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Understanding the Digital Music Customer: Attributes of Satisfaction

Paper within Economics and Management of Entertainment and Arts, Master Thesis (EEA08)

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Jönköping June 2010

Master Thesis in Economics and Management of Entertainment and Arts Industries

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Subject terms: Digital music, record companies, recorded music, digital customer, new customer, creative destruction, file sharing, digital music services, new media

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Abstract

Problem: Record companies are suffering due to a downturn in recorded music sales. Innovative firms have developed digital music services that offer recorded music products to customers in new ways, yet sales are not what they used to be. Web 2.0 technologies have changed the customer's tastes, expectations, and desires. Thus, a deeper understanding of the new "digital customer" is needed in order to better offer services in a way that he or she prefers most.

Purpose: The goal of this paper is to provide insight into how modern digital music services are satisfying certain requirements of the new "digital customer" by examining how the price of services, inclusion of user-generated content options, mobile functionality, and search options relate to customer satisfaction.

Method: Quantitative analysis through the means of a multi-question survey and a logistic regression is conducted to determine whether certain variables, exposed through academic research, correlate with satisfaction and use of digital services. This is bolstered by qualitative analysis of industry news and research.

Conclusions: It is argued that four variables are correlated with customer satisfaction with digital music services: price, user-generated content options, mobile functionality, and search functionality. Our research suggests that price is most strongly correlated with satisfaction.

By offering products and services according to these tastes and preferences, companies will be better positioned to garner increased satisfaction with and use of their services, ideally leading to higher revenues for service operators and artists alike. We also suggest areas for future research concerning these four areas of study.

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1 Introduction

The recorded music industry is at a crossroads today the likes of which it has never seen before. Piracy, competing entertainment forms, and the effects of a decentralized music platform have cut so deeply into revenues that many record labels are folding, and those that can stay in the game are suffering heavy losses and huge setbacks. (Lessig, 2004) Yet while the major labels have been counting their losses and working to promote the status quo of the compact disc, other companies have sprung up to take advantage of the CD's downfall. Many different digital music distribution forms have appeared since Napster in the late 1990's, changing the played field.

The CD is gradually being replaced by digital media that transform culture. Tyler Cowen (2009) mentions how the conventional album format of the 1960's is being replaced by song singles thanks to a-la-carte download platforms such as iTunes, using *brevity* as a term by which to describe the market actions of the modern digital customer. These hyper-cultural creations establish an ongoing experience for Internet users and potential customers. Music labels ignored this developing trend, and instead of lowering prices, retained high prices for low value users accessing the Internet, which led to the proliferation of digital piracy (Aris and Bughin, 2009).

Music labels have also ignored the increasing power of the new type of customer that is able to constantly explore, consume, and experience unlimited digital inventories of media (Anderson, 2008). The music industry is heading towards a "cloud based" state, meaning that content is moving from physical resources and market nodes like the CD or the iPod towards digital environments of streaming platforms like Spotify or streaming sites like last.fm. It is also a new environment of connected music networks under the umbrella of big online retailers where subscription services and online radio stations could potentially help the industry to revive (Wikstrom, 2009). In this environment, policymakers find significant intellectual property law challenges, as it is difficult to control illegal dissemination of works and claim economic rights for its owners.

1.1 Purpose

The goal of this paper is to provide insight into how modern digital music services are satisfying certain requirements of the new "digital customer" by examining how the price of services, inclusion of user-generated content options, mobile functionality, and search options relate to customer satisfaction.

1.2 Perspective

The perspective of this study will be from the viewpoint of both consumers of digital music media and the businesses that operate these media services.

1.3 Delimitation

Digital music distribution models are inherently technical and arise from a complex web of technologies spread out amongst both producer and consumer. These technical qualities will not be taken into account in more of a way than to explain in common terms how the products and services provided operate at the end-user level.

Much of the raw statistical data regarding subscriptions, revenues, and other business data lies in the servers that belong to the companies responsible for the distribution models, and it is therefore difficult to obtain this data without personal access or personal contact with executive officers.

2 Background – Digital Music's Effect on the Industry

2.1 The Napster Dilemma: Correlation or Causation?

In 1999, Napster, a peer-to-peer file-sharing network started by college student Shawn Fanning, shook up the music industry. Napster operated by allowing users of the service to search for and transfer digital music files over a central server that operated as the network hub (Tyson, n.d.).

Major record labels such as Sony and Warner threatened to sue Napster for copyright violations; Napster's plea was that they were innocent because it was the individual users who were providing copyrighted material and not the company itself. The courts disagreed, saying that because the files went through Napster's central server, Napster was responsible by default. By mid-2002, Napster had shut down (McManus, 2003).

The matter of debate is Napster's (and other p2p software's) ultimate effect on the music industry. There is, however, an undeniable trend: sales began to decrease almost immediately after Napster hit, and have been going down ever since. The recorded music business today is worth almost half of what it was at its peak in the late 1990s (RIAA, 2009).

Understanding Napster and the impact it had on the music business and its customers is key to an understanding of digital music distribution models. These models significantly alter the playing field and operate under rules outside those of the traditional recorded music norm, just as Napster had.

2.2 The Copyright Debate, IP Enforcement and Piracy

The role of intellectual property law in controlling the licenses needed for new digital platforms can be described by Peter Jener's (president of the International Music Managers Forum) quote: "*the record business is not close to making it simple, there would be no radio had it been as complicated as it is today to get licenses for*

digital music providers" (Ermert, 2009). For Richard Posner (2005) IP law assists to find a balanced optimum between artists and their employers/businessmen or provide justice between the first and users that infringe on copyrighted works. Corporations reward their artists and employees with strong monetary rewards and use IP law as an incentive for their workers to continually strive to produce cultural content which is then being heavily marketed to maximize revenues. The problem is that by extending or enforcing copyright law it affects negatively the public arena because the access costs for customers are raised, new illegal peer to peer networks are growing and the licensing of digital music distribution platforms is prohibited in the case of countries with strong IP enforcement (Posner, 2005). The authors Khemka and Harbaugh (2001) mention how enforcement of copyrights which ideally promises to fight piracy, raises the access costs for low value users who search and obtain pirated copies and illegal material instead of choosing to pay. The extended copyright enforcement also empowers a monopoly right of the copyright owner over the consumer. New music distribution models should use price discrimination towards customers that value music products very low because IP enforcement generates different implications based on the type of a low or high value customer.

3 Theoretical Framework

3.1 General Background: The Modern Music Industry

The music industry has been facing problems due to declining sales of the CD, precipitated by a massive wave of technological change initially in the form of file-sharing networks (Oberholzer-Gee & Strumpf, 2007). This has prompted the industry to take large-scale legal action against consumers participating in illegal file sharing networks. While rapid technological change will generally lead to increased economies of scale and greater concentration of ownership, the change in the music business has shifted consumers towards illegal networks, which do not generate profit for the industry (Alexander, 2002).

Anderson and Tushman (1990) have shown that in cases of technological upheaval, there is often market fragmentation until a dominant paradigm emerges; this happens cyclically. The market currently lies fragmented, as the industry tries to gain revenue from various digital distribution methods while still clinging to traditional CD sales. This has upset the value-chain of the industry, allowing new competitors and even artists themselves into the business of selling music (Bockstedt, Kauffman, and Jesse, 2004). In the context of the online world, this fragmentation allows niche media players to re-orient their focus on better serving the customers of their niche market (Daughtery, Easton, & Bright, 2008).

3.2 The New Customer

Yi-Shun Wang et. al. (2001) have researched the field of customer satisfaction and have noticed the lack of an exact definition. They recognize that digital services and digital products are information products and services provided by various firms that establish online customers as end users. The environments of these information services, according to the authors, play a very important role in overall customer satisfaction, which is different in digital than in traditional physical markets.

According to Andersson & Andersson (2006), "*Internet consumption tends to follow a logistical development over time with an extended segment of increasing returns to consumption*". Styven (2007) furthers this by connecting intangibility with numerous marketing problems related to digital music services. Thus, wherever and whenever there is customer experience in the digital world there will be inseparable customer stance on consumption.

Another branch of theory on intangibility is location, citing customer attributes surrounding a customer's willingness-to-pay besides price alone (Andersson & Andersson, 2006). If the intangible location of an online music content provider raises concerns to a digital customer such as abstract environment and mental uncertainty, this might trigger an increasing perceived risk, which can affect the customer's willingness to pay for the e-service and his overall evaluation criteria. This also affects how the digital distributor will optimize the design interfaces of his

e-services to offer lesser perceived risk and more authentic user performance (Featherman and Wells, 2004).

In addition, experience products and services harbor an intense collaboration between the producer and the consumer of the goods and services (Andersson & Andersson, 2006). Thus, the customer who experiences a digital music service is learning to use, and even co-produce, the content he consumes. This is furthered by Goggin & Spurgeon (2007) who suggest that the user is becoming the most important subject for digital media instead of the content itself.

The rise of what is known as "Web 2.0" has given birth to new dynamic aspects of online communities, which have differentiated themselves from previous websites. Web 2.0 philosophy reinforces the meaning of customer aspects such as collaboration, cooperation, consumption of digital information and affects current and future business models, according to Hoegg et. al. (2006).

Behind these aforementioned customer attributes and based on Abraham Maslow's paper "A Theory of Human Motivation" (1943) we find different levels of motivation triggered in humans in order for them to achieve self-actualization and follow cultural patterns. In the world of Web 2.0, accessing and searching for content, and participating and belonging to certain online communities give a new meaning to his early theory.

3.3 Adapting to the New Customer

Out of the perception of information products and services emerge digital marketing concepts that affect e-businesses, according to Hoffman and Novak (1996). These digital marketing concepts should adapt to the behavior of the new type of customer and be designed to retain customer attention. The authors also mention that by interacting and communicating with other users a new digital environment is established: the new digital market. The traffic in these digital markets can be tracked by the amount of information (clicks, for example) that flows from the user's personal computer. The shift from the physical world where one-way

communications ruled, to many media communications online, helps marketers to fully implement a collaborative spirit between customers and firms (Hoffman and Novak, 1996).

Rust and Kannan (2003) discuss how businesses in the information age must adapt their business models from products into services, and the music industry is no exception. They also conclude that in the transition from physical product to e-service, companies must take advantage of the electronic environment and technological advancements to stay competitive. Harold Vogel (2007) notes that thanks to wireless Internet access and cell-phones, music has entered into a "service distribution" phase, providing for ubiquitous music across myriad platforms.

Aris & Bughin (2008) further this by discussing the notion that certain key elements are specifically necessary for the successful operation of media-related e-businesses in the modern era, many of which are in line with the findings of Chris Anderson (2008), Goggin & Spurgeon (2007), Daughtery, Easton, & Bright (2008), Styven (2007), and many others. This means that intangible music services or products should ideally deliver content to their customers based on the customer's expectations and overall satisfaction attributes. Our goal is to explore these elements in relation to customer satisfaction, and by extension, its revenue effect on firms.

We have considered the marketing problems related to intangible goods and services with the lack of customer satisfaction research revolving around those goods and services, while also noting the unique market forces at play in an increasingly fragmented digital music industry, and the impact that this has upon customers and their consumption habits. Therefore, we hypothesize that four different aspects of digital music distribution services have an important affect on customer satisfaction and consumption within those services: search functionality, mobility, pricing strategies, and user-generated content.

3.4 Search Functionality

Bhattacharjee et. al. (2009) have suggested that the *product experience* and harnessing *"search" as a product* are important factors in developing successful digital music platforms. Beer (2008) suggests that part of the success of Apple's iPod is due to its simplicity, showing that music product interface can have significant impact on revenue.

Of additional importance is the perceived service quality of digital products and services. Kwong and Park (2008) suggest that digital music services hoping to succeed against illegal alternatives must provide a fun and engaging experience to the consumer. Thus, an enjoyable and easy-to-use service is a mark of the service quality perceived by the consumer, and is also important in distinguishing one legitimate music service from another.

G. Prem Premkumar (2003) explains how the aforementioned digital distribution technologies and piracy have increased consumer power, devalued the CD, and affected young generations of potential customers to purchase less and illegally download more. This behavior of the new type of online customer will be successfully managed only if the *supply chain* offering of music products and digital services will be optimized while minimizing the *access* and *search costs* that still remain high in the physical markets (Premkumar, 2003).

In line with Chris Anderson's *Long Tail* (2008), *"search*" can become a product in and of itself in digital music distribution paradigms. This is because the vast amount of information being made available to consumers thanks to the speed and storage capacity of modern technologies has made finding information in these "music warehouses" all the more important (Deliege & Pedersen, 2006). Search functionality is so important that research is even being done on ways in which modern technology can further enhance searching from simple, one-item searches (e.g., "rock music") to "natural language" searches ("songs with great jazz drums") (Knees et. al., 2007). A service that offers a great way to find new music is one that

can offer this ability as an advantage and product in its own right, bolstering the value of the service as a whole (Anderson, 2008).

3.5 Mobility Options

The media company of the future and its customer is also the focus of Saul Berman's work (2004) who believes that the first should embrace innovative multiple platforms and an open mentality with the customer accessing broadcast online media content as the epicenter. The purpose of altering the company's core business models and offering ubiquitous product windows through cell phones, wireless spots and technological gadgets is about exploiting content to numerous digital platforms embedded in users devices, establishing the new norm (Berman, 2004). Creating innovative digital music distribution platforms is the same as developing strong brands that generate customer loyalty.

With consumer lifestyles that are increasingly going mobile (Hjorth, 2009), purchasers of music or music service subscriptions demand that the *product experience* of music go beyond simply enjoying a song in the privacy and comfort of their living room; that must be an option too, of course, but the real takeaway is that music should be able to move with the consumer. Kukulska-Hulme, Traxler, and Pettit (2007) mention that mobile networks, particular involving user-generated content, can provide revenue generation for operators.

Thus, *product line extensions* are becoming more important, as music is moving from the living room and the car to a personal mobile environment, becoming ubiquitous in the process (Galloway, 2004). Mobile devices have already begun to become more and more significant revenue sources for communication and technologies firms (Lash, 2002). Note the increase in ringtone sales over the past few years, and one can see that auxiliary mobile business is booming – all the more reason for a digital content provider to offer their service across various platforms, suited for various lifestyles and points-of-purchase (Rao, 2005). This increase in mobile business

operations and investment has brought about increased research interest in effect of "premium" markets, where mobile content is branded as a "premium" product requiring extra spending by the consumer (Goggin & Spurgeon, 2007).

3.6 Pricing

Crosby and Johnson (2006) suggest that innovation in industries results from a deep understanding of that industry's customer. Styven (2007) discusses how the intangibility of digital music products complicates the pricing procedure since consumers use price as a greater basis of quality for intangible goods and services.

Customers are segmenting at such a high pace that future digital music distribution models and platforms have to renew their pricing strategies to grasp all these different users with the goal of offering customer value and establishing competitive strategies for troubled music labels according to Iyer, Miyazaki, Grewal and Giordano (2002). The internet is decreasing the information asymmetry which prevails in physical markets making it more flexible to adjust prices online based on consumer's demand without ignoring other important aspects like transaction security, product variety and delivery service, to name a few. Advanced technological software algorithms might also assist music labels to identify the behavior of the new type of customer in order to formulate more successful pricing strategies and tactics (Iyer et al., 2002).

If a digital service or platform increases or decreases prices it can immediately affect consumer loyalty; therefore, through making use of different pricing methods, the integrity of a brand is being questioned according to Keller (2001). Keller's work overall embraces industries where brand quality and customer opinion matter in order to retain the brand's image in the eyes of the customer. His theories also can be looked through digital distribution models and firms that operate in the internet space keeping in mind that communal feelings, easiness and fun are factors that matter for their brand's equity (Keller, 2001). The Styven (2007) text again makes a

connection here, discussing how strong brands can positively affect consumers feeling of uncertainty regarding digital music services.

Simultaneously, digital music is inherently tied to the Internet, which has drastically decreased search costs for consumers over the past years (Lynch and Ariely, 2000). Going hand-in-hand with decreased search costs is increased price sensitivity for certain goods, which means for the music industry that their product, recorded music, has become more price sensitive thanks to the Internet (Sinha & Mandel, 2008).

The transition from paid to free content is one aspect of product pricing and distribution that has been radically enabled by the growth and developing presence of the Internet. (Anderson, 2008) Chris Anderson in his 2008 article "Free!" makes a giant concept simple by reducing it to terms of market forces:

> *"… there is a huge difference between cheap and free. Give a product away and it can go viral. Charge a single cent for it and you're in an entirely different business, one of clawing and scratching for every customer. The psychology of "free" is powerful indeed, as any marketer will tell you."*

Anderson posits that because of the declining marginal costs of producing and distributing digital content that content eventually hits a point where it simply makes more sense to offer it for free and make money elsewhere than to charge for it. He likens this to the radio model, where the content is free over the air but advertisers pay to "ride along" as they promote their products and services in the hopes that someone will buy it. As consumers continue to vote their opinion that songs sold online remain too expensive (Styven, 2007), pricing strategies seemingly remain a key obstacle in attaining customer satisfaction.

Gallaugher et.al., however, in "Revenue Streams and Digital Content Providers: an Empirical Investigation", argue that providing free content might end up being a loss-leader strategy (2001). Their work focuses on the effects of simultaneously

promoting free online material that coexists alongside paid-for printed material in the magazine industry. They see an arena where the content is the same for both platforms, but that users pay for their convenience and efficiency of the portable printed media. Styven (2007) addresses the concept of price in a similar way by showing how different music distribution companies have used price discrimination in an attempt to attain higher revenues.

The effect of pricing an intangible experience good in a market where marginal costs approach zero thus seems to be an important arena for research, and will be formally addressed in this paper.

3.7 User-Generated Content

Goggin and Spurgeon (2007) bring up a new point in their discussion of P.D. Marshall's 2008 work by noting that the "user" has become the most important subject for digital media; this is most heavily realized by looking at the amount of influence that end-users (customers) can and do exert on participatory platforms.

Empowering consumers through user-generated content (UGC) is one of the main features of the so-called "participative web" in which consumers generate content themselves in various Internet media sites, according to Wunsch-Vincent & Vickery (2007). The authors also mention how the participation inequality rule has changed from only 10% of contributors producing 90% of the content to the digital era of sites like Amazon where 10% of internet users create 50% of the content (Wunsch-Vincent & Vickery, 2007).

Market fragmentation within the media industries, coupled with the growing Net-based nature of the business, has allowed for increasing customization of business practices toward niche-markets and niche consumers; these markets are increasingly driven more and more by user-generated content (Daughtery, Easton, & Bright, 2008). This is bolstered by McQuail (2000), who states, "the communications revolution…has shifted the balance of power from the media to the audience." Kukulska-Hulme, Traxler, and Pettit (2007) have discussed how aspects

of UGC retain customers within communities, and can generate revenue for operators.

This shift in power requires a stronger understanding of the digital media customer and their motivations (Daughtery, Easton, & Bright, 2008). UGC-contributing consumers have been shown to be motivated to create UGC for a variety of reasons, but chiefly to popularize themselves, to have fun, and to share experiences with friends (Bughin, 2007). Moreover, Bughin (2007) also supports the notion that in order to make the most of this content proliferation, managers must understand how to nurture these motivations, and few currently do, thus citing an increased need for an understanding of the benefits of user-generated content within media platforms.

3.8 Hypotheses

Based on the research outlined above, we propose the following set of hypotheses:

1. Pricing within legal digital music services are correlated with customer satisfaction
2. User-generated content functionality within legal digital music services is correlated with customer satisfaction
3. Mobility options within legal digital music services are correlated with customer satisfaction
4. Search functionality within legal digital music services is correlated with customer satisfaction

There is also the question of how importance of these variables in determining satisfaction relates to consumption (use) of digital music services. This will be addressed further in the discussion section of this paper.

4 Research and Methods

To provide insight into our hypotheses, we conducted a 15-question survey of legal digital music service users and provide the results of that survey in the form of an empirical analysis.

The survey was developed through Google Documents, a web-based document platform that allows for simple data collection and easy surveying tools. Respondents were directed to this page via a link advertised through Facebook. The advertisements were made periodically throughout the day over a period of 2 weeks. The survey was administered exclusively over the Internet, and respondents were enticed to participate through periodic Facebook updates.

The participants in the survey were not purposefully selected in any fashion; rather, the survey was advertised through Facebook updates, and taking it was completely up to those who saw the updates and decided to spend the time on it. The collective pool of individuals on Facebook who saw the advertisement spans a great range of ages, a great number of nationalities, and a broad range of personal interests. As such, we feel that administering the survey in this fashion attracted a broad range of individuals to respond; not simply those who would describe themselves "music-lovers" or those up-to-date with music technology.

Pulling from such a large pool was necessary, as the focus of this research is on the "digital customer" – a person who could conceivably be of any race, nationality, age, gender, and have any range of interest, income, and every other conceivable variable. Moreover, administering this survey over Facebook ensured that our respondent pool was at least familiar with Internet and digital activities.

Some drawbacks to administering the survey in this fashion are that we were unable to obtain a proper response rate statistic; because the majority of respondents were directed to the survey through the advertisements rather than a direct-approach method, it is unknown how many people saw the advertisements

but chose not to respond to the survey. However, the respondent pool did come from our collective number of Facebook friends, numbering around 1000 persons. Because of this, a random sample was still obtained.

In total, the survey garnered 152 responses.

4.1 Survey Results – Descriptive Analysis

Our research focuses on the digital customer, which implies that there is some sort of monetary transaction occurring as a result of his or her interactions with a digital music service. As such, it was necessary to exclude respondents who did not participate in legal digital services, but rather use illegal Bit-torrent or peer-to-peer software for music consumption.

This was accomplished by utilizing a yes-or-no control question:

"Do you use, or have you used, a legal digital music service for the purpose of listening to or purchasing music? (for example: iTunes Music Store, Rhapsody, Spotify, Deezer, last.fm, Pandora, Lala (Google), Napster, Youtube, Myspace, AmazonMP3, 7digital, or another. BIT TORRENT OR P2P SERVICES DO NOT COUNT.) "

Respondents who answered "No" were not allowed to continue with the survey. Those were answered "Yes" were taken to the next page.

Basic Demographics

To keep the survey simple and better reflect the wide range of faces potentially associated with the digital customer, we only asked two demographic questions: age and gender.

The majority of respondents were male, with 86 results constituting 56% of the total. Females were the remaining 44% with 67 results. While an exactly even division between males and females might be optimal, our respondent pool came very close.

Various measures of center were conducted on the data reflecting the respondents' age. The average age of respondents was 26; the modal response was 24; the media response was also 24; and the minimum response was 15, while the maximum was 56, creating a range of 41.

Pricing

As discussed earlier, we hypothesized that the price of a digital music service is correlated with a customer satisfaction. Thus, survey respondents were asked the following question to address this notion:

"How important is the PRICE of the service in determining your SATISFACTION with a legal digital music service? PRICE refers to the per-song fee (for services like iTunes), a monthly fee (for services like Rhapsody). Services like last.fm, Pandora, Lala, Youtube, and Myspace cost nothing; consider this zero-cost the price."

Because of the vast range of digital technologies available, there are naturally many different types of digital music services. This question was phrased so as to encompass all types of digital music services in relation to their price. This also includes free services such as Youtube and Myspace where "customers" pay nothing to hear music, but content providers fund performance royalty organizations through ad revenue. Figure 1 below outlines the garnered responses.

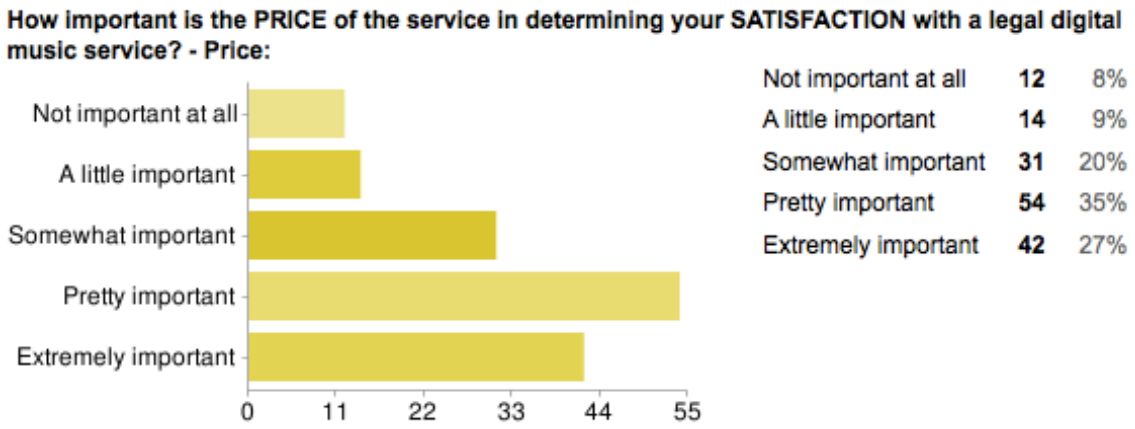


Figure 4-1 – Price of service as determinant of satisfaction

As seen in Figure 4-1, price seems to be important in determining satisfaction, with only 8% saying that the price of a service did not have anything to do with how satisfied they were with it. The most popular response was "Pretty important", with 54 results (35%). The next most popular was "Extremely important", with 42 results (27%). In all, 92% of respondents claimed that price was of at least some amount of importance to them in determining their satisfaction with a digital music service. 62% of respondents answered either "Pretty important" or "Extremely important", which we are considering to be the upper-range of affect on satisfaction, and from here onward defined as "high value."

We also wanted to know how price affects a digital customer's use of a service. Because some legal services cost money (iTunes, Spotify) and others don't (Youtube, MySpace), we developed a question that was aimed at whether or not the price of a service deterred people from that service, and instead led them to *illegal* options. This would mean, by extension, that they are using legal services less. The question was:

"Do you sometimes seek illegal alternatives to legal digital music services due to the price of service being too high?"

The results from this question were closely split, but the majority of respondents (89 results totaling 58%) indicated that they *do* seek illegal alternatives due to the

price of a service being too high, thus showing that they do not use legal services because of what they perceive as a high price.

User-Generated Content

Another hypotheses revolved around user-generated content and its correlation with customer satisfaction and use of services. Like with pricing, there is wide array of methods to employ user-generated content in music services, so the phrasing of the question had to naturally be such that it encompassed as many alternatives as possible. The question asked was:

"How important is USER-GENERATED CONTENT in determining your SATISFACTION with a legal digital music service? Consider user-generated content as user-created playlists, uploading your own material, interactive content, user reviews, etc."

Figure 2 highlights the results of this question.

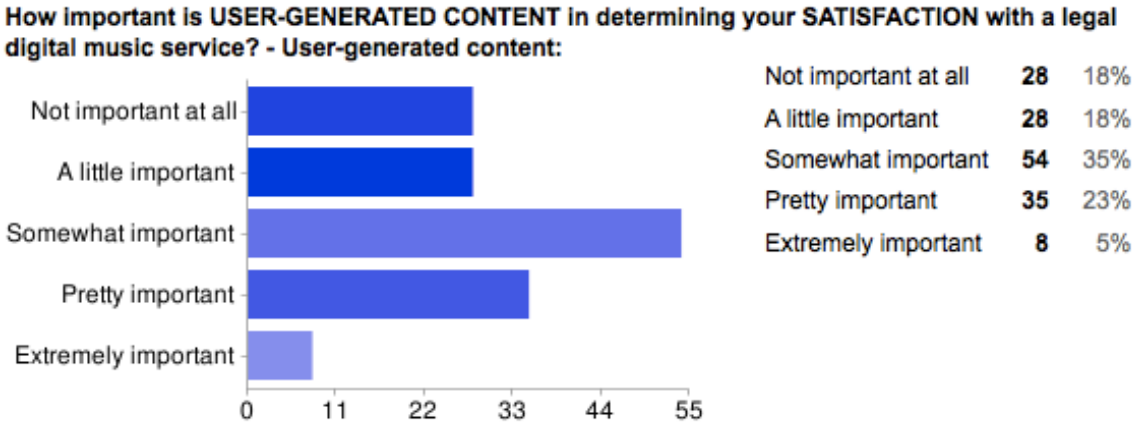


Figure 4-2 – User-generated content as related to customer satisfaction

In Figure 4-2 we can see that our respondents were more clustered in the center than they were with pricing. Interestingly, 18% said that UGC was not important at all in determining their satisfaction with a service, and only 5% consider it extremely important. The most popular answer was "Somewhat important", with 35%. In total, only 28% of respondents were within the high value range of affect on

satisfaction. From these results, it can be inferred that UGC might not be as related to customer satisfaction as we had anticipated based on our theoretical framework.

As with price, we also imagined that if a service incorporated more UGC, digital customers might be more willing to use the service more. The next question was related specifically to that, and was worded:

"How would the inclusion of more user-generated content capability affect your legal music consumption?"

Note that consumption and use are the same thing, overall, in terms of legal digital music services. An iTunes customer who purchases more songs is consuming more, just as the Youtube user who watches/hears who hears more music is also consuming more. This is because both methods of consumption result in royalty payments to rights holders.

Figure 3 shows the results from this question.

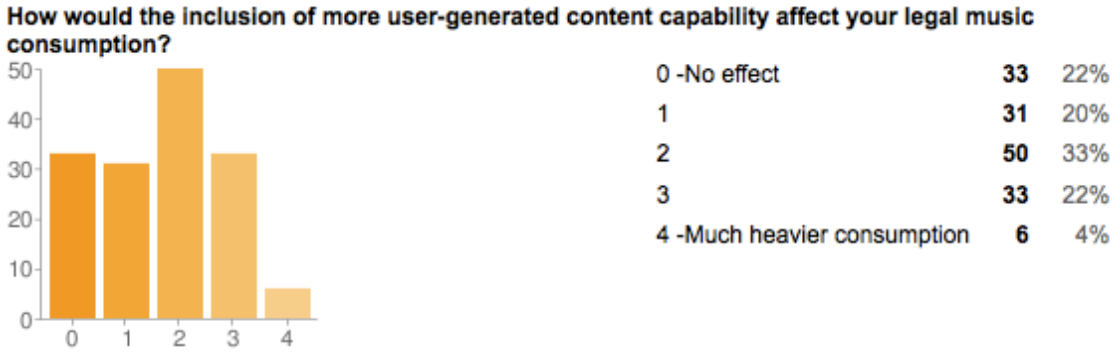


Figure 4-3 – Increased UGC's effect on music consumption

As shown in Figure 4-3, respondents were a bit scattered in their answers to this question, with answers all the way from "0 – No effect" to "3" all being rather close in quantity; somewhere within the 20%-33% range. Interestingly, only 4% of respondents said that they would consume "much more heavily"; that is to say that only 6 people out of 153 would consume much more music if more user-generated content were incorporated. Only 26% of respondents can be considered as being in the high value range for effect on use (meaning that they answered a 3 or a 4).

Overall, respondents did not consider UGC to be of particular importance in their satisfaction with digital music services and did not believe that more UGC would increase their music consumption.

Mobility

Our third hypothesis related to the ability to use a service on mobile platforms. With the rise of smart phones and other handheld devices, our research suggested that this arena would become of increasing importance to users. To look into this, we asked the following question:

"Is the ability to use a music service on mobile platforms and devices important in determining your satisfaction with a legal digital music service?"

Figure 4 offers some results.

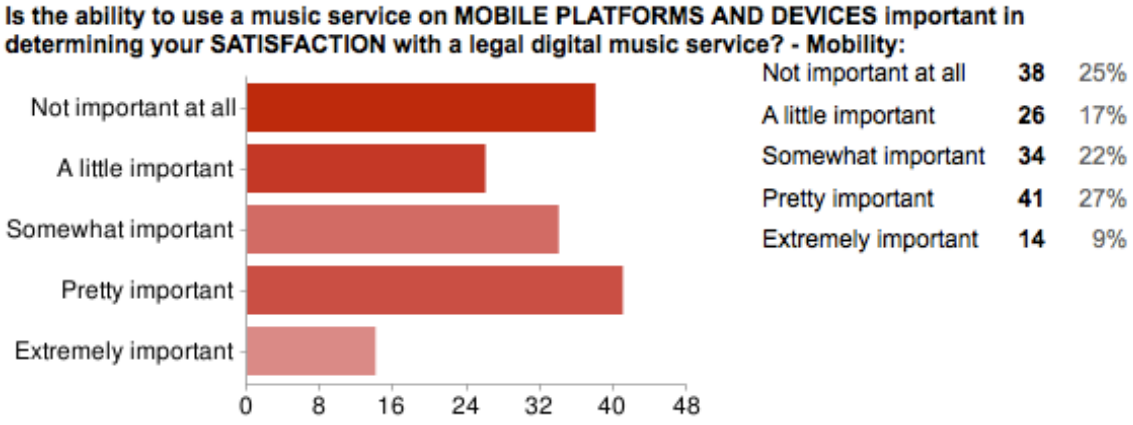


Figure 4-4 - Mobile platforms and devices as related to customer satisfaction

Figure 4-4 shows that the mobile capabilities in relation to customer satisfaction question returned diverse results according to our survey respondents. Even if our theoretical framework argues in favor of the importance of mobile capabilities in digital music services, our survey findings suggest that people perceive mobility in different ways. A large amount of 25% (38 results) of respondents considered mobility as not important at all, while at the same time an almost similar amount of 27% (41 results) considered mobility as pretty important for their satisfaction.

Between those two findings, an amount of 17% (26 results) and 22% (34 results), answered that mobile functions are a little important and somewhat important respectively. Only 9% of the respondents believed that mobile devices are extremely important. These results provide some confusion to our original hypothesis, as the majority of the weight lies in the realm of lesser importance, yet the highest individual answer was "Pretty important". In total, 36% of respondents answered within the high value range.

Along similar lines, we imagined that customers might be more willing to use a digital service more frequently if they could use it on mobile platforms. For this we asked:

"How would the inclusion of more mobile capabilities affect your use of a legal digital music service?"

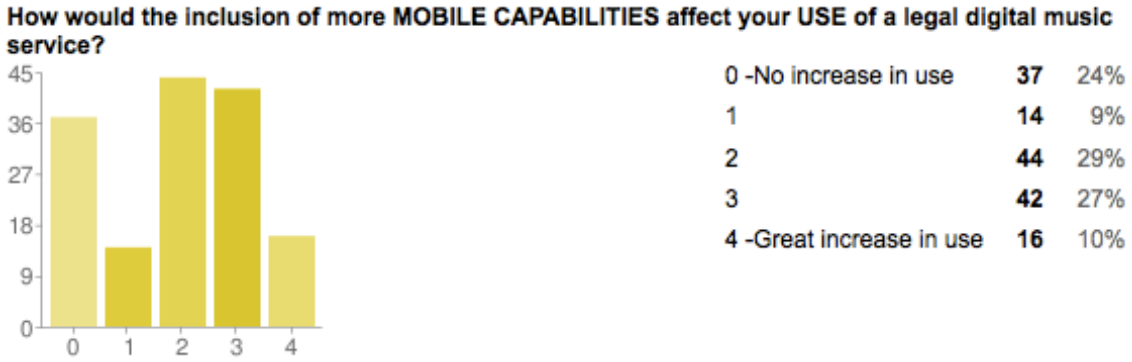


Figure 4-5 - Mobile capabilities' effect on use of digital music services

In regard to the increase in use generated by more mobile capabilities in digital music services, Figure 4-5 that a comparably large amount of 24% (37 results) think that there would be no increase in their use. This was followed by a small amount of 9% (14 results) who suggested a small increase in use. It proved interesting to see that the majority of the respondents were located in the middle of our five-step scale and constituted 29% of respondents (44 results). Only 10% of the people answered that they would greatly increase their use and a total of 37% answered within the high value range. In general our findings are mixed in a similar way as

mobility's impact on satisfaction in related to our original hypothesis, as results tend to be scattered across the spectrum of our scale, with the largest percentage of respondents answering "No increase in use" when compared to the other use-variables we were looking for.

Search

Our hypotheses revolving around search functionality were of particular importance, as the academic framework behind search hinted at a significant importance being placed on this concept by the digital customer. The effects of the "Long Tail", after all, have made search functionality incredibly important for customers to simply find the information or content they are looking for (Anderson, 2008). Thus, the question we asked was:

"How important is an effective search function in a legal digital music service in relation to your satisfaction with a service?"

Figure 6 below shows us the results.

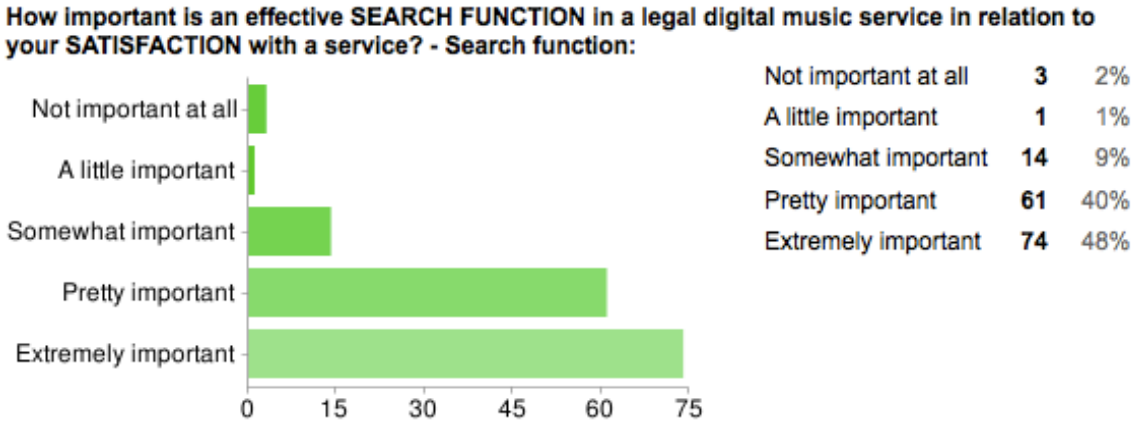


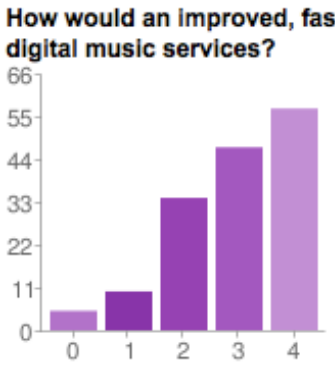
Figure 4-6 - Search function as related to customer satisfaction

Concerning the search function within a legal digital music service, Figure 4-6 shows that a very small amount, constituting only 2%, of the respondents (3 results), consider search as not important at all for their satisfaction criteria. This was followed by only one person (1%) who answered that search is a little important. In the middle of the five–step–importance-scale we found that a small amount of

fourteen people (9%) answered that the search function is somewhat important. Most of the people in the survey consider the search function as pretty important, a total approaching 40% while the majority of the respondents for this question totaled 48% and think that the search function is extremely important. Therefore a total of 88% of respondents answered within the high value range. This finding seems to walk in line with our original hypothesis about search and linked customer satisfaction.

We also imagined that a better search function within a service could lead to customers being more willing to use the service; for this hypothesis, we asked:

"How would an improved, faster and more accurate search function affect your use of legal digital music services?"



0 -No increase in use	**5**	3%
1	**10**	7%
2	**34**	22%
3	**47**	31%
4 -Great increase in use	**57**	37%

Figure 4-7 - Increased search effect on legal digital music services use

The findings for this question, presented in Figure 4-7, similarly followed the findings for the previous graph. It is interesting to notice how the increase in use accelerates through the graph from start to end in an increasing line. We can see that the majority of the people totaling 104 (68%) of the respondents consider an improved search function within a digital music service as a factor that will greatly increase their use. Thus, 37% of the respondents that suggested a great increase in use, and an amount of 31% who suggested an increase in use on a scale of four out five. In the middle of the scale, we found an amount of 22% of the respondents showing a preference of scale three out of five for an increase in their use. The

smallest use was chosen by an amount of people accounting only for 3% and 7% accordingly. These last figures show no to very little increase in use when an improved and faster search function takes place.

Overall Satisfaction

As a final question, we asked respondents whether or not they were satisfied "overall" with the current range of legal digital services in the marketplace. A majority, constituting 68%, of respondents do consider themselves satisfied. Yet 32% are not satisfied, which is still no small figure when considering the enormous amount of potential digital customers in the marketplace.

Variable Definitions

The following variables will be used in the forthcoming correlation matrix and the regression model:

Dependent variable:

- Overall Satisfaction = the answers to survey question: *"Overall, do you consider yourself "satisfied" with the current range of digital music services in the marketplace?"*

The answer range was yes (1) or no (0), meaning that this variable is binary. This affected the way we approached regression, because a linear model would not be the best in this case. As such, a logistic model was used, as will be discussed further ahead.

Independent variables:

- Price Satisfaction = the answers to survey question: *"How important is the PRICE of the service in determining your SATISFACTION with a legal digital music service? PRICE refers to the per-song fee (for services like iTunes), a monthly fee (for services like Rhapsody). Services like last.fm, Pandora, Lala, Youtube, and Myspace cost nothing; consider this zero-cost the price."*

The answer range was 0-4, with 0 being "Not important at all", 1 being "A little important", 2 being "Somewhat important", 3 being "Pretty important", and 4 being "Extremely important."

- UGC Satisfaction = the answers to survey question: *"How important is USER-GENERATED CONTENT in determining your SATISFACTION with a legal digital music service? Consider user-generated content as user-created playlists, uploading your own material, interactive content, user reviews, etc."*

The answer range was 0-4 in the same manner as price satisfaction.

- Mobile Satisfaction = the answers to survey question: *"Is the ability to use a music service on mobile platforms and devices important in determining your satisfaction with a legal digital music service?"*

The answer range was 0-4 in the same manner as price satisfaction.

- Search Satisfaction = the answers to survey question: *"How important is an effective search function in a legal digital music service in relation to your satisfaction with a service?"*

The answer range was 0-4 in the same manner as price satisfaction.

- Illegal too High = the answers to survey question: *"Do you sometimes seek illegal alternatives to legal digital music services due to the price of service being too high?"*

The answer range was yes (1) or no (0).

- UGC Consumption = the answers to survey question: *"How would the inclusion of more user-generated content capability affect your legal music consumption?"*

The answer range was 0-4, with 0 being "No effect" and 4 being "Much heavier consumption."

- Mobile Consumption = the answers to survey question: *"How would the inclusion of more mobile capabilities affect your use of a legal digital music service?"*

The answer range was 0-4, with 0 being "No increase in use" and 4 being "Extreme increase in use."

- Search Consumption = the answers to survey question: *"How would an improved, faster and more accurate search function affect your use of legal digital music services?"*

The answer range was 0-4 in the same manner as mobile consumption.

- Freqofuse = respondents' stated frequency of use of a service

The answer range was on a 1-5 scale, where 1 = "Less than once a month", 2 = "Once a month", 3 = "A few times a month", 4 = "A few times a week, but not every day", 5 = "Every day".

- Gender = gender of respondent
- Age = age of respondent

The scales used to quantify these variables are the same as used to prepare the descriptive graphs.

4.2 Survey Results - Correlation Analysis

In order to examine the correlations between out variables, we ran a bi-variate correlation matrix containing the variables related to our hypotheses, which we present on the following page in Table 4-8. A Pearson correlation generally assumes linear relationships, and this was the type of correlation used between our variables. With our dependent variable (overall satisfaction) being binary in nature, it is clear that a linear relationship might not be the best manner in which to classify our data. Nevertheless, we did find a number of significant correlations among our data set.

Table 4-8 – Pearson Correlations and Significance of Variables

n=152

	Overall Satisfaction	Price Satisfaction	UGC Satisfaction	Mobile Satisfaction	Search Satisfaction	Illegal too High	UGC Consumption	Mobile Consumption	Search Consumption
Overall Satisfaction	1								
Price Satisfaction	-.146*	1							
UGC Satisfaction	-.019	.077	1						
Mobile Satisfaction	-.041	-.030	.152*	1					
Search Satisfaction	.052	.068	.179**	.151*	1				
Illegal too High	-.254***	.179**	.227***	-.019	.066	1			
UGC Consumption	.014	.001	.678***	.141*	.105	.105	1		
Mobile Consumption	.010	.095	.100	.774***	.180**	-.009	.143*	1	
Search Consumption	.034	-.067	.292***	.168**	.465***	.198**	.324***	.236***	1

*** $p<0.01$, ** $p<0.05$, *$p<0.10$

Significant Correlations

Among the 4 variables related to our hypotheses (price satisfaction, UGC satisfaction, mobile satisfaction, and search satisfaction), only price satisfaction was found to be significant when correlated with overall satisfaction; this was a negative correlation of -0.146 at the 10% level of significance. UGC satisfaction, mobile satisfaction, and search satisfaction were not significantly correlated with overall satisfaction.

Among the consumption variables, we found that all 4 (illegal too high, UGC consumption, mobile consumption, search consumption) were significantly correlated with their corresponding satisfaction variables (price satisfaction, UGC satisfaction, mobile satisfaction, and search satisfaction.) Moreover, all correlations were found to be positive, meaning that as the value of one variable increases, so does the value of the other.

The correlation between illegal too high and price satisfaction was 0.179 at the 5% significance level; thus, the higher illegal too high is, the higher price satisfaction is. The correlation between UGC consumption and UGC satisfaction was 0.678 at the 1% significance level – the higher the UGC satisfaction value, the higher UGC consumption is expected to be.

The correlation between mobile consumption and mobile satisfaction was 0.774 at the 1% significance level, meaning that if mobile satisfaction is high, mobile consumption is expected to be as well. Finally, the correlation between search consumption and search satisfaction was 0.465 at the 1% significance level, meaning that when search satisfaction was high, search consumption was expected to be as well, as with the other correlations mentioned.

4.3 Logistic Regression Analysis

While our original four hypotheses were aimed at determining the relation between stated importance of a variable in determining satisfaction and overall satisfaction, we decided to investigate their impact on overall satisfaction when taken together. For this, we ran a logistic regression according to the following formula:

Overall satisfaction = gender + age + freqofuse + pricesatisfaction + ugcsatisfaction + mobilesatisfaction + searchsatisfaction

As we did not originally anticipate our variables to collectively affect overall satisfaction (but rather to do so independently), we were not surprised when our logistic model returned a rather poor Chi-squared value of .4062. Accordingly, we acknowledge the limitations of our model but do see some potential parallels with our correlation findings. Table 4-9 on the following page illustrates the results of our model, including the marginal effects of each variable for both possible outcomes of the overall satisfaction variable.

It should be stressed once more that the dependent variable, overall satisfaction, stemmed from a yes-or-no question, which thus became 0 (no) and 1 (yes) within our data set. A logistic regression was chosen in an attempt to better model the binary nature of our data.

Logistic Regression Results

Table 4-9 – Logistic regression results (dependent variable: overall satisfaction)

Results for Logistic Regression (dependent variable: overall satisfaction)					
	Logit with control variables (z value)			d(y=0)/dx	d (y=1)/dx
freqofuse	-.0079 (-0.06)			-.0018 (-0.06)	.0018 (0.06)
pricesatisfaction	.2671* (1.84)			.0611* (1.84)	-.0611* (-1.84)
ugcsatisfaction	.0472 (0.32)			.0108 (0.32)	-.0108 (-0.32)
mobilesatisfaction	.0935 (0.73)			.0214 (0.73)	-.0213 (-0.73)
searchsatisfaction	-.1758 (-0.85)			-.0402 (-0.86)	.0402 (0.86)
gender	-.497 (-1.30)			-.114 (-1.31)	.1137 (1.31)
age	.0132 (0.48)			.003 (0.48)	-.003 (-0.48)
Observations	152				
R2/Pseudo R2	0.0349				
Prob> chi2	0.4062				

Z-values in brackets. *p > .10

As can be seen, the only variable found to be statistically significant in relating to overall satisfaction is the price satisfaction variable, which even then was only significant at the 10% level. This walks hand-in-hand with our correlation matrix findings, where of the 4 satisfaction variables, only price satisfaction correlated with overall satisfaction. Z-values for each variable can be found within brackets, underneath the coefficients. The marginal effect values seem to suggest that within the context of our survey pool, the larger stated importance of price is for a digital customer as a determinant of satisfaction, the less likely the customer is to be satisfied overall. Again, this is the same finding as our correlation between overall satisfaction and price satisfaction.

Gender, age, and frequency of use, our "control" variables, do not appear significantly correlated with overall satisfaction. No consumption variables were used in this regression; relationships involving these variables will be mentioned in the forthcoming discussion section.

Based on our regression, we reject hypotheses 2, 3, and 4, and do not reject hypothesis 1.

5 Discussion and Analysis

Here we present a discussion and analysis section based on our descriptive data, statistical data, theoretical framework, and additional business research. In this fashion, we hope to ground the findings of our paper firmly within the business world and offer insight into many of the recent developments in the music industry revolving around our 4 variables.

On the whole, our survey results differ dramatically from our regression findings. While many respondents *said* that they thought the variables were important in determining satisfaction, our regression shows that only price had any significant affect on overall satisfaction, thus highlighting a strong revealed preference for price over any of the other 3 variables. This could be due to the restrictions of our survey, such as a relatively small sample size of 152, which could lead us to somewhat biased interpretations of the correlations; with a sample of this size, it is hard to have significant findings, which could also help to explain the disconnect between some of our survey results and our regression.

5.1 Pricing

Our survey findings show that the majority of respondents (62%) considered pricing important. Moreover, the price satisfaction variable was the only satisfaction variable that was found to be statistically significant when correlated with the overall satisfaction variable and through our logistic regression. According to our data, this suggests that price is the issue that must be most strongly taken into consideration when considering impact on overall satisfaction.

Our empirical findings on pricing connect with the related theoretical background provided by Iyer et al. (2002) who write about the decreasing information asymmetry taking place on the Internet, because digital firms can adjust prices more easily. As a result, have the power to react more easily when prices change. Crosby and Johnson (2006) have stressed about understanding the customer to spur innovation. Thus, the significance of price in our empirical findings can be seen as an innovation factor for digital music services.

Furthermore, Keller (2001) talks about the effect of pricing on a digital service's brand loyalty, and again we find valid ground in connection to our empirical results of price satisfaction both in the correlation and our logistic regression. Last but not least, Sinha and Mandel (2008) suggest that due to decreased search costs, price sensitivity has increased for recorded music. Our survey, correlation, and regression findings all seem to agree with this consensus – the importance of price in determining satisfaction is negatively correlated with overall satisfaction. Thus, the more one thinks that price is important, the less likely he is to be satisfied.

What follows are some examples of how businesses have noticed the impact of price first-hand:

As if they listened to their subscribers, Italian social network Dada is providing 15 songs by Universal Music and Sony Music artists for the price of $ 10. This is a figure, which compared to the pricing schemes followed by iTunes, accounts for 2/3 of the price offered by the latter digital music service (Cyrus, 2009). Following a taking-off trend, new subscription music services like Microsoft's Zune promises to offer access to unlimited inventories of songs for only $ 14.95 per month (Burrows, 2007).

The iTunes pricing structure, an industry stalwart, was somewhat shaken in 2009 when Apple, at the long-standing request of major labels, allowed a price-hike up to $1.29 on some popular tracks. Apple additionally started another price tier, with some songs at 69 cents (Associated Press, 2009).

In line with our research findings, however, the price-hike actually led to a decrease in sales. Warner CEO Edgar Bronfman, Jr., went on record earlier in 2010 stating that the new pricing schemes, while still net-positive for the industry on the whole, did lead to slightly lower sales coming from iTunes, with Warner's revenue growth slowing to 8% that quarter from the 20% it had grown the previous quarter (Melanson, 2010). This seems appropriate given our findings; higher importance of price in determining satisfaction was shown to significantly affect overall satisfaction in a negative manner, through both correlation and regression analysis.

With 58% of our respondent pool saying that they seek illegal opportunities for downloading music because the price is too high and the statistically significant negative correlation between the illegal too high variable and overall satisfaction, it should come as no surprise that higher prices would naturally lead to lower sales.

In a similar vein, another digital music retailer, eMusic, raised the subscription prices raising fury from its users and customers. The effect was that new subscriptions started declining – exactly as our research would seem to suggest (Bluestein, 2010).

5.2 User-Generated Content

The UGC satisfaction variable was not found to affect overall satisfaction in our regression model, contrary to what theory and business practice suggest. The UGC consumption variable was positively correlated with the UGC satisfaction variable, at the 1% level. It is possible that consumers see UGC as a function that improves their use of the service, while not necessarily driving the desire to use the service more. In some ways, UGC might have become a necessity for services in the modern age – overlooked by consumers as affecting satisfaction, because it is already expected.

As Daughtery, Easton, & Bright (2008) point out, people primarily make UGC to share experience with friends and to have fun. Since the logistic regression showed

that the UGC satisfaction variable had no significant affect on overall satisfaction, it could be that consumers view UGC as completely independent of the service since the content is made by other consumers, even though the service must control and develop the technology that makes this available. The researchers theory though makes sense for the empirical findings about UGC consumption and UGC satisfaction discussed before.

Wunsch-Vincent & Vickery (2007) theories that UGC is nevertheless a strong characteristic of the participative web and how the inequality rule is changing towards an increasing number of simple users rather than traditional content providers, walk in agreement with our correlation matrix which shows a strongly statistically significant correlation between the UGC satisfaction and UGC consumption variables at the 1% level, offering new insight into UGC's impact on the use of a service that branches out from our theoretical framework.

Thus, UGC could be a factor not perceived and realized as important for customers of digital music services while it still matters for creators of this kind of platforms. This is a bit contradictory in regard to sites like Myspace, where user generated content has taken over the role of traditional music businesses (Goldie, 2006).

Additionally, there's Youtube, the leading user-generated content video site which labels have started making deals with to monetize UGC by sharing advertising revenues and by letting people sell music to each other through playlist sharing services (Bruno, 2007). This aspect of monetizing UGC is not something we addressed in our theoretical framework or our empirical analysis, but is a fertile ground for future research due to the enormous popularity of sites like Youtube. For social UGC, Rhapsody has launched a Facebook widget to let users add their favorite tracks to their Facebook profile (Cyrus, 2009).

It seems that digital music service companies choose to enhance UGC functions in their platforms more than what our empirical findings showed where only 28% of the respondents constituted the high value range of UGC affect on customer satisfaction and 26% accordingly for effect on platform use.

5.3 Mobility

While our academic framework suggested quite strongly that mobility would be an important factor in shaping customer satisfaction, the mobile satisfaction variable did not significantly affect overall satisfaction in our regression, but was found to be strongly significantly correlated with mobile consumption at the 1% level. These results seem confusing; on the one hand, consumers say they might not consider mobility very important, but on the other hand, they seem to say they would consume more if they did have mobile options.

These empirical findings walk in line with: Berman's (2004) academic framework about the new norm, which is exploiting music windows to various technological gadgets and cell phones; Hjorth's (2009) arguments about the mobile music product experience moving along with the customer; and Lash's (2002) work about increasing revenue opportunities because of these mobile music exploitation dealings. Even though academic work argues in favor of the expanding mobility of music services in regard to customer satisfaction, our regression showed no significant impact on overall satisfaction by the mobile satisfaction variable.

An example of the use of mobility with digital music services is Dobson communications signing deals with digital music services like Napster Inc. Other telecoms like AT&T follow mobile music strategies too, in a similar vein (Fitchard, 2007).

One of the more popular services is Nokia's Comes with Music, which is available in 30 countries. The service includes a year of access to music downloads from all 4 of the major labels, as well as some of the independents, with the price of the phone, and the music files are generally DRM (digital rights management) protected (Ricknäs, 2010). This service is, arguably, one of the better applications of mobility, especially when viewed through Hjorth's (2009) lens that customer lifestyles are increasingly going mobile. This agrees with our finding that mobile satisfaction is significantly positively correlated with mobile consumption, at the 1% level.

Overall customers of mobile phones and handsets are migrating to third generation networks with the effect of boosting demand for music capabilities provided by digital music content providers like Australia's Soundbuzz. Nokia's Comes With Music subscription service, iTunes and iPhone, Universal's deal with Nokia's service, Motorola's MotoMusic mobile service. All are cases showing how the mobile music market is growing worldwide to serve the new type of customer (Elizer, 2008).

5.4 Search

The search functions in digital music services, as described earlier in our theoretical framework, play a significant role in both subscription and on-demand services. However, search satisfaction was not found to significantly impact overall satisfaction through our regression. Search satisfaction was, however, correlated with the search consumption variable in a positive manner at the 1% significance level.

The latter empirical findings connects with the theoretical work by Bhattacharjee et. al. (2009) who suggest that the *product experience* and harnessing *"search" as a product* are important factors in developing successful digital music platforms. The prominent digital music services iTunes and AmazonMP3 harness the power of search as well, with Anderson (2008) paying particular notice to the value of Amazon's overall search infrastructure. If the above is the case, then Bhattacharjee et. al.'s (2009) suggestion about harnessing "search as a product" might be helpful when trying to increase use of a service, because the search satisfaction and search consumption variables were found to be strongly correlated. According to Kwong and Park (2008) these kinds of enjoyable online environments help users to explore new music and bolster the perceived quality of the service to the consumer. Anderson's (2008) perception on search is about increasing the value of the service and establishing search as an advantage and product in its own right. Nevertheless, these authors suggest a connection between search functionality and satisfaction which our regression model did not find.

Services like Napster, Rhapsody To Go, MTV's Urge, Yahoo's Musicmatch and Music Unlimited all line up together to push for subscription while loading their platforms weaponry with a highly intelligent infrastructure of search software algorithms (Dalton, 2006). As discussed in our empirical findings, 88% of the respondents answered in the high value range in regard to customer satisfaction and 68% think that an improved search function greatly increases their use within a digital music service, yet there was no statistical significance between search satisfaction and overall satisfaction.

This could be, perhaps, because users have begun to take advanced search functionality for granted, as we postulated them to do with UGC as well. It could be the case, as well, that search functions are simply taken for granted. Customers might simply assume that a good search function exists within a service. If this is the case, it is contradictory to our original hypothesis, but possibly in line with Sinha and Mandel's (2008) work regarding the price sensitivity of digital goods – they state that products are more price sensitive due to the decreased search costs of the Internet. Given the high price-sensitivity in the marketplace thanks to low search costs, using the "search as a product" approach could assist in retaining customers.

6 Conclusion

Our research was aimed at the new type of online customer who is constantly facing dynamic and innovative Web 2.0 environments on which many digital music services are building their business models in an attempt to embrace the changing Web. Based on previous academic research in the related field, we hypothesized that customer satisfaction was correlated with four attributes as variables: price, user-generated content, mobility, and search functionality.

It seems that our survey findings for our satisfaction hypotheses do not hold up when put to statistical significance tests, for the most part. Only price satisfaction was found to be statistically significant both in the correlation matrix and logistic regression when correlated with overall satisfaction, contrary to what our

descriptive statistics might have suggested. Thus, the only hypothesis not rejected was that price satisfaction is correlated with overall satisfaction. In spite of this, we still found numerous connections between our theoretical framework and our empirical results. The consumption variables were significantly correlated with their corresponding satisfaction variables (price satisfaction, UGC satisfaction, mobile satisfaction, and search satisfaction), lending insight into how firms might employ these variables in an attempt to increase revenues.

Digital music service developers have fully embraced concepts surrounding all of these variables, as outlined in our discussion section, with heavy focus on mobility options and user-generated content platforms. Web 2.0 sites like Youtube and Myspace, while not originally started as music services per-se, have morphed into music services as the digital customers demands and expectations have changed, further outlining the need for a more in-depth understanding of these customers.

By researching this topic, we have hoped to contribute to the understanding of the most important psychological forces behind customer satisfaction in the digital music world. In the end, our results generally seem mixed; given the developing nature of an industry that has been shaken so heavily by decreasing revenues and seemingly decreasing interest, perhaps this comes as no surprise. Customers are changing, and their needs and wants must be understood if digital services are to proliferate and offer what customers expect.

6.1 Suggestions for Further Research

While UGC, mobile functionality, and search functionality were not found to be statistically significant when correlated with overall satisfaction, our survey data taken at face value suggests otherwise. This, taken with the fact that these variables do seem to correlate with increased consumption and the fact that the general music business climate is moving in favor of these variables, seems to suggest that there is still much more to be understood about how the variables operate given the context of digital music distribution models.

Furthermore, with numerous statistically significant correlations between variables that were not expressly discussed in our paper, there could be other common threads running through our 4 variables as they relate to satisfaction and consumption. Perhaps understanding why mobile consumption and search consumption, for example, are so strongly correlated, could be of benefit to the industry, as well as how to further monetize functionalities of these 4 variables.

Finally, because we rejected 3 of our satisfaction hypotheses and none of our use hypotheses, there could be a disconnect in the perception of these terms in the mind of the consumer. Thus, better understanding how the consumer perceives both satisfaction and use, as well as how they relate the two, would be beneficial.

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Appendix A – Descriptive Tables

Age of Respondents

	Min	Max	Mean	Mode	Median
Age	15	56	26	24	24
N=152					

Note. Min. = Minimum; Max. = Maximum;

Gender of Respondents

	Male	Female
Gender	86 (56%)	67 (44%)
N=152		

Overall Satisfaction

	Yes	No
Overall Satisfaction	104 (68%)	49 (32%)
N=152		

Answers to the "Illegal too high" and "Illegal don't pay" variable questions (see Appendix B, questions 7 and 8)

	Yes	No
Illegal Too High	89 (58%)	64 (42%)
Illegal Don't Pay	72 (47%)	81 (53%)
N=152		

Answers to the Satisfaction and Consumption variable questions (see Appendix B; corresponding questions in parentheses next to variable name)

	Not important at all	A little important	Somewhat important	Pretty important	Extremely important
Price Satisfaction (6)	12 (8%)	14 (9%)	31 (20%)	54 (35%)	42 (27%)
Ugc Satisfaction (9)	28 (18%)	28 (18%)	54 (35%)	35 (23%)	8 (5%)
Search Satisfaction (11)	3 (2%)	1 (1%)	14 (9%)	61 (40%)	74 (48%)
Mobile Satisfaction (13)	38 (25%)	26 (17%)	34 (22%)	41 (27%)	14 (9%)
N=152					
	0 - No increase in use	1	2	3	4 - Great increase in use
Ugc Consumption (10)	33 (22%)	31 (20%)	50 (33%)	33 (22%)	6 (4%)
Search Consumption (12)	5 (3%)	10 (7%)	34 (22%)	47 (31%)	57 (37%)
Mobile Consumption (14)	37 (24%)	14 (9%)	44 (29%)	42 (27%)	16 (10%)
N=152					

Appendix B – Survey Questions

1. Do you use, or have you used, a legal digital music service for the purpose of listening to or purchasing music? * (for example: iTunes Music Store, Rhapsody, Spotify, Deezer, last.fm, Pandora, Lala (Google), Napster, Youtube, Myspace, AmazonMP3, 7digital, or another. BIT TORRENT OR P2P SERVICES DO NOT COUNT.) *(Y/N)*

2. Gender *(Male/Female)*

3. Age

4. What is the name of the legal digital music service you most frequently use for purchasing music or listening to music that you don't own (streaming)? * Please enter only one.

5. Roughly, how often do you use this service for purchasing music or listening to music you don't own (streaming)?

   (Answers: Less than once a month; once a month; a few times a month; a few times a week, but not everyday; every day)

6. How important is the PRICE of the service in determining your SATISFACTION with a legal digital music service? * PRICE refers to the per-song fee (for services like iTunes), a monthly fee (for services like Rhapsody). Services like last.fm, Pandora, Lala, Youtube, and Myspace cost nothing; consider this zero-cost the price.

   (Answers: Not important at all; a little important; somewhat important; pretty important; extremely important)

7. Do you sometimes seek illegal alternatives to legal digital music services due to the price of service being too high? * Illegal alternatives are Bit-torrent and p2p networks, for example. *(Y/N)*

8. Do you sometimes seek illegal alternatives to legal digital music services because you don't want to pay anything for music? * Illegal alternatives are Bit-torrent and p2p networks, for example. *(Y/N)*

9. How important is USER-GENERATED CONTENT in determining your SATISFACTION with a legal digital music service? * Consider user-generated content as user-created playlists, uploading your own material, interactive content, user reviews, etc.

   (Answers: Not important at all; a little important; somewhat important; pretty important; extremely important)

10. How would the inclusion of more user-generated content capability affect your legal music consumption? * Consider user-generated content as user-created playlists, uploading your own material, interactive content, user reviews, etc.

    (Answers: No effect – 0, 1, 2, 3, Much heavier consumption – 4)

11. Is the ability to use a music service on MOBILE PLATFORMS AND DEVICES important in determining your SATISFACTION with a legal digital music service? * Mobility examples: Rhapsody-To-Go, restriction-free iTunes downloads, Slacker iPhone app, Youtube phone app)

    (Answers: Not important at all; a little important; somewhat important; pretty important; extremely important)

12. How would the inclusion of more MOBILE CAPABILITIES affect your USE of a legal digital music service? * Mobility examples: Rhapsody-To-Go, restriction-free iTunes downloads, Slacker iPhone app, Youtube phone app)

    (Answers: No increase in use – 0, 1, 2, 3, Great increase in use – 4)

13. How important is an effective SEARCH FUNCTION in a legal digital music service in relation to your SATISFACTION with a service? * Search functions are ways in which the service helps you find what you are looking for.

    (Answers: Not important at all; a little important; somewhat important; pretty important; extremely important)

14. How would an improved, faster, and more accurate SEARCH FUNCTION affect your USE of legal digital music services? * Search functions are ways in which the service helps you find what you are looking for.

    (Answers: No increase in use – 0, 1, 2, 3, Great increase in use – 4)

15. Overall, do you consider yourself "satisfied" with the current range of legal digital music services in the marketplace? * *(Y/N)*