Music is data. A shitload of it packed in every single song. To people, music equals entertainment. To a computer, it’s a precise stream of ones and zeros.

If you could teach computers to understand those ones and zeros — to digest them like we do — then you could manipulate sounds in ways even Prefuse 73 hasn’t dreamed of. You could use your iPhone as a violin. You could settle scores over who liked an artist first — you, or your obnoxious friend with the impossibly skinny jeans. You could take your favorite Jay-Z album, tweak one cut into a two-step swing remix, add cowbell to another, and determine which one cut into a two-step swing remix, add cowbell to another, and determine which

The short answer: the Echo Nest has analyzed tens of millions of songs, as well as virtually every fan and artist profile, blog post, comment, and article about music that’s available online. Through that process, they’ve amassed an incredibly dynamic war chest of data — their Application Programming Interface (API) — that can power music apps in radical new ways. With these extensive resources in their clutches, the Echo Nest is the platform on which the next generation of music fans will discover, follow, remix, and recommend their favorite bands. Most of what the company’s intelligence can do hasn’t even been invented yet.

CEO Jim Lucchese says the Echo Nest has done a terrible job of, it’s driving more mainstream awareness to the awesome shit that people are doing on our platform,” says Lucchese, an attorney. “Maybe it’s because we’re founded by two MIT PhDs and run by a lawyer. In the developer community, we’re past being considered the ‘smart little guys,’ and we’re being recognized as a best-in-class platform.

“The most important music company on Earth is the platform on which the next killer app, IDJ has even given Echo Nest’s community of 7000 independent developers access to more than one million songs to play with. Yet despite receiving tons of tech press, the Davis Square company remains in the shadows of pop culture. They’re not even as well-known as Pandora, which, according to Lucchese, has taken a decade to index the same number of songs that his crew could crunch in two hours. For their scraper status, Lucchese credits the fact that Echo Nest provides no direct-to-consumer products, and concedes that the business is hardly run by marketing mavens. But he suspects they won’t be underdogs for much longer.

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The Echo Nest is so far ahead of the rest that the people who were anxious to discuss — and, more often, argue about — music trends and styles. Somehow, Whitman thought, these were not disparate musings.

“In hindsight,” he says, “this is all very obvious. But when these communities were forming, the people who were doing music recommendation and retrieval weren’t looking at [blogs and message boards] — they were just looking at the audio signals. . . . I set out to prove that the more you know about a community, the more you understand peoples’ preferences.”

Following his interest in the conversation around music, Whitman’s explorations brought him to the world-renowned MIT Media Lab, where he eventually met his philosophical nemesis and future business partner, Tristan Jehan: a soft-spoken, French-born computer scientist, amateur keyboardist, and researcher who cut his teeth at UC-Berkeley’s Center for New Music and Audio Technologies.

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CEO Jim Lucchese says the Echo Nest doesn’t want to be the next MTV, or the next Spotify, or the next Island Def Jam (IDJ). Instead, they’ve sealed watershed deals with those companies and many more, all of which are tapping the Echo Nest API to gauge what’s hot and what’s not for who, what, when, and where. In its search of the next killer app, IDJ has even given Echo Nest’s community of 7000 independent developers access to more than one million songs to play with.

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Given that it’s still kind of the early days for [everybody else] to really understand what we do, but now it looks like mobile apps are changing that.”

**AGREE TO DISAGREE**

In the late 1990s, Brian Whitman was a frustrated computer scientist and electronic musician living in New York City, and performing under the name Blitter. He played regular gigs and even dropped some vinyl, but spent most of his time imagining ways to get his music in front of potential fans. At the time, he noticed that online message boards were becoming increasingly populated by people who were anxious to discuss — and, more often, argue about — music trends and styles. Somehow, Whitman thought, these were not disparate musings.

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Jehan’s view of music analysis was the opposite of Whitman’s; he thought that relationships between songs should be derived by extracting and analyzing musical metadata. Jehan came to MIT to prove that sounds — as opposed to the more diffuse dialogue about music — were the best barometers of listener taste. “I’d been working on how to make computer programs better understand music, “ says Jehan. “Brian was looking at how computers could understand music in the context of how people speak about it on the Web.” Adds Whitman: “You can’t just look at the audio signals, and at the same time you can’t ignore the audio — you have to know what the song sounds like, and understand the conversation around it. You need to do both.”

By the time that Whitman and Jehan earned their doctorate degrees (in machine listening and media arts and sciences, respectively) in 2005, both were considered all-stars in their parallel fields. So it was fitting that they agreed to disagree, and partnered to launch the Echo Nest out of a small office in the same building where the company now occupies several suites. Using their complementary research as a foundation, they wrote programs that crawled the Internet (and streaming services like last.fm), analyzing everything from comments and discussion about songs and artists, to the rhythm, harmony, and timing of millions of actual tracks. Within two years, they’d built the most powerful interactive music database ever indexed as a single platform — an API they would come to call the “Musical Brain.”

But while Whitman and Jehan had ideas that could significantly impact listening habits worldwide, they still hadn’t figured out how to use their Musical Brain to make money. “It was a pretty classic example of two scientists running a business, “ says Whitman.

Luckily for them, the right people noticed Echo Nest relatively early on. They attracted investors like Barry Vercoe, a music-programming icon and a co-founder of the Media Management Company investment fund. He was in the attention of the Boston-based Kelso Group, who might dig them. That same month, Whitman and Jehan met Will Rose, who now works at the British Broadcasting Company that helps guide inventors toward apps that are already revolutionizing the commercial space. Rose has a vision for the future: “The music world is recognizing how integral app developments are to steering the industry forward. On April 28, MTV will host its first annual O Music Awards (“to celebrate online creativity”), where Lamere and his teenager daughter Rhiane are up for Best Music Hack. Their nominated app, Jennie’s Ultimate Road Trip, uses the Songkick and Echo Nest APIs to help music fans find tour dates for “your favorite artists in each town along any travel route.”

The Lameres engineered their app at last year’s Boston Music Hack Day, as did two of the other OMA nominees for Best Music Hack. In fact, these powwows have become ground zero for catalytic developments, from the aforementioned Invisible Instruments iPhone violin app, to qSratLive, which allows users to instantaneously buy whatever track a DJ is playing in the club.

Moving forward, the Echo Nest’s new visual remix tech will allow users to personalize music videos in real time, so that your friends’ ugly faces — rather than Kanye’s — are on your screen. Echo Nest is the anti-pawnshop, rising to the occasion as the underground scenes are their soon-arriving “query-by-description” apps, which are essentially digital versions of the grease-ball snots behind record-store counters, who think everything is copyright.

To keep tabs on all this, the Echo Nest even launched its own blog, evolver.fm, to serve as a critical clearinghouse for building music-app developments. “There is something for everyone out there — it’s just a matter of finding what works for you, “ says evolver.fm editor Eliot Van Buskirk. A former writer for CNET and Wired, Van Buskirk has surveyed the digital landscape for more than a decade; Echo Nest hired him to review apps and evaluate the marketplace. “I’m testing an app right now that quizzes you about what you’re doing this weekend, and then picks songs to go with that. And that’s kind of the point to a lot of this — it’s fun, it’s free, and people who aren’t music geeks are now able to do some incredible stuff.”

“We understand the entire language of music better than anyone else does,” says Lucchese, “and now we’ve put that research and analysis into the hands of professional developers. To us, there’s no doubt about it — this is the new class of creative people who are reshaping the role of music in our lives. With them, we’re aiming toward where things are heading, and making sure that we’re still around when it explodes.”

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