Cooperative Music Management and Scheduling

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# A Short Introduction

<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th>Jan Krämer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field of Study:</strong></td>
<td>Computer Science, Psychology</td>
</tr>
<tr>
<td><strong>Hobbies:</strong></td>
<td>College Radio</td>
</tr>
</tbody>
</table>
My Project in 30 Seconds

What I am doing is...

Music Management
My Project in 30 Seconds

What I am doing is...

Music Management and Scheduling
My Project in 30 Seconds

What I am doing is...

Cooperative Music Management and Scheduling
My Project in 30 Seconds

What I am doing is...
Cooperative Music Management and Scheduling

I am doing this because...
...experienced first hand how much problems people had.
Outline

1. Background
2. Research
3. My Work
Outline

1. Background
2. Research
3. My Work
**Structure of a Radio Station**

### Groups
- Management and support staff
- On-air editorial staff
- Music editorial staff
Structure of a Radio Station

Groups

- Management and support staff
- On-air editorial staff
- Music editorial staff
Music Selection for Radio

Some Concepts

- Songs
- Rotation groups
- Clocks
Music Selection for Radio

An Example Clock
Music in Radio Stations

Music Selection for Radio

Some Concepts

- Songs
- Rotation groups
- Clocks
- Stop sets
- Drops, jingles, teasers...
Challenges

To Schedule Music You Need:

- Songs you can schedule
  **But:** Keeping track of the collection is hard
- Information about those songs
  **But:** What information do you need? Who enters the data?
- Specification of the playlist
  **But:** How and in what detail do you want to specify it?
Challenges

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2. Research
3. My Work
Related Work

Commercial

Software for Radio Stations

- Either very simple (for example Raduga)...)
Software for Radio Stations

- Either very simple (for example Raduga)...
- ...or very complex (for example MusicMaster)...

...but there is no transition path.
### Commercial

#### Software for Radio Stations
- Either very simple (for example Raduga)...
- ...or very complex (for example MusicMaster)...
- ...but there is no transition path.
“Sony Music Browser” by Francois Pachet et al. 2004

- Constraint-based playlist generation
- Shared metadata (via server2server communication)
- Central server
Playlists Based on Skipping by Pampalk et al. 2005

- Music Similarity based on Spectrum, timbre and rhythm
- Playlist generation based on seed song and skipping behaviour
Related Work

Scientific

**Lots of Work on Feature Extraction**

- Example: Audio Summarization by Peeters et al. 2002
- Example: Perceptual Tempo by McKinney and Moelants 2004
Method for the Preparatory Study

Based on Contextual Inquiry

- On-Site
- Master/Apprentice
Target Users

Non-professional music editorial staff
Target Users

Non-professional music editorial staff

Participants

- Five music editors from four college radio stations
- A telephone interview with head of music programming
  Radio NRW
Preparatory Study

Results From a Preparatory Study

Findings Include:

- Music editors spend most time managing the collection and checking playlists
- Editors work around their software a lot
- Being able to listen to music and playlists is extremely important
- Editing playlists is painful
Concepts

- Identity (persons, groups and services)
- Objects, i.e. songs, artists, recordings
- Tags, ratings, fields, relationships, note
- Revision control
- Constraints
- License of information
A Quick Tour

Use Case: Updating the Collection

The Collection Interface

Collection of Hochschulradio Aachen

Add Music

<table>
<thead>
<tr>
<th>Song</th>
<th>Artist</th>
<th>Album</th>
<th>Speed</th>
<th>Rock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorem ipsum dolor sit amet consectetur</td>
<td></td>
<td></td>
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<tr>
<td>Lorem ipsum dolor sit amet consectetur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only Happy</td>
<td>Garbage</td>
<td>Garbage</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Filter

| Lorem ipsum dolor sit amet consectetur | | | | |
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| Lorem ipsum dolor sit amet consectetur | | | | |
| Only Happy | Garbage  | Garbage | 2     |      |
| Lorem ipsum dolor sit amet consectetur | | | | |
| Lorem ipsum dolor sit amet consectetur | | | | |
| Lorem ipsum dolor sit amet consectetur | | | | |

Only Happy When It Rains

of: Garbage

- alternative
- alternative rock
- female voice
- grunge voice
- rock

aggressiveness: 2/5

Talk Time

Chroma

speed: 3/5
Use Case: Verifying the Playlist

Playlist Thursday 27.7.2006

11:35
Lorem Ipsum - Dolor Sit Amet (2:45)

11:40
Consectetuer - Adipiscing Elit (2:55)

11:45
Vestibulum Porttitor - Ipsum (3:33)

11:50
Eu Nulla - Nam Dapibus (3:15)

11:55
Only Happy When It Rains - Garbage (3:46)

12:00
Risus - At Quam (4:05)

12:05
Song of the Week at 11:50

12:10
Morbi A - Est Praesent (1:48)

12:15
Sed - Mi Quis Ipsum (3:10)

12:20
Rutrum Pretulum - Fusce (2:16)

12:25
Song of the Week at 12:00

Only Happy When It Rains
of: Garbage

alternative
alternative rock
female voice
grunge
rock

aggressiveness: 2/5
speed: 3/5
A Quick Tour

Use Case: Updating the playlist structure
Used Technologies

- C++
- Qt 4.2
- Peer2Peer communication, DHT over HTTP
- WebServices
The Method of Evaluation

Deployment
- The system will be deployed at the college radio in Aachen
- Documentation as case-study
Any Questions?
Any Questions?

P.S.
I need a name....