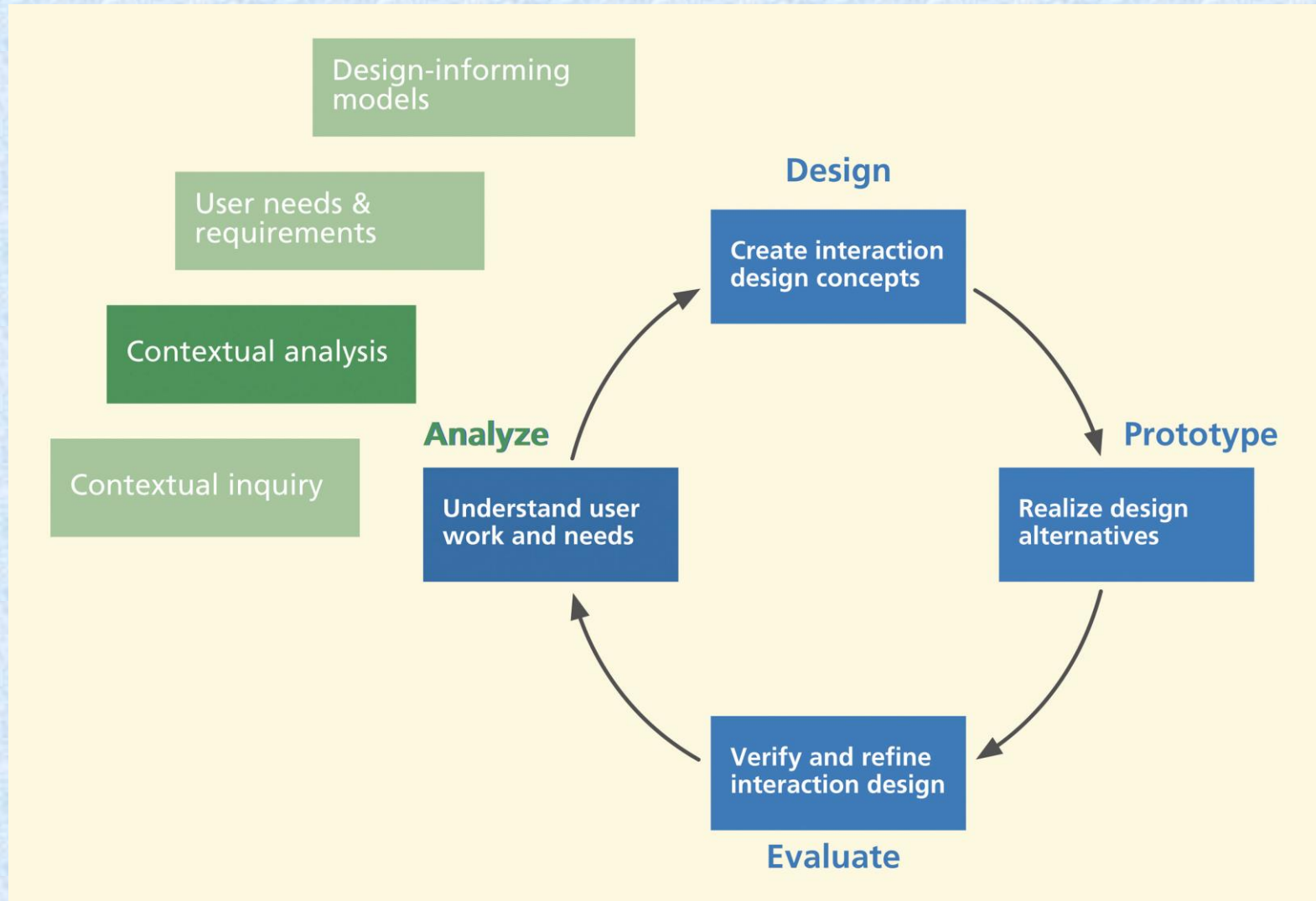


User experience design

Chapter 4. Contextual Analysis: Consolidating and Interpreting Work Activity Data

Introduction



Contextual analysis

- **Systematic analysis of contextual user work activity data**
 - Identification, sorting, organization, interpretation, consolidation, and communication
 - For purpose of understanding work context for new system to be designed
- **Contextual analysis does not directly yield either requirements or design**

How to do contextual analysis

- Identify work roles, user classes
- Build initial flow model
- Synthesize work activity notes
- Consolidate data
- Build work activity affinity diagram (WAAD) from work activity notes
- Communicate results to team via walkthroughs

Flow model

- **A “big picture” diagram of work domain**
 - **Shows interconnections among components of work domain**
 - **Work flow among components**
 - **Information flow among components**
 - **Components include key work roles and machine roles (e.g., central database)**
 - **In essence, shows how things get done in domain, how entities communicate**

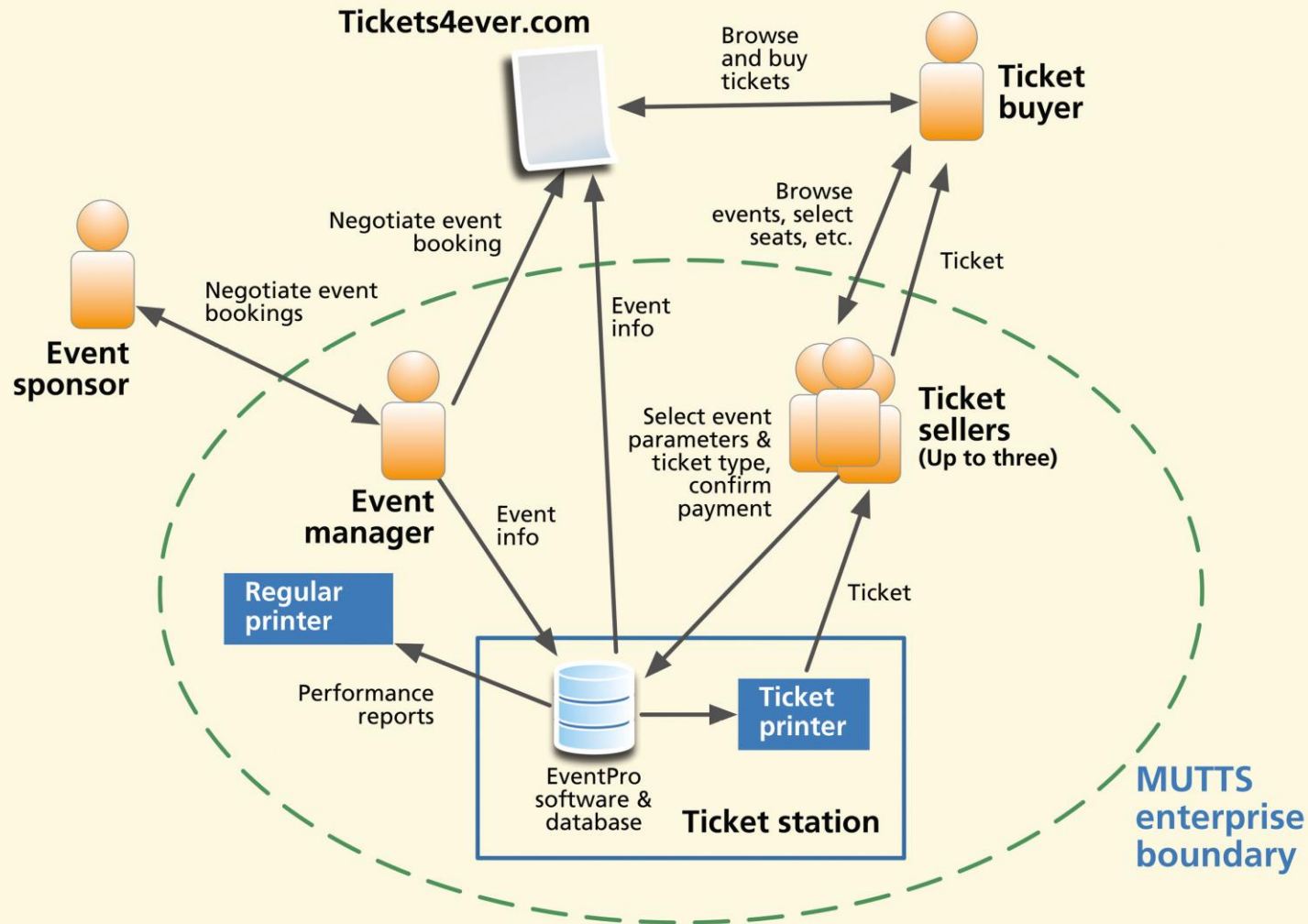
Sketch initial flow model

- **Draw nodes of diagram to represent work roles**
 - **Label nodes with work role names**
- **Add additional labeled nodes for other entities (e.g., a database)**
 - **Anything involved in flow of work practice**

Sketch initial flow model

- **Add arcs indicating flow**
 - Label with what flows (e.g., order information)
 - Include flow outside system and label with flow channel (e.g., phone, email)

Example flow model for MUTTS



Starting analysis

- **Transcribe interview and observation recordings, if used**
- **Start with whole team session to get in sync**
 - **Review data**
 - **Each interviewer and note taker reviews notes with group**
 - **Retell stories, events**

Starting analysis

- **Break into groups with moderators**
 - Refine flow model sketches
 - Synthesize work activity notes
- **Get back in team session**
 - Consolidate/merge flow models
 - Share, discuss, and adjust work activity notes

Synthesizing work activity notes

- **IMPORTANT: Doing this well is key to rest of contextual analysis**
- **Tag each work activity note with source ID**
 - **Unique identifier of person observed or interviewed**
- **Paraphrase and synthesize, instead of quoting raw data verbatim**

Synthesizing work activity notes

- **Make each work activity note a simple declarative point**
 - Not quote interviewer' s question plus user' s answer
- **Filter out all noise and fluff**

Synthesizing work activity notes

- **Make each note**
 - **Compact**
 - **Concise**
 - **Easily read**
 - **Understood at a glance**
- **Be brief**
 - **Keep a note to one to three succinct sentences**

Synthesizing work activity notes

- **Each note should contain**
 - Just one concept, idea, or fact
 - Possibly with one rationale statement
- **Break a long work activity note into shorter ones**
- **Make each note complete and self-standing**

Synthesizing work activity notes

- Disambiguate pronouns, references to context
- Refer to work roles rather than individual people
- Avoid repetition of same information in multiple places
 - Do not include information from flow model in work activity notes

Example, work activity notes for MUTTS

- **User (ticket buyer, id=u17) raw comment:**

It is too difficult to get enough information about events from a ticket seller at the ticket window. For example, sometimes I want to see information about popular events that are showing downtown this week. I always get the feeling that there are other good events that I can choose from but I just do not know which ones are available and the ticket seller usually is not willing or able to help much, especially when the ticket window is busy.

Work activity notes for MUTTS

- **Break up raw comment:**

It is too difficult to get enough information about events from a ticket seller at the ticket window. For example, sometimes I want to see information about popular events that are showing downtown this week.

- **Synthesize work activity notes:**

It is too difficult to get enough information about events from a ticket seller at the ticket window.

I want to see information about current popular downtown events.

Work activity notes for MUTTS

- Break up raw comment:

I always get the feeling that there are other good events that I can choose from but I just do not know which ones are available and the ticket seller usually is not willing or able to help much, especially when the ticket window is busy.

- Synthesize work activity notes (**with some interpretation and further discussion**):

I would like to be able to find my own events and not depend on the ticket seller to do all the browsing and searching.

There are potential communication gaps because the ticket seller does not always understand my needs.

Work activity notes for MUTTS

- **User** (ticket buyer, id=u17) **raw comment:**

It is hard to judge just from information available at ticket window whether an event has been well received by others.

- **Synthesize work activity notes (with some interpretation and further discussion):**

It would be nice to get reviews and other feedback from people who have already seen the show.

[Design idea] Consider including capability for people to add reviews and rate reviews. Question: Should this be located at event venues rather than kiosk?

Organize work activity notes as you go

- **Best to print work activity notes (e.g., on Post-it™ stock)**
- **Extend anticipated data bins to accommodate emerging categories**
 - **Start putting work activity notes into corresponding bins**

The work activity affinity diagram (WAAD)

- **A work activity affinity diagram is a way to sort data into categories and sub-categories when you don't know in advance what the categories will be**
- **The data determine the categories, not preconceived notions**
- **In practice, it's both**

Prepare to construct WAAD

- **Need a big room with plenty of wall space**
 - **Dedicated for duration of project**

Prepare to construct WAAD

- **Tape up large “belt” of butcher paper or similar around walls of room**
 - **As working space for posting work activity notes**
 - **Blue “painter’s tape” holds well but releases later without pulling off paint**

Prepare to construct WAAD

- **Have in hand huge stack of work activity notes**
- **Need enough team members to make it go fast**
 - **But not so many that you spend all your time in discussion**

Prepare to construct WAAD

- **Shuffle the work activity notes, for variety**
- **Deal out dozen or two work activity notes to each person**
- **Allow time to read notes**
- **Start slowly, working together**

Getting started on the WAAD

- Read note, discuss, post on work space (butcher paper on wall)
- If there is related note or notes already posted
 - Post this note next to it
 - The physical proximity represents affinity

Growing note clusters

- **Do not talk about implementation yet**
- **Grow clusters of related work activity notes**
 - **Move notes to related affinity piles**

Labeling note clusters

- **Label cluster temporarily**
 - **Capture gestalt**
 - **So don't have to re-read notes to know what cluster is about**

- **Newly hatched cluster with temporary topical label**



Post more notes in clusters

- **As clusters start forming**
 - **Team members can look through notes in hand for ones that relate**
- **Often effective to compartmentalize everything by work role**
- **Soon clusters will mature into real affinity groups**

Example, MUTTS

- Topical label that has grown in scope during affinity diagram building



Pick up the pace

- **After everyone gets it, speed it up, work in parallel**
 - Ask for discussion when needed
- **Stay flexible**
 - Clusters move and morph
- **Set aside outlier or “maverick” notes in a corner**
 - Don’ t waste time on them
 - They might fall into place later

Democratic process

- **Anyone can post or move a label or note**
 - Just have to discuss
- **Don't get invested in data ownership**
 - No note/cluster/group is “owned” by anyone
 - Everything is driven by *team consensus*

Keep groups manageable

- **Don't have huge note groups (4-5 to 12-15 is normal)**
- **Find ways to split large groups**
 - **Different sets of commonalities**

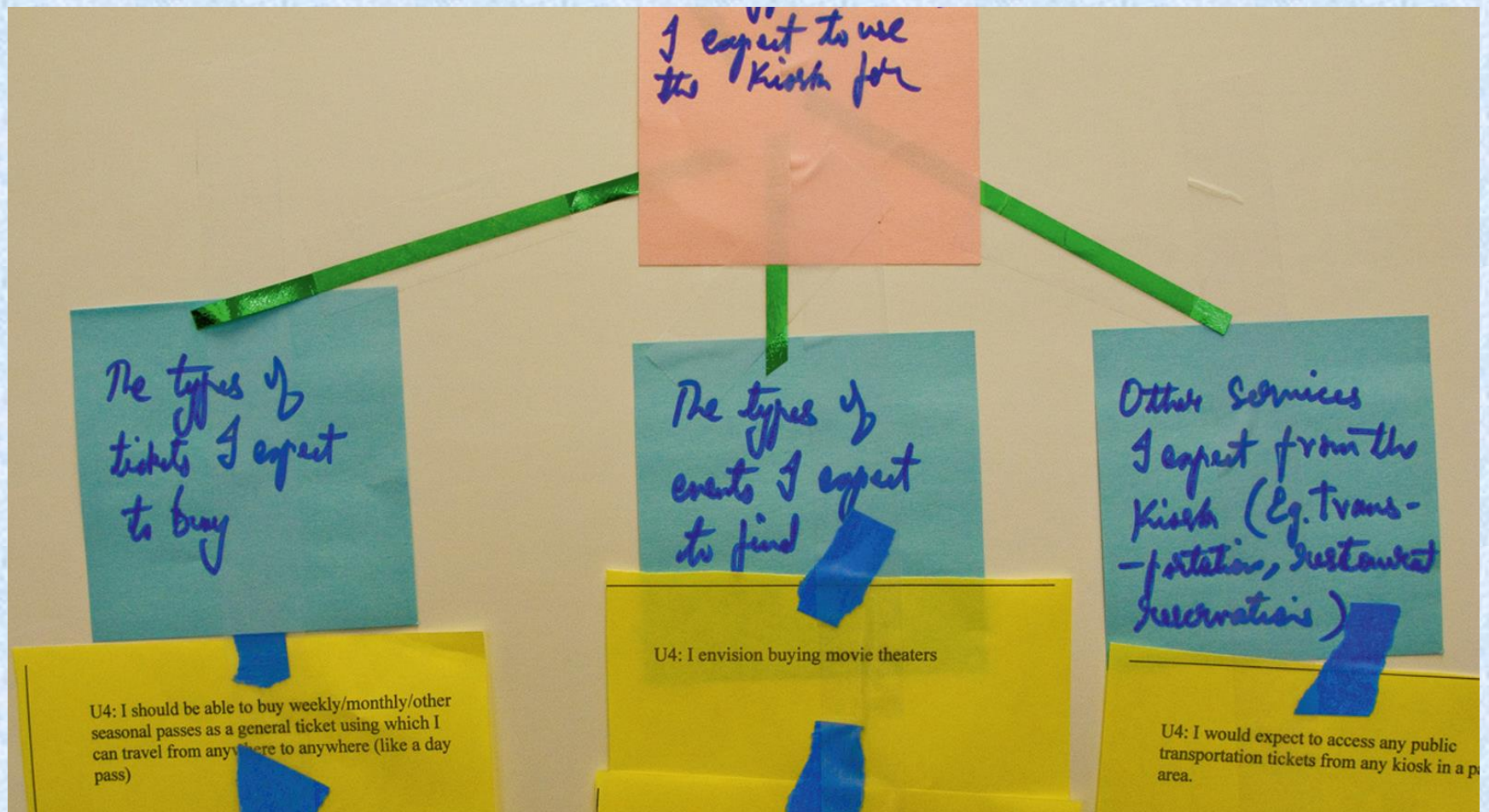
Give care to group labeling

- **Labels must have high descriptive power**
 - **Capture “meaning” of group concisely**
 - **Avoid “miscellaneous” or “general”**

Make groups of groups

- **Find groups that are related**
 - **Group together with higher-level label**
- **Can color code levels of labels in hierarchy**

Example, building group of groups



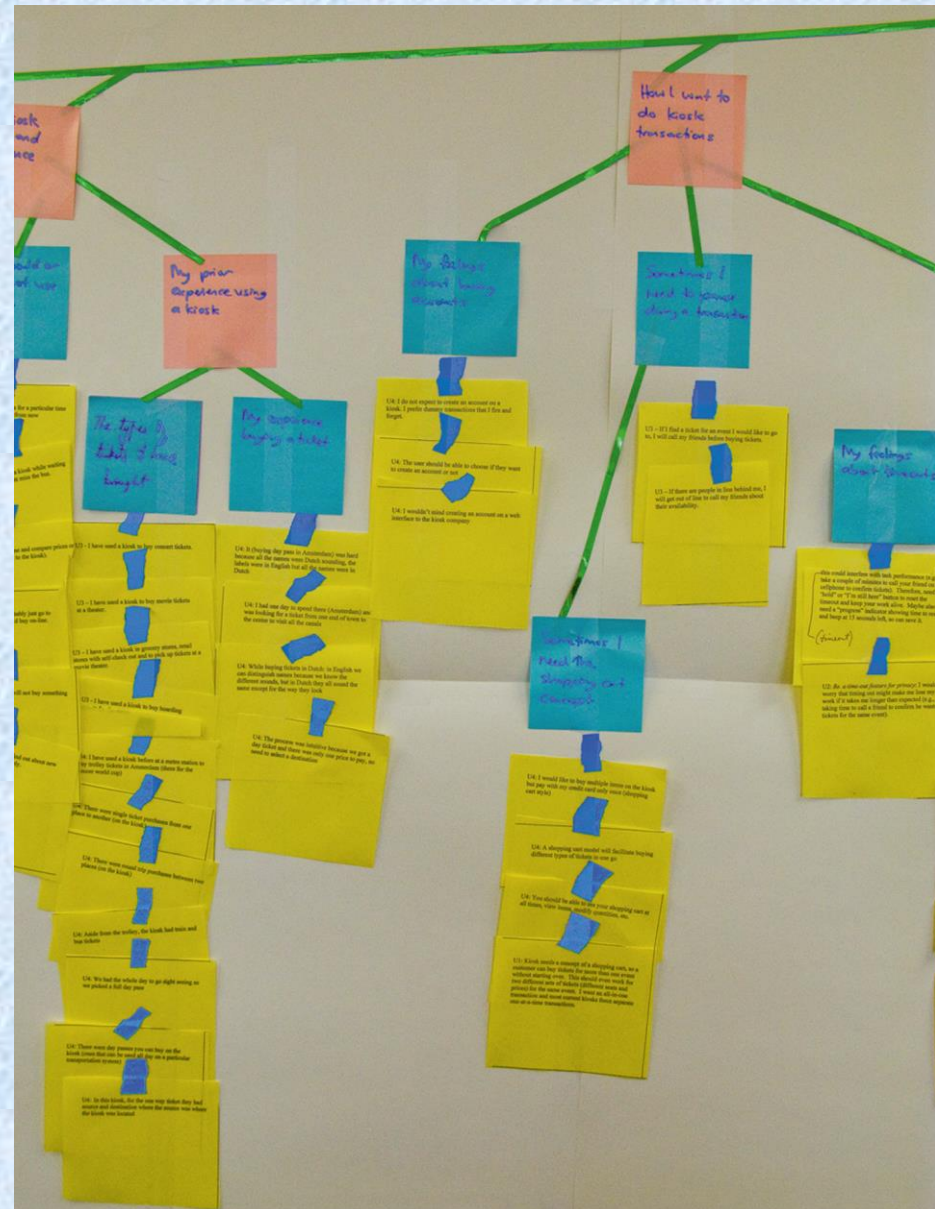
Example

- Team studying clusters to form groups



Example

- Second-level labels for groups of groups shown in pink





Walkthrough of WAAD

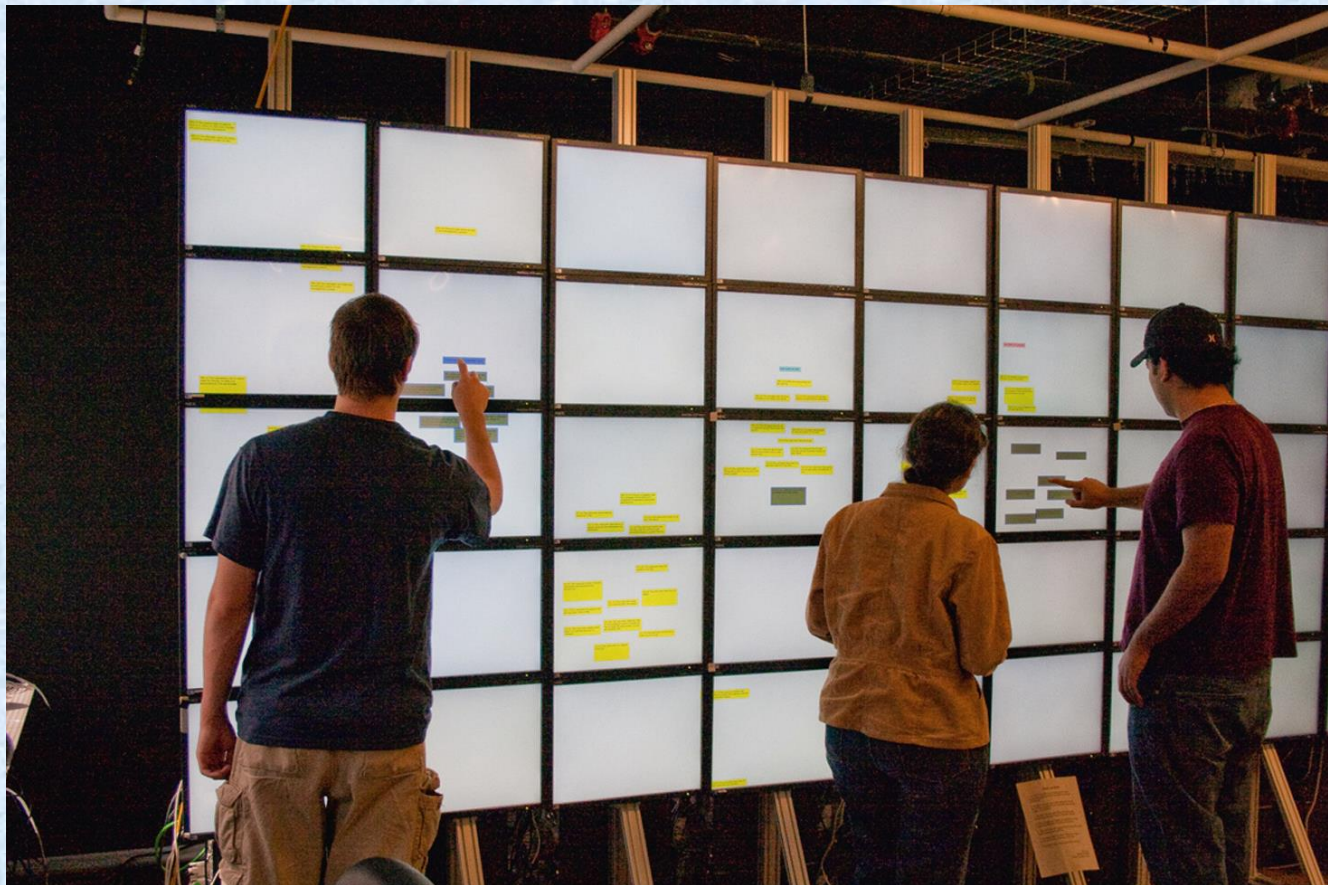
- **Consolidation and communication**
- **Share appreciation of user work activities, issues with all stakeholders**

Walkthrough of WAAD

- **Explain your process in a nutshell**
- **Goals**
 - **Garner more input**
 - **Discuss to unify WAAD and flow model**
 - **Achieve shared understanding of user work issues**

Example

- Building WAAD with software tool on large touchscreen



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