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Mood music for the cyber set

From...
THE INDUSTRY STANDARD
AN IDG.net SITE

September 8, 2000
Web posted at: 10:05 a.m. EDT (1405 GMT)

by Alex Pappademas

(IDG) -- Say you're a pop-music fan and your favorite band is the Beastie Boys. Chances are you've devoted some time to considering Mike, Adam and Adam's place within the larger pop-music pantheon. You might have even considered how, within this mosaic, the Beasties relate to other artists -- that they're wittier than Limp Bizkit, for instance, and more nasal than EPMD. But you've probably never evaluated them on a scale of "Plainness" and "Simplicity." And chances are you'd never describe the Beasties to an uninitiated friend as being "like Helloween or Oingo Boingo, but less elaborate and sophisticated."

But with the introduction of its new Artist Browser feature, the creators of the All-Music Guide are betting that users want someone to perform those exact calculations for you. The site is already the premier music-information locus online; its vast library includes detailed biography/discography entries for more than 400,000 artists and bands, studded with an abundance of cross-referenced links. In an era where online music content gets flashier by the day, All-Music is increasingly anomalous: a comprehensive text-based resource characterized by depth, not dazzle.

The Artist Browser, therefore, represents something of a new direction for the site. Instead of tracing an assistant engineer from one session to another or calling up a list of everyone who has ever covered Isaac Hayes's *Theme From Shaft*, you're encouraged to follow more ambiguous paths. Using feedback submitted by All-Music users, along with input from the site's staff critics, the Artist Browser ranks musicians according to keys based on the music's "mood." On Alanis Morissette's page, for example, the browser offers links to artists whose music is "Denser, Thicker" (Iron Butterfly), "Colder, Firmer" (Ace Frehley, Savoy Brown) and "Gentler, More Peaceful" (Rick Springfield).

Although these recommendations, on the face of it, seem absurd, if broadly accurate, All-Music says the Artist Browser is a work in progress and represents the latest bell and/or whistle from upstart music-tech firms dreaming of new ways to differentiate themselves from the competition.

"Mood-based" search technology promises to let users find music based on how it feels, not on where a record store would file it. In addition to All-

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Music, sites ranging from the relatively venerable CDNow to startups such as CantaMetrix, MoodLogic, MuBu and MongoMusic have begun experimenting with this space-age song-sniffing model as a means of adding "stickiness" to their sites. If you've ever had trouble putting your musical longings into words, your ideal search engine might have arrived.

The idea of "mood music" was hatched in the 1950s. As the high-fidelity sound system became an indispensable lifestyle accessory, record companies rushed to market with all manner of themed instrumental-music collections, records that promised to use cutting-edge technology to better soundtrack each moment of the listener's life. The invention of quadraphonic sound during the early 1970s brought us I.S. Teibel's Environments series, featuring such excursions in pre-Aphex Twin ambience as *Gentle Rain in a Pine Forest, Psychologically Ultimate Seashore* and *Be-In*.

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So in the year 2000, when a digital-music entrepreneur such as Max Wells, co-founder and CTO of the music-search startup CantaMetrix, boasts that his company has "created an electric ear" and stresses that its technology borrows from the Search for Extraterrestrial Intelligence project, it's hard not to wonder if mood-based search engines are merely the digital-music version of the lounge era's new adventures in hi-fi.

Granted, there's technical acumen behind CantaMetrix's music-search application, which the company hopes to license to e-commerce sites and repositories such as MP3.com (MPPP) and radio stations. (Wells has a Ph.D. in engineering and applied science from what might be the most impressive-sounding institution from which a would-be-Net-music mogul could have a degree -- the Institute of Sound and Vibration Research at the University of Southampton in England -- and a bachelor's of science in biology and psychology.) CantaMetrix's technology analyzes the digital waveform of a piece of music, coding songs based on characteristics such as melody, rhythm and timbre to produce a digital "fingerprint." This information is then run through a "psycho-acoustic model" based on responses from about 500 people who have rated a selection of songs based on psychological factors such as "upbeatness" and "energy."

The model's centerpiece, Wells says, is "a similarity matrix, where we can take any song and compare it with any other song and determine how similar it sounds." Using this comparative tool, the CantaMetrix application can help users find the music they're in the mood for by digitally determining, for example, which Belle & Sebastian songs rank as high on the mope-o-meter as Nick Drake's *Pink Moon*. And because the songs are entirely machine-sorted, CantaMetrix can narrow vast catalogs with unparalleled speed.

The privately held San Francisco startup MoodLogic does CantaMetrix one better, employing an academic and music-psychology expert -- Northwestern University Professor Bob Gjerdingen -- as its "vice president of music taxonomy." Gjerdingen, who is also editor of the music-psychology journal Music Perception, says that digital signal processing techniques of companies such as CantaMetrix have their place in the categorization of digital music, but rejects the idea that sorting music can be fully automated, at least for now.

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"The difference between a funny song and a not-funny song is very hard to pick up in DSP," Gjerdingen says. "Computer vision is rather sophisticated now, but would you allow it to drive your car down the Kennedy Expressway in Chicago? No. You'd get killed. DSP can add a lot in matching what I call the acoustic surface of things -- if you want to find, quickly, four songs that go boom-chick-a-chick-boom, that's very hard to put into words, and there aren't a lot of actual questions I can ask you that will help me identify what you're really after."

To this end, MoodLogic built the back end for its own mood-based search technology using more than a hundred million responses from human beings. According to Gjerdingen, the site is now "the world's champion collector of data from ordinary people about popular music." And by putting this data to work, Gjerdingen hopes that MoodLogic would guide fans of mainstream music into a wider world.

"If you're a Britney Spears fan," Gjerdingen says, "you can go to any of 10,000 sites, type in her name and you'll get something back. You don't have to have a complex search engine to come up with Britney Spears -- you almost have to fight it off. However, let's say someone really wants to listen to Afro-pop from Nigeria. How many people can spell 'Anikulapo Kuti'?" he says, referring to the late Nigerian bandleader and activist, better known by his first name, Fela.

"And once you get past Fela or his son, who's the next guy? But if you've got search engines where people can actually click on a map, where people can say, 'I want something upbeat, something that reminds me of James Brown,' they'll actually get something. There's a lot of R&B; influence in Afro-pop, and I think a lot of R&B; fans would enjoy some of this music tremendously."

Perhaps because it doesn't entirely dispense with qualifying factors such as era and genre, MoodLogic's search technology provided the most accurate results of the mood-music browsers tested for this story. (CantaMetrix's search tool wasn't available for a test-drive at press time.) Its "SoundBrowser" demo lets users position "magnets" labeled "Upbeat," "Aggressive" or "Brooding" and narrows their searches using filters such as "Tempo" and "Decade." When the search results show up, they cluster around the magnet that best describes them.

Not every selection the MoodLogic browser spit back was accurate, but each search contained at least one dead-on track -- Steely Dan's *Doctor Wu* for a "Mellow" and "Brooding" '70s song; Stevie Wonder's *Signed, Sealed, Delivered, I'm Yours* for "Upbeat" and "Romantic"; and both D'Angelo's *Brown Sugar* and Massive Attack's *Teardrop* for "Sentimental/Rap-Hip Hop" with "Smooth" vocals and a "Medium" beat. The last set of results is instructive. While there are undoubtedly plenty of music fans out there who like D'Angelo's hazy R&B;, and Massive Attack songs such as *Teardrop*, the two would probably never turn up together in a strict genre-based search, which would disregard Massive Attack as "techno."

As for All-Music, according to its President Vladimir Bogdanov, 20,000 pages on the site are now cross-referenced via the Artist Browser. "Our database is very large, comprehensive and complete," he says. "But when you come to the front page, you usually don't see that completeness."

The option to search by mood, Bogdanov says, is one way to open up the vaults. It's also a search tool that doesn't involve typing; according to All-Music's research, people don't like to use search prompts.

Bogdanov says Artist Browser has quickly become one of the site's most-used functions, although he does add that All-Music has turned down offers to

license the feature because it's "not prime time yet." And he promises that the next version of the browser will be "significantly better," incorporating more critical input and drawing on a larger group of artists. Still, exploring All-Music with the Artist Browser is like using a map of North America to find your car in the mall parking lot -- you've got breadth, but at the expense of clarity. Which raises the question -- can a software application, even one that incorporates human feedback, ever accurately predict what kind of music people will like, let alone how that music will make them feel?

"If you ask anybody," says MoodLogic's Gjerdingen, "from cab drivers to ditch-diggers to Nobel laureates, the first thing that comes out of their mouth is, 'Well, my tastes are kind of unique.' The paradox, of course, is that there wouldn't be Top 40 if everybody's tastes were truly unique."

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