

# Searching and Finding

Lecture 11

## Outline

- Storage and Retrieval in the Physical World
- Storage and Retrieval in the Digital World
- Example: Digital Media in the Home
- Exercise

## Storage and Retrieval in the Real World

- Storage
  - Rely on physical locations, everything in a place
  
- Retrieval
  - Indexing – different attributes of the artifact
    - Title, author, genre
    - Size, type (book, map, CD, ...)

## Storage and Retrieval in the Digital World

- Storage
  - Disks, folders, files
  
- Retrieval
  - Wide range of digital attributes
  - Size, creation date, modification date
  - Type (pdf, word, text, application ...)
  - Tagging

## Databases: Storage Alternative

- Databases
  - Could help organize and store the wide range of digital stuff
  - Must define a schema in advance – hard when you don't always know that might be stored

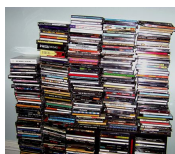
## PIM & GIM

- Every day challenge of managing stuff
  - PIM – Personal Information Management
    - Addresses how people organize stuff for themselves
  - GIM – Group Information Management
    - Addresses how one or more people organize stuff for sharing

## Example: Media in the Home

- Musical Fingerprints: Collaborating around Home Media Collections
  - Robin Sease & David W. McDonald
  - GROUP

## Media in Transition



## Media in Transition



## Media in the Home

- What happens in the transition from physical to digital collections?
- Physical collections
  - Constrained by cost and size
  - Explicit opportunities for collaboration
- Digital collections
  - Fewer cost and size constraints
  - Opportunities for collaboration unclear

## Research Questions

- What kinds of collaboration happen around media collections?
- How are people sharing in personal media collections?
- How does sharing impact the collection's management and organization?

## Prior Work

- Prior studies on personal media collections
  - Generally small collections, early in transition
  - Little focus on in-the-home sharing and collaboration
- **Media Lifecycle** (Brown et al. 2001)
  - Discovery, acquisition & collection, organization, selection and sharing
- **Intimacy Spectrum** (Volda et al. 2005)
  - Sharing with whom, in the workplace

## Quick Outline

- Problem Motivation
- Research Questions
- Prior Work
- Methods & Participants
- Findings
  - Learning about Media
  - Acquiring and Collecting
  - Organizing
  - Selecting for Use
  - Sharing Practices
- Discussion
- Questions

## Qualitative Study

- San Francisco Bay Area and Seattle
- Three rounds of recruiting
- Twenty homes
- Digital and physical collections of music and video
- P1-5 small-medium (<100 - 500 albums)
- P6-20 large-extra large (600 - 1000+)

## Interview Outline

- ~ 2 hour semi-structured interviews in 3 parts
  - Home tour of media and devices
  - Questions about collecting and managing
  - Task-oriented questions or *probes* to retrieve items within the collection.
    - What is the last thing you listened to? (recency)
    - What was the first item you collected? (landmark)
    - What might you play at a dinner party? (social setting)
    - What would remind you of your school years? (historical)
- Recorded, transcribed, analyzed

## Learning About Media

- Significant other learns from curator
- Curator learns from 'experts' and external sources

*<P16a> is more seeking than I am, because I think, he's in my life. I just get enough exposure to things through him and that's*

*Not many give me ... like I said, I give more information than I get. – P21a*

## Acquiring and Collecting

- Acquisition different from collecting
- Acquisition informed by expense
  - Dependency upon cheap
  - Preference for actual product

*...it kind of disturbs me to get Journey's Greatest Hits on a little silver thing with Sharpie writing.... If I like something then I kind of want to see the whole package. I want to see what they intended. – P5*

## Organizing

- Collections may or may not be merged
  - Separate collections for individual identity
  - Partially combined on overlapping interests
  - Fully combined leads to confusion

*I'm not sure I ever want them mixed just because it's... I don't know like it's... that's one thing that's all mine. We share a lot of other things plus the other stuff... but that is just all my own. – P20*

## Selecting for Use

- People do not always satisfice
  - Specific selections to accommodate co-residents
    - Mood of home
    - Mutually enjoyed music/video
    - Current
  - Friends
    - Shared
    - Selected

*[I]n the mornings when I come out, I will certainly pick stuff that*

*I just use this, "Ah, something is wrong with the CD player again ... Wait, wait, why, let me turn this down, oh, that's better." Yeah, it's evil. — P10*

*Like the Jingle Cats, which is all the Christmas songs being meowed. That's how, after you have Christmas dinner, how you get your family to start moving toward the door. You put this on. — P14*

## Sharing Practices

- Individual characteristics inform sharing
  - Identity
  - Musical Fingerprint
- Collection
  - Full
  - Unique

*It's a part of myself that I happen to keep outside of myself. — P20*

*musical fingerprints. There have been cases where somebody was stealing music [from the radio station] and you just knew who was*

*It's like I collected it, and now it's my duty to see that it is transferred digitally so someone can find that show someday and go wow that's great. — P14*

## Discussion

- Media Lifecycle framework
  - Probably better conceptualized as a Web of interrelated states
  - The transitions between states are difficult to observe
- Device dependency/independency
- Intimacy spectrum
  - Useful for considering all states of Media Web

## Implications

- Scaffold sharing
- Collection segmentation
  - Playlists not suitable/scalable
  - Exceptions/overrides
- Media as memory
  - Links between related media
  - Autobiography
- Multiple ownerships

## Social Search

- What social media systems do you use?

## Social Search

- What social media systems do you use?
- In those systems how do you learn about your friends?
  - What do you do?

## Exercise

- Context Scenario
  - Barry loves social media. He participates in Facebook, Google+, and LinkedIn. He shares his music listening on Pandora and through iTunes Ping. He actively tweets his daily activities – though some of his followers don't seem to appreciate that.
- Problem Statement
  - Barry wants to be able to conduct a "social search" using his friends. He wants to be able to ask them questions or know things about them all in one place.
- Challenge
  - Design a "social search" tool that allows Barry to search one or more of his social media services. Barry should be able to ask questions (polls) that might have a delayed response depending on when his friends answer, but he should be able to query attributes of friends and their user profiles as well.

## Exercise

- Challenge
    - Design a "social search" tool that allows Barry to search one or more of his social media services. Barry should be able to ask questions (polls) that might have a delayed response depending on when his friends answer, but he should be able to query attributes of friends and their user profiles as well.
  - Take a few minutes to think about this ... brainstorm
    - What do you already know about social media?
    - What kinds of questions do you ask about friends?
1. Develop (write) one Key Path Scenario
  2. Storyboard that Key Path
  3. List the technical feature(s) required to make this work

## Presentation

- What is your (key path) scenario?
- What is one technical feature required for this to work?
- What results are displayed?
- How are the results displayed?