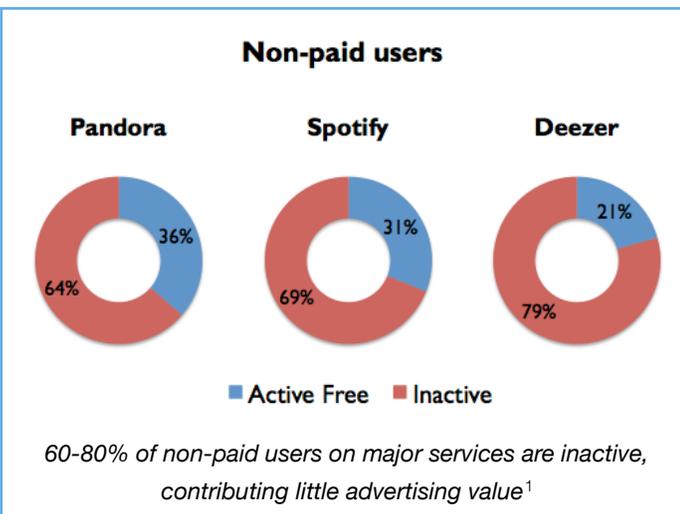# How Music Services Can Acquire, Engage, and Monetize High-Value Listeners

August 2013

A New Landscape, a New Listener

Today's music services are ushering in a revolutionary change in how listeners interact with music: exploration-focused, socially-driven, and with little barrier to sampling something new from a near-limitless catalog of music. For music services, these changes make it easier than ever to reach and attract potential users.

However, not all of these listeners are equally valuable -- particularly for services hoping to monetize listeners through advertising. A recent report published by MIDiA Consulting suggests that in 2012, 60-80% of free accounts on ad-supported music services were effectively inactive, representing users who contribute little advertising value to the service.

Non-paid users

Pandora

36%

64%

Spotify

31%

69%

Deezer

21%

79%

■ Active Free   ■ Inactive

60-80% of non-paid users on major services are inactive, contributing little advertising value[1]

The majority of listening comes from a small segment of users: the committed, engaged, "high-value" listeners that grow the business (as opposed to the "low-value" tourists who disappear from sight).

Rather than waiting for a user to "reveal" themselves as high- or low-value, successful services will be those that proactively *predict* which listeners are likely high-value, and focus on retaining and monetizing those listeners.

To accomplish this, The Echo Nest has developed a process that can analyze a service's users and identify the patterns of music

For music services, the majority of value comes from a small segment of engaged listeners.

The Echo Nest can use music taste to predict a listener's future value; services can maximize ARPU by focusing on monetizing the likely high-value users.

taste that best predict a user's future value. This process applies the Echo Nest's **Taste Profile** technology, which provides in-depth understanding of an individual listener based on music listening behavior, likes, dislikes and other music activity.

Once deployed, services can execute strategies focused specifically on acquiring, engaging, and maximizing the ARPU of the likely high-value users.

Based on a small amount of musical behavior data about each user, The Echo Nest can help a music service:

(i) Predict each user's future value to the service.

(ii) Identify musical characteristics of high-value listeners to help the service tailor user experience towards the high-value group.

(iii) Identify psychographic / affinity characteristics of high-value listeners to help the service monetize that group via targeted advertising.
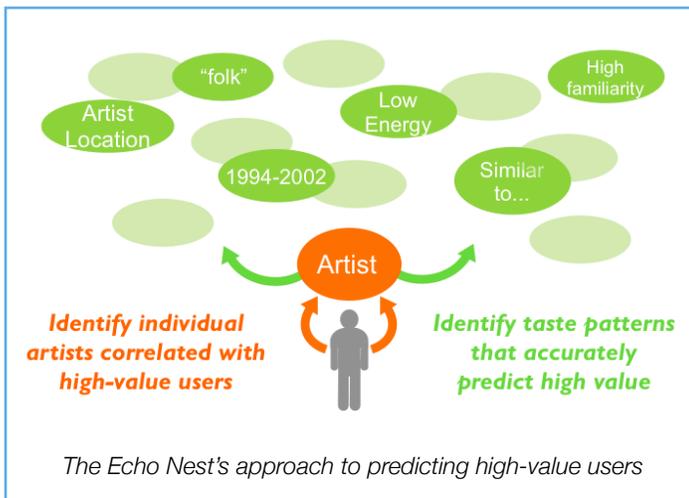
As a demonstration, The Echo Nest executed this process with a partner streaming music service. In this report, The Echo Nest outlines the findings from that exercise, and subsequent action items that music services can follow to maximize acquisition, engagement, and monetization efforts.

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[1] "Making Freemium Add Up", MIDiA Consulting, May 2013

How to Predict High-Value Listeners

The Echo Nest uses musical taste to predict user value in two ways. The first finds the artists that correlate with high-value users, and the second identifies the patterns of musical behavior that best predict high-value listeners.

(The definition of a "high-value" listener varies service-by-service, based on business goals, editorial choices, product set, and much more. Similarly, the specific characteristics that predict such users will vary by service.)

"folk"

Artist Location

Low Energy

High familiarity

1994-2002

Similar to...

Artist

Identify individual artists correlated with high-value users

Identify taste patterns that accurately predict high value

The Echo Nest's approach to predicting high-value users

Step 1: Identify the music artists correlated with high-value users on the service

The Echo Nest's first action is to identify music artists that are correlated with high-value listeners on that service. New users who express high affinity for those artists can be treated as potential high-value listeners.

In this exercise, The Echo Nest identified key artists that correlated with high-value users on a partner music service. Users that preferred these artists were more likely to fall into the high-value segment. The Echo Nest also identified artists correlated with listeners who are *less* likely to stay with the service.

This artist-specific approach was useful at drawing out a few interesting insights:

- There was no clear-cut correlation between specific genres and value.

- The popularity of an artist was <u>not</u> a good predictor of value, as "hit" artists appear in both the high-value and low-value user segments.

> **"High-value" artists for this service:**
> *Florence + The Machine, Bon Iver, fun., Kid Cudi, Ed Sheeran, The Kooks, Of Monsters and Men, Angus & Julia Stone, The Naked And Famous, and The Black Keys.*
>
> **"Low-value" artists for this service:**
> *Katy Perry, Lil Wayne, Red Hot Chili Peppers, Train, Benjamin Francis Leftwich, Hans Zimmer, Wale, Rusted Root, Swedish House Mafia, and The Wanted.*

Step 2: Identify the type of music taste that best predicts a user's value on the service

A service may wonder if their highest-value listeners are hipsters who listen to obscure, out-of-mainstream music; or perhaps the listeners who are constantly discovering music they haven't heard before; or maybe the cutting-edge music listeners who seek out new releases.

A service cannot target all the different types of tastes that may or may not indicate a future high-value listener. To help identify which aspects of taste are actually predictive of valuable listeners, The Echo Nest can leverage its "Taste Profile Attribute" technology.

Taste Profile Attributes allow The Echo Nest to precisely quantify the different aspects of music taste, and the specific attribute that is most predictive of value on a service can be identified. New users can then be measured along that attribute, and services can predict from just a few data points whether that user is likely to be a future high-value listener or not.

Five such attributes that The Echo Nest calculates are Adventurousness, Diversity, Freshness, Locality, and Mainstreamness.

- **Adventurousness** describes how open the listener is to music outside their "musical comfort zone."

- **Diversity** describes how varied the listener's preferred styles and genres are.

- **Freshness** describes the listener's preference for new and recent artists vs older music.

- **Locality** describes the spread, worldwide, of where the listener's preferred artists come from.

- **Mainstreamness** describes the listener's affinity for well-known artists vs obscure artists.
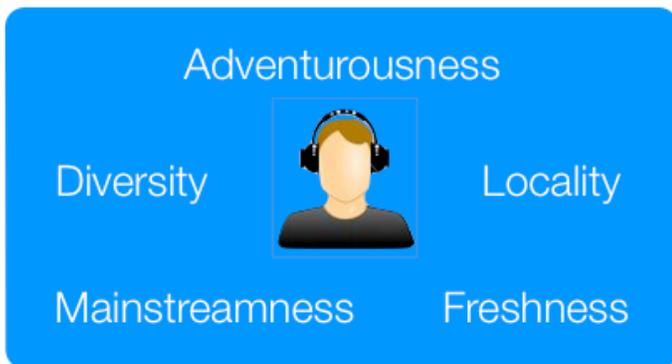
The Echo Nest's Taste Profile Attributes

For this service, extensive analysis identified the *diversity* of a listener's musical taste as the key factor in predicting whether a user was part of the high-value segment. **In other words, given only a handful of early data points about a user's music taste, this particular service should track the user's taste diversity (rather than whether the listener prefers obscure music, cutting-edge music, etc.) to predict future value.**

Although diversity of music taste is the best indicator to study for *this* service, the outcome would vary for other services, depending on positioning, catalog, user base, and other factors.

How Music Services Can Acquire, Engage, and Monetize High-Value Listeners

Through the process outlined above, The Echo Nest was able to analyze a music service and identify the key predictors of whether a user was likely to belong to that service's high-value segment:

- A preference for music artists correlated with high-value users. (For this service, this meant Bon Iver, fun., Kid Cudi, and others.)

- A high score on the Taste Profile Attribute that was most predictive of value. (For this service, it was diversity of taste.)

Both the list of "high-value" artists and the predictive power of Taste Profile Attributes vary service-by-service. But once known, these findings can form the basis of *targeted* actions designed specifically to acquire, engage, and monetize high-value listeners.

The foundational tool that services can use to implement these targeted actions is The Echo Nest **Taste Profile**, a technology that provides in-depth understanding of an individual listener based on music listening behavior, likes, dislikes and other music activity.

Music services apply Taste Profiling technology to power personalized radio and music recommendations, connect like-minded music fans, and help listeners find expert curators with similar tastes.

User Acquisition

- By creating an Echo Nest Taste Profile for a user upon account signup, services can begin tracking the musical preference of each user starting with their first visit, looking for users that listen to high-value artists, and calculating a user's Taste Profile Attribute scores immediately.

- To understand a new user even more quickly, services can use The Echo Nest's Mobile SDKs to immediately predict a user's value based on the music in the user's mobile library.

- Services can ensure that "high-value" artists are surfaced throughout homepage recommendations and in marketing promotions.

Engagement and Retention

- Based on the Taste Profile attributes that are predictive of value for a service, The Echo Nest's Playlist tool comes with parameters that a service can tune to deliver the appropriate experience ("more adventurous," "less familiar," "more diverse," etc.)

- For user-to-user recommendations, The Echo Nest's Taste Profile Similarity tool can be used to direct high-value listeners towards the users who best match their tastes.

Ad-Supported Monetization of High Value Listeners

- Just as music taste can be used to predict listener value, The Echo Nest has developed a set of models to identify interest and affinity segments based on a listener's music taste. Using these affinity models, the company is able to surface interests that are prominent within the high-value segment -- which, for this exercise, were social causes, concerts, green/eco, outdoor adventure, and alcohol brands.

Interests and affinities that aligned well (blue) or poorly (red) with the high-value listener segment for this service

- Once the affinities of the most valuable, engaged listeners are known, a service can package its audience to the advertisers that align with the interests of high-value users.
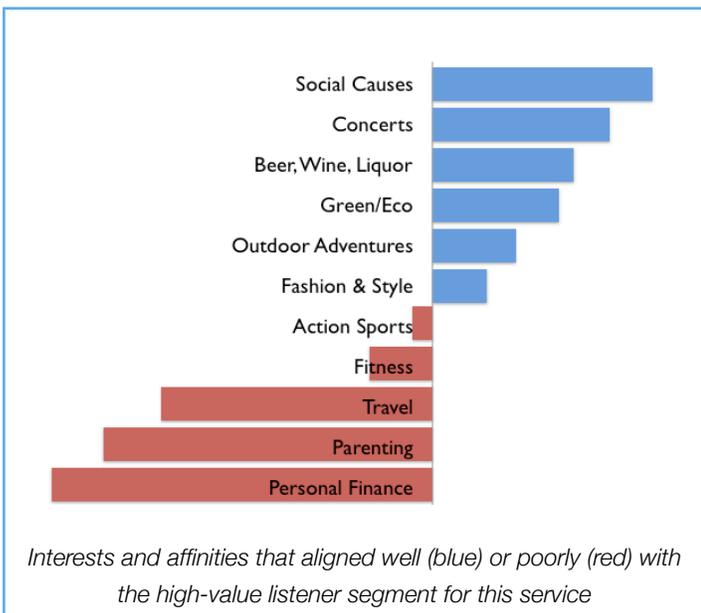
This capability provides more value to advertisers, and more relevant ads to users.

- In addition to standard affinity models, The Echo Nest can in many cases build custom models to predict affinity towards a specific brand, interest, or advertiser segment.

Implementation Detail

The process outlined above can identify the music artists and Taste Profile Attributes that best predict listener value on a service. This analysis can be run for any music service; the steps involved are:

1. *Build Taste Profiles for each user.* Each time a listener indicates a musical preference on a service, that preference is automatically added to the user's Taste Profile via The Echo Nest API. Depending on the service, Taste Profiles can capture plays, favorites, skips, searches, social Likes, or other activities.

2. *Determine the best metric for listener value.* Listener value depends on an individual service's business model, goals, editorial choices, and other factors. Depending on the service, The Echo Nest can predict visits, shares, purchases, or other service activities.

3. *Identify the best indicators of value.* Once enough examples of listener-level music data and value are available, The Echo Nest applies machine learning classifiers that use different aspects of music taste to identify key predictors of value. The Echo Nest also compares high-value listeners to affinity models, to understand which interests best align with the high-value segment of a service.

About The Echo Nest

The Echo Nest is the industry's leading music intelligence company, providing app developers with the deepest understanding of music content and listeners.

Leading music services (Clear Channel's iHeartradio, MOG, Rdio, SiriusXM, Spotify), editorial, video and social media networks (BBC.com, Foursquare, MTV, Twitter, VEVO, Yahoo!), connected device manufacturers (Buongiorno, doubleTwist, Nokia) and big brands (Coca Cola, Intel, Microsoft, Reebok) access the largest repository of music data and intelligence through our open API to build smarter music experiences that help fans to better discover, share and interact with the music they love. The Echo Nest's customer base reaches over 100 million music fans every month and over 400 applications have been built on The Echo Nest platform.

Headquartered in Somerville, MA, The Echo Nest was co-founded by two MIT PhDs. Investors include Commonwealth Capital Ventures, Matrix Partners, Norwest Venture Partners and three co-founders of the MIT Media Lab.

For more information, visit http://echonest.com/ or follow @echonest on Twitter.

Contact The Echo Nest

48 Grove St.
Suite 206
Somerville, MA 02144
Phone: 617.628.0233

For press inquiries, please contact press@echonest.com

For all other business inquiries, contact biz@echonest.com