

THE INVITATION:  
NICHE AUDIENCES, PARTICIPATORY CULTURE, AND *THE HYPE MACHINE*

by

Conrad Daellenbach

Popular Music B.A, University of Western Ontario, London, 2013

This Major Research Project  
Presented to Ryerson University

In partial fulfillment of the  
Requirements for the degree of  
Master of Digital Media

In the Yeates School of Graduate Studies  
Toronto, Ontario, Canada, 2015

© Conrad Daellenbach 2015

**Authors Declaration Page****AUTHOR'S DECLARATION FOR ELECTRONIC SUBMISSION OF A MRP**

I hereby declare that I am the sole author of this MRP. This is a true copy of the MRP, including any required final revisions.

I authorize Ryerson University to lend this MRP to other institutions or individuals for the purpose of scholarly research.

I further authorize Ryerson University to reproduce this MRP by photocopying or by other means, in total or in part, at the request of other institutions or individuals for the purpose of scholarly research.

I understand that my MRP may be made electronically available to the public.

Signed,

Conrad C. Daellenbach

## **Abstract**

This paper explores the use of aggregation and curation of syndicated sources to support social media listening as a way of addressing the problem of information overload inherent in music discovery. Whereas Hodson & Wilkes looked at textual patterns and sentiment in discourse, the objective of my research is to apply their techniques within the context of identifying trends in electronic music discourse. I'll then determined whether a traditional model for understanding influence, such as Katz & Lazarsfeld's "Two-step flow theory," remains true in a digital ecosystem. I'll examine the music blog aggregator *Hype Machine*, which employs crowdsourcing and content curation to pre-filter a sample of top blog posts, with the objective of creating a dataset from which to identify correlations in both audio properties and blog influence. My research is driven by an exploration of technology and cultural change, as well as examinations of why and how audiences consume music.

## **Acknowledgements**

I want to dedicate this thesis to my supervisor, Dr. Jaigris Hodson for her unwavering support throughout this entire process, and for inspiring me to write this paper. I thank her for imparting on me her unique outlook on the music industry and (perhaps most importantly) for refocusing my efforts countless times.

I also want to thank my directed studies partner and one of the most talented people I know, Naomi Cowan for her insight, her kindness, and her faith. This was an impactful journey to undertake and it wouldn't have been nearly as much fun without her.

## **Table of Contents:**

<b>Title Page</b>	.....	I
<b>Author Declaration</b>	.....	II
<b>Abstract</b>	.....	III
<b>Acknowledgments</b>	.....	IV
<b>Table of Contents</b>	.....	V
<b>Introduction</b>	.....	1
<b>Music in the Digital Age</b>	.....	4
<b>Consumption, Remix &amp; Data-Driven Digital Advertising</b>	.....	7
<b>The Hype-Machine, Word-of-Mouth &amp; Opinion Leaders</b>	.....	10
<b>Methodology</b>	.....	16
<b>Findings</b>	.....	22
<b>Discussion</b>	.....	27
<b>Conclusion</b>	.....	30
<b>Works Referenced</b>	.....	32

## Introduction

Lawrence Lessig (2008), an advocate of remix culture and its many affordances, writes that YouTube and Wikipedia are a part of a cultural economy that gives the audience something more, asking “something more of the audience,” and inviting a response (p. 111). The Hype Machine is a music blog aggregator, founded in 2005, that tracks posts from a handpicked set of blogs, and presents them to its audience for easy analysis, consumption and discovery (HypeM, 2015). David Beer and Roger Burrows (2013) look at *Hype Machine* as a popular cultural source of recursive data, describing Hype Machine to be a product of a “huge communal presumptive effort on the part of participants... creating new forms of data” (p. 55). The predictive feedback process that the Hype Machine community engages in not only captures culture, but also shapes it by inviting a response from its audience. The opportunity for trend identification, with the use of big data, has affected and improved the process of online music recommendations, as well as the decision-making process and the process of forecasting information that is at the heart of opportunity for the musician, the label, and the industry as a whole. To give a quick example of the power of data, one can look at the use of data gathered by the music-streaming service Spotify. In 2013, Spotify looked at users’ listening habits, taking into account song and album streaming, to “determine the popularity of the music... Spotify [then] used streaming data to predict the Grammy Award winners... In the end, 4 out of the 6 predictions made by Spotify turned out correctly” (Van Rijmenam, 2014, para. 5). This is only one example of many.

The ongoing conversation regarding this last decades paradigm shift within the music industry, leading to diminishing music sales and inadequate streaming royalties, has introduced the topic of new revenue sources that leverage ‘big data’. This trend has led to

new information on the use of big data in connecting with audiences, which Darius Fong suggests can to some extent reveal consumers' motivations. The Venture Beat writer points out that in a data-driven industry no longer limited by the rigid structures of the old music industry regime, artists can now "monetize by helping brands connect with their target audience... instead of relying solely on consumers to monetize their music" (Fong, 2014, para. 14). Social and digital media's ability to create opportunities for brand partnerships illuminates only one of the many affordances granted to musicians and producers in the digital space. My research suggests that musicians and labels as a whole need to stop looking at emerging barriers and instead look to the opportunities that these "barriers" are creating. With this in mind, the goal of this research paper is to use a popular culture source such as *Hype Machine* to identify a niche audience, and to then produce music with that audience in mind.

The crowd-sourced atmosphere described by Beer and Burrows (2013) parallels the changing roles of participatory culture and audience engagement outlined in Henry Jenkins' "Spreadable Media" (2013). Spreadable media is defined by Jenkins (2013) as an umbrella term for content that recognizes the importance of social connections, connections that are amplified by social media, and content that can be continually repositioned as it enters different niche communities. As a musical content aggregator, Hype Machine embodies the notion of "spreadable media" in the value it lends to audience interaction, open-ended participation, and content sharing. If we take Hype Machine to be a predictive reader of trending music, including the display of viral "less-known" music, how does one then produce spreadable media in a way that holds on to that audience? The easy

answer to producing a “viral” song is to create a unique sound with a compelling message that is picked up by one of the many blogs that Hype Machine curates. The not-so-easy answer for creating spreadable material is that your song must not only appeal to a broad audience in order to have the best chance of being noticed, but must be available in such a way that today’s participatory remix culture can adopt, shape, and reposition your work to enter different niche communities. Henry Jenkins (2013) describes this as a process of fandom, a process where groups of fans are “gaining greater communicative capacity within a networked culture and toward a context where niche cultural production is increasingly influencing the shape and direction of mainstream media” (p. 36). The changing definition of “audience”, from consumer to contributor, is illuminated in a participatory culture where platforms such as Hype Machine can be utilized to act as vehicles for an artist to engage in prosumer marketing.

An analysis of today’s music sharing and discovery process that is shaping the many ways that people find new music, and the many ways that musicians can take advantage of this process, reveals the importance of influentials (mass media and opinion leaders) in generating conversation and visibility for a musician, as well as the importance of finding a service where a content producer can reach the largest percentage of their audience. In the following sections, literature on technology and cultural change is discussed, followed by an examination of why and how audiences consume music online. Following this, the importance of word of mouth and opinion leadership in music discovery and sharing is explored, concluding with the role of digital technology in shaping music consumption, discovery, and sharing. Finally, I describe the methodology and findings of a dataset gathered from two samples of top-20 Hype Machine songs and the corresponding trend



identification. It is through this research and findings that I will be shaping the production of a song, a minimum viable product, to be pitched and potentially released through a music blog influencer such as Indie Shuffle or Dancing Astronaut. I believe that producing a song within the audio characteristic ranges that I have found, and distributed through the right influentials, will give my work the best chance to spread and gain traction with an audience.

### **Music in the Digital Age**

Understanding the history of music consumption requires taking a brief look at the evolution of “social listening” (a form of social media market research) and, more specifically, of music listening before the digital age of cd’s, mp3’s and streaming. Moreover, an understanding of the evolution of consumption will illuminate the current shift from mass marketing, a process made popular with the advent of mass media, to niche marketing. If we begin with the invention of the LP, marketed to consumers by RCA Victor in the 30s, and FM radio in that same decade, we can recognize technology as an influencing force that led to a blossoming of musical styles and experimentation (Karr, 2002). This introduction of mass media allowed for music to be more readily available to the consumer. This caused music to be viewed by the postmodern consumer (Van Raaij, 1993) as a commodity that is subject to the circle of consumption (Arnould et al., 2005).

The subsequent rise and fall of the music album, defined as containing one or more recordings (as on a tape or disc) produced as a single unit (Merriam-Webster, 2015), mirrors a paradigm shift in consumer behaviours and in technological innovations. Since

2010, album sales have decreased steadily, revealing an inflection point during which digital sales overtook their analogue counterparts for the first time – signalling a new stage for music selling (Anderson, 2006). For the first time, audiences were exposed to new ways of discovering, consuming, and sharing music. Now fast-forward to 2015, where the development of digital technologies has already begun to radically reshape the ways people access and share culture (Jenkins, 2006). To offer a current example, the rise of today's niche audiences is the outcome of an age in which the consumer is afforded unlimited choice, a privilege and process of digital empowerment. In a blog post titled "Mass production and mass media", author Seth Godin writes that today's "smart" creators are shifting away from mass marketing, a practice made popular with the advent of mass media (TV, newspapers, radio, etcetera) over fifty years ago. "Mass production," he says, "is being replaced by micro production, by the short run, by customization, by the long tail" (Godin, 2015). What Godin is suggesting is that we must now produce for a micro-market, or niche market, and market to that same niche market. This form of niche customer development is a deliberate and constant process that allows today's producer to be as in-sync as possible with the consumer. In the music industry, a shifting attention towards the long tail, which refers to a digital retailers ability to sell "a large number of unique items, each in relatively small quantities" over a long period of time, (qtd. in Spiers, 2011) and towards targeting niche audiences reflect certain innovations in technology and the impact they have had on Internet culture. The emergence of Web 2.0 technologies and platforms such as social networking sites, video-sharing websites, and blogs, where users connect directly to one another and collaboratively create and share content, has led to a sharing

culture that empowers not only music creators but consumers as well. These innovations have changed the consumption and distribution of cultural information (O'Reilly, 2005).

With the elimination of barriers associated with distribution and retailing, cultural consumers can now utilize Web 2.0 tools to interact with, create, and publish content online that voices their musical preferences more easily (O'Reilly, 2005). Where historically the practices of producing and distributing cultural content had been controlled in a predominantly top-down process, these tools have provided both amateurs and opinion leaders great alternatives to expand their knowledge and to help their peers (Anderson, 2006). Media audiences that actively make use of possibilities to find and share content with other online users are continually switching between their roles as consumers and producers of content (Jenkins, 2006), generating online attention to cultural products by uploading fan-produced videos to VEVO or YouTube, writing reviews in various blogs, or uploading music to any number of online platforms that now exist. The recent on-demand nature of music video distribution sites allows the audience control that they had not had in the MTV video days, and that is the power of connection to media libraries, social networks, personalized playlists, and convenience (Edmond, 2014). While these developments have, to a certain extent, granted audiences control over both production and consumption, it also created what Ryan Lawler calls an "attention economy" (2011) – an economy that places greater emphasis on personalized content and multi-platform availability for capturing the consumers' attention. Ray Velez, CTO of the digital ad agency Razorfish, suggests that consumer behaviours are putting burdens on publishers to drive personalization in an effort to remain relevant (Moses, 2015). For both the musician and

the music publisher, it is equally important to consider how personalization drives relevance in a remix-driven electronic music industry.

### **Consumption, Remix & Data-Driven Digital Advertising**

Digitization has allowed for co-creation in music consumption. Brewster and Broughton (2006), in addressing the subject of the contemporary DJ, suggest that the listener forms part of a creative process with the DJ. This idea parallels one of the more transformative digital shifts affecting the music industry, which is the changing relationship of read-only (RO) and read-write (RW) cultures on the web. In *Remix*, Lawrence Lessig (2008) describes RO culture as a way of consuming content passively; it is a culture that “emphasizes hierarchy,” (p. 113) and delivers content with a measure of authority and control. Under the umbrella of RO culture would fall practices such as viral marketing and sponsored user-generated branding. RW culture, on the other hand, Lessig describes as “giving the audience something more. Or better, it asks something more of the audience. It is offered as a draft. It invites a response” (p. 111). Within the music industry sphere, this “invitation” represents a shift towards democratization, where the relationship between the artist and audience is no longer dependent on pre-existing hierarchies, such as the control of the major record labels, within the music industry. What this means is that there is a new, constant and shifting balance of control from producer to consumer, musician to fan. Paralleling this shifting balance of control is the shifting understanding of content, as described by Jenkins, that values “spreadable” content over “viral” or “sticky” content. In an interview on *Deep Media*, Jenkins (2013) argues that the term viral media “consistently strips agency from the participants within networks of circulation” (para. 3).

“Spreadability,” he says, “recognizes the importance of the social connections among individuals, connections increasingly made visible (and amplified) by social media platforms” (Jenkins, 2013, p. 6). An understanding of digital content is inextricably linked to an understanding of the processes by which it is created, positioned, and distributed.

Gamble and Gilmore (2013) identify five typologies of co-creational marketing that categorize distinctive relationships between the brand and the consumer: these include viral marketing, sponsored user-generated branding, UGC (user-generated content) marketing, vigilante marketing, and prosumer marketing. Looking at the disparity in buyer-seller involvement along a continuum of these marketing strategies, one can see an inherent “struggle” for control of creation, distribution, and positioning of content. When applied to the music industry, we see that there is an opportunity for greater understanding of fan preferences and market research, as well as possible deployment of prosumer marketing. As discussed earlier, there is a clear shift in balance of power from record label experts and talent specialists to crowd-wisdom, and this shift in power and engagement of prosumer communities must be further explored when speaking to the changing nature of content. Konczal (2008) defines prosumer marketing as a process whereby a consumer “becomes involved in the design and manufacture of products and services so they can be made to individual specification” (p. 22-23).

In today’s progressively data-driven musical landscape, prosumer involvement now takes shape in the form of adoption; adoption of tools for music discovery, streaming, creating, etcetera. Audiences are becoming a part of the content development stage for promoters, managers, and musical artists, and we can see big data and crowd wisdom

increasingly being used as an early-detection system for hits. Shazam, a tool created initially for identifying unfamiliar songs, is now being used to identify in which geographical regions a song is beginning to gain traction (Thompson, 2014), consequently aiding the tour booking process for managers. Similarly, Spotify is being used by concert promoters to analyze which towns have the most “listens” and, therefore, the most fans. Where once it may have been a popular saying that there is no industry blueprint guiding an artist on how to produce a hit song, we can now be confident that crowd-wisdom has the potential to tell us exactly that if put through the correct filter.

Allowing an audience the control to shape an experience ties in very closely to emerging music discovery platforms that employ crowd-wisdom, content curation, and filtering as a means of allowing users to shape their own results. Evaluating a digital crowdsourcing archive, such as Hype Machine, demonstrates that fan involvement can be harnessed in unique ways, and in a way that draws elements of both integrity and audience-user experience from both RO and RW culture (Lessig, 2008). Hype Machine, which Beer and Burrows (2013) describe as a popular cultural source of recursive data, is a predictive music service that engages in aggregate data gathering from popular music blogs; it is predictive in the manner that it aggregates and curates its content, taking into account feedback from listeners in the shape of ‘likes’, number of blog links, and searchable, self-organized archived content.

Hype Machine recognizes the importance of audience interactions in the digital ebb and flow of ideas, and in what Jenkins calls “open-ended participation” (2013). He says that the “participatory logic of spreadability leads to audiences using content in unanticipated

ways as they retrofit material to the contours of their particular community” (Jenkins, 2013, p. 6). This touches on the nature of remix culture and the “invitation” that Lawrence Lessig talks about. Lessig (2008) believes that “it takes extraordinary knowledge about a culture to remix it well...” and furthermore, “the audience is constantly looking for more as the audience reads what the remixer has written. Knowing that the song is a mix that could draw upon all that went before, each second is an invitation to understand the links that were drawn – their meaning, the reason they were included” (p. 93). Remix allows content to enter different niche communities, and spread in a way that encourages consumers to engage with and decipher the music in their own unique ways.

“Search-bar paralysis”, a term coined by John Jurgensen of *The Wall Street Journal* in 2014, accurately explains the importance of this process, and the particular ecosystem that helps to foster this sort of content curation. Search-bar paralysis refers to the average music consumer becoming overwhelmed with the unlimited choices for song selection (Jurgensen, 2014). The consumer falls back on music that they are familiar with rather than finding something new that they connect with. With an infinite number of songs accessible to the user, the issue for the consumer shifts from “What is available?” to “What available strategies are best for searching a virtually infinite data bank?” (Hargreaves and North, 1999, p. 72), which presents the core questions this study is looking to answer: how do people discover new music, and how can musicians take advantage of these tools?

### **The Hype Machine: Word-Of-Mouth & Opinion Leaders**

Mike Kadziulis, a writer for the popular music blog *Pigeons and Planes* suggests that “in order to sustain a balanced music ecosystem, active music listeners need a platform to

share the music that they discover with the rest of the world” (2015, para. 6). Instead of implementing a sharing utility, The Hype Machine opts for a feedback mechanism that allows others to see what music you “heart”; a system similar to Facebook’s “like” system. These “hearts” act as human-based filters that help users to reach “most-popular” charts. This predictive feedback process creates a data environment that not only captures culture, but shapes it as well. This process demonstrates the ability for aggregate information on consumer behaviour to exert social influence, and modify consumers’ interest and demand.

In a study called *Charts and demand: empirical generalizations on social influence*, the success of music products was demonstrated not only to be a “function of independent quality perception”, but to also be “driven by other consumers’ choice” (Maecker et al, 2013, p. 429). Consumers were determined not only to be interested in “viral” but also in what is popular and topping sales ranks. Translating this to social media popularity for mainstream and niche songs, what is considered “viral” constitutes a newly released song that has gained blog popularity and the associated high sampling rate (Dewan and Ramaprasad, 2012, p. 4). For fans looking to discover music on a site like Hype Machine, looking for niche music that has little to no word-of-mouth press, consumers must look to the opinions and actions of other consumers. This crowd-sourced recommendation atmosphere parallels the changing roles of participatory culture and audience engagement. As a music blog aggregator, Hype Machine embodies the notion of “spreadable media” in the value it lends to audience interaction, open-ended participation, and content sharing. A song with “spreadable” qualities would not only appeal to a chosen audience, but also be available in such a way that today’s participatory remix culture could adopt, shape, and



reposition the work to enter different niche communities. Henry Jenkins (2013) describes this as a process of fandom, a process that is changing to account for groups that are “gaining greater communicative capacity within a networked culture and toward a context where niche cultural production is increasingly influencing the shape and direction of mainstream media” (p. 36).

The topic of “key influencers” and the roles that different social platforms play in shaping the music industry and shaping experience are important to discuss when we try to understand music discovery and music consumption in the digital landscape. Goggins and Petakovic (2014) suggest that different social platforms serve different purposes. For researchers this suggests differences in the way we should frame influence within those perspective platforms. Different platforms carry different forms of “influence”, as we will uncover when looking at The Hype Machine under the microscope of Katz and Lazarsfeld’s “Two-step flow theory” (1955). Where once music industry gatekeepers held the keys to production and distribution, and the major labels held the keys to the kingdom, digitization now offers many the opportunity to not only produce from a home studio but to tap an infinite resource and reach a targeted niche market. I’ve described the power of “remixing” in a participatory culture that lends itself to the type of cultural customization that is now absolutely necessary to compete in a once global market now separated into micro markets. These freedoms are true of today’s music economy; however, powers of influence have not necessarily changed but instead simply undergone a slight alteration.

A pre-internet era theory known as the “Two-step flow theory” (Katz and Lazarsfeld, 1955) suggested that influence flows downwards from high status individuals to lower

status individuals. It was also found that high status opinion leaders generally formed their opinions based on mass media, and those in contact with the opinion leaders formed their own opinions accordingly. Democratization of the music industry landscape has led to hundreds of music blogs coming into existence, fashioning themselves as “influencers” and “trend setters”. These blogs are simulacrums of what Katz and Lazarsfeld (1955) describe as “opinion leaders”.

Gruzd and Wellman (2014) imagine this form of influence to resemble the ideas from solitary villages spreading through word of mouth. On a platform such as Hype Machine, word-of-mouth influence is reflected in the feedback system that allows “hearts” to be tagged to particular songs, and “most-popular” lists to be curated. In fact, we can parallel and, to an extent, gauge effective influence on a platform such as Hype Machine that draws from various music blogs. Take for example “high status” blogs whose influence flows downwards towards lower status individuals or, otherwise labelled, users on the platform in question (Katz and Lazarsfeld, 1955). These are those blogs that Hype Machine chooses to share with its users, and those blogs that follow its code of integrity. The songs posted by this chosen group of influencers are then filtered and curated by “opinion followers” that search through the index and “heart” their favourite songs.

Looking again at the “Two-step flow theory,” Katz and Lazarsfeld found that “influentials” were more influenced by mass media than non-influentials and in particular they noticed a trend of homophily where “people tend to vote, it seems, the way their associates vote” (1955, p. 32). In this sense, opinion leaders form their opinions based on mass media, and those in contact with those opinion leaders form their opinions based on

the opinion leaders. To apply this to Hype Machine, one can look at music blogs, to an extent, as a tier of opinion leaders. Identifying music blogs in the digital space as mass media influentials versus identifying them to act as opinion leaders can be quite confusing. Where certain music blogs have channels of distribution that range from broadcast media to social media and otherwise, it is not a far stretch to imagine that music blogs have the opportunity to alter the concept of “mass media” in a digital ecosystem. This is one of many questions I hope to answer in this case study. Nonetheless, Hype Machine’s unique network offers an interesting look at the “Two-step Theory” in an aggregated and curated ecosystem. Figure 1 shows the correlation between a posted (or blogged) song and the number of favourites (hearts) per hour tagged to that particular song on a given date.

**Figure 1: Favorites per hour on Hype Machine**



*(Next Big Sound, 2015)*

If we take a closer look at Next Big Sound’s plotted graph, we could consider the first blog poster (on May 30) to be the “opinion leader”, perhaps even the first few if they have not had time to rebound to other “trending” blog posters. In the case of “Lose It,” the first three posts are all made on the same day. We can see the nature of “viral” content as more

and more blogs post, adding to the number of “blog shares” listed next to the song on Hype Machine. The number of “blog shares” attributed to a song is a useful indicator for users searching for trending songs. However, an even greater indicator is the aggregate “hearts” that a song has accumulated.

So, why is this graph important, and what can these correlations possibly tell us? As found by Goldsmith and Horowitz (2006), the main motives behind consumers seeking opinions online are to reduce risk in the purchase of new products and to find the lowest prices. However, digital piracy and online streaming are essentially free, so does this perception of risk still apply? In today’s attention economy, it becomes a question of time – the audience is fighting against a lot of noise, content, and junk. The audience needs to adopt strategies to sort through this noise, and some websites have taken advantage of this opportunity by providing content through content aggregation: collection and syndication of content from a number of various sources.

Hodson and Wilkes (2014), in exploring the use of content aggregation and curation to support social media listening, found that pre-filtering a sample of blog posts through crowdsourcing and content curation could in fact be used as a means of identifying trends related to a product launch. Their method proposed to demonstrate that “aggregating the text chatter produced among networks of high-authority, and highly interested influencers, and subjecting that data to a cursory level sentiment analysis,” could be an effective way of “drawing usable, actionable conclusions from activity on networks like blog communities” (Hodson and Wilkes, 2014, N.p.). I contend that Hype Machine is an emerging and powerful, influence driving music blog aggregator and music-discovery platform. Hype Machine’s code of integrity allows us to assume that “accepted” blog influencers are posting with

authenticity rather than spamming (for example, overloading the system with content in the hopes that something sticks). That doesn't mean however that there isn't a foreseeable totem pole of influence amongst blogs. In 2014, Style of Sound created a list of the top 100 influential blogs, a list that was derived using a scoring system that included Klout score as one of many attributes (Ulloa, 2014). While this list in all probability parallels some of the top influencers on Hype Machine, each algorithm must be altered to measure effective influence of a corresponding platform. Currently, Klout incorporates data from Twitter, Facebook, Instagram, etc; however, with the constantly shifting digital landscape, algorithms must be shaped to incorporate and support emerging platforms.

## **Methodology**

Whereas Hodson and Wilkes (2014) looked at textual patterns and sentiment in discourse, for the purpose of tech-related market research, my goal was to apply their "social media listening" techniques within the context of identifying trends in electronic music discourse. To determine where to focus my data collection and analysis in developing a method for producing content for a niche audience, I leveraged research from the music intelligence platform Echo Nest. In 2014, Echo Nest conducted a research that showed prediction of iTunes Sales through the anatomy of music. I set out to apply their methods to my own questions regarding electronic audiences' taste preferences and the role that audio properties play in this. In my experience, artists and bands are often concerned with the anatomy of creating a hit; instead, I was interested in the anatomy of the song itself and how the audio characteristics of a curated list of popular songs might lead to streams, blog interest, and "hearts". My analysis answers this question by

identifying trends on Hype Machine in a weekly dataset sample taken over the last 6 months, and a daily sample over 10 days from which the audio data was coded using API from The Echo Nest. Following Katz and Lazarsfeld's "Two-step flow theory," we can understand Hype Machine as an ecosystem from which influence flows downwards from high status individuals, in this case represented by Hype Machine's pre-curated source of credible music blogs, to lower status individuals, which is represented by users on the platform.

Hype Machine is an aggregator in that it tracks and presents content from a handpicked set of music blogs. When content is posted to a music blog that is being tracked, the content is then shared for consumption and discovery on Hype Machine's feed. This tool not only empowers the voices and influencers that write about music, but also empowers and inspires conversation about both music and culture.

Beginning with the sample taken over a period of 6 months, my first step was to look at Hype Machine's "Popular" section, and to look at their archived "Time Machine" information. This sorted Hype Machine's most popular music in a way that allowed me to collect data monitoring the Top 20 songs in any given week. This data included the names of the artists, the corresponding songs, genre, number of blog posts, and the nature of the musical content – whether it was a cover song, remix, or original. Data was collected from January 1<sup>st</sup> to June 1<sup>st</sup>, and was analyzed to identify corresponding themes. The focus of analysis for this sample group was to look at emerging artists being featured versus mainstream artists, to determine user activity and develop an understanding of Hype

Machine as a music discovery platform. Moreover, I wanted to understand the qualities of the songs which remain relevant over a longer period of time (staying in the Top 20) in an attention and music streaming economy. As was mentioned, Ray Velez suggests that consumer behaviours are putting burdens on publishers to drive personalization. (Moses, 2015). In this 6 month sample, I wanted to explore the correlation and potential connection between song remixes and an artists ability to remain relevant – which I define as re-appearing in Hype Machine’s Top 20 charts more than once.

For the 10-day sample, my methodology involved the coding of Hype Machine’s pre-curated “Most Popular” list. To run this analysis, a data set was built containing each song appearing in the Top-20 during this 10 day period combined with track features collected using Echo Nest’s API, which can be found at <http://developer.echonest.com/docs/v4/song.html>. Echo Nest is a musical intelligence company that developed an API containing analytic profiles for any number of popular songs. These profiles include song characteristics such as tempo, time signature, musical key, and even abstract notions such as energy and danceability. After collecting information from the Hype Machine to create the 10-day sample dataset, I pulled data from the Echo Nest API for each song. For the few songs that Echo Nest was unable to retrieve audio summary data, I had to either upload the song to Echo Nest manually, or determine the values myself. Here (seen below) is a list of all track features collected, and their associated definitions:

**Figure 2: Audio Features and Associated Definitions**

<b>time_signature</b> (integer [0,Inf))	An estimated overall time signature of a track. The time signature (meter) is a notational convention to specify how many beats are in each bar (or measure).
<b>key</b> (integer [0,Inf))	The estimated overall key of a track. The key identifies the tonic triad, the chord, major or minor, which represents the final point of rest of a piece.
<b>mode</b> (binary [0,1])	Indicates the modality (major or minor) of a track, the type of scale from which its melodic content is derived.
<b>tempo</b> (floating point [0,Inf))	The overall estimated tempo of a track in beats per minute (BPM). In musical terminology, tempo is the speed or pace of a given piece and derives directly from the average beat.
<b>loudness</b> (floating point [-Inf,Inf))	The overall loudness of a track in decibels (dB). Loudness values in the Analyzer are averaged across an entire track and are useful for comparing relative loudness of segments and tracks. Loudness is the quality of a sound that is the primary psychological correlate of physical strength (amplitude)
<b>duration</b> (floating point [0,Inf))	The duration of a track in seconds as precisely computed by the audio decoder.
<b>speechiness</b> (floating point [0,1])	Detects the presence of spoken words in a track. The more exclusively speech-like the recording (e.g. talk show, audio book, poetry), the closer to 1.0 the attribute value. Values above 0.66 describe tracks that are probably made entirely of spoken words. Values between 0.33 and 0.66 describe tracks that may contain both music and speech, either in sections or layered, including such cases as rap music. Values below 0.33 most likely represent music and other non-speech-like tracks.
<b>liveness</b> (floating point [0,1])	Detects the presence of an audience in the recording. The more confident that the track is live, the closer to 1.0 the attribute value. Due to the relatively small population of live tracks in the overall domain, the threshold for detecting liveness is higher than for speechiness. A value above 0.8 provides strong likelihood that the track is live. Values between 0.6 and 0.8 describe tracks that may or may not be live or contain simulated audience sounds at the beginning or end. Values below 0.6 most likely represent studio recordings.
<b>acousticness</b> (floating point [0,1])	Represents the likelihood a recording was created by solely acoustic means such as voice and acoustic instruments as opposed to electronically such as with synthesized, amplified,



$[0,1]$	or effected instruments. Tracks with low acousticness include electric guitars, distortion, synthesizers, auto-tuned vocals, and drum machines, whereas songs with orchestral instruments, acoustic guitars, unaltered voice, and natural drum kits will have acousticness values closer to 1.0.
<b>Danceability</b> (floating point $[0,1]$ )	Represents a perceptual measure of intensity and powerful activity released throughout the track. Typical energetic tracks feel fast, loud, and noisy. For example, death metal has high energy, while a Bach prelude scores low on the scale. Perceptual features contributing to this attribute include dynamic range, perceived loudness, timbre, onset rate, and general entropy.
<b>valence</b> (floating point $[0,1]$ )	Describes the musical positiveness conveyed by a track. Tracks with high valence sound more positive (e.g., happy, cheerful, euphoric), while tracks with low valence sound more negative (e.g. sad, depressed, angry). This attribute in combination with energy is a strong indicator of acoustic mood, the general emotional qualities that may characterize the track's acoustics. Note that in the case of vocal music, lyrics may differ semantically from the perceived acoustic mood.

*Figure 2 (sourced from Czech, 2015)*

Once song characteristic analysis of the aggregated posts was completed, the identified music content guidelines were then compared to Next Big Sound's analysis of how the properties of music affect sales; which can be found here: <http://making.nextbigsound.com/post/97809923743/predicting-itunes-sales-through-the-anatomy-of>. These two sets of guidelines were compared to illuminate any differences related to the effects that audio characteristics may have on streaming success versus digital sales success. The goal was to identify an opportunity for further research, where Echo Nest's API combined with average daily iTunes sales data was able to illuminate audio guidelines that would best position a song for digital release.

Within this 10-day sample, I also identified the top blog influencers. Hodson and Wilkes determine blogs and syndicated sources to generally have "core and periphery structure" where a small set of top blogs "diffuse information to the rest of the web (qtd. in 2014, N.p.). They say that because of "unequal distribution of readership" and the scale free character of how blogs link together (qtd. in Hodson & Wilkes, 2014, N.p.), developments among a few top blogs can predict trends in both reader interest and content formation. This shaped my methodology to compare and contrast the human curation aspect of Hype Machine's ecosystem similarities to "Klout". Amongst some questions regarding platform integrity and trust that were out of depth for this particular study, I was able to ask questions such as: "How does an aggregate influence score (hearts) relate to song influence?" and "How do blog posts on Hype Machine effect the number of "hearts" and relative popularity?" To look at influence on Hype Machine, I looked to compile a list of each blog that contributed a post to any song charting during the 10-day sample. To create a scoring system that would take into account post frequency, quality, and flow, I would record the number of songs in the Top 20 chart blogged by each publisher, as well as when each song was blogged in relation to other publishers. I hoped to link data on Hype Machine's most influential blogs to Style of Sound's "100 Influential Blogs" list to identify both trends and discrepancies.

Although much of what appeals to us in music is a combination of familiarity and surprise (Sacks, 2006), my methodology looked to evaluate how emotional and even perceptual qualities of a song could contribute to its popularity among tastemakers, or in this case blog aggregators, such as Hype Machine.

## Findings

Beginning with a time-capsule look at the Hype Machine's Top-20 charts over a 6 month period from January 5 to June 28, I set out to discover whether users on this particular music discovery platform were engaging with a higher percentage of "mainstream" artists, or with a greater percentage of "undiscovered" or "emerging" artists. After collecting data on 408 artists in a 6-month span on Hype Machine, I found that 283 of those artists had only one song in the Top 20. This means that approximately 69.6% of the artists in the Top 20 over this period did not have more than one trending song, whether it be a remix, an original song, or a cover song; although, these artists may have had this one song re-appear on the Top 20 charts over a number of weeks. From this, I could garner two things. First, was that users on Hype Machine frequently "hearted" a wide array of songs, rather than using the platform to listen to their "favourite artists" on repeat. In this sense, Hype Machine acts as a valuable source for discovering new music. Second, this told me that 30% of the artists listed during this had two or more songs re-appear on the Top 20.

Taking a closer look at this 30%, I examined which artists were played the most to discover any correlations or common themes. I applied a method of artist evaluation based on social metrics, in which Next Big Sound classifies an artist as "promising" until they reach 200,000 Facebook page likes, or until they hit 80,000 Twitter followers (qtd in Buli, 2014). Interestingly, while Kanye West and Ed Sheeran (two mega-stars) held two of the Top 3 spots for most songs total in the Top 20, the artist Phoebe Ryan held the top spot with 9 songs reaching the Top 20. This is especially interesting because of Phoebe Ryan's

standing as a relatively unknown, emerging artist. It is also interesting because it proves Hype Machine to be a useful service for discovering emerging artists. Using Next Big Sound's grading system, Phoebe would be classified as a "promising" artist. Of the songs entering the "Most Popular" chart, Phoebe had three original songs, one original remixed by other artists four times, one cover song, and the cover song remixed by one artist. This finding highlights the opportunity afforded by "remix", allowing content to be repositioned for niche audiences within a cultural frame, and in this case within a curated and aggregate music resource. Similarly to Phoebe, each artist within the Top 15 "most songs trending" reached their listeners with a variation of original songs, remixes, and cover songs.

To give an in depth look at the trend movement that a song might take on Hype Machine, we can look at Phoebe Ryan's song "Mine," which appeared in the Top 20 five separate times during the 6 month span from January to June. "Mine" appeared first from January 26 to February 1<sup>st</sup> as an original. "Mine" then re-appeared on February 16<sup>th</sup> as a Michael Keenan remix, again February 23 as a DOCO remix, and twice more. The nature of the bootleg or "remix" is shown to consistently propel songs back into Hype Machine's Top 20, as I found to be the case with other songs such as Major Lazer's "Lean On" (appearing 4 times), and Flume's "Some Minds" (appearing 3 times).

Going off the assumption that "people tend to vote, it seems, the way their associates vote," (Katz and Lazarsfeld, p. 32) we can imagine a music discovery ecosystem where users on Hype Machine might often "heart" or like songs that are already trending. However, this assumption does not account for the finding that the majority of music on Hype Machine's Top 20 list has a lifetime of two weeks in the popular sections. We have

established that users on Hype Machine engage in music discovery, and will more often “like” new music rather than returning to popular, mainstream artists. Therefore, remixing is a powerful tool for the electronic artist. To offer another example, a song such as ASTRs “Activate Me,” did not break the Hype Machine popular mark (nor was it blogged) until a remix of the original song entered the charts on May 20. The song lasted on the charts for three days, then entered the Top 20 again on June 5<sup>th</sup> as a remix by SNBRN, again lasting for three days. If we compare this afterlife to “partynauseous”, a song by two mega stars in Kendrick Lamar and Lady Gaga that entered the charts for a day and did not return, ASTR and SNBRN are just two of many examples suggesting a trend for Hype Machine’s “popular” list to consistently chart “promising” artists.

The goal for my 10-day Hype Machine data sample was two-fold: First, I looked to code each appearing song in this sample for its audio properties according to Echo Nest’s API. Second, I hoped to gage the influence of music blogs on the songs that most frequented the Top 20 charts.

An assumption I had going into my analysis was that song features would be “similar” based on Hype Machine’s platform being geared towards the electronic music genre. I found that there was very little variation in features such as time signature, key, and tempo. There was slightly more variance when it came to an attribute such as acousticness. Although the median recorded equalled 0.09, which would constitute electronically produced songs including electric guitars, distortion, synthesizers, etcetera, approximately 14% of the songs were recorded as being more acoustic than electronic. These particular songs could then be analyzed to understand what other audio elements

may have assisted in propelling them into the top-charts; however, my goal was to find a set of rules that would guide audio characteristics in a given song, allowing it the best chance to reach Hype Machine's Top-20 list.

The largest amount of variance was found in the danceability and valence categories, which was unsurprising considering Echo Nest's evaluation of these characteristics as "perceptual" measurements. The average "danceability" for the 100 songs that reached the popular charts during this sample was 0.63, meaning that the intensity and powerful activity released throughout the track was higher (typical of energetic tracks feeling fast, loud, and noisy); whereas the average "valence" was 0.38, indicating a more negative acoustic mood (e.g. sad, depressed, angry) rather than positive (e.g. happy, cheerful, euphoric). Figure 2 explains the associated definitions for this dataset.

Based on my findings, a set of guidelines for songs looking to achieve audio properties that could conceivably list them amongst Hype Machine's curated Most Popular list, would fall within these ranges:

**Figure 3: Audio Guidelines**

<i><b>Feature Name</b></i>	<i><b>Range</b></i>
<i>Duration</i>	<i>155 to 325 scs</i>
<i>Speechiness</i>	<i>0.03 to 0.18</i>
<i>Acousticness</i>	<i>0 to 0.69</i>
<i>Danceability</i>	<i>0.35 to 0.79</i>
<i>Loudness</i>	<i>-11.6 to -4 dcbs</i>
<i>Valence</i>	<i>0.16 to 0.82</i>

Looking at blog influence on Hype Machine, I set out to follow my methodology to chart the number of songs in the Top 20 chart, in relation to blog publisher and in relation to when each blog posted a given song (seen below).

**Figure 4:**

**Tracking Music Blog Influence based on number of posted songs to reach Top-20**

<u><i>HypeM Popular</i></u> <i>(May 30 - June 7)</i>	Music Blogs	# of blogged songs in Top 20	First 5 to blog	Final 3 to blog
	Indie Shuffle	31	19	0
	Kick Kick Snare	24	16	0
	Acid Stag	16	5	0
	Blahblahblahscience	15	2	0
	JayeL Audio Music	15	0	12
	D Squared	14	12	0
	Dancing Astronaut	12	12	0
	Beautiful Buzzz	12	9	0
	Earmilk	11	7	0
	Waxhole	11	6	0
	Pigeons and Planes	10	8	0
	Site of Sound	10	2	0
	Audio Aquarium	9	7	0
	EDM Girl	9	9	0
	Y este finde que	9	3	0
	Going Solo	8	2	0
	Last Gas Station	8	7	0
	Music You Wanna Listen To	8	6	0
	pressPLAY	8	7	0
	Your Music Radar	8	4	0

Amongst the music blogs most frequently posting songs reaching the chart during the sample, Indie Shuffle and Kick Kick Snare were also amongst the first to blog. As we saw in Figure 1, trending musical content on Hype Machine often amasses additional blog posts as it “spreads,” or begins trending. Consistently being one of the first to blog quality content scores blogs like Indie Shuffle and Kick Kick Snare, as well as D Squared and Dancing Astronaut, as top influencing blogs. As we know, the number of “blog shares” attributed to a song is a useful indicator for users searching for trending songs, however this alternatively introduces users to the blogs posting these songs. It is in this case that we can see a music blog like JayeL Audio Music, in Figure 3, capitalizing on the nature of viral content. Not once were they one of the first five to blog a popular song; however, by posting what is already

trending, they are lower on the influence totem pole, and nearer the bottom of the two-step flow theory.

In 2014, Style of Sound created a list of the top 100 most influential blogs using a scoring system based on post frequency, quality, SEO, social media, and Klout score (Ulloa). Comparing our two lists, there is very little crossover in our Top 20 influencing blogs. A list of music blogs appearing on both lists include Indie Shuffle and Dancing Astronaut. However, the appearance of these two influencers on Style of Sound's list, as well as my own, confirms the finding that the two-step flow theory exists in a platform such as Hype Machine (Katz and Lazarsfeld, 1955). These two music blog influencers are not only found to consistently post music that amasses a high aggregate of total "hearts", but also are found to consistently post content before other blogs, which presents the possibility that these two blogs are influencing other blogs to post this content. As is suggested in Katz and Lazarsfeld's (1955) "Two-step flow theory," the posted content is then "pushed", and shared, by all those the content flows on to. While all music blogs handpicked by Hype Machine could be considered to have "high status", in relation to those blogs whose posts are not aggregated, Indie Shuffle and Dancing Astronaut are found to be two opinion leaders who sit atop the totem pole. These two blogs, whom other high status blogs form their opinions based on, provide many mass media services. In this sense, these music blogs have not disrupted mass media in providing commentary or new emerging content producing practices, but have instead taken their place. Content posted from these high status music blogs can, for all intents and purposes, be categorized as mass media influencers.



Hodson and Wilkes (2014) acknowledge that content aggregation and curation is often overlooked as a means of performing market research because it “lends itself more to repeating what has been said by other influential voices online” (N.p.). However, my findings identified two prominent “tastemakers”, further validating the authors contention that it is this process of “buzz” generation and the flow of spreadable media that is useful when separating signal from noise in large social datasets. The data flow in my findings suggests, “developments among a few top blogs can predict trends in both reader interest and content formation more generally” (Hodson and Wilkes, 2014, N.p).

## **Discussion**

After applying social learning techniques to compare HypeM “hearts” to audio data from The Echo Nest, we can understand some of the most common audio characteristics found amongst popular songs. Of course, finding information about artists and tracks, such as existing following or online social activity, would be useful when determining the relevance of song properties to popularity. However, for the purpose of my own research and production, the goal was to see what could be learned exclusively from a song’s audio properties, as well as the effect that today’s opinion leaders would have on subsequent distribution. I acknowledge, and have developed in my research, the importance of distribution channels and music blogs in an attention economy that appears to have continued to operate consistent to the “two-step flow theory”; however, it is uncertain whether the musical content or distribution method has a greater affect over the other. Sometimes the content, and the contributing artist, has qualities that attract the attention of both listeners and blog influencers, and sometimes it is the blog influencer that attracts

the attention. However, through this study of Hype Machine, we can not only see what audio properties that the platform's users are partial to, but also which audio properties top blogs are most likely to post.

An opportunity for further research would be to compare these measurements to Next Big Sound's own generalized set of guidelines, which follows audio content based on Echo Nest's API combined with average daily iTunes sales data. In comparing our data with the findings of Next Big Sound's study, one could potentially illuminate differences related to streaming success and digital sales success. Another potential research opportunity would focus on producing musical content with a platform in mind.

A Next Big Sound study tells us that "about a quarter of all music-related follows on Twitter last year were for indie rockers," yet "we don't in fact spend time on different services depending on what genre we're seeking" (2014, para. 10). While it is possible for an online community that aggregates, curates and positions music for niche audiences, such as Hype Machine, to be an indicator of trending music (Hodson and Wilkes, 2013), producing content that aligns with a niche audience interest is only half the battle. The other half is of course reaching that audience. When analyzing popular charts from Hype Machine, one could assume that the data will be skewed based on the blogs and genres the service caters to; in this case, the service is more electronic and indie focused. For music producers looking to reach their target demographic it is not only in their interest to look at the trends, but to find a service where they can reach the largest percentage of their audience. This supports the use of micro marketing, and supports advocates (such as Godin and Jenkins) that identify the best strategy for the marketing of niche cultural production

to be tailoring goods or services to a “small group of people that really want to hear about it and really want to spread the word (Godin, 2014, para. 4).

Finally, it would be interesting to research the process for positioning a song to best attain niche appeal. Songs that recurred most often in the “most-popular” charts were often remixed for these niche audiences existing on Hype Machine. The original songs, remixed and positioned for sub-genres by other artists, could be evaluated to understand which audio properties were most consistent in allowing that content to be spread. Of course, there are some major differences when comparing text content with musical content; however, the nature of spreadable content, and its ability to transform to permeate multiple micro-markets, remains consistent.

## **Conclusion**

During my studies in the popular music program at Western Ontario, a central lesson surrounding song production was that while following a set of song-writing rules would not absolutely lead to a “hit,” following these rules would give your song the best chance to make a splash. While analyzing data based on an aggregated and curated list of popular songs can present a set of audio properties guidelines, the fact is that there are many other factors involved in determining which music “sticks”, and which music “spreads”. Today’s consumers have a vast array of tools at their disposal that allow them to access cultural products in new ways, and today’s musician must follow and adapt to trends, just as the music industry does, by understanding why and how music is consumed.

By looking at a source of recursive data, such as Hype Machine, we can prove that Katz and Lazarsfeld's "Two-step flow theory" (1955) has stayed constant in the digital era. As Katz and Lazarsfeld found that influentials were more influenced by mass media, and that people tended to vote the way their associates vote, we found that both music blogs and users acted in this manner. Moreover, we were able to prove Hype Machine to be a useful service for discovering new artists. For those fans looking to discover niche music with little word-of-mouth press, consumers must look to the opinion and actions of others. In this crowd-sourced recommendation atmosphere, and in pre-filtering for influential opinions, the data gained by analyzing a source of aggregated music blogs proved valuable to understanding blog influence and the role that audio properties play in music recommendation. This research shows that micro-analysis of crowd sourced media, from a cohesive social platform, is an effective guide for the strategic leveraging of cultural and popular trends in musical innovation and creation.

## Works Cited:

- Anderson, C. (2006). *The long tail*. 1<sup>st</sup> ed. New York: Hyperion.
- Arnould, E., Price, L and Zinkhan, G. (2005). *Consumers*. (1<sup>st</sup> ed.). New York [etc.]: McGraw-Hill/Irwin.
- Beer D, Burrows R. (2013). Popular Culture, Digital Archives and the New Social Life of Data. *Theory, Culture & Society*.
- Brewster, B. and Broughton, F. (2006). *Last Night a DJ saved my life*. (1<sup>st</sup> ed.). London: Headline.
- Buli, Liv. (2014). Difference Between Being 'Undiscovered' And 'Epic' On Social Media. *Forbes*. Retrieved from <http://www.forbes.com/sites/livbuli/2014/10/07/the-difference-between-being-undiscovered-and-epic-on-social-media>
- Czech, Eric. (2014). Predicting iTunes Sales Through the Anatomy of Music. *Next Big Sound*. Retrieved from <http://making.nextbigsound.com/post/97809923743/predicting-itunes-sales-through-the-anatomy-of>
- Dewan S, Ramaprasad J. (2012). Music blogging, online sampling, and the long tail. *Information Systems Research*.
- Edmond, M. Here We Go Again: Music Videos after YouTube. *Television & New Media*.
- Fong, Weespin D. (2014). How big data can change the music industry. *Venture Beat*.
- Gamble J, Gilmore A. (2013). A new era of consumer marketing?: an application of co-creational marketing in the music industry. *European journal of marketing*.
- Godin, Seth. Mass production and mass media. *Seth's Blog*. Retrieved from <sethgodin.typepad.com>

Godin, Seth. Micro marketing and the called bluff. *Seth's Blog*. Retrieved from  
<[http://sethgodin.typepad.com/seths\\_blog/2014/06/micro-marketing-and-the-called-bluff.html](http://sethgodin.typepad.com/seths_blog/2014/06/micro-marketing-and-the-called-bluff.html)>

Goggins, S and Petakovic, E. (2014). Connecting Theory to Social Technology Platforms: A Framework for Measuring Influence in Context. *American Behavioral Scientist*.

Goldsmith, R and Horowitz, D. (2006). Measuring motivations for online opinion seeking. *Journal of interactive advertising*.

Gruzd, A., and Wellman, B. (2014). Networked Influence in Social Media: Introduction to the special issue. *American Behavioral Scientist*.

Hargreaves, D. J. N., Adrian C. (1999). The functions of music in everyday life: Redefining the social in music psychology. *Psychology of Music*.

Hodson J, Wilkes G. (2013). Using social media aggregation and curation techniques in the classroom to identify discourse trends and support brand operations. *Professional Communication Conference (IPCC)*. IEEE International.

Hodson J, Wilkes G. (2014). Content Aggregation vs. social listening software as a means of separating signal from noise in a discourse. The case of the iPhone 5S [poster]. *Social Media and Society Conference*. September 2014. Toronto, ON.

Jenkins, H. *Convergence culture*. (1<sup>st</sup> ed.) New York: New York University Press.

Jenkins, H. Deep Media. *Books, Copyright, Social Media*. Retrieved from  
<http://www.deepmediaonline.com/deepmedia/2013/01/henry-jenkins-on-spreadable-media.html>

Jenkins H, Ford S, Green J. (2013). Spreadable Media: Creating value and meaning in a networked culture.

Jurgensen, John. (2014). An Ode to Joyful Music Streaming. *The Wall Street Journal*. Retrieved from <<http://www.wsj.com/articles/SB10001424052702304591604579290721300786680>>

Kadziulis, Mike. (2015). The importance of music curation in the digital era. *Pigeons and Planes*. Retrieved from <[pigeonsandplanes.com/2015/04/spotify-beats-playlist-human-curation/](http://pigeonsandplanes.com/2015/04/spotify-beats-playlist-human-curation/)>

Karr, R. (2002). TechnoPop: The Secret History of Technology and Pop Music. Retrieved from <http://www.npr.org/templates/story/story.php?storyId=1150717>

Katz, E., Lazarsfeld, P.F., and Columbia University. (1955). Personal influence: The part played by people in the flow of mass communications. Glenco, Ill: Free Press.

Konczal, J. (2008). Identifying, knowing & retaining your customers: the “prosumer””. *Customer Interaction Solutions*.

Lawler, Ryan. (2011). Ubiquity imperative: Why content needs to be everywhere. *Gigaom*. Retrieved from <http://gigaom.com/2011/12/13/the-ubiquity-imperative>

Lessig, Lawrence. (2008). Remix: Making Art and Commerce thrive in the Hybrid Economy. *The Internet Archive*.

Maecker O, Grabenstroer NS, Clement M, Heitmann M. (2013). Charts and demand: empirical generalizations on social influence. *International journal of research in marketing*.

Moses, Lucia. (2015). 5 things holding back personalized content. *Digiday*. Retrieved from <[digiday.com/publishers/5-things-holding-back-customized-content](http://digiday.com/publishers/5-things-holding-back-customized-content)>

Next Big Sound Presents 2014: State of the Industry. (2014). Retrieved from <<https://www.nextbigsound.com/industryreport/2014>>

O'Reilly, T. (2005). *What Is Web 2.0*. Retrieved from  
 <<http://oreilly.com/web2/archive/what-is-web-20.html>>

Sacks, O. (2006). *Musicophilia: tales of music and the brain*. New York: Vintage Books.

Spiers, J. Wiley. (2011). *Perish Your Publisher*. (1<sup>st</sup> ed.). Seattle: Seattle Teacher's Press.

Thompson, Derek. (2014). The Shazam Effect. *The Atlantic: Magazine*. Retrieved from  
<http://www.theatlantic.com/magazine/archive/2014/12/the-shazam-effect/382237/>

Ulloa, Nina. (2014). The 20 Most Influential Music Blogs... *Digital Music News*. Retrieved  
 from <[www.digitalmusicnews.com/2014/03/26/20blogs](http://www.digitalmusicnews.com/2014/03/26/20blogs)>

Van Raaij, W. (1993). Postmodern consumption. *Journal of Economic Psychology*.

Van Rijmenam, Mark. (2014). How Big Data Enabled Spotify To Change The Music Industry. *Datafloq*. Retrieved from <<https://datafloq.com/read/big-data-enabled-spotify-change-music-industry/391>>