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Gender Differences

in Digital Music Distribution Methods

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Abstract: This study examines gender differences among Greek Internet users in using digital music distribution methods. First, a Web-based questionnaire was developed and placed on most popular Greek forums. Then, 300 Greek Internet users stated their opinions regarding digital music and the following downloading methods: 1) Http downloading, 2) P2P downloading, 3) Torrent downloading, and 4) Combined iTunes method. The results revealed that P2P programs are the first choice for downloading mp3. The responders were satisfied with the P2P's easiness of use, the variety of songs and the no need to pay. However, they worried about P2P's safety. Gender differences were identified in several areas. Music industry managers could consider these findings in their strategies to reach the consumers. Advertising companies could use the results to target differently male or female consumers.

Keywords: digital music; gender differences; Greece; file sharing; iTunes; music distribution; music downloading; music market; P2P; Torrent.

1. INTRODUCTION

The whole music industry system has been affected worldwide by the Internet revolution. According to ITU (International Telecommunication Union), more than half of people in the developed countries are Internet users (www.itu.int). Nowadays songs and artists are not only promoted through traditional ways but through new digital music distribution services as well, which could increase the sales. According to Nielsen SoundScan, there were large changes in the music market. From the first half of 2006 to the first half of 2007, there was a 19% decrease of CD album sales (from 254.8 to 205.7 millions), a 60% increase of digital album sales (from 14.7 to 23.5 millions) and a 49% increase of digital track sales (from 281 to 417.3 millions). It is acknowledged (Koster, 2008) that the recording music industry experiences a decline of its sales. On the contrary, the concert industry's revenues have not been affected by illegal Internet downloading. Furthermore, it is making use of the Internet to increase them. According to IFPI (International Federation of the Phonographic Industry), about 795 million single tracks were downloaded in 2006. However, there were even more illegally downloaded songs. Since the rise and fall of Napster, file sharing has moved into the mainstream. At present, tens of millions of consumers access one or more of these networks each month, according to BigChampagne, an online media measurement company specializing in P2P. Actually, it was found that broadband connectedness increased the death rate of brick and mortar music stores and reduced their number (Zentner, 2008). Also, the presence of a university led to a reduction in the number of music specialty stores in the zip code. The main purpose of this study is not only to describe the prevailing situation in the Greek digital music market, but also to reveal the consumers' desires regarding digital music consumption as well.

Specifically, this study aims to address the following questions:

- What are Greek consumers' desires regarding digital music downloading?
- Are there any gender differences in choosing downloading method?
- How do they rate the various downloading methods?

Firstly, we discuss two groups of related previous studies. The first group of studies examined Gender Differences in Internet usage. The second group of studies investigated the Digital Music Distribution. However, there were no studies investigating Gender Differences in Digital Music Distribution.

Some of the studies regarding Gender Differences in Internet usage include the following. Thompson and Vivien (2000) confirmed previous studies which reported the phenomenon of male dominance in the Internet. Reasons for the male dominance in the Internet in Singapore include the traditional view that males are more technologically inclined and have more confidence in computers. Heimrath and Goulding (2001) claimed that although both sexes were generally positive about the Internet, the role it plays in their lives and the services it offers, females had more negative educational and recreational experiences of computing. Mitina and Voiskounsky (2005) reported that in Russia, males' and females' stereotypes towards the Internet did not differ too much, especially on the self-reported upper levels of competence in the Internet use. Yang and Lester (2005) found that when it comes to online shopping, females tend to be affected by more factors than males. Psychological traits such as anxiety over computer use and their attitudes toward money, together with how often they surf the Internet, are all factors in their consideration of shopping online.

Researches started to investigate the music industry system since the beginning of the 1990´s mainly with a social sciences and economics perspective. Since 2000, there has also been an increasing amount of research on digital music distribution. The Research & Information Department of the British Phonographic Industry (2003) revealed that most people are encouraged to download music because it is free. Also, there is some evidence that people like to try music before making a purchase decision. Furthermore, they consider important the ability to find rare or 'difficult to find' material. File sharing services such as KaZaa were the most popular sources of online music. Similarly, Peitz and Waelbroeck (2005) argued that file-sharing and other forms of online music distribution can be used as a device for consumers to test new music; as an advertising toọl or as an instrument to open

the market to small artists. Laycock (2004) surveyed P2P file-sharing network users. Downloading music without cost or restriction was clearly an important contributing factor to the file-sharing success. The range of music and the ease of use were cited as the primary reasons for using P2P networks. The majority of file-sharing network users agreed that artists should be rewarded for their work. However, they thought that the music industry makes too much profit and artists are being ripped off. Similarly, Chiang (2004) reported that most Internet users in Taiwan still get used to obtaining free content. Internet music service costs customers much less. These users can download songs from P2P platforms without restrictions. In Taiwan, P2P file-exchange platform operators such as Kuro and ezPeer support more than one-third of online music consumers. He concluded that consumers' trend of surfing the Internet for searching and downloading music can not be blocked. Along this direction, Sanduli (2007) found that the low price, high assortment (and so, low search cost), and high discovery of new music using P2P networks were related to higher proportions of owning P2P music as compared to Compact Disc (CD) music. Bukhart (2008) argued that the subscription model is unviable. An exploration of consumers' attitudes toward fee-based online services revealed that consumers' willingness to pay for online services is likely to be influenced by their perceived value of convenience these services provide, and by the extent to which they utilize these services (Ye et al., 2004). It was argued that consumers are essentially maximizing value when choosing between buying and downloading music (Chen et al., 2008).

Regarding ethics, most users did not perceived the music downloading unethical (Chen et al., 2008). Furthermore, it was found that fashion involvement plays an important role in shaping an individual' intention to download. Similarly, Lysonski and Durvasula (2008) found that most students felt that downloading is ethical but the legal consequences of doing so were acknowledged. Also, they were not convinced that their behavior was harmful to the music industry or that record companies use profits from major artists to fund new talent. Shang et al. (2008) found that consumer's rights may be the major and general cause for sharing music files in the P2P network.

Typke et al. (2005) provided an overview of content-based music information retrieval systems, both for audio and for symbolic music notation. They showed that existing content-based retrieval systems fail to cover a gap between the very general and the very specific retrieval tasks. Cunningham et al. (2003) conducted an ethnographic study of the searching/browsing techniques employed by people in the researchers' local communities, as they use two common sources of music: the public library and music stores. Jones and Lenhart (2004) discussed the Internet's consequences for the music industry, music fans, and popular music studies, and compared the audiences for home taping and music downloading. Nettamo et al. (2006) examined the retrieval, consumption and sharing of digital music content in two different cultural environments, New York City and Hong Kong. They found several cultural differences in consuming and managing music.

Christin et al. (2005) examined the differences between pollution and poisoning, and their respective impact on content availability in P2P file sharing networks. They measured the content availability in the four most popular P2P file sharing networks, and showed that the injection of a small number of decoys can seriously impact the users' perception of content availability. Good and Krekelberg (2003) concluded that users were unable to tell what files they were sharing. An analysis of the KaZaA network suggested that a large number of users appeared to be unwittingly sharing personal and private files, and that some users were indeed taking advantage of this and downloading files containing private information. Voida et al. (2005) provided descriptive evidence of the practices surrounding the iTunes music sharing among employees of one corporation. They suggested new areas of the music sharing design space of iTunes' technologies. Lee and Downie (2004) uncovered two major themes that could have a significant influence in the future development of successful Music Information Retrieval (MIR) and Music Digital Library (MDL) systems. The first major theme is that people display "public information-seeking" behaviours. The second is that users expressed needs for contextual metadata in addition to traditional bibliographic metadata.

Analyzing the previous studies, it is evident that there is a lack of research on the following areas: 1) Internet users' opinions about various music downloading methods, 2) comparison of various music downloading methods, 3) gender differences in music downloading, and 4) music downloading by Greek Internet users. So, it could be interesting to investigate these issues asking Greek Internet users who download music. In this paper, we investigate the preferences and methods used by Greek Internet users to download music as well the presence of any gender differences. In the next section, we describe the methodology. Then, we describe the results of the responses to our survey. Finally, we conclude and suggest areas for future research. The music industry could take the findings into consideration.

2. METHODOLOGY

Initially, we reviewed the literature regarding previous studies on new ways of digital music distribution. Then, we searched for existing systems and services that might be identified as digital music distribution. Furthermore, we made a series of in-depth interviews with several "downloaders" which helped to identify the key issues surrounding the downloading phenomenon. This helped greatly to the development of a detailed questionnaire of 30 questions. The questionnaire was published at ereuna.servemp3.com and in all Greek popular forums, including forums concerning digital music like www.greek-forum.com, www.twmn.net, www.myphone.gr, www.insomnia.gr, www.blue-whitegt.com, www.fititis.gr, www.pcmaster.gr, www.greek-subs.net, www.ADSLgr.com/, www.greektechforum.com/, www.zoo.gr, forums.shareaza.com/, forums.greekcity.com.au/index.php . More than 300 Internet users in Greece answered the questionnaire between August 2006 and October 2006. Our target group consisted of experienced Internet users who join popular Greek forums. These users were at the edge of technological innovations. It could be expected that the general population could follow the same trend in the near future. About one third of the Greeks are Internet users. About one third of Greek Internet users admit that they download music. According to the National

Commission of Telecommunications and Post (www.eett.gr), 16% of Greek citizens had Internet access from their home in 2005. Currently, there are 1 million broadband lines in Greece. According to Focus Bari, about 36% of Greek citizens between 13-79 years old accessed the Internet during the last month (March-September 2007). There were more men Internet users (42.9%) than women (29.6%), as well more young people between 13-17 years (65.9%) than between 18-24 years (61.1%), 25-34 years (48.7%) and 35-44 years (35.7%). According to TNS-ICAP (2006), about 34% of Greek citizens use the Internet. There were more young Internet users between 15-24 years (54.1%) than between 25-34 years (43.2%), 35-44 years (34.1%), 45-54 years (20.4%) and 55-64 years (5.3%).

The questionnaire is organized in six groups of questions. Questions in the first group try to identify the profile of the user. Questions in the second group try to identify the user's computer knowledge and experience. Questions in the third group try to find out how often and what style of music the user listens. Questions in the fourth group try to find out the usage of mp3. Questions in the fifth group try to discover the user's attitude towards spending money for an mp3 file. Finally, questions in the sixth group try to discover the user's preference regarding the various digital music distribution methods.

This study examines gender differences using the Test of Independence (2: Chi-square test) statistical analysis. The Chi-square test is used to test the statistical significance of differences in a classification system (one-way classification) or the relationship between two classification systems (two-way classification). Specifically, the Chi Square Test of Independence tests the association between 2 categorical variables. If the calculated P-value is less than 0.05, there is a statistically significant relationship between the two classifications. Moreover, the Contingency Coefficient (CC) is a measure of the degree of relationship. The larger the value of this coefficient is, the greater the degree of association. The maximum value of the coefficient, which is never greater than 1, is determined by the number of rows and columns in the table.

3. RESULTS AND DISCUSSION

3.1. Demographics

Most responders were males (87%). The majority of both males (35.5%) and females (58.3%) were between 21 and 25 years old (Figure 1). Few males (9.8%) and females (16.9%) were over 30 years old. The distribution of ages shows that female responders are older than male responders. Moreover, statistical analysis shows that a difference exists between sex and age related distribution of responders (X^2 = 11.514, DF = 5, P = 0.0421 <0.05, CC = 0.197).

[Take in Figure 1]

Regarding their education level, there are not detected any gender differences (X^2 = 1.278, DF = 2, P = 0.5278, CC = 0.066). Most males (67.1%) and females (75%) have University education. Fewer males (26.2%) and females (22%) have secondary education, and hardly any males (6.7%) and females (3%) have primary education.

3.2. Users' profile

Most males (98.02%) and females (91.7%) own a PC (Personal Computer) or have access to a PC at home. Although a slightly higher percentage of females do not have a PC or access to a PC at home, there is not statistically significant difference among males and females (X^2 = 2.645, DF = 1, P = 0.1039, CC = 0.095).

Both males (97.23%) and females (88.89%) have Internet access at home. Marginal gender difference is observed as the percentage of females who do not have Internet access at home is higher (X^2 = 3.902, DF = 1, P = 0.0482 <0.05, CC = 0.116).

Among those having Internet access at home, most males (91.6%) and females (78.1%) have ADSL (Asymmetric Digital Subscriber Line) Internet connections at home. Recently, the cost of an xDSL connection has descended so much that the Greek Telecommunications Operator can hardly support the demand by the users. However, more females still use PSTN (Public Switched Telephone Network) (15.6%) and ISDN (Integrated Services Digital Network) connections (6.3%) than males (PSTN: 6.7%; ISDN: 1.7%). So, gender differences appear with respect to the type of Internet connection at home (X^2= 6.516, DF = 2, P = 0.0385 <0.05, CC = 0.151).

A large majority of both males (94.84%) and females (91.6%) think that Internet is important into their life. Statistically, no significant gender differences are detected (X^2 = 0.151, DF = 1, P = 0.6973, CC = 0.023).

3.3. Users' computer experience

After asking them to declare what they believe about their computer experience, most males (74.2%) and females (55.55%) consider themselves to be advanced PC users. However, much more females (41.66%) than males (17.85%) consider that they have basic PC knowledge. Finally, a small percentage of males (4.36%) and females (2.77%) consider themselves to be beginners. Consequently, there is a gender difference with respect to their perceived PC knowledge (X^2 = 10.836, DF = 2, P = 0.0044 <0.05, CC = 0.190).

More than 93.7% of all responders use the Internet on a daily basis. It seems that males use the Internet more frequently than females (Figure 2). So, gender differences are detected concerning the frequency of Internet usage (X^2 = 9.786, DF = 3, P = 0.0205<0.05, CC = 0.181).

[Take in Figure 2]

3.4. Music use and preferences

More than 90% of all responders (91.6% females and 90.5% males) hear music on a daily basis (Figure 3). No gender differences are detected (X^2 = 0.953, DF = 3, P = 0.8126, CC = 0.057).

[Take in Figure 3]

Most males (64.7%) and females (75%) listen to both Greek and foreign music. Fewer females (16.7%) than males (27.8%) listen to only foreign music. Few females (8.3%) and males (7.5%) listen to only Greek music (X^2 = 2.008, DF = 2, P = 0.3664, CC = 0.083).

However, gender differences are detected regarding the specific type of music they like to listen (Figure 4). Most responders prefer rock/metal (17.8% of all; 19.5% females and 17.6% males) and pop (13.8% of all; 20.3% females and 12.9% males) music. Greek 'laika' (10.4% of all; 11.7% females and 10.3% males) and 'entexna' (12% of all; 14.8% females and 11.6% males) follow. Other types of music achieve smaller popularity.

[Take in Figure 4]

Regarding their music purchasing habits, about 39% of both genders admit that they never buy music CDs. No gender differences are detected. Regarding the frequency of buying CDs, most responders (76% of both genders) buy CDs once or twice per year. More females (23.5%) than males (17%) buy CDs once or twice per half-year period. The rest males (7%) buy CDs more often (X^2 = 1.536, DF = 2, P = 0.4640, CC = 0.114).

An amazing 97.2% of males and 88.9% of females listen to music from their PC. Here, gender differences are marginal (X^2 = 3.902, DF = 1, P = 0.0482 <0.05, CC = 0.116).

Almost all responders know about the digital music files called mp3. Also, 89% of all responders (90.5% males and 86.1% females) use mp3 files for listening to music. The rest of them use wma, way, real audio, aiff, etc. Thus, mp3 dominates the digital music files. No gender differences for both questions are detected (X^2 = 0.288, DF = 1, P = 0.5917, CC = 0.032), and (X^2 = 7.081, DF = 5, P = 0.2147, CC = 0.155).

Most males (98.8%) and females (91.7%) store their mp3 files in their hard disks. Statistically gender differences are detected as more than 8% of females do not store their mp3 files (X^2= 4.766, DF = 1, P = 0.0290<0.05, CC = 0.128).

Most males (99%) and females (91.7%) have more than 300 stored mp3 files. However, some females have 0 to 50 (1.1%), 50 to 99 (2.1%), 100 to 199 (4.1%) and 200 to 299 (1%) stored mp3 files. Here, gender differences are also detected (X^2 = 4.766, DF = 1, P = 0.0290, CC = 0.128).

Most responders (69.76%) use mp3 files for a combination of reasons (Figure 5). The most important single reason is that mp3 files are widely available and acceptable (8.3% of all; 7.9% males and 11.1% females). The rest reasons follow: mp3 files provide near CD quality (6.8% of all; 7.9% males and 0 females), mp3 provide high degree of compaction (6.5% of all; 6.7% males and 5.6% females), and mp3 are easy to use (6.1% of all; 6.7% males and 2.8% females). However, more than 8% of females did not choose any of the suggested reasons. Consequently, there are significant differences among females and males regarding the reasons of using mp3 (X^2 = 11.849, DF = 5, P = 0.0369 <0.05, CC = 0.199).

[Take in Figure 5]

Although it seems that females (91.7%) are more eager than males (79.8%) to share their mp3 files, no statistical gender differences are detected (X^2 = 2.201, DF = 1, P = 0.1379, CC = 0.087).

Regarding the considered advantages of mp3 over CDs, most responders (69.13%) consider a combination of mp3 advantages over CDs (Figure 6). They believe that the most important advantage is that they do not need to buy the entire album (10% of all; 9.1% males and 16.6% females). The small storage size of mp3 (8.2% of all; 9.1% males and 2.8% females) and the easiness of use (6.9% of all; 6.7% males and 8.3% females) are also appreciated. No gender differences are detected (X^2 = 6.732, DF = 5, P = 0.2414>0.05, CC = 0.180).

[Take in Figure 6]

3.5. Spending money for an mp3 file

It is interesting that only 20% of all responders (20.2% males and 19.4% females) have paid for an mp3 file (X^2 = 0.012, DF = 1, P = 0.9116, CC = 0.007).

However, many responders (34.6% of all; 37.1% males and 18.2% females) are willing to spend money for an mp3 file in order that the artist acquires his money (Figure 7). Also, they could buy an mp3 file because they can make whatever they want with the file (24.1% of all; 23.2% males and 30.3% females), and the quality is good (11.6% of all; 10.7% males and 18.2% females). The rest could pay for other reasons. No significant gender differences are detected (X^2 = 5.165, DF = 3, P = 0.1601, CC = 0.141).

[Take in Figure 7]

Finally, most responders (75% of both genders) could spend 0.1 to 0.5 euro for buying an mp3 file. Few responders (19.6% of all; 20% males and 17% females) could spend 0.6 to 1 euro, and only 5.4% of them could spend more than 1 euro for a single mp3. No gender differences are detected (X^2 = 0.974, DF = 2, P = 0.6143, CC = 0.058). Note that the music

industry asks about 1 euro per song. According to our findings, most responders are not willing to pay more than half euro per song.

3.6. Digital music downloading methods

The majority of both males (52.77%) and females (58.33%) prefer to use the P2P downloading method (Figure 8).

[Take in Figure 8]

However, their preferences regarding the rest methods differ. The second most popular downloading method by males is Torrent (21.42%), followed by Http (20.23%), Do Not Download mp3 (4.76%), and iTunes (0.79%). On the other hand, the second most popular downloading method by females is Http (25%), followed by Torrent (11.11%), Do Not Download mp3 (5.6%), and iTunes (0 %). This attitude of females not trusting Torrent downloading methods can be explained from their answers to previous questions. Torrent downloading methods are slightly more difficult to use. Females spent fewer hours than males surfing on the Internet and have basic level of PC knowledge. Thus, females are hesitant to try new methods like Torrent downloading or need more time to adjust to new technologies.

Finally, the responders evaluated the existing downloading methods with respect to the following criteria: Speed, Variety of Songs, Easy to use, Safety, Quality of Songs, and Payment.

Regarding the downloading Speed, the superiority of Http is clear. About 42% responders are absolutely satisfied with the Http downloading (Figure 9). Next, they are satisfied with

Torrent. P2P follows. So, although they are not absolutely satisfied with P2P's speed, they massively use it. Finally, they are not satisfied with iTunes.

[Take in Figure 9]

Regarding the Variety of Songs, the superiority of P2P is clear. About 43% responders are absolutely satisfied with P2P (Figure 10). So, the variety of songs is one of the reasons for their preference towards P2P. Next, they are satisfied with Torrent. Http follows and iTunes is last.

[Take in Figure 10]

Regarding the Easiness of use, about 40% responders are absolutely satisfied with P2P (Figure 11). So, the easiness of use is one of the reasons for their preference towards P2P. They are also satisfied with Http and Torrent. ITunes is last.

[Take in Figure 11]

Regarding the Security and Safety, responders are hesitant. About 28% responders are absolutely satisfied with Torrent (Figure 12). Next, they are satisfied with Http. ITunes follows and P2P is last. So, although they are not satisfied with P2P's security and safety, they massively use it.

[Take in Figure 12]

Regarding the Quality of Songs, about 35% responders are absolutely satisfied with Torrent (Figure 13). Next, they are satisfied with Http. P2P follows. So, although they are not completely satisfied with P2P's quality of songs, they massively use it. ITunes is last.

[Take in Figure 13]

Regarding the No Need to Pay, over 43% responders are absolutely satisfied with P2P, Http and Torrent (Figure 14). So, the no need to pay is one of the reasons for their preference towards P2P. Of course, they are not satisfied with iTunes is last.

[Take in Figure 14]

Thus, we remark that over 53% responders use P2P since they are satisfied with respect to its variety of songs, easiness of use and no need to pay. However, they are not satisfied with respect to its safety. On the other hand, although they are satisfied with Torrent regarding its safety, quality of songs and payment, fewer than 20% use it.

4. USERS' SUGGESTIONS

Finally, the responders made suggestions and recommendations for the improvement of the downloading methods. Regarding the Http downloading method, the most common suggestions are the larger variety of songs and easier searching (Table 1). This is also in accordance to their evaluation where they assigned low score to Http with respect to its variety of songs.

[Take in Table 1]

Regarding the P2P downloading method, the number one request is to offer faster speed (Table 2). In addition, the absence of viruses and better quality seem also to be valuable requests for this method. This is also in accordance to their evaluation where they assigned low scores to P2P with respect to its safety and speed.

[Take in Table 2]

Regarding the iTunes method, responders seem to suggest better pricing and larger variety of songs especially Greek songs (Table 3). This is also in accordance to their evaluation where they assigned low scores to iTunes with respect to its variety of songs and payment.

[Take in Table 3]

Finally, responders would like faster downloading when using Torrent and expect larger variety of songs than the currently available (Table 4). This is also in accordance to their evaluation where they assigned low scores to Torrent with respect to speed and variety of songs.

[Take in Table 4]

5. CONCLUSIONS AND IMPLICATIONS

In this paper we performed a survey regarding the digital music downloading methods used by Greek Internet users. The analysis of their responses leads to some interesting findings.

Gender differences are identified in the following areas:

- Age of Internet users: females are older than males.
- Internet connection at home: more females still use old Internet connection technologies than males.
- Perceived PC knowledge: females trust less their computer knowledge than males.
- Internet use frequency: females use the Internet less frequently than males.
- Kind of music: females listen to different kinds of music than males.
- Mp3 storage: fewer females than males store their mp3 files.

- Mp3 quantity: females possess smaller number of stored mp3 files than males.
- Mp3 usage reasons: females use mp3 for different reasons (widely acceptable and available, near CD quality, high compaction degree, easy to use) than males.
- Downloading method: P2P is the most preferable method for both genders. Females prefer Http as a second choice and Torrent as a third. While males prefer Torrent as a second choice and Http as a third.

The females' reserve regarding Torrent can be explained by their low perceived computer knowledge and their low frequency of Internet use. It is slightly more difficult to use Torrent downloading methods than the other methods.

The most preferable digital music downloading method is P2P (54%). Most responders use P2P programs like kazaa, dc++, limewire, bearshare etc. The advantage of P2P is that it provides very pleasant and easy to use environment as well as variety of free songs. On the other hand, they are dissatisfied with its security. They propose that songs should be filtered before shared.

The next preferred methods are Torrent (21%) and Http downloading (20%). The responders are pleased with the good quality of songs and the safety offered by Torrent. However, they complain about Torrent's low speed and the small variety of songs, especially Greek songs. The most important advantage of Http is its speed. It provides fast downloading. However, many responders complained that Http suffers from many broken links, non functional links, and pop-ups which are disturbing. They also wish the variety of songs to be larger. Finally, few responders prefer iTunes (2%). Most responders have never used iTunes and they would like to have free songs in order to try this new method.

Another interesting finding is that responders consider as the most important advantage of mp3 files over the traditional CDs the fact that they do not have to buy the entire albums. Although only 19% of responders have paid for an mp3 file, they could spend money for an mp3 file in order that the artist acquires his money. They are not willing to spend more than 0.5 euro for a song. Cost is a key factor for customers. The cost and the quality of songs should be at such levels so that they would not bother downloading free songs.

The findings of this study may have an impact on digital music advertising, pricing, sales, distribution and intellectual property protection. Since, gender differences were found with respect to several issues, advertising and marketing companies could launch different campaigns for men and women. Advertisement could also promote the benefits of mp3 files' portability, transferability, compaction, and easiness of use. Responders were very sensitive with respect to pricing issues. Involved companies should carefully consider the music pricing. If consumers are not convinced that it is worthy to pay the required price, they could continue to trying free downloading methods. Furthermore, the pricing scheme should be simple and clear (either per song or subscription). Free trials could be offered so that consumers could 'taste' music samples. For example, the first seconds of a song, limited life CDs, limited time subscription or sample songs could be offered for free. Bundling (e.g. tailored made albums) could be offered at reasonable prices. Not matter what marketing, selling and piracy policies will be followed by the companies if the price is not tempting consumers could try to find low price or even free music. Furthermore, there are many competing distribution channels (e.g. CDs, Internet, mobile) with many competing players in each channel (e.g. i-mode and Vodafone live). This competition could also affect the pricing.

People in the following music industry sectors could consider the findings in their strategies: 1) music/record companies, 2) artists, 3) traditional music stores/ retailers, 4) music downloading companies, 5) Internet Service Providers (ISPs), 6) mobile operators and carriers, 7) mobile devices manufacturers, 8) governments, 9) consumers.

Specifically, music/record companies could use multiple distribution channels (e.g. multiple downloading methods, mobile) to reach the consumer. They could consider offering free trials and attractive discounts. However, they should persuade the consumer that it is worthy to spend money on music. It seems that consumers are not willing to pay the companies. Also, it seems that responders feel for artists. So, the music companies should explicitly show what amount of money goes to the artists. However, they could also consider alternative ways of making money. Instead of trying to sell songs, they could offer them for

free and make money from services (e.g. concerts, advertisements), sales to radio and TV stations, rights from companies that use music to make money (e.g. bars), as well objects that are difficult to or can not be downloaded (e.g. t-shirts, caps). They could also consider offering different kinds of music to males and females.

Artists could produce, record, advertise, sale, and distribute their work directly to the consumers. They could also manage their intellectual rights by themselves. Alternatively, they could cooperate with one or more companies. Also, they could offer free trials of their work. They could also make money from alternative services (e.g. concerts, video clips, advertisements, t-shirts).

Traditional music stores/ retailers could offer alternative downloading methods. They could offer to the consumer large databases of quality songs stored locally. A customer could listen to music for free and then download songs directly to his mobile device for a small price (e.g. mp3 player, USB flash drive, CD, mobile phone, PDA, laptop) via a high speed local network (wired or wireless). So, consumers will not need to download the music via Internet. They could also make money from extras (e.g. t-shirts, portable devices).

Music downloading companies, ISPs, mobile operators and carriers could offer advertising, sales and distribution. They could develop accurate consumers' profiles and use different strategies based on consumers' profiles. For example, more males than females use Torrent. So, Torrent downloading administrators could try to satisfy males who are young, advanced computer users, use the Internet frequently, and store many mp3 files. In addition, they could try to attract more females by offering training and free trials. Furthermore, these companies could offer multiple downloading methods so that a consumer could choose his preferred method. Finally, they could offer bundling (combine several products in one) at attractive prices. For example, they could provide a single subscription to multiple databases (from various record companies) of songs or to databases of ring tones, songs, video clips, movies, etc.

Generally, consumers are interested in the variety, quality and cost of songs, as well as the easiness of use, security and safety of the downloading method. P2P downloading

administrators could advertise their variety of offered songs, easiness of use, and low cost. On the other hand, they could try to improve their speed, security and safety, and quality of offered songs. Torrent's downloading administrators could advertise their quantity of songs, low cost, security and safety. On the contrary, they could try to improve their speed, and variety of songs. Http downloading administrators could advertise their speed, and cost. On the contrary, they could try to improve their variety of songs, security and safety. Finally, iTunes administrators could try to improve their speed, variety and quality of songs, easiness of use, and cost.

Mobile devices manufacturers could design and develop devices so that a user will easily buy, download, store, manage and listen to mp3 files. These devices could be used only for music, or for many purposes (e.g. telephone, mms, Internet, music, photos, video, movies, radio, TV).

Government should protect the artists' intellectual rights developing legal measures and supporting digital copyright mechanisms (e.g. digital watermarking). It should also support standards and interoperability in order to foster compatibility among the various files' format, devices, downloading techniques, etc. Furthermore, it could enable competition among companies in an open market. Of course, it should protect the consumer with respect to music cost, personal data confidentiality, safety and security. Freedom and fairness should be protected. Discrimination should be avoided. Everyone irrespectively of gender, age, education, economical situation, place, abilities, and other factors should have the possibility of using the Internet and downloading music. Finally, government should educate citizens on using the Internet and participating in the information society.

Consumers could select among multiple channels in downloading music. They like the facts that mp3 files have good quality, are widely acceptable and available, and can easily be stored, transferred and used. It is easy to search, store, copy, use, transfer, even modify and combine songs that are stored as mp3 files. Finally, consumers want specific capabilities of the downloading methods as it is described in the Users' Suggestions section. However, they are not eager to spend a lot of money.

Finally, alliances among these players could be developed.

This study investigated the use of digital music downloading by Greek Internet users. So, the sample was not representative of the overall population. Future work could consider other samples. In addition, this study could be replicated to examine Internet users in other countries. A cross-country comparison could reveal similarities and differences. Furthermore, future work could examine the use of mobile phones for downloading music. Especially in Greece, mobile phones are much more widespread than computers. Almost everyone has a mobile phone. In 2006, there were 137 million 3G subscribers worldwide. Handheld devices, mp3 players and ipods all integrated with Bluetooth technology will prevail in the coming years, so the music distribution may alter. New digital music distribution methods and business models could be suggested. Finally, a future study could investigate the digital movies downloading.

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APPENDIX

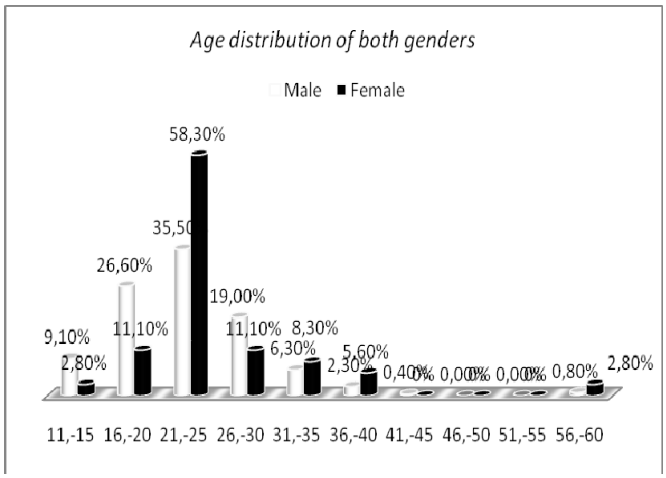

Figure 1 - Age distribution for both genders

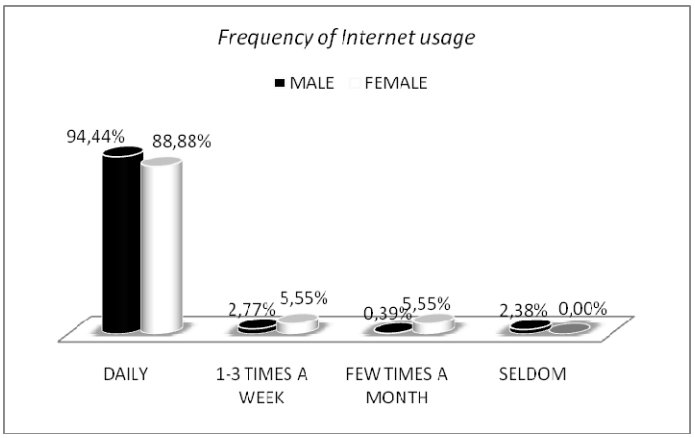

Figure 2- Frequency of Internet usage for both genders

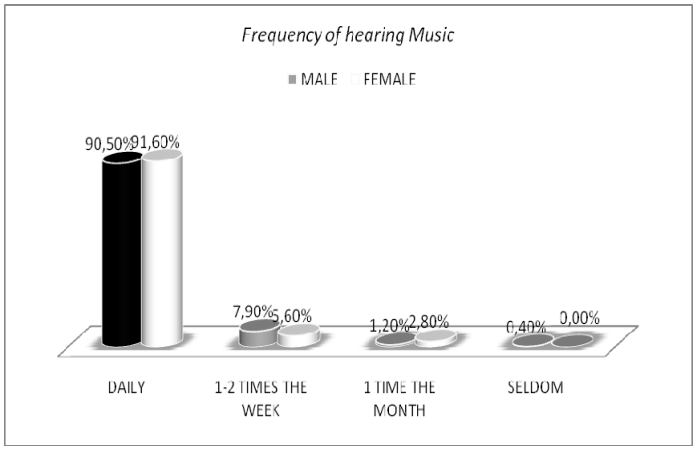

Figure 3- Frequency of listening music for both genders

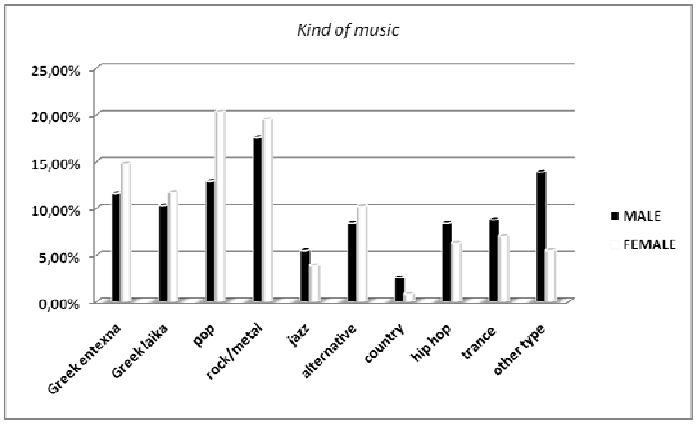

Figure 4- Preferred type of music for both genders

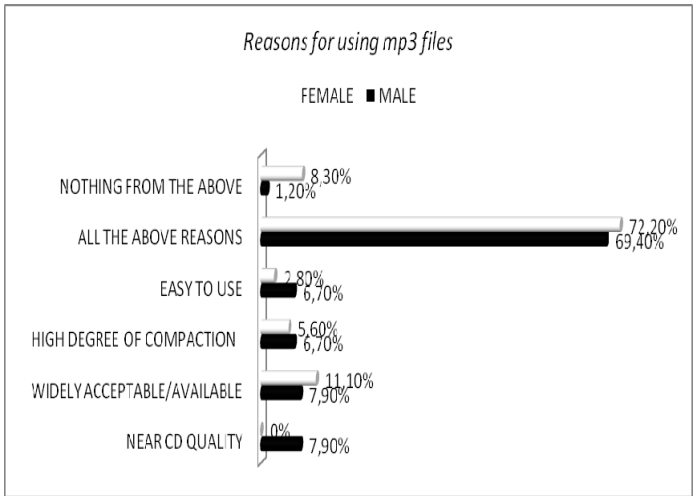

Figure 5 - Reasons for mp3 usage for both genders

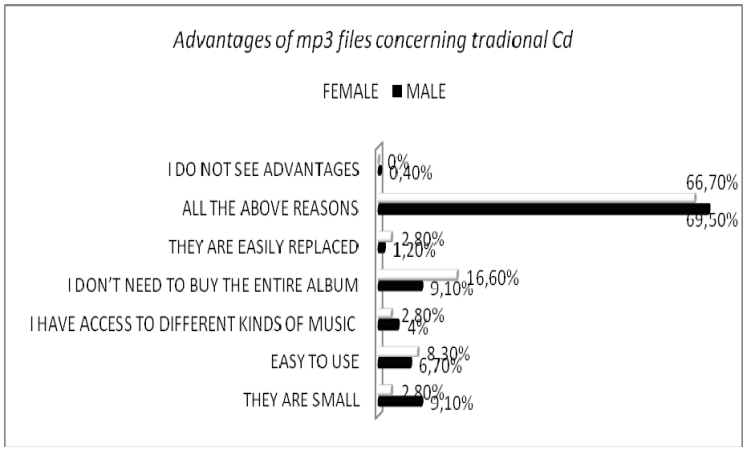

Figure 6 - Advantages of mp3 files concerning against CDs

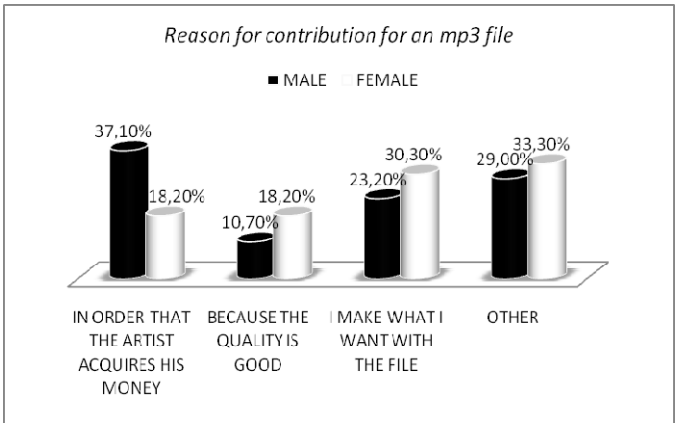

Figure 7- Reason for paying for mp3 files

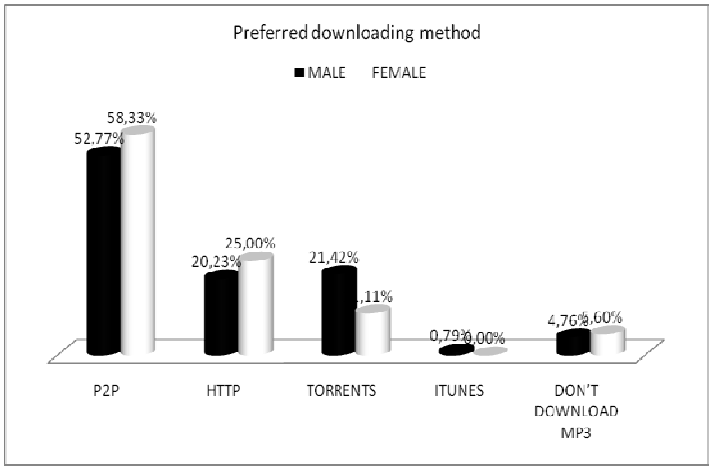

Figure 8 – Preferred downloading method for both genders

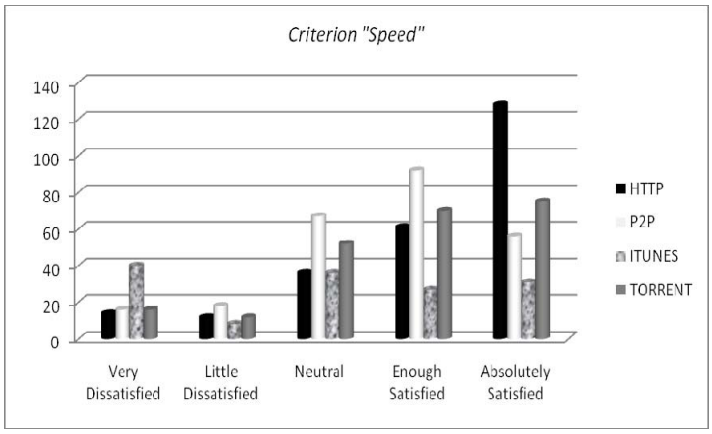

Figure 9 – User satisfaction of the downloading methods with respect to downloading speed.

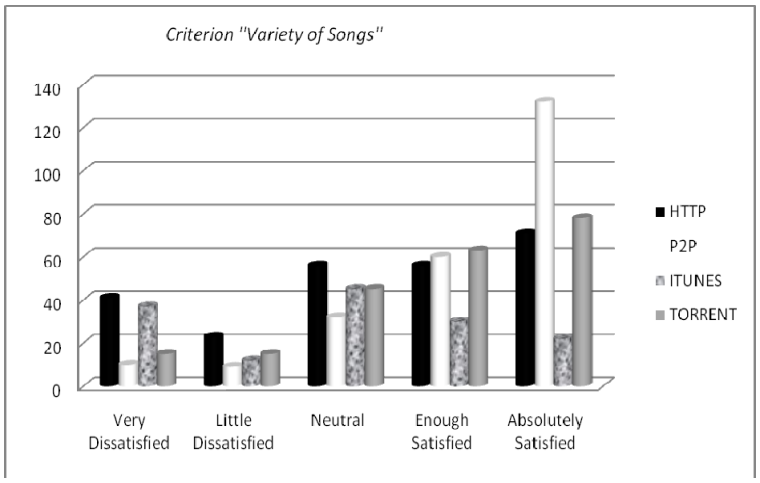

Figure 10 - User satisfaction of the downloading methods with respect to variety of songs.

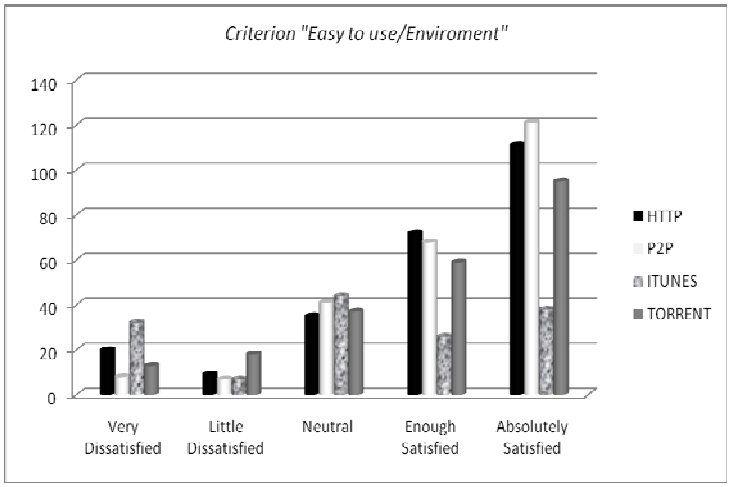

Figure 11 - User satisfaction of the downloading methods with respect to easiness to use.

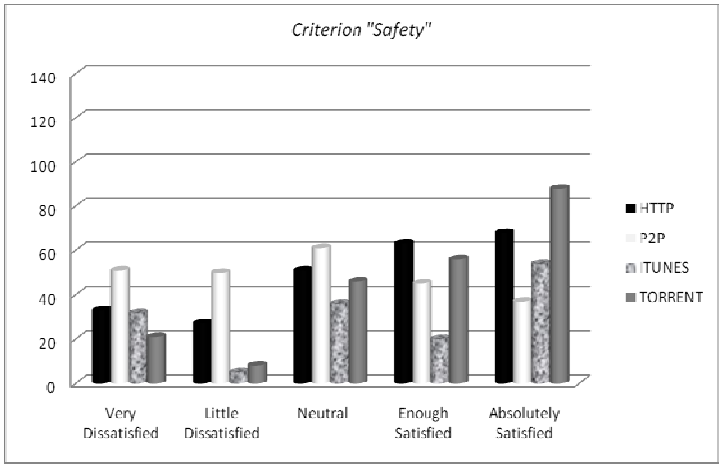

Figure 12 - User satisfaction of the downloading methods with respect to security and safety.

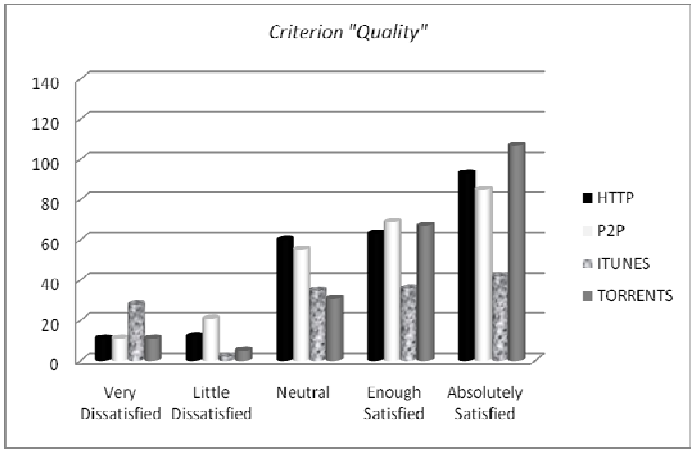

Figure 13 - User satisfaction of the downloading methods with respect to quality of songs.

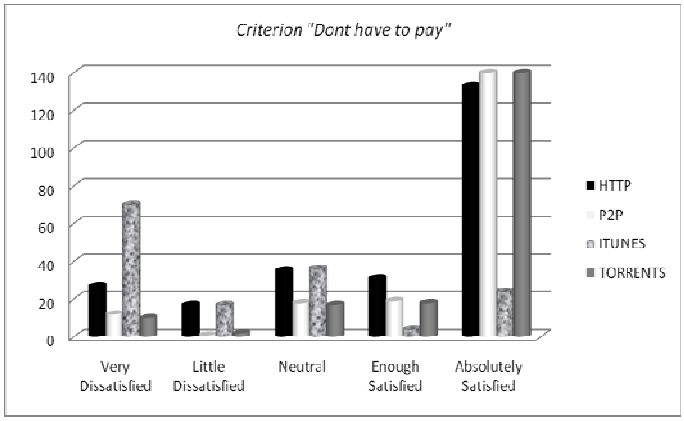

Figure 14- User satisfaction of the downloading methods with respect to no need to pay.

TABLES

Suggestions for HTTP	**users**
Larger Variety of songs/ Greek	18%
Easier search method	18%
No popups	14%
No time limitation	14%
No broken non functional links	10%
Faster Speed	10%
Facility in the use	10%
No credit card use	6%

Table 1- Suggestions for Http improvement

Suggestions for P2P	**users**
Faster Speed	35%
No viruses/ Better Safety	21.7%
Better Quality/Filtering of Songs	21%
Better Sharing	14.3%
Larger Variety of songs/ Greek	4%
Facility in the use	4%

Table 2- Suggestions for P2P improvement

Suggestions for iTunes	**users**

Better Price	62%
Larger Variety of songs/ Greek	38%

Table 3- Suggestions for iTunes improvement

Suggestions for Torrent	**users**
Faster Speed	45%
Larger Variety of songs/ Greek	38%
Download Single Tracks as well	17%

Table 4- Suggestions for Torrent improvement