Lecture 5: Interpretation & Affinity Diagram

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Acknowledgement:
Much of the material in these lectures is from Anirudha Joshi. Used with permission.

Announcements

- The description of G2 & G3 is out

Lecture Sessions

- **Session 1** *(30 minutes)*
  - Lecture
- **Session 2** *(30 minutes)*
  - Workshop Part 1
- **Session 3** *(30 minutes)*
  - Lecture
- **Session 4** *(60 minutes)*
  - Workshop Part 2
  - Feedback
  - Submission of class exercise

Session 1

30 minutes

- **Lecture**
  - Outline of the class/workshop
  - What is Affinity diagram?
  - Why is it important?
  - When is it suitable?
  - Steps of Affinity diagram (see next slide)
  - Instructions on Session 2 (see following slides)

Erik's Design Project

The Interpretation Session

- The interpretation sessions let every team member experience all interviews
- Interpretation sessions enable sharing and mutual discovery

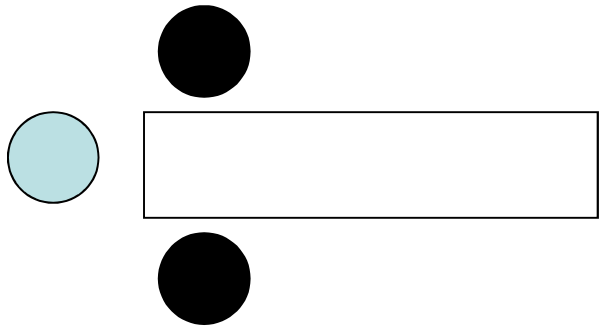
What Happens?

- Interviewer/s walk/s through a single interview
- Others listen, ask questions, ~~draw work models~~ and record issues, interpretations and design ideas
- Each person has a *role* assigned

Roles

- Interviewer(s)
  - Describes things as they happened
  - Do a retrospective account with the interviewer
  - Is interrupted all the time – have notes handy

Roles

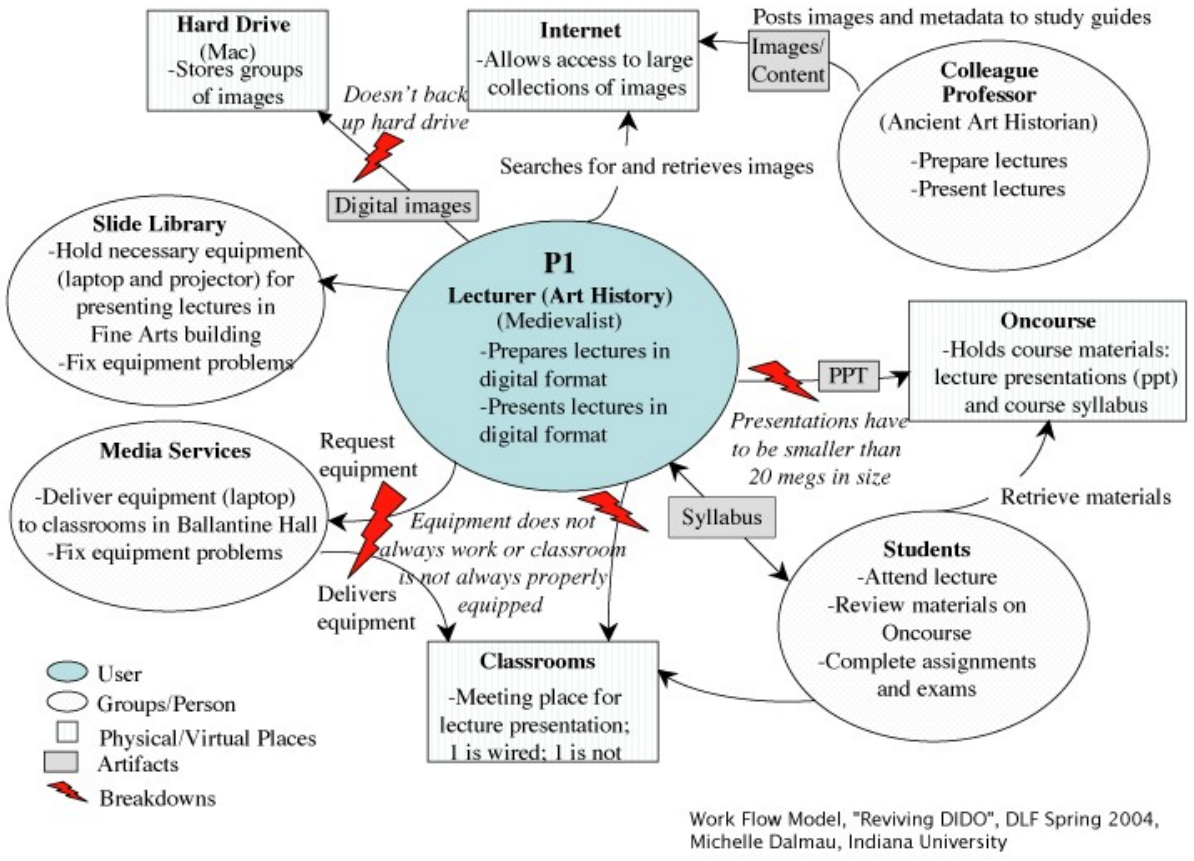


- Interviewer(s)
- Two Work Modellers
  - One for flow and culture
  - Other for sequence
  - Artifacts are put up and annotated as they come
  - Interviewer draws the physical model
  - Write while you listen, don't slow down the meeting to capture data
  - Group watches for correctness
  - Don't filter – interviewer already did
  - Work models keep the team true to what really happened
  - If formal process exists, but is different, color it green

Work Models

Graphical models of work
  - Five models
- Flow models
  - Depicts relationships between various individuals in work environment
  - Rare that one person does everything
- Sequence models
  - Work is divided up into steps
  - Captures steps and the intention behind steps
- Artifact models
  - People use and modify things
  - Understanding how and why reveals characteristics and break downs
- Cultural models
  - Expectations, desires, policies influence work
- Physical models
  - People adapt their environment so they can accomplish work

Flow Model



Work Flow Model, "Reviving DIDO", DLF Spring 2004, Michelle Dalmau, Indiana University

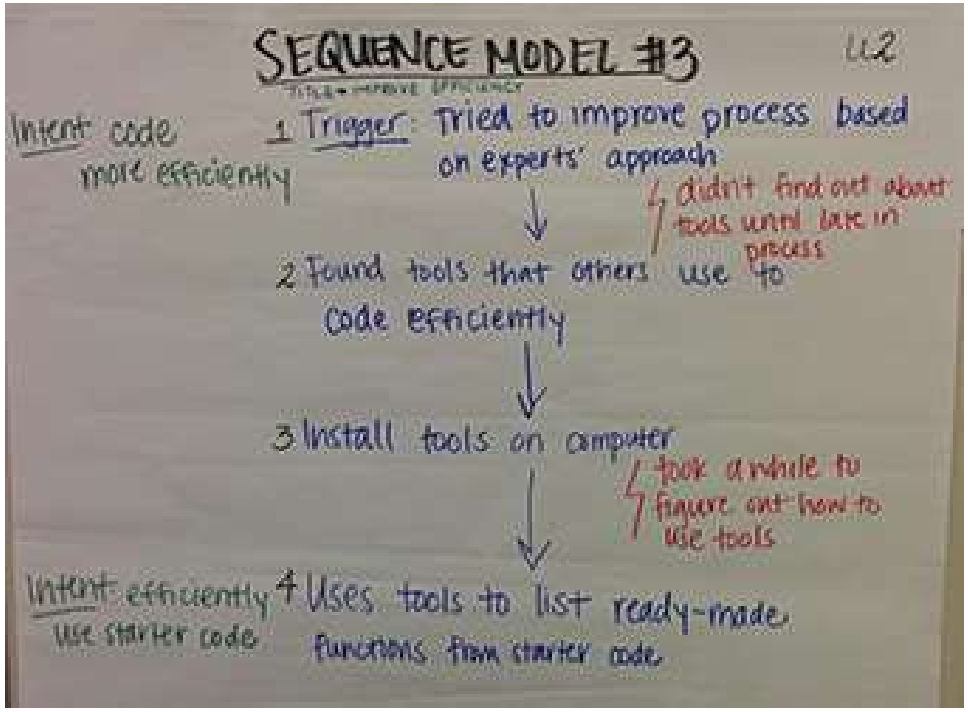
Work flow models define how work is broken up across people and how people coordinate

- Contains:
  - Interviewee (oval in middle)
  - Other groups/people also ovals
  - Physical/virtual places (e.g. the internet) as rectangles
  - Artifacts as they pass between people as shaded rectangles
  - Breakdowns (lightning bolts)
- Done from the perspective of your interviewee

Building Flow Model

- Start with subject you interviewed
  - List responsibilities
- Look at flow of information, tasks, and artifacts
  - Coordination
    - Where do artifacts come from and where do they go next
  - Strategy
    - Why are things done a certain way?
  - Roles
    - What makes a role? Knowledge, tools, procedures, or data
  - Informal Structures
    - What are out-of-band channels?
- Most important
  - LOOK BEYOND formal processes

Sequence Model

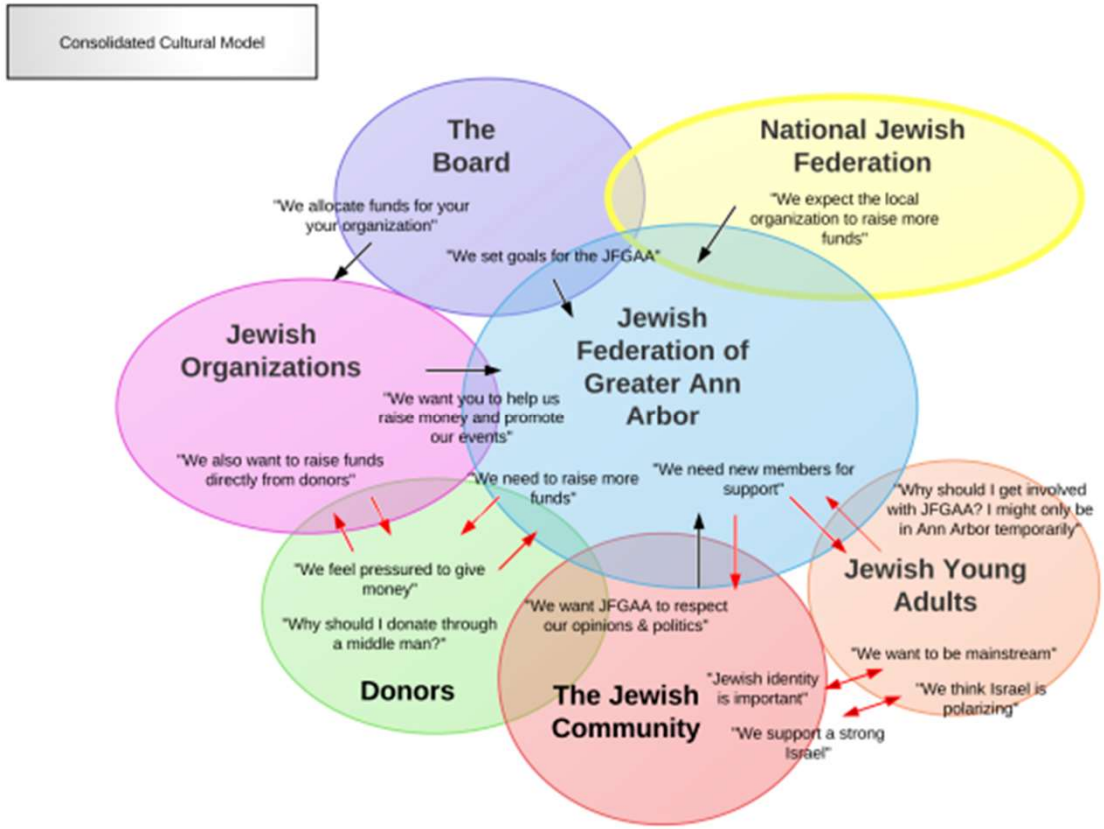


- All work unfolds as a series of steps/actions to achieve an intent
- Contains
  - Intent behind sequence
  - Trigger, which initiates sequence
  - Steps, at a reasonably high level of details (actions, but not movements)
  - Loops and branches showing order and iteration
  - Breakdowns where things go wrong
- Notice hesitations, errors, and intents
  - Intents can be overall or unfold during sequence

Constructing Sequence Models

- From interview, identify each main task
- Express task as an intent
  - Flow diagram can help with intents
  - Look at responsibilities from flow diagram
- Identify triggers which start task
  - Can be a regular occurrence (like arriving at the office)
  - Can be opportunistic (like a few minutes with no one around)
  - Can be on-demand (e.g. student knocks at my door)
- Add steps, showing links, loops, and branches
- Review steps, and fill in subsidiary intents that controls overall process
  - For example, in sales, maybe someone wants to up-sell once they've made the sale
- Add in breakdowns at any time as observed

Culture Model



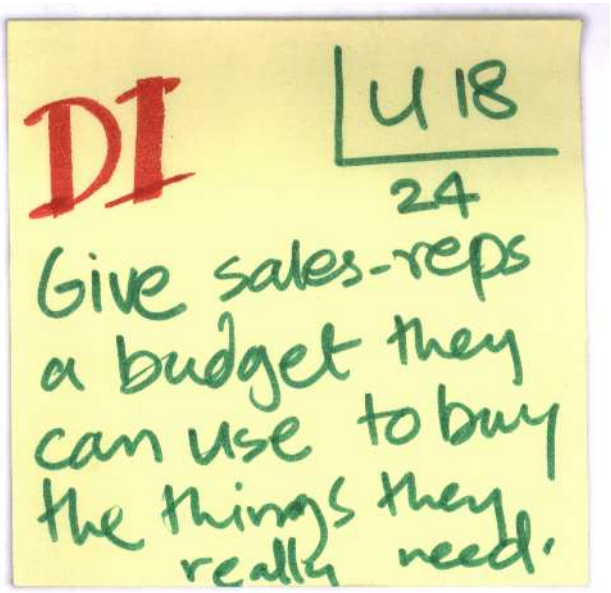
- Cultural models allow a system to understand constraints under which users perform task
- Includes:
  - Influencers, represented as bubbles
    - Can be individuals or groups (e.g. competitors)
  - Extent of influence, represented by overlap in bubbles
  - Influences, represented as arrows between bubbles
    - Direction important, and frequently incorporates pushback
  - Breakdowns

Building Cultural Models

- Steps
  - Start with bubble for interviewee
  - Add bubbles for each group or individual
  - Arrange to reflect extent of influence
  - Describe overall culture, if exists
  - Identify breakdowns on model
- Pay attention to what people think, not what they say
- Culture is often implicit

Roles …

- Interviewer(s)
- Two Work Modellers
- The Recorder
  - Notes typed and projected (we will just use post-its here)
  - While recording, state clearly and succinctly the insight or issue
  - Notes example



What to Record in Notes?

- Key observations
- User statements
- Breakdowns
- Insights
  - Influences from the cultural model (cultural insights)
- Design ideas
- Questions and ambiguities

- Notes are used later to build the affinity

What to Record in Notes?

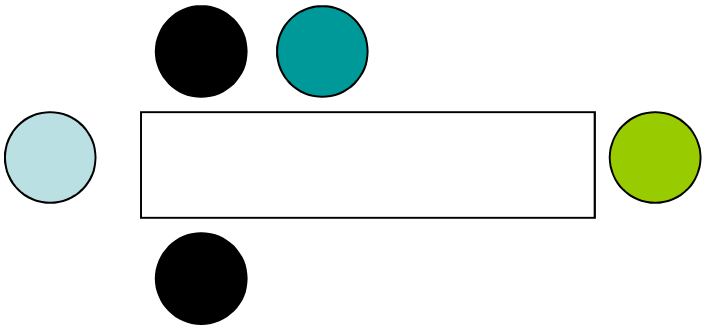
- Key observations
  - User has several joint accounts with family members
  - Has mugged up the key sequence, ignores the screen
- User statements
  - "Friends are there to lend us money in an emergency"
  - "There is always some paste in the toothpaste"
  - "HIV is a virus, not a disease"
  - "You send [the SMS] madam, I will manage."
  - "We brush our teeth twice a day."
- Breakdowns
  - Each medical report is 1-3 pages long, but has only one or two relevant numbers – thick files, time
  - "[I should not miss my pills, else] doctor will scold me"
  - "There are girls [at the counter]" – hence avoids the branch

What to Record in Notes?

- Insights
  - Banking and finance is a family activity (not individual)
  - Subtle screen changes may not be noticed by rote learners
  - Giving petty loans to friends is a part of the culture
  - Technology barriers could be easier to overcome than social barriers
  - People are desperate for information about HIV and lack an authentic source
  - People have procedural knowledge, but lack conceptual understanding about HIV

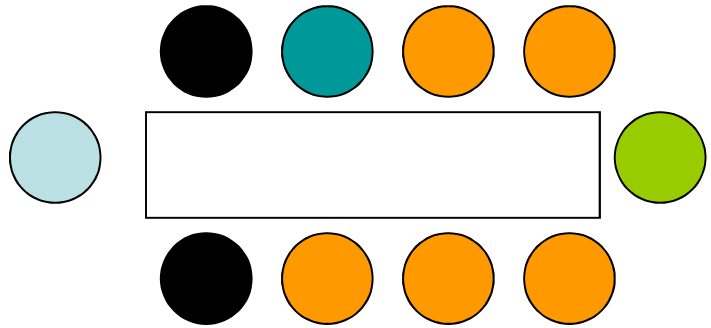
If more than 4 people …

Roles…



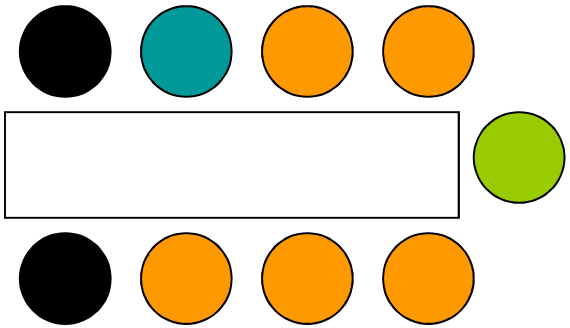
- The Interviewer(s)
- Two Work Modellers
- The Recorder
- The Moderator
  - Keeps everyone busy and on topic
  - Makes sure everyone participates
  - Keeps the pace brisk
  - Reorients the interviewer if he gets lost
  - No meeting works without someone taking the role of moderator

Roles…



- The Interviewer(s)
- Two Work Modellers
- The Recorder
- The Moderator
- Participants
  - Listen, ask questions, understand and develop insights
  - Capture design ideas to avoid discussing them now
  - Watch notes and models to ensure that they are right

Roles



- The Interviewer
- Two Work Modellers
- The Recorder
- The Moderator
- Participants

Building a Shared Understanding

- Better data
  - Everyone asks questions, so interviewer remembers more
- Written record
  - Insights, design ideas and questions
  - Work models and notes during the discussions
- Effective cross-functional cooperation
  - Focus on data and extracting meaning from data

Building a Shared Understanding…

- Better data
- Written record
- Effective cross-functional cooperation
- Multiple perspectives on the problem
  - Triangulation
  - Someone will see more in the interviews – so don't filter
  - Predigested presentation of interviews will limit information

Building a Shared Understanding…

- Better data
- Written record
- Effective cross-functional cooperation
- Multiple perspectives on the problem
- Development of a shared perspective
  - By hearing other perspectives, everyone expands their focus

Building a Shared Understanding…

- Better data
- Written record
- Effective cross-functional cooperation
- Multiple perspectives on the problem
- Development of a shared perspective
- True involvement in the data
  - Speeches tend to get boring, attention wonders and everyone misses some points
  - Interpretation reveals data interactively
  - Everyone has a job to do – draw work models, take notes, moderate, ask questions

Building a Shared Understanding…

- Better data
- Written record
- Effective cross-functional cooperation
- Multiple perspectives on the problem
- Development of a shared perspective
- True involvement in the data
- Better use of time
  - Talk, write and understand at the same time

Running the Interpretation Session

- Interpret interviews within 48 hours
  - Same day – only notes
  - Next day – annotate notes from tapes
  - More than 48 hours – transcribe notes from tapes
- Capture demographics in a separate file
  - Keep them private
- Keep a brisk pace
  - It can get a bit chaotic, but if everyone is paying attention to everything, that's OK
  - Be non-judgmental – don't evaluate ideas

At the End

- Capture top insights at the end and keep building the top insights list
  - You can communicate this to others in the organization
- Models, notes, top insights and design ideas are the first deliverables

Interpretation Session

- Should not be "another time-wasting meeting"
  - Actual work should get done
- Turn interview into data
- Foster cross-functional creativity and understanding

Team Makeup

- Get wide buy-in and cross-fertilization
- Plan to make the process work
- Try to accommodate every one in the team for the first meeting
  - But not more than 12 people
- Large teams should break-up into teams of 4-6 for subsequent meetings
- Rotate people among teams

The Sharing Session

- Share if there are other sub-teams
- Present the work models, update if new findings come
- Recorder should add any new notes
- Sharing is active, it's not a presentation

Affinity Diagram (Steps)

Gather Data

Write Observations (Sticky notes)
Ask questions and fill up gaps
Interview more people if necessary

Workshop Part 1

Convert Data into Knowledge

Grouping the Notes
Assign Label to groups
Generate design Ideas
Questions and Ambiguities
Report

Workshop Part 2

Session 2

40 minutes

- **Workshop Part I (Interview and Data collection)**
  - Interpretation & writing down notes (20 min)

- **Deliverables**
  - Sticky notes

Session 2: Write Down Notes

How to log information?

- **After Interview**
  - Interpretation session and note generation
  - While writing notes, state the *insight* clearly and succinctly
  - One note should consist of a *single* fact
  - If a user statement have multiple insights, break them down into multiple notes.
- You may find that there are certain gaps in knowledge, feel free to interview members in your group to generate more knowledge

In-class Workshop

Session 3

30 minutes

- **Lecture**
  - Instructions on how to construct affinity diagram
  - How to seek insights from user statement
    - Examples
  - How to group the facts?
    - Examples
  - How to generate design ideas?
  - How to capture ambiguities and uncertainty?
  - How to submit class exercise?

Contextual Design Concepts

- Contextual Inquiry
- Work Models
- Interpreting Interviews
- Affinity Diagram

Why Consolidate?

- The challenge is to design for a population, but meet the needs of the individual
- See the work as a whole to invent systems that support the work coherently
  - Incomplete support for work creates an opportunity for competitive products

Why Consolidate?
Products: Design Issues

- Manage differences, contradictions
  - Don't let individual differences blind you of common patterns of work
- Avoid point solutions – see the big picture
  - Plan products to address coherent work practice
    - What happens if we remove the guard?
- Expand the scope of a product
  - Grow product offerings to support related work
    - Home accounting > loans? Insurance? investment?

How to Consolidate?

- Inductive reasoning is key to seeing pattern
  - Reveal the users' story by seeing the pattern behind the instance
  - Variation exists within a structure – it isn't random
  - Remember, many conclusions are possible
  - Arguments are never binding but may be cogent

Affinity Diagrams

- Create a bottom-up hierarchy of notes
  - Key observations
  - User statements
  - Breakdowns
  - Insights
  - Design ideas
  - Questions and ambiguities

Goals

- **Summarise**, prioritise, find trends, patterns,
  - Find the rules of the world
  - Push knowledge up the hierarchy
  - Make data more presentable
- **Explain** differences, contradictions
- Generate **new knowledge**
  - More DIs, more concepts
- Help make **design decisions**
  - What matters?
  - How should we respond?
- **Involve** people with the data

Start this way

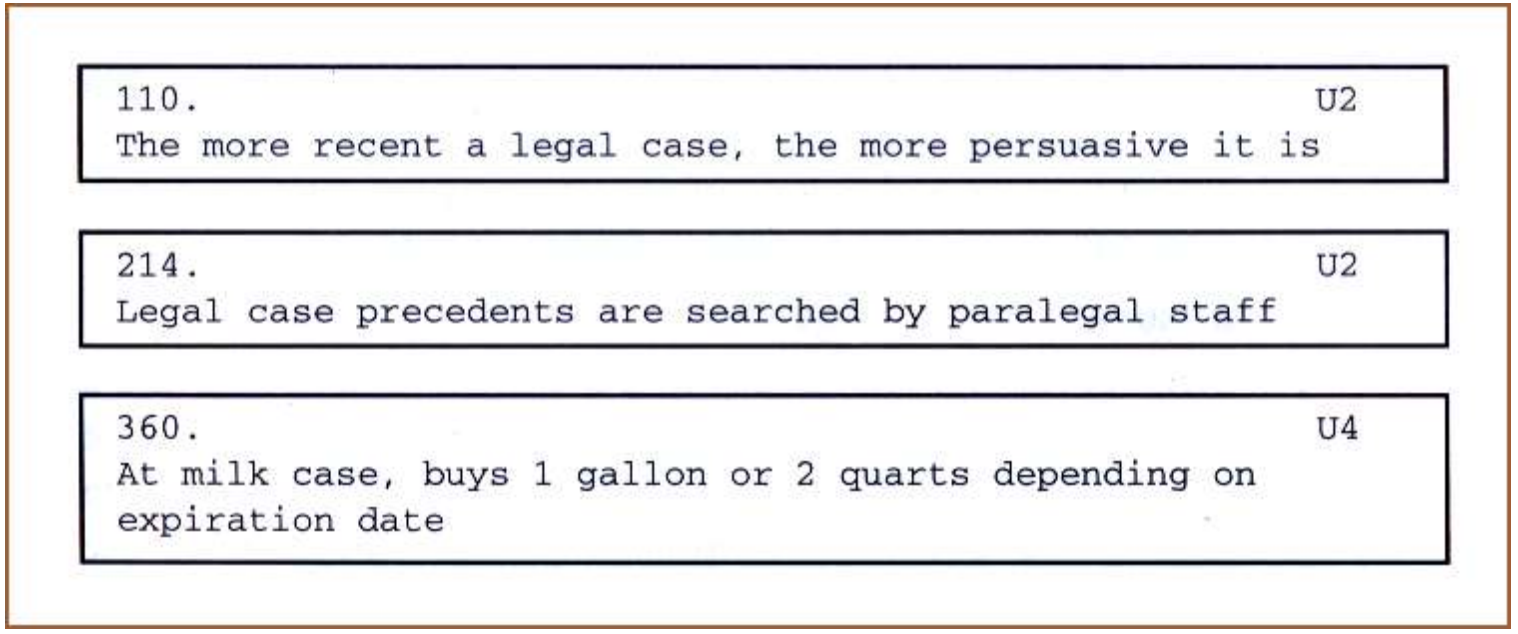
- Familiarise with data
  - Invite new members
  - Client, marketing, domain experts, friends
- Start with your favourite finding
- Then, everyone looks for what else goes with it
  - No justification needed, but look for affinity
- When you find 3-5 notes, give a label
  - If there are too many in a group, break up groups
  - Add higher level groups to collect groups
- Look for the next favourite note

Remember

- Bottom up
  - Do not start with pre-defined categories
- No justification needed, but
  - Relevant to project focus
  - Same / opposite
  - Ask how this could be relevant to design
  - Go into meaning of notes to see if they go together
  - Check meaning with interviewers
- Don't be afraid to break up the affinity
  - When notes can be grouped in different ways, choose the grouping that gives more new ideas

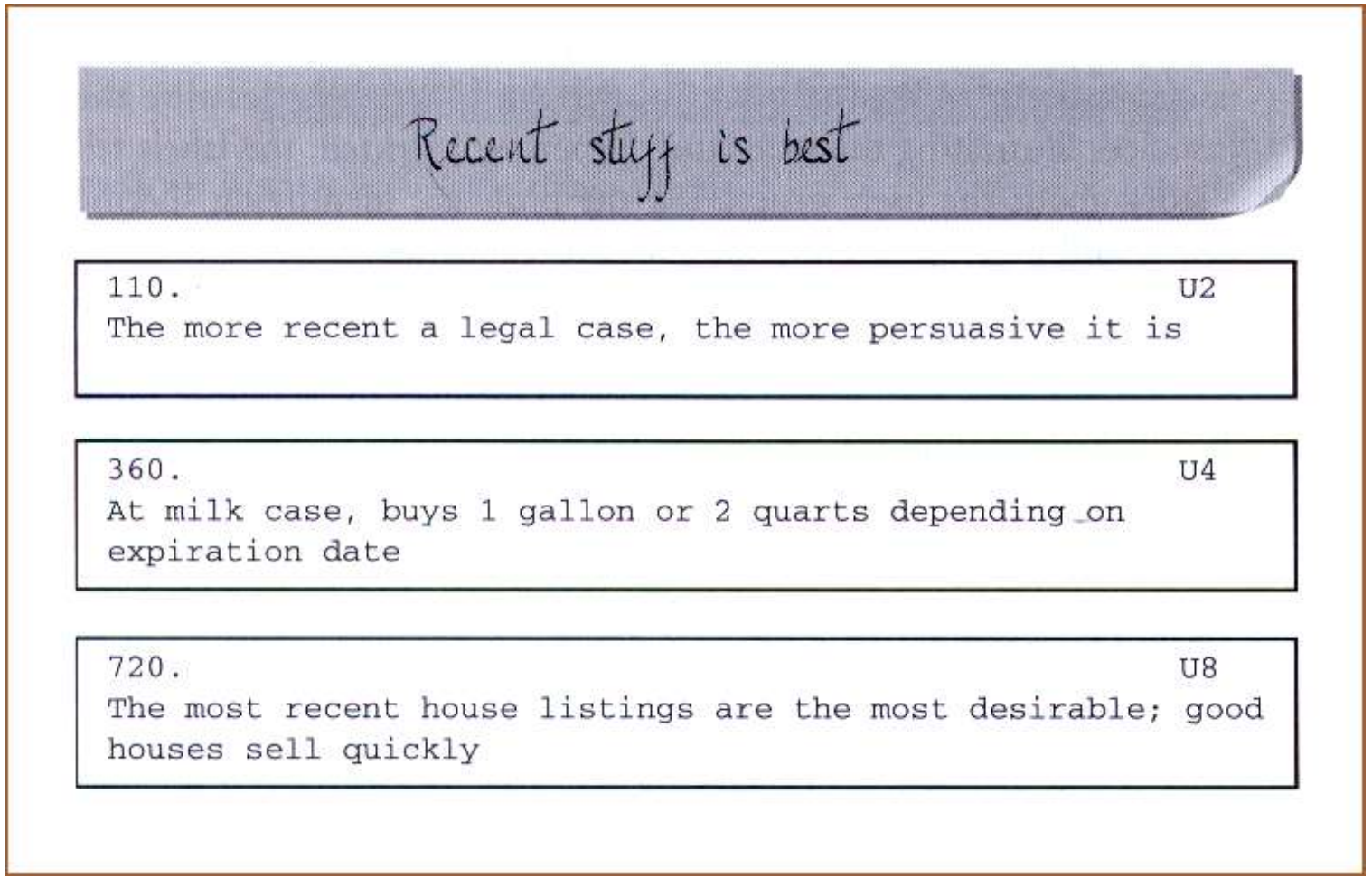
How to Build Affinity?…

- CD 159



How to Build Affinity?…

- CD 159

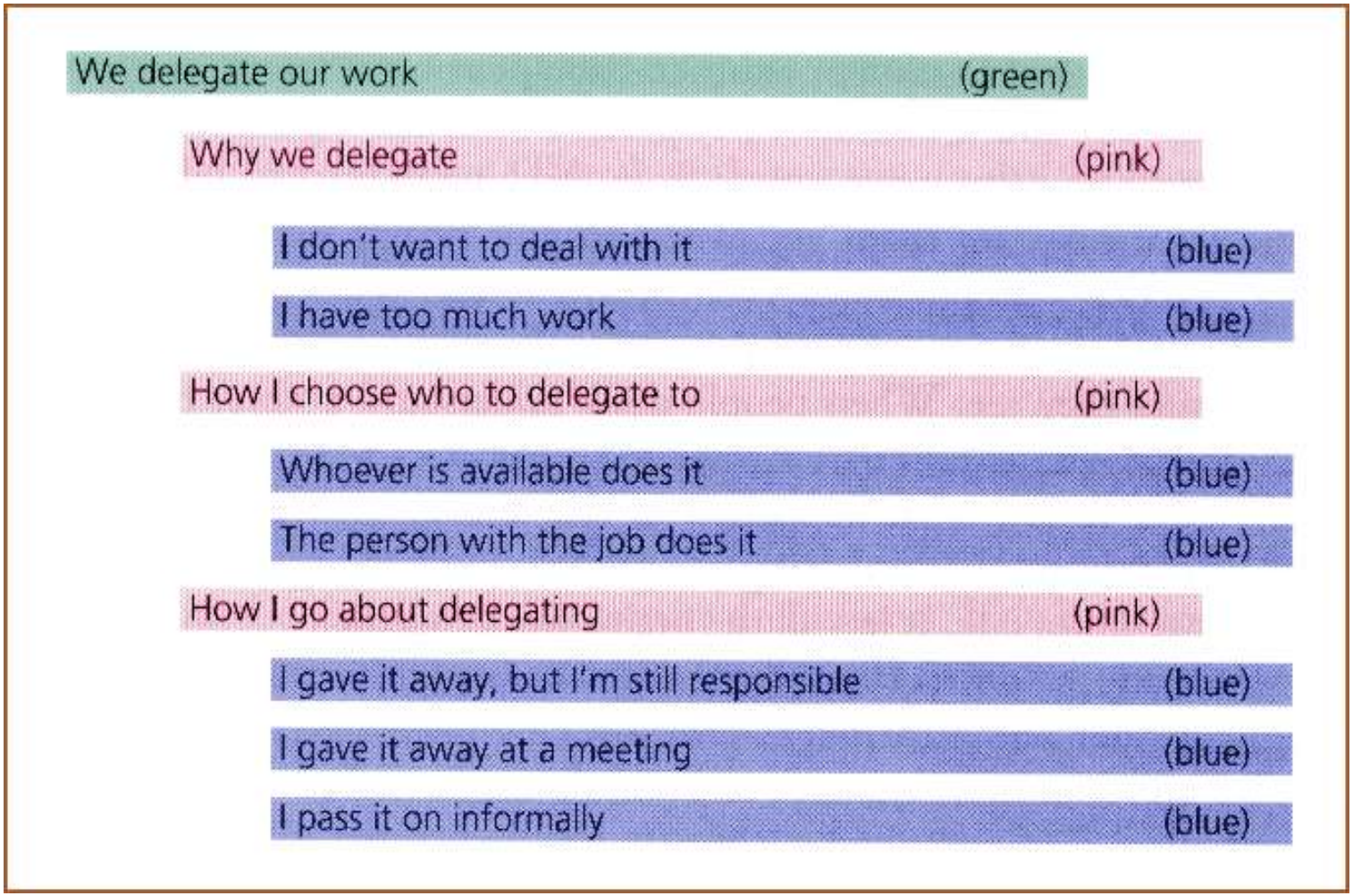


How to Build Affinity?…

- Give a name to represent a group
  - Summarize rather than give a heading
    - "Different ways of searching"
    - "Recent stuff is best"
- Use direct, immediate language
  - As if the user was talking to the designer
    - "Don't tempt me"
- Labels become the meaning that we design from
  - Try to push the knowledge up in the hierarchy
  - Group to higher orders of hierarchy
  - Generate new knowledge: challenge entering assumptions
  - Build affinity at the end all at once

How to Build Affinity?…

- CD 161



An Affinity

- Summarizes findings, makes them manageable, presentable
- Brings in new insights
- Aids design
- Involves people with the data

Affinity Shows

- Problems, opportunities, goals, constraints
  - Issues, worries, key elements of work practice
- Key quality requirements
  - Reliability, performance, support, positioning…
- Hierarchy groups similar issues
  - Creates stories about the user

Affinity Statistics

- Data from 10-20 interviews
- 50-100 notes per user
- Typically 1000 notes per session
- Need about 10 in 1 day or 4 people in 3 days
- Data from 10-15 interviews
- 30-60 notes per user
- Typically 500-700 notes per group
- Need about 10 people to build in two hours

Session 4

60 minutes

- **Workshop Part 2 (Construct Affinity Diagram)**
  - Construct affinity diagram (*20 min*)
  - Generate Design Ideas (*15 min*)
  - Class Exercise (*25 min*)
  - Take a snapshot of your affinity diagram
  - Feedback

- **Deliverables:**
  - Affinity Diagram
  - Top insights
  - Design Ideas
  - Class Exercise

Session 4: Affinity Diagram

How to Prepare Affinity Diagram?

- **Activities**
  - Group the notes (if there is more than 5 in a group, divide them into multiple groups)
  - Label each of the group
  - Generate design ideas