brooke maury - vijay viswanathan - jeannie yang
Brief History of Listening
The Digital Revolution

• The first MP3 Players could hold 7,500
• Now they hold 10,000
• Tomorrow: 1 million?
Information Overload

- About 170 terabytes of information on the surface
- About 17 times the volume in the Library of Congress!
- A lot of this is music and information about music
Internet Music Services

• Peer-to-peer networks
• Legal services: iTunes, Napster 2.0
• Just announced: Yahoo! Music Unlimited
How do you discover new music without even knowing what’s out there?
Listening to music

Finding New Music

Caribou: The Milk of Human Kindness
[Leaf/Domino; 2005]
Rating: 8.5
Buy it from InSound

When Dan Smith's Manitoba released Up in Flames in early 2003 it felt like a debut. Bearing little resemblance to the cuddly IDM of 2001's Start Breaking My Heart, Up in Flames felt like the work of another mind, and logic dictated that the project should have a different name. The Gods of Music apparently agreed but were a little slow on the uptake; finally sensing the marked shifts in tone and focus they sent Handsome Dick Manitoba of the Dictators to smite the project. Papers were served, a trade infringement lawsuit was threatened, and Caribou was born.

Bummer that the record racks of the world are going to get more confusing, but in purely musical terms the name change isn't such a bad thing. The Milk of Human Kindness sounds once again like an album from a band without a past, a band ready to take risks and go where the music needs to go. The contrast between The Milk of Human Kindness and Up in Flames is certainly less pronounced than the jump from the debut, but the feel here-- clearer arrangements and better songs, both more expensive and comparatively sober-- is new to Smith.

I should explain that when I say that Caribou sounds like a band without a past, I mean.
Meet Clark

- Listens to music everyday
- Does not like to listen to the same songs over and over again
- Has at least 500 songs on his computer
- Keeps up with music news
Interview
Music Listening Maestro

- Listens to 20 Gigs of music on his laptop in shuffle mode
- Reads music reviews from at least 20 MP3 blogs
- Uses a script to automatically download new music from MP3 blogs
- Uses own rating system to weed out songs and integrate new songs
Radio Deejay

- Creates own categorization of songs based on themes and genres
  - Thematic radio show such as songs with violent themes, Thai New Year, songs from the axis of evil (Iraq, Iran, North Korea)
- Community of deejays review and share new music with each other
Survey
Respondents

• Total of 44 respondents
• Targeted people with > 500 songs in their digital music collections
Music Listening

How often do you listen to music on your computers?

- 59% use their computers to listen to music every day

23% 2-3 times a week

59% Everyday
Music Collection Size

How big is your music collections on your computer?

- 18% has 20Gigs to 120Gigs of music on their computers
- Over 75% has more than 500 songs on their computers
- 23% has less than 500 songs (<2Gigs)
- 34% has more than 3000 songs (>12 Gigs)

(by Orpheus)
Looking for New Music

How often do you look for new music?

- 43% search for new music at least 2-3 times a week
- 7% search for new music everyday
- 47% indicated their friends as their primary source for finding out about music
Music information

- Discography: 57%
- Artist's other bands: 43%
- Artist Pseudonyms: 30%

Scale of 1-5:
- 5 (Very important)
- 4
- 3
- 2
- 1 (Not important)
- No answer
Music information

- Discography: 57%
- Artist’s other bands: 43%
- Artist Pseudonyms: 30%

Scale of 1-5:
- 5 (Very important)
- 4
- 3
- 2
- 1 (Not important)
- No answer
Music Sources

- 68% read online music reviews
  - 14 people read Pitchfork Media, an Orpheus data source
- 52% read magazine music reviews
Social Networks

• 91% wants to know their friends’ music collection
  – 84% would share their music collection with their friends

• 84% wants to know their friends’ playlists
  – 72% would share their playlists with their friends
Results

• Validated our construction of users
• Found out what information they are interested in
• Determined demand for additional features such as social networking
User Interface and User Tests
What is Orpheus?
The agony, desire, that none rise above
The sweet aching torture from one that you love
For some shall believe, while many find hard
There is nothing quite like, the song of Macabre!

Okay, so I ripped that off some goth chick’s "webcave," but short of a tragi-co-absurdist interpretive dance, it’s the best way to sum up the feelings I have for The Faint’s new album, Danse Macabre. Indie rock (with the exception of the obscure supergroup The Hatfatteners) has never expressed much of an interest in a “ring of corpses holding hands,” but if the kids really want to fight the culture industry through song, they should embrace this, as death does not care for social standing or wealth. Nor does dance!

But let’s start from the beginning: long before The Faint released Danse Macabre last Tuesday, the bubonic plague wiped out approximately one-third of Europe’s population. Fear of falling
Danse Macabre
The Faint

The agony, desire, that none rise above
The sweet aching torture from one that you love
For some shall believe, while many find hard
There is nothing quite like, the song of Macabre!

Okay, so I ripped that off some goth chick's
The agony, desire, that none rise above
The sweet aching torture from one that you love
For some shall believe, while many find hard
There is nothing quite like, the song of Macabre!

Okay, so I ripped that off some goth chick's...
The old saying goes that if you pretend to be something long enough, you'll eventually become it. If this is true, then the men of the Faint must have spent a lot of time between their rocking debut album, Media, and their third full-length, Danse Macabre, practicing their Duran Duran,
The old saying goes that if you pretend to be something long enough, you'll eventually become it. If this is true, then the men of the Faint must have spent a lot of time between their rocking debut album, Media, and their third full-length, Danse Macabre, practicing their Duran Duran.
The Faint  Saddle Creek Records Official band website: www.thefaint.com  fan site: www.thefaint.net

IN THE BEGINNING...

Ten years ago, in a town very, very similar to every town in the United States, we started a band...
The Faint

Saddle Creek Records Official band
website: www.thefaint.com
fan site: www.thefaint.net

IN THE BEGINNING...

ten years ago, in a town very, very similar to every town in the united states, we started a group... they beth and embrace this, as death does not care for social standing or wealth. nor does it care for anything...
The Faint

<table>
<thead>
<tr>
<th>Album</th>
<th>Year</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media</td>
<td>N/A</td>
<td>Saddle Creek</td>
</tr>
<tr>
<td>Danse Macabre</td>
<td>2001</td>
<td>Saddle Creek</td>
</tr>
<tr>
<td>Blank-Wave Ar</td>
<td>1999</td>
<td>Saddle Creek</td>
</tr>
<tr>
<td>Wet from Birth</td>
<td>2004</td>
<td>Saddle Creek</td>
</tr>
<tr>
<td>I Disappear</td>
<td>N/A</td>
<td>Saddle Creek</td>
</tr>
<tr>
<td>Norman Bailer</td>
<td>N/A</td>
<td>Saddle Creek</td>
</tr>
</tbody>
</table>

The Faint released Danse Macabre last Tuesday, the bubonic plague wiped out approximately one-third of Europe's population. Fear of falling.

Their next album is due out in 2005. The Faint have been a staple of the emo scene since their debut album, 'Mockingbird.' Their music has evolved over the years, incorporating elements of post-punk, industrial, and electronic music. The band's lyrics often explore themes of isolation, struggle, and the human condition.
The Faint

Albums

1. '80s Retro (disc 2)
2. 100th Window
3. 1984 (For The Love Of Big Brother)
4. 2004 Soundtrack
5. 20th Century Masters - The Millenium Collection...
6. 3
7. 59_393
8. 99 Cents

Songs

<table>
<thead>
<tr>
<th>Track</th>
<th>Album</th>
<th>Time</th>
<th>Rating</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Greatest Hits ...</td>
<td>3:48</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>6</td>
<td>Greatest Hits ...</td>
<td>3:01</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>7</td>
<td>Greatest Hits ...</td>
<td>3:44</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>8</td>
<td>Greatest Hits ...</td>
<td>3:29</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>9</td>
<td>Greatest Hits ...</td>
<td>3:35</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>10</td>
<td>Greatest Hits ...</td>
<td>4:12</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>11</td>
<td>Greatest Hits ...</td>
<td>3:30</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>12</td>
<td>Greatest Hits ...</td>
<td>3:27</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>13</td>
<td>Collaborations</td>
<td>4:25</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>14</td>
<td>Danse Macabre</td>
<td>3:59</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>15</td>
<td>Danse Macabre</td>
<td>3:01</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>16</td>
<td>Danse Macabre</td>
<td>2:18</td>
<td></td>
<td>E\music\The ...</td>
</tr>
<tr>
<td>17</td>
<td>Danse Macabre</td>
<td>4:03</td>
<td></td>
<td>E\music\The ...</td>
</tr>
</tbody>
</table>

Media

Danse Macabre
Blank-Wave Ar...
Wet From Birth
I Disappear
Norman Bailer

Year

N/A
2001
1999
2004
2004
N/A

Label

Saddle Creek
Saddle Creek
Saddle Creek
Saddle Creek
Saddle Creek
Saddle Creek
Red House Painters
User Tests
User Tests

- Goals
  - Focus on user feedback on the usefulness of information & interface

- Participants
  - Four users: 3 second year SIMS and 1 non-SIMS
  - Users talked-aloud as they interacted with the features
User Tests

- Goals
  - Focus on user feedback on the usefulness of information & interface

- Participants
  - Four users: 3 second year SIMS and 1 non-SIMS
  - Users talked-aloud as they interacted with the features
User Tests: Player Window

- Playlist tab is out of context
- Song tab is at the wrong level
- Confusion on how to actually request album and artist information
User Tests: Explore Window

- Missing section labels
- Discography not as relevant at this time
- Filter check boxes were not obvious
- No interaction in the list window
The agony, desire, that none rise above
The sweet aching torture from one that you love
For some shall believe, while many find hard
There is nothing quite like, the song of Macabre!

Okay, so I ripped that off some goth chick's "webcave," but short of a tragico-absurdist interpretive dance, it's the best way to sum up the feelings I have for The Faint's new album, Danse Macabre. Indie rock (with the exception of the obscure supergroup The Hatfatteners) has never expressed much of an interest in a "ring of corpses holding hands," but if the kids really want to fight the culture industry through song, they should embrace this, as death does not care for social standing or wealth. Nor does dance!

But let's start from the beginning: long before The Faint released Danse Macabre last Tuesday, the Bubonic plague wiped out approximately one-third of Europe's population. Fear of falling...
Information Please!

- Artists
- Artist biographies
- Artist Discographies
- Album Reviews
- Album Metadata (cover art, label, release year, etc)
- Music in our users’ libraries
Information Please!

- We need to match the data we collect to our users’ music collection.
- Infer or extract relationships between artists
- Publish data to the client
- Automatic metadata generation.
Information Sources

- The Internet
- Our users
- Structured sources
Web Crawling
Text Mining

- HTML, possible to parse with regular expressions
- Pull out Artist, Album, Label, etc.
- Store it in our DB.
Text Mining

Orpheus db

When Dan Smith's Manitoba released Up in Flames in early 2003 it felt like a debut. Bearing little resemblance to the catchy IDM of 2001's Start Breaking My Heart, Up in Flames felt like the work of another mind, and less like a continuation of the project's previous sound. The record's marked shift in tone and focus set Manhoodless Dick Manitoba of the Dictators to smoke the project. Papers were served, a trade infringement lawsuit was threatened, and Caribou was born.

Summer that the record racks of the world are going to get more confusing, but in purely musical terms the name change isn't such a bad thing. The Milk of Human Kindness sounds once again like an album from a band without a past, a band ready to take risks and go where the music needs to go. The contrast between The Milk of Human Kindness and Up in Flames is certainly less pronounced than the jump from the debut, but the feel here—clearer arrangements and better songs, both more expansive and comparatively satirical—is new to Smith.
User Information

- User Preferences
- User Ratings
- Music Information
Information Flow

Orpheus DB

MusicBrainz

Filesystem
System Architecture
Orpheus ERD
Client Server Architecture

Orpheus User

Internet

Orpheus Server

Orpheus Database
Orpheus Messaging Objects
Client Server Architecture

Client → Server
- Request Reviews
- Request Artist Exploration
- Update User Library

Client ← Server
- Artist Review
- Album Review
- Artist Relation Graph
Distributed System
Highly Scalable
What now?
Future Work – Version 2

- Conduct focus group
- Incorporate community ratings
- Incorporate social networking with friends
- Continue NLP development to enrich music relations
- Process more music information sources such as MP3 blogs
- Music sampling
Acknowledgements

• Marti Hearst – for her guidance and expert feedback
• Larry Downes – for his incredible patience and sage advice
• Jeffrey Heer – for the prefuse toolkit which powered our visualizations
• MusicBrainz – for their commitment to music and open-source data
The Tools We Use

- Prefuse - Graph Visualization Tool (Jeffrey Heer)
- MusicBrainz - Open Source Community Music Database
- PostgreSQL - Robust Open Source ORDBMS