files were acquired.

CONCLUSION

This paper presents a complex scenario of unauthorised music file sharing. This paper argues that underground file sharing communities are highly sophisticated and collaborative, and that the individuals involved in creating and maintaining such communities have strong technical skills and there exists an opportunity to learn from what makes these communities work. Underground music file sharing communities are online spaces where individuals interact, communicate and collaborate, and many of them use the same peer-2-peer open source software as the infrastructure for the community, therefore the discussion in this paper applies to more than one community. They are formed around the act of file sharing, and are private and secretive in nature, and they operate under the radar of law enforcement.

There are a number of motivations for file sharing; political reasons, unlimited choice, the community connection, the love of music, and the desire for quality. It is argued that in order to understand the casual file sharer's activities, it is necessary to understand those in the underground. They (underground file sharers) argue that they are not malicious; instead they argue that they regularly spend money on music.

This paper gives insight into an underground music community and it is argued that it is not productive to ignore an important group of users involved in a widespread activity that will not go away if we simply ignore it, or prosecute those involved. Based on a critical analysis of unauthorised music file sharing, this paper argues for a reconceptualisation of file sharing by treating file sharers as an important group of users, and to consider file sharing systems and communities as technology-enabled social spaces worthy of research attention. It contributes to the IS literature by demonstrating how to overcome significant ethical challenges in investigating illegal behaviour within the information systems context.

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