Social Networking and Music Discovery

Overview of the Traditional Music Distribution Industry

The music publication and distribution industry is an oligopoly where music labels Warner Music, EMI, Sony BMG and Universal Music Group control over 70% of the world music market. All other music labels are referred to as "independent record labels" which comprise the other 30% of the market.

Before the internet, the major record labels had almost complete control over the release of music into the consumer segment. Traditional terrestrial radio was the primary means of music discovery for consumers and it was standard practice for record labels to pay radio stations a fee to promote the play of their artists under contract. This industry practice all but blocked independent artists and labels from the marketplace. However, the Telecommunications at of 1996 eliminated the pay for play practice which was the first crack in the old industry model.

The Telecommunications act also lifted the restrictions on the number of terrestrial radio stations that any one company could own. This brought about a rapid consolidation of that market. For example, between 1996 and 2002 Clear Channel Communications grew from 40 stations to more than 1200 stations. By 2006, the top four media companies had 48 percent of terrestrial radio listeners. This has lead to a reduction in the variety of music content.

More pressure on the industry status quo - The mid 1990s also brought about the rise of the internet. The ability to move around digital music files was greatly enhanced by the introduction of the mp3 music format and the ever increasing bandwidth of internet connections. In addition, retail outlets such as Wal-Mart and Best Buy began using music CDs as loss leaders which put further pressure on music prices and led consumers to expect cheaper music prices. This came at the same time that music pirating platforms, such as Napster, emerged exacerbating the situation.

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Internet radio (also known as webcasting or streaming radio) has also becoming increasingly popular. The rise of the format is owed to the low barriers to entry such as very low cost of internet access, no spectrum licensing fees and the borderless nature of the internet. These factors made it easy to scale internet radio and consumer desire for greater variety of content could be addressed. The number of online radio listeners is projected to grow at over 20% annually to about 150 million by 2010.

Social Music Overview

As the number of internet streaming radio stations mushroomed, some entrants began to look for ways to differentiate themselves from the pack. The most significant tactic was to allow listeners to interact with the "station". The new interactive category of webcasting lead to new discovery models for music and gave access to the long tail of music content. These dynamics offered a disruptive business model to the traditional terrestrial, satellite and online streaming stations. In effect, these new streaming models allowed the user to create highly customizable "personal" radio stations that could be created without the need for traditional DJs. The new model eliminated interruptive advertising and bypassed the traditional distribution systems allowing listeners to buy songs electronically bypassing retail CD sellers. Some online radio stations have taken this model even further by blending the ability to create personalized radio stations and providing a forum for social networking.

Legality & Royalty Issues of Internet Radio

In the United States, Sound Exchange has been the organization that historically negotiated royalty rates with webcasters. Prior to 2007 the rate structure was based on a percentage of the revenues collected by the internet stations. This represented a low barrier of entry and allowed small "mom and pop" radio stations to startup. However,

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in March 2007 the Copyright Royalty Board (CRB) announced its decision to change the rate structure. The newly adopted policy resulted in a fixed per user-song charge and an increase in the rate itself. It is estimated that these rates resulted in a 10X increase in fees for many internet radio businesses. Interestingly, these fees are only directly imposed on US based internet businesses. This will cause most, if not all, of the US based stations cease operations if the new rate structure is not overturned. Ironically, due to the nature of the World Wide Web, it is very likely that the market share of the US operators will be very quickly assimilated by foreign broadcasters. The net impact of the royalty rate increases may very well result in a decrease in revenues for domestic copyright holders relative to the old rate structure.

Pandora

Pandora was founded in 2000 as a "Music Genome Project" by Tim Westergren, a few musicians and some technical coders. The Music Genome Project's goal was to analyze thousands of popular songs and categorized them by attributes such as tonal quality, melody, harmony, instrumentation, rhythm, vocals lyrics etc. In all more than 200 attributes were evaluated. The original monetization model was "to create the ultimate music recommendation system" and license the technology to retailers such as Best Buy. There, music fans could input the names of their favorite songs or artists and the music genome algorithm would recommend bands that had similar characteristics thus helping the listener discover new music and helping the retailer sell more CDs.

Much to its dismay, the Pandora team found that the retailers were not willing to pay enough for the service to allow Pandora to make a profit. The retail dogs weren't eating the dog food. It was time to search for a new market fit.

Management Team & Technical Approach

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Pandora.com - In 2004 Pandora developed a new business model, Pandora.com, sourced a new round of funding and hired a new CEO Joe Kennedy. Joe had an MBA from HBS and experience at E-LOAN and Saturn Corporation. Tim Westergren moved to the position of Chief Strategy Officer and Tom Conrad was hired as CTO(see **Exhibit 1 & 2** for the bios of the full leadership and board teams).

The new business model shifted the focus away from the retailer and directly onto the music consumer. It used a combination of advertising and user subscription fees to monetize the business. The concept was to develop an internet radio that could be fully customized by listener. In essence, each listener could create their own personal radio "station". The process was simple. The user would simply type in the names of artists and songs that they like into a web based player and the music genome algorithm, developed earlier, would be used to stream music that it determined the user would like. In addition, a simple user rating system was developed to help Pandora learn more about the user's tastes and improve the user experience. The goal of Tom Conrad and the Pandora team was to keep the user interface extremely simple and the "thumbs up/thumbs down" rating system was an integral part of this goal.

Technically, in order for users to access their Pandora radio station they must have an internet connection since it is a streaming model. Music is not stored on user's computers due to licensing agreement limitations. This internet tethering is currently both an asset and liability for Pandora. It is what facilitates two way communication but it also limits the delivery of content to devices that are not connected to the internet.

Assessment of Product/Market fit and Partnership strategy

Pandora as recently announced hardware and carrier partnerships that allow its users to enjoy the Pandora experience away from the computer:

Pandora for the Home Stereo - Pandora has partnered with companies such as Sonos and Logitech to develop hardware products that allow a more traditional listening

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experience that is untethered to a computer. The Squeezebox and Transporter allow listener created radio stations to be played through a home stereo.

Pandora on the Go - Currently, Pandora has partnered with Sprint to bring a portable listening experience via user's cell phones. The cost is $2.99 per month in addition to the cost of a traditional data plan.

Moving beyond cellular - The future of Pandora on the go was alluded to in a May 23, 2007 blog posting. The blog posting discusses a relationship that is developing between Pandora and the Bay Area Company known as Zing. Zing is attempting to build a platform that will enable WiFi connected media players to become a reality. Muni WiFi, as it is being billed, has the potential to blanket the country in a high speed internet connected network making portable internet streaming mobile devices a reality.

History of performance to-date

Pandora is still a private company and as such, information on revenues and number of subscribers is not made public. However, based on interviews with a member of Pandora's leadership team it is estimated the company currently has approximately 7-8 million subscribers and is growing this base steadily. This would make Pandora the second most popular internet radio service behind LastFM. In addition, the company is closely approaching a breakeven point in terms of profitability.

Main opportunities and challenges going forward

Opportunities - The first opportunity for Pandora is to continue to grow its internet radio subscriber base and to maximize its revenues through advertising. Pandora's philosophy has been to create a very simple user interface such that the technological barrier for listeners would be as low as possible. This approach caters to the busy, wired professional and concurrently presents an attractive target audience for its advertisers.

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In addition, Pandora's ability to acquire demographic and interest data on its subscribers further enhances this revenue model.

Moving forward, Pandora's big prize may be in the mobile delivery of content (assuming they are able to resolve the royalty issue). Partnerships with cell phone carriers is, at best, a bridge technology as sound quality and the ability to integrate the experience is less than ideal.

Pandora's overall strategy may to build be build a beachhead in the tethered internet radio model while waiting on the proliferation of widely accessible WiFi in the same way that NetFlix is positioning itself to take advantage of wider accessibility of broadband for digital movie delivery. If Pandora is successful it could expand its platform into other user content such as television, news etc.

Challenges - The most pressing challenge for Pandora is the royalty issue. "In the old, percentage-based fee system, webcasters paid SoundExchange - the Recording Industry Association of America associated organization that pushed the Copyright Royalty Board to adopt the new rates - between 6 percent and 12 percent of their revenue, depending on audience reach."[1] "The new system charges all webcasters a flat fee per song per listener."[2] In addition, the new rates are retroactive. The result for Pandora is an order of magnitude increase in royalty fees and an impending bill of over $2 billion; far outstripping its revenue base. Joe Kennedy was quoted in Wired as saying, "The rates are disastrous. I'm not aware of any internet radio service that believes it can sustain a business at the rates set by this decision." The nonmarket activity has been impressive on both sides. Pandora has been trying to rally the support of their listener base by

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[1] *Wired* March 6, 2007
[2] *Wired* March 6, 2007

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sending emails to subscribers asking them to contact their congressmen. According to Tim Westergren, "Four hundred thousand people called in the first four days."[3]

The secondary challenge for Pandora will be its ability to capture sufficient market share of music listeners. It appears as though Pandora's product market fit might not be as good as some of its newer and more successful competitors like Last.fm.

Last.FM

Last.fm was founded in 2002 by Felix Miller, Martin Stiksel, Michael Breidenbruecker and Thomas Willomitzer as an internet radio station and community music site. Their idea was to use assimilate music profiles of its users to generate new playlists as a means to allow users to discover new music.

In parallel an effort was underway at the University of Southampton, lead by Richard Jones, that was code named "Audioscrobbler". The Audioscrobbler system is a massive database that tracks listening habits and calculates relationships and recommendations based on the music people listen to.[4] This research into music charting and collaborative filtering involved open Application Programming Interface (APIs) and led to the Miller and Jones teams working together.

Management Team & Technical Approach

The management and technical teams are global by nature and consist of teams of 12 working to make Last.fm "speak" German, Spanish, French, Italian, Polish, Portuguese, Russian, Japanese, Korean, Chinese, Swedish, and Turkish. Efforts like these have helped propel Last.fm into more than 200 countries. The young and fun culture of Last.fm has helped it attract the a younger demographic who are willing to participate in the social networking aspect of the business model helping solidify their product market fit.

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[3] USAToday.com
[4] http://www.audioscrobbler.net/

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Last.fm has developed both a downloadable client based player as well as a flash based web player. In addition, they have allowed widgets to be created and embedded in other websites and blogs further enhancing their marketing buzz.

Assessment of Product Market Fit & Partnership Strategy

Last.fm's open "platform" approach has also allowed Last.fm to tailor its product market fit with different segments and attract developers. Their open approach blended with the social networking aspects of the experience, allowed the site to leverage network effects and grow extremely fast. As of May 30th 2007, the Last.fm community consisted of 15 million active users in more than 232 countries.

Recently, Last.fm was able to sign partnership deals with the major music labels. In February 2007, it signed a deal with Warner which gave it full access to Warner's music catalog. This deal was quickly followed by a deal with EMI. With tow of the major labels signed on, Last.fm has secured a reliable source of mainstream content. In addition, Last.fm has actively encouraged independent artists to join and promote their music which drives users down the long tail of the music chain.

Because Last.fm is based in the UK, it has not been adversely affected by the recent by the DMCA and SoundExchange (both based in the US) royalty rate plans. Overseas internet stations are shielded by the regional nature of royalty and copyright laws. Agreements with major record labels will benefit Last.fm however they are still threatened by these movements.

In May 2007, Last.fm was acquired by CBS for $280 million. This was about half the amount that was Viacom was rumored to be offering to acquire the company in earlier negotiations.

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Last.fm recently announced its intention to add music videos to their service offering allowing users to create custom music video channels based on their profiles.

Conclusion

First, we must assume that Pandora and other US based internet radio stations will be able to resolve their royalty issues otherwise all that follows is moot.

Pandora's clean user interface and simplistic operation is a big selling point for its customers and allowed it to quickly bypass smaller competitors before the arrival of Last.fm. However, when evaluating product market fit relative to Last.fm, it would appear that Last.fm has found a better fit. Even though it began its operation after Pandora, it has grown its subscriber base much more quickly and now claims to have more than double the number of subscribers of Pandora. Although Last.fm has been executing its business on a larger sale than has Pandora, its fast growth would not be possible without a good market fit. Last.fm's combination of personalized radio stations, inexpensive scalability of its recommendation engine and social networking features have tapped into a deeper market of consumers than has Pandora.

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Appendix

Exhibit 1 - No. of online streaming radio stations/webcasters.
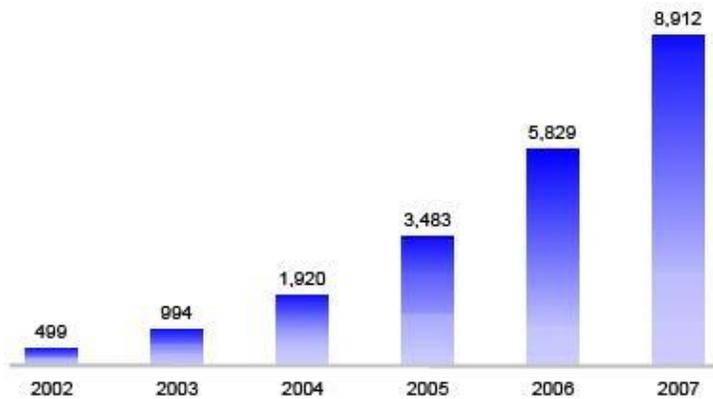
Exhibit 2 - Spectrum of online music services

Non-interactive webcasting	Interactive webcasting	Limited Downloads	Permanent Downloads
Continuous, non-interactive webcasts and simulcasts	Users can interact (skip tracks, pause, fast-forward) and influence output by rating tracks	Users can access specific music on-demand or access "tethered" downloads of certain tracks	Users can permanently download tracks
e.g. - Radio Paradise, WOXY	e.g. - LaunchCast, Pandora	e.g. - Rhapsody, Napster	e.g. - iTunes, eMusic

Exhibit 3 - Projected online internet usage

Year	Internet Radio Usage*	Percent Increase
2005	45	-
2006	57	26%
2007	72	27%
2008	91	27%
2009	116	27%
2010	148	61%

* Weekly number of listeners, in millions

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*Exhibit 4 - **Performance royalty fee schedule for commercial webcasters as determined by the CRB***

Year	Fee Per Performance	Percent Increase
2006	$0.0008	-
2007	$0.0011	38%
2008	$0.0014	27%
2009	$0.0018	29%
2010	$0.0019	6%

*Exhibit 5 - **Distribution of performance royalties by broadcast medium***

Broadcast Medium	Musical Composition Performance Royalty	Sound Recording Performance Royalty		
	Songwriter or Publisher	Featured Artist	Non-featured Artists	SRCO* or Record Label
Terrestrial radio stations	Royalties paid directly to ASCAP/BMI/SESAC	Nothing	Nothing	Nothing
Internet radio stations	Royalties paid directly to ASCAP/BMI/SESAC	45 percent of royalties paid to SoundExchange	5 percent of royalties paid to SoundExchange	50 percent of royalties paid to SoundExchange
Satellite radio stations	Royalties paid directly to ASCAP/BMI/SESAC	45 percent of royalties paid to SoundExchange	5 percent of royalties paid to SoundExchange	50 percent of royalties paid to SoundExchange

* Sound Recording Copyright Owner

Exhibit 6 - Pandora Leadership Team

Joe Kennedy
Chief Executive Officer & President
Joe Kennedy joined the company in 2004 following a five-year stint at E-LOAN, where he was President and Chief Operating Officer. From 1995 to 1999, he was the Vice President of Sales, Service and Marketing for Saturn Corporation, which he grew to over $4 billion in revenue and established as the top brand for customer satisfaction in the auto industry. Joe joined the initial start-up team at Saturn, four months after its founding, as a marketing manager and held positions of increasing marketing responsibility over the course of his 11-year tenure there.

Tim Westergren
Chief Strategy Officer & Founder
Tim Westergren founded Pandora in January 2000 and now serves as its Chief Strategy Officer. Tim is an award-winning composer, an accomplished musician and a record producer with 20 years of experience in the music industry. He has recorded with independent labels, managed artists, owned a commercial digital recording studio, scored feature films, produced albums, and performed extensively. His main instrument is the piano, but over the years he has played the

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bassoon, drums and clarinet and his musical background spans such genres as rock, blues, jazz and classical music.

music, and spread the word of the Music Genome Project.

Tom Conrad
Chief Technical Officer
Tom Conrad leads the Pandora product organization, which includes product management, user interface design, software development, and network operations. Over the years, Tom has led numerous engineering and product design teams across a wide range of applications - from operating systems and enterprise software to video games and consumer web sites. Before joining Pandora, Tom was the Vice President of Engineering at Kenamea, Inc. where he led the teams responsible for the design and development of an award-winning Internet-scale messaging system. Tom previously was the Technical Director for the successful video game

Nolan Gasser
Chief Musicologist
Dr. Nolan Gasser is the brain behind the Music Genome Project and its rigorous methodology for analyzing music. He is a critically acclaimed composer, pianist, conductor and arranger, as well as a published musicologist.

Nolan got his Ph.D. in Musicology in 2001 from Stanford University, where he is an Adjunct Professor in Medieval and Renaissance Music History. He also is the composer of numerous award-winning musical works, including classical, jazz and popular music. In fact, his music has been performed at the Kennedy Center in Washington D.C., Alice Tully Hall, La Salle Pleyel in Paris and even the Rose Bowl in Pasadena.

Etienne Handman
Chief Operating Officer
Etienne oversees all aspects of the Music Genome Project. This includes managing the musicians who acquire and analyze the music heard on Pandora, as well as Pandora's Listener Advocates - the team who responds to listener comments, suggestions and questions. Etienne spends most of his time working on ways to improve the quality of the Pandora listening experience.

Cheryl Lucanegro
Vice President of Advertising Sales
Cheryl Lucanegro oversees Pandora's growing national ad sales team as well as the ad operations group. She is a media industry veteran with a reputation for building and growing new media outlets. Cheryl was part of the founding team of The Industry Standard, and has since worked for several entrepreneurial media ventures, from Salon.com, where she served as Senior Vice President of Integrated Sales, to Edutopia, a magazine and website aimed at teachers funded by the George Lucas Foundation, where she most recently served as Founding Publisher. Earlier in her career, she worked for Ziff-Davis Publishing and Upside Media. Cheryl has a Bachelor of Science degree in Journalism from the University of Florida. She currently sings and plays piano with the "Kayotics", a group of girl friends who sing and co-write clever lyrics to favorite tunes together for parties and weddings.

Jessica Stoner
Vice President of Business Development
Jessica has served as Pandora's Vice President for Business Development since mid-2004, and is responsible for strategic partnerships for the company. Prior to joining Pandora, Jessica led the business development efforts for the international division of Overture Services (a Yahoo! company). During her four-year tenure there, she helped to grow the business from one market to a 19-country, 600+ person international division that drove $500M in annual revenues. Before Overture, Jessica worked in international finance, with clients ranging from Softbank Japan to the Thai Ministry of Finance. Outside of work, she is a singer-songwriter, writing under the name "Jessica Stone," with a full-length CD entitled Seven Letters released in 2002.

Michael Zapruder
Music Buyer
It is Michael's job to find great music to add to the Music Genome Project, whether it's a freshly pressed home studio recording, or a long lost vintage album from a well-known jazz great. Michael spends his days scouring the Internet, from indie labels and magazines to music-related blogs and newsgroups. His search for great music also takes him to music festivals and clubs coast-to-coast. Finally, he is the one who ensures that all of the music submitted to the Music Genome by Pandora fans gets a good listen.

Paul Brown
Managing Director, Pandora Europe
Paul is a digital media business specialist and is a media lawyer by background (with a particular focus on music). Previously Director of Digital Business Affairs and Development in the Futures Division at Sony BMG UK, Paul has spent the last five years in the music industry working with senior management and third party media partners to grow Sony BMG's digital business with particular emphasis on the strategic development, negotiation and execution of major digital media marketing and content deals (across mobile, online and TV) at both the UK and European level as well as covering the complex digital aspects of artist deals. Prior to joining Sony Music, Paul was a Director at UBS Warburg working as a banker in the private equity and venture capital sector and prior to that was a venture capital lawyer at major city law firm, Lovells.

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