Cooperative Music Management and Scheduling

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Presentation at Club i10 on 27.7.2006

A Short Introduction

Name:

Jan Krämer

Field of Study:

Computer Science, Psychology

Hobbies:

College Radio

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

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Structure of a Radio Station

Groups

- Management and support staff
- On-air editorial staff
- Music editorial staff

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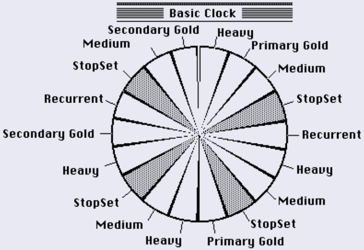
Music Selection for Radio

Some Concepts

- Songs
- Rotation groups
- Clocks

Music Selection for Radio

An Example Clock



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?

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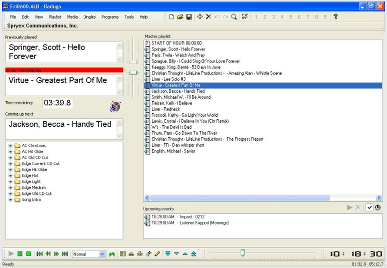
Outline

1. Background
2. **Research**
3. My Work

Commercial

Software for Radio Stations

- Either very simple (for example Raduga)...



Fri0600.ALB - Raduga

Spryex Communications, Inc.

Previously played: Springer, Scott - Hello Forever

On air - now playing: Virtue - Greatest Part Of Me

Time remaining: 03:39.8

Coming up next: Jackson, Becca - Hands Tied

AC Christmas
AC Hit Oldie
AC Old CD Cut
Edge Current CD Cut
Edge Hit Oldie
Edge Hot
Edge Light
Edge Medium
Edge Old CD Cut
Song Intro

Master playlist

START OF HOUR 06:00:00
Springer, Scott - Hello Forever
Paris, Twila - Watch And Pray
Sprague, Billy - I Could Sing Of Your Love Forever
Keaggy, King, Denté - 53 Days In June
Christian Thought - LifeLine Productions - - Amazing Alan - Whistle Scene
Liner - Lee Solo #3
Virtue - Greatest Part Of Me
Jackson, Becca - Hands Tied
Smith, Michael W. - I'll Be Around
Reisen, Kelli - I Believe
Liner - Redneck
Troccoli, Kathy - Go Light Your World
Lewis, Crystal - I Believe In You (Chr Remix)
W's - The Devil Is Bad
Thum, Pam - Go Down To The River
Christian Thought - LifeLine Productions - The Progress Report
Liner - FR - Dan whisper short
English, Michael - Savior

Upcoming events

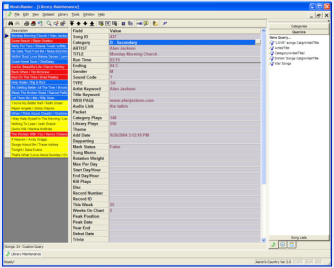
10:28:00 AM - Impact - 0212
10:29:00 AM - Listener Support (Mornings)

Ready 01:32.9 05:12.7

Commercial

Software for Radio Stations

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



Description
Monday Morning Church / Alan Jacksc
Some Beach / Blake Shelton
Party For Two / Shania Twain w/Billy
He Gets That From Me / Reba McEntire
Nothin' Bout Love Makes Sense / LeAi
Come Home Soon / SheDaisy
Awful, Beautiful Life / Darryl Worley
Back When / Tim McGraw
Mud On The Tires / Brad Paisley
Holy Water / Big & Rich
It's Getting Better All The Time / Brook
Bless The Broken Road / Rascal Flatts
Let Them Be Little / Billy Dean
You're My Better Half / Keith Urban
Paper Angels / Jimmy Wayne
When I Think About Cheatin' / Gretche
I May Hate Myself In The Morning / Lee
Nothing To Lose / Josh Gracin
God's Will / Martina McBride
The Woman With You / Kenny Chesne
If Heaven / Andy Griggs
Songs About Me / Trace Adkins
Tonight / Sara Evans
That's What I Love About Sunday / Cr

Field	Value
Song ID	437
Category	B - Secondary
ARTIST	Alan Jackson
TITLE	Monday Morning Church
Run Time	03:15
Ending	04 C
Gender	M
Sound Code	T
TYPE	SH
Artist Keyword	Alan Jackson
Title Keyword	
WEB PAGE	www.alanjackson.com
Audio Link	the talkin
Packet	
Category Plays	148
Library Plays	250
Theme	
Add Date	9/26/2004 3:12:18 PM
Dayparting	
Mark Status	False
Song Memo	
Rotation Weight	
Max Per Day	
Start Day/Hour	
End Day/Hour	
Kill Plays	
Disc	
Record Number	
Record ID	
This Week	25
Weeks On Chart	2
Peak Position	
Peak Date	
Year End	
Debut Date	
Trivia	

Commercial

Software for Radio Stations

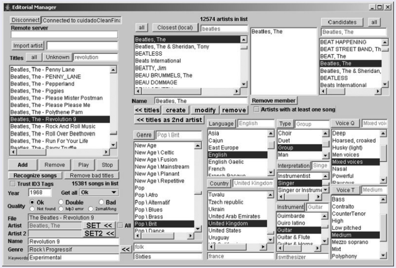
- Either very simple (for example Raduga)...
- ...or very complex (for example MusicMaster)...
- ...but there is no transition path.

?

Scientific

“Sony Music Browser” by Francois Pachet et al. 2004

- Constraint-based playlist generation
- Shared metadata (via server2server communication)
- Central server



Connected to cuidadoCleanFin

Titles: revolution

Beatles, The - Penny Lane
Beatles, The - PENNY_LANE
Beatles, The - Pepperland
Beatles, The - Piggies
Beatles, The - Please Mister Postman
Beatles, The - Please Please Me
Beatles, The - Polythene Pam
Beatles, The - Revolution 9
Beatles, The - Rock And Roll Music
Beatles, The - Roll Over Beethoven
Beatles, The - Run For Your Life
Beatles, The - Savoy Truffle

□ Trust ID3 Tags
15381 songs in list

Year: 1968
Get all: Ok

Quality: ● Ok ○ Double ○ Bad ○ Not found ○ Mp3 error ○ 2small/long

File: The Beatles - Revolution 9
Artist: Beatles, The
Artist 2:
□ All
Name: Revolution 9
Genre: Rock \ Progressif
Keywords: Experimental

12574 artists in list

beatles

Beatles, The
Beatles, The & Sheridan, Tony
BEATLESS
Beats International
BEATTY, Jim
BEAU BRUMMELS, The
BEAU DOMMAGE

Beatles, The

Candidates: Beatles, The

BEAT HAPPENING
BEAT STREET BAND, Th
BEAT, The
Beatles, The
Beatles, The & Sheridan,
BEATLESS
Beats International

Name: Beatles, The

□ Artists with at least one song

Genre: Pop \ Brit

New Age
New Age \ Celtic
New Age \ Fusion
New Age \ Mainstream
New Age \ Planant
New Age \ Repetitive
Pop
Pop \ Afro
Pop \ Alternatif
Pop \ Blues
Pop \ Brass
Pop \ Brit
Pop \ Dance

folk
Sixties

Language: English

Asia
Cajun
East Europe
English
English Gaelic
French
French Basque

Country: United Kingdom

Tuvalu
Tzech republic
Ukrain
United Arab Emirates
United Kingdom
United States
Uruguay

france

Type: Group

Choir
Duet
Group
Man

Interpretation: Singe

Instrumentist
Singer
Singer or Instrume

Instrument: Guitar

Guimbarde
Guiro latino
Guitar
Guitar & Flute
Guitar & Horns

synthesizer

Voice Q: Mixed voi

Deep
Hoarsed, croaked
Husky (light)
Men voices
Mixed voices
Nasal
Powerful
Raucous

Voice T: Medium

Bass
Contralto
CounterTenor
High
Low pitched
Medium
Mezzo soprano
Mixt
Polyphony

Scientific

Playlists Based on Skipping by Pampalk et al. 2005

- Music Similarity based on Spectrum, timbre and rythm
- Playlistgenerateion based on seed song and skipping behaviour

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

Target Users

Non-professional music editorial staff

Target Users

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

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

Outline

1. Background
2. Research
3. **My Work**

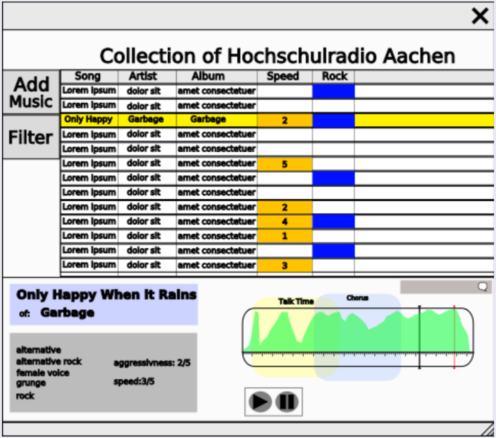
The Basic-Concepts Slide

Concepts

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

Use Case: Updating the Collection

The Collection Interface



Collection of Hochschulradio Aachen

Song	Artist	Album	Speed	Rock
Lorem ipsum	dolor sit	amet consectetuer		🟦
Lorem ipsum	dolor sit	amet consectetuer		
Only Happy	Garbage	Garbage	2	🟦
Lorem ipsum	dolor sit	amet consectetuer		
Lorem ipsum	dolor sit	amet consectetuer		
Lorem ipsum	dolor sit	amet consectetuer	5	
Lorem ipsum	dolor sit	amet consectetuer		🟦
Lorem ipsum	dolor sit	amet consectetuer		
Lorem ipsum	dolor sit	amet consectetuer	2	
Lorem ipsum	dolor sit	amet consectetuer	4	🟦
Lorem ipsum	dolor sit	amet consectetuer	1	
Lorem ipsum	dolor sit	amet consectetuer		🟦
Lorem ipsum	dolor sit	amet consectetuer	3	

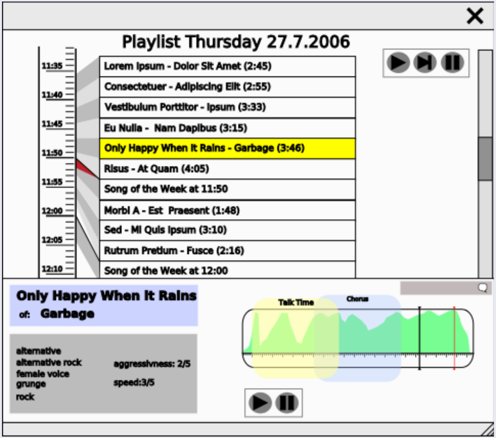
Only Happy When It Rains
of: Garbage

alternative
alternative rock
female voice
grunge
rock

aggressivness: 2/5
speed:3/5

A Quick Tour

Use Case: Verifying the Playlist



Playlist Thursday 27.7.2006

Lorem Ipsum - Dolor Sit Amet (2:45)

Consectetuer - Adipiscing Elit (2:55)

Vestibulum Porttitor - Ipsum (3:33)

Eu Nulla - Nam Dapibus (3:15)

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

Risus - At Quam (4:05)

Song of the Week at 11:50

Morbi A - Est Praesent (1:48)

Sed - Mi Quis Ipsum (3:10)

Rutrum Pretium - Fusce (2:16)

Song of the Week at 12:00

Only Happy When It Rains

of: Garbage

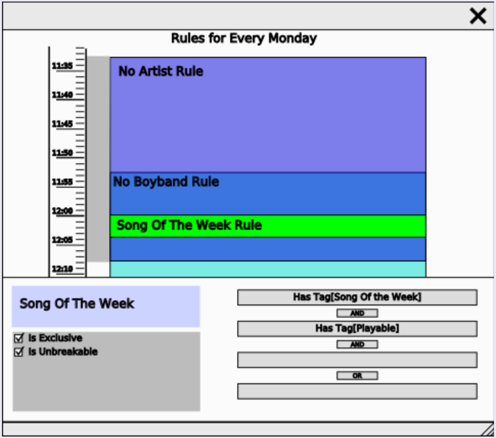
alternative
alternative rock
female voice
grunge
rock

aggressivness: 2/5

speed:3/5

A Quick Tour

Use Case: Updating the playlist structure



Rules for Every Monday

Song Of The Week

☑ Is Exclusive
☑ Is Unbreakable

Has Tag[Song Of the Week]
AND
Has Tag[Playable]
AND

OR

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

Wrap Up

Any Questions?

Wrap Up

Any Questions?

P.S.

I need a name....