Creating a Digital Microfilm Library

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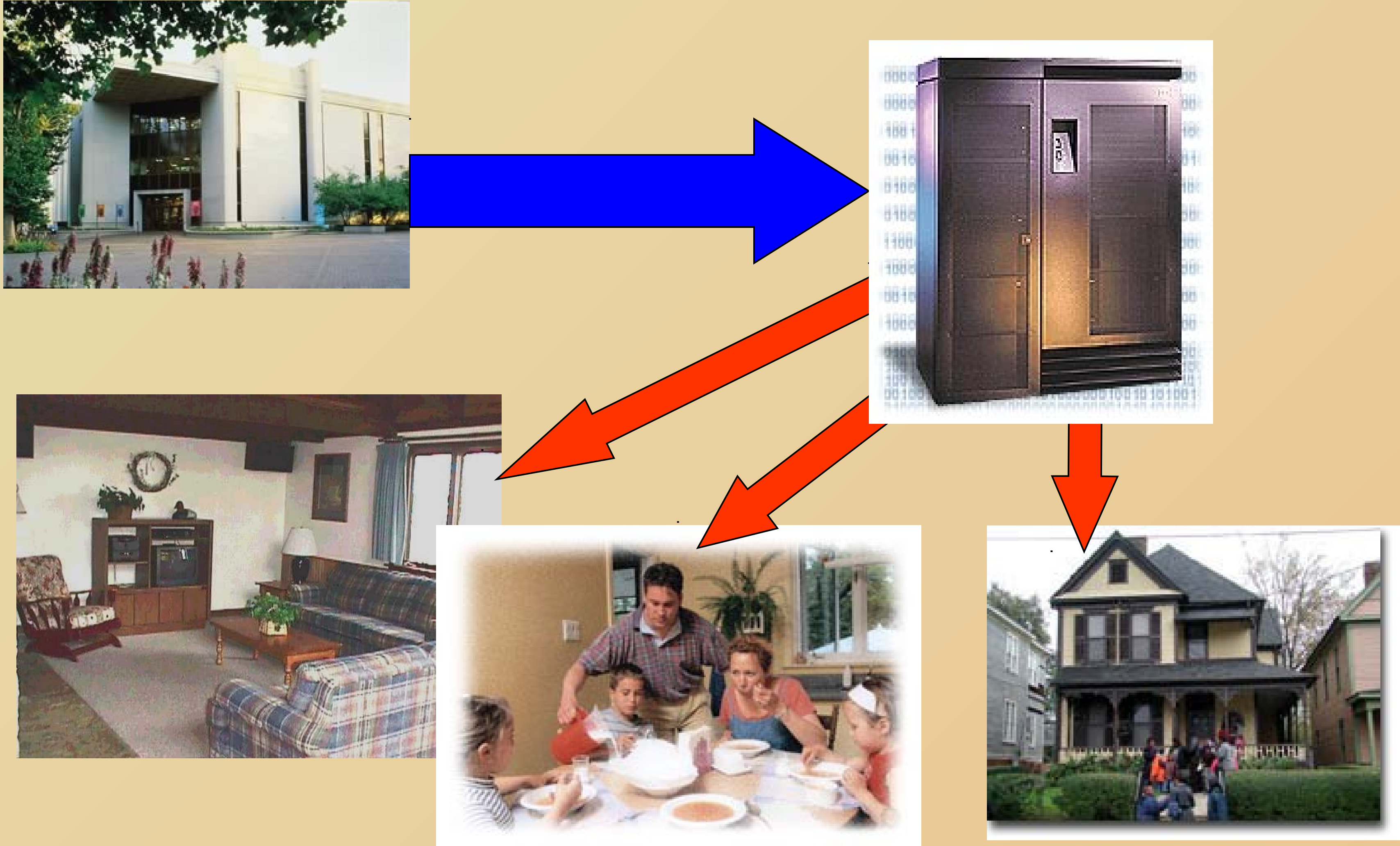
The meaning of family history

Getting in touch with your ancestors

Family history out of the library and into the home



How big is the problem?

- 2.5 million films and growing
- 1000 images per film = 2.5 billion images
- 600 KB per image =

1,500,000 Gigabytes

25,000 laptop hard disks :-)

What will it cost to store it?

- 1,500,000 GB
- $30 per GB - real servers not PCs
- Total library cost
  - Today - $45,000,000
  - 5 years - $4,500,000
  - 10 years - $450,000

Producing the Image Library

- Scanning rate - 100 frames per minute (optimistic)
- Images to scan - 2.5 Billion
- Scanner time per year - 2000 hours
- To complete the library
  - 208 scanner years

Cost of production

- 20 scanners = $1,000,000
  - 10 years to finish
  - replacement costs $1,000,000
- Worker costs = 10x$100,000 = $1,000,000
- 10 year plan
  - GB per year - 150,000
  - Cost - $3,000,000

Creating the Digital Microfilm Library

- 10 years

- $8,000,000

Delivering images to the home

- Image size = 500K
- Dialup data rate = 5K Bytes / sec
  - (on a good day)
- Time per image = 1.6 minutes

- You cannot scan digital images the way you scan through microfilm

- The library must be indexed at the image level

Extracting data from images

- Extraction 12/hour
  - Assumes one record per image
- hours to extract the entire library
  - 208 million hours
  - cost at $5/hour = $1 billion
- 20,000 extractors - 100 hours per year
  - 104 years to complete
- 2 million extractors to complete in 10 years

To build the library in 10 years

- $5,000,000 to store
- $3,000,000 to scan
- must be indexed
- $1,000,000,000 to extract using current approach

- Need a new indexing plan

Extract for index

- Ordered collections
    - by name
    - by date
  - Parish records
  - Death records
  - Main archive group sheets
- Unordered collections
  - Wills
  - Deeds
  - Other records where image order is not helpful

Ordered collections

- Extract top date or name from each image
  - 100/hour
  - 12 years to complete - 20,000 volunteers
- Sample extract every 10 images then interpolate
  - 1000/hour
  - 1.2 years to complete - 20,000 volunteers

Unordered collections

- Extract only essential name, date and place info

- Let the image carry most of the data
  - Eliminate interpretation errors in extraction
- Extractors map extracted data to image fragments
- Auto extraction methods - OCR and Handwriting
  - Use extraction as a training set for new algorithms

What library should we build?

Lessons from the past

- Microfilm library
  - Make the raw data available in a uniform way
- WWW/GEDCOM
  - Make the library open
  - Base collection
    - Tools on top but not in place
    - Support both people and software
- Guaranteed archiving
  - **Digital Stone**
- Guaranteed naming

The vision

- Out of the library into the home
- Scan it all in 10 years
  - $8,000,000
- Index not extract
  - High level index (beat microfilm)
  - Deeper indices on important collections
- Open library architecture
  - Raw data and raw indexes publicly available
- Library of last resort - Digital Stone
  - Guaranteed archive, guaranteed naming

Family history out of the library and into the home