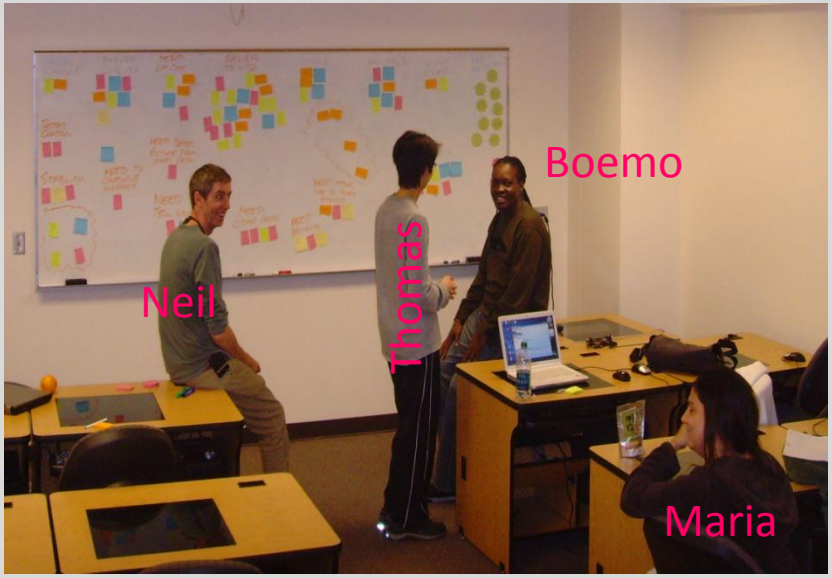
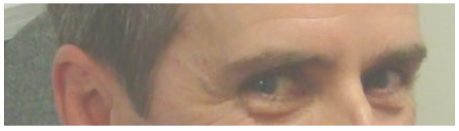
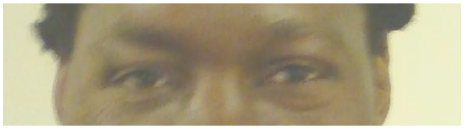
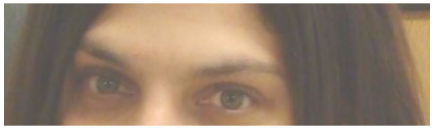
User Centred Innovation

Project Group 4

Personal Photography Experience





Neil O Connell

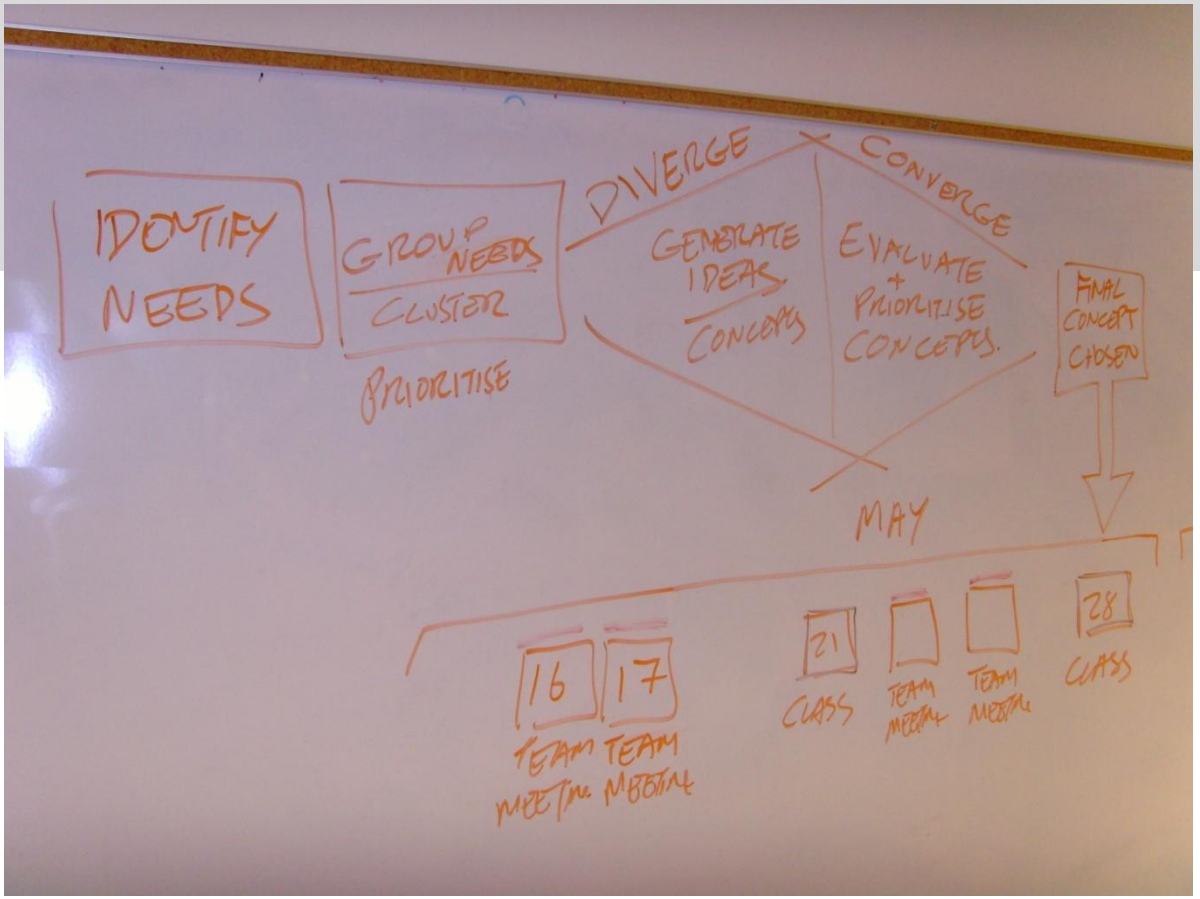
Chih-HsunLin

Nametsegang Boemo-Mokhawa

Maria Schenk

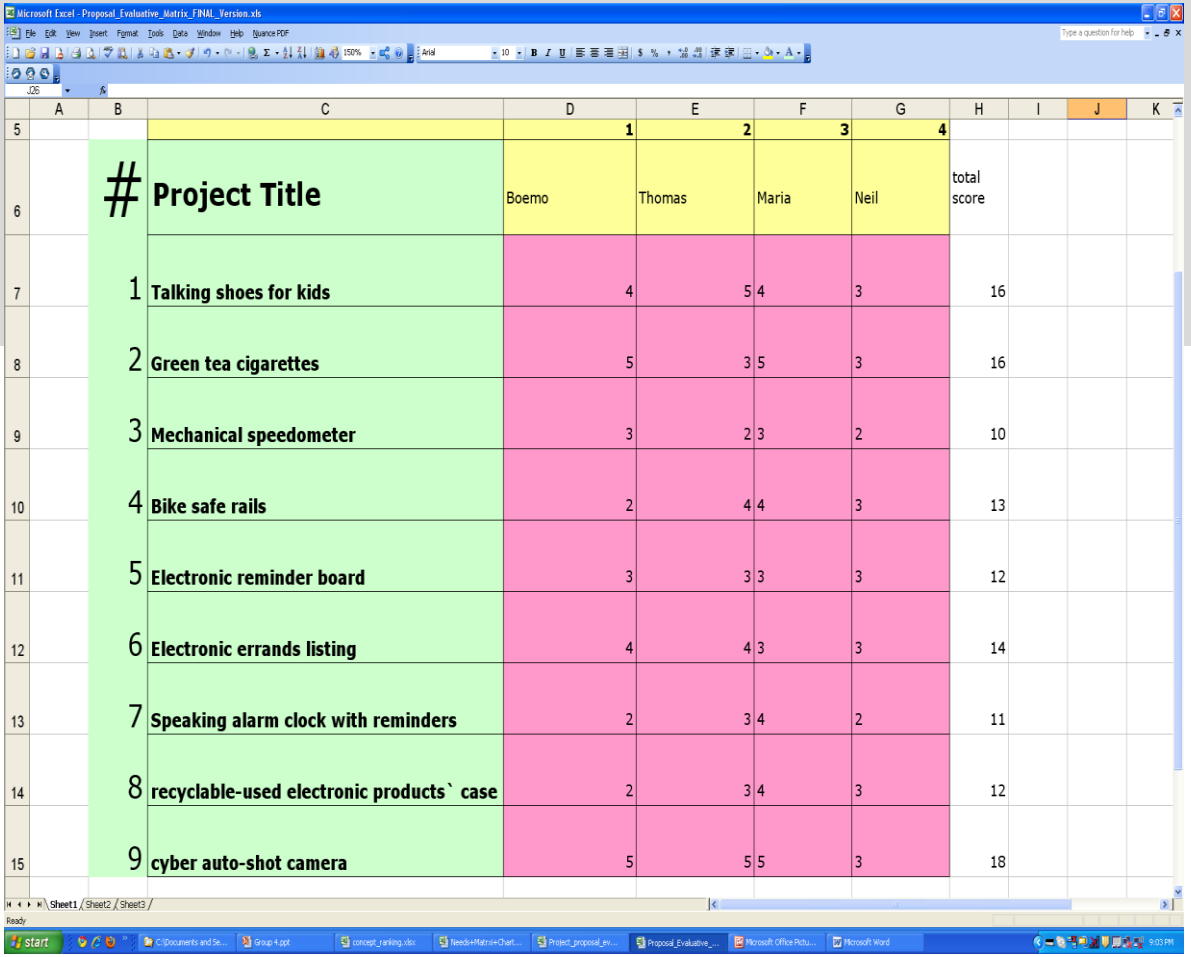
Introduction

- Which area to study?
- Project proposal selection
- Evaluative criteria reference
- Project Framework
- Qualitative research
- Field research
- Data analysis
- Transform voices into requirements
- Identify themes
- Propose solutions to needs
- Scoring method example
- Concept scoring
  - Concept scoring result
  - Concept ranking and choice
- Final concept
- Conclusion
  - Q/A



Project proposal selection?

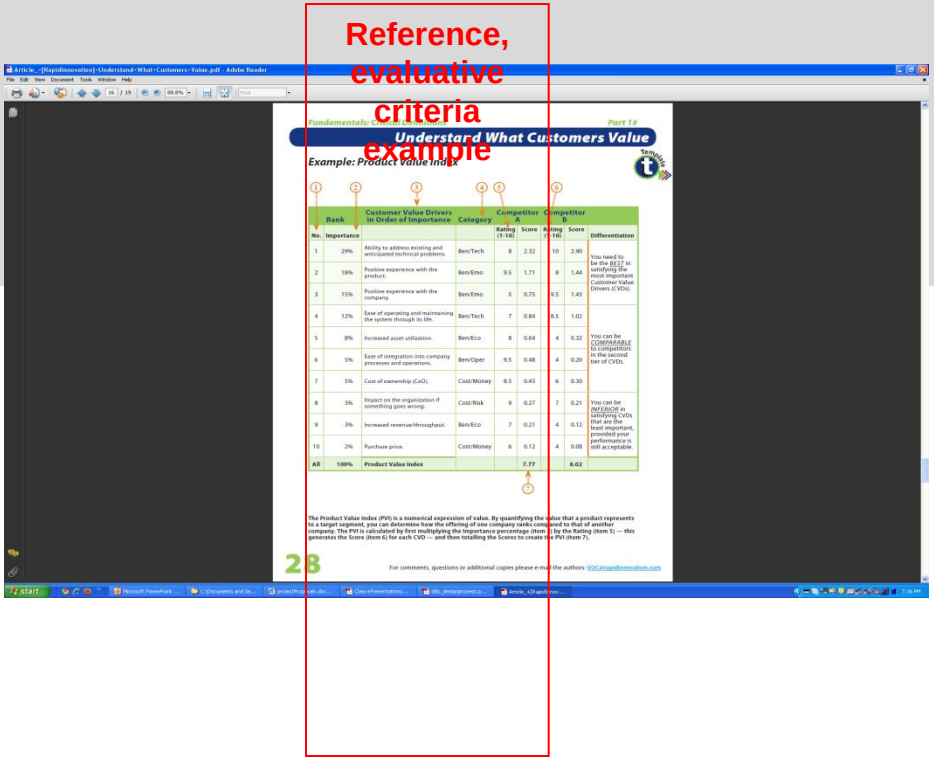
- Each member suggested proposals
- Used evaluative matrix to rank and discuss
- Final choice was ‘personal photography experience’



#	Project Title	Boemo	Thomas	Maria	Neil	total score
		1	2	3	4	
1	Talking shoes for kids	4	5	4	3	16
2	Green tea cigarettes	5	3	5	3	16
3	Mechanical speedometer	3	2	3	2	10
4	Bike safe rails	2	4	4	3	13
5	Electronic reminder board	3	3	3	3	12
6	Electronic errands listing	4	4	3	3	14
7	Speaking alarm clock with reminders	2	3	4	2	11
8	recyclable-used electronic products` case	2	3	4	3	12
9	cyber auto-shot camera	5	5	5	3	18

How we decided to study ‘personal photography experience’ Maria

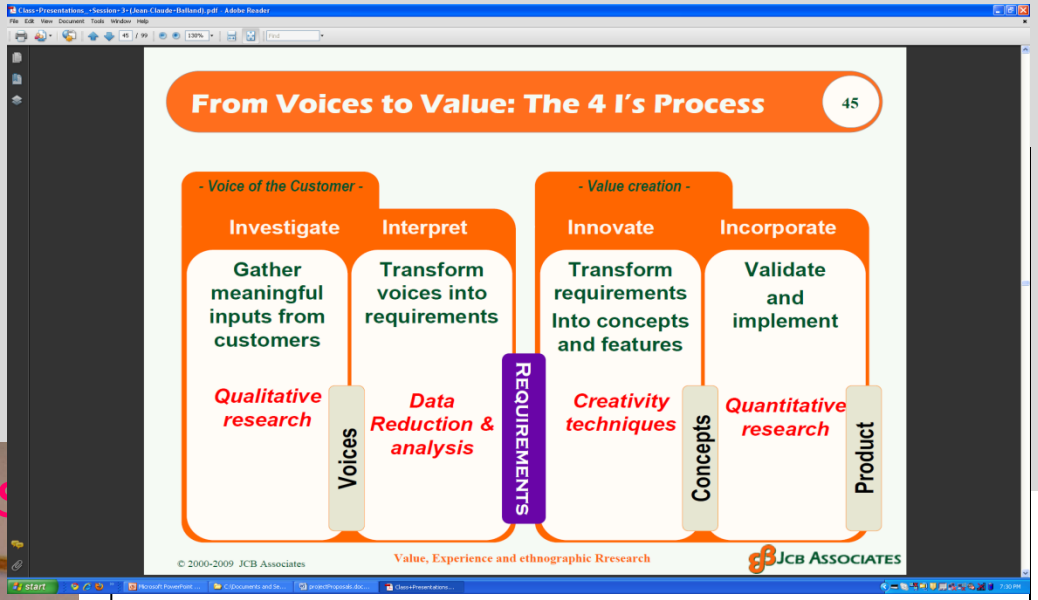
Evaluative criteria reference

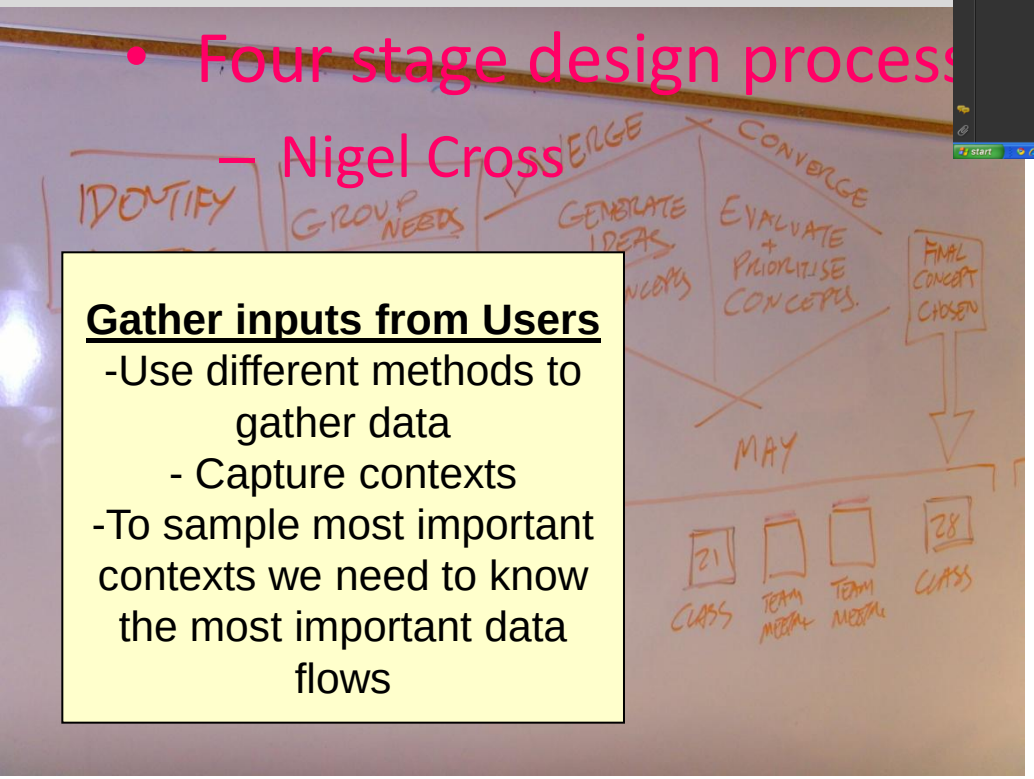


- Cost
- Ease of use
- Suitability for a project
- Potential of technical success
- Potential of market success

Project Framework

- Adopted phase/gate approach
  - JC Ballard
- Four stage design process
  - Nigel Cross





Gather inputs from Users

-Use different methods to gather data

- Capture contexts

-To sample most important contexts we need to know the most important data flows

Stage Gate Approach

1. Investigate
2. Interpret
3. Innovate
4. Incorporate

Qualitative research phase

- Economical questions
- How much did you pay for your camera?
- How do you care
- Is cost a factor when buying a camera?
- Do you find cameras expensive or cheap?
- Does owning a camera improve your income?
- Does owning a camera improve anyone`s income?
- How much do you want to spend on camera accessories? Which camera accessories would you consider buying first? (tri-pod, bag, spare lens ect…)
- How long have you had your camera?
- How many cameras do you own? Do you also own a camera-phone? Which camera do you use more often? Why? Which one do you use less? Why?
- How often do you buy a camera?
- How often do you tend to upgrade as new feature become available?
- What do you think is a reasonable amount for a camera?
- Technical questions
- How do you show your pictures to others?
- od of showing pictures to others?
- own?
- ur camera?
- our batteries?
- our camera have?
- res do you like most and why?
- tures? If no, why not?
- erating other cameras?
- Could you demonstrate how you use some of these special features?

- Visit locations where cameras are used a lot
- Contexts help show what users already know
- Keep and revise diaries of activities to note sources of frustrations/obstacles
- present wide scenario to brainstorm with users

Methods use to gather Data

- Conducted in-house training to ensure consistency among team members during interviews.

1) **One-on-one interviews**

Constructed interview questions based on different Benefit categories. The Cost categories will only be considered at the Third Gate – Innovate, when evaluating viable solutions.

- Technical
- Operational
- Economic
- Emotional
- Network

Reference: www.rapidinnovation.com
Dr. Ballard

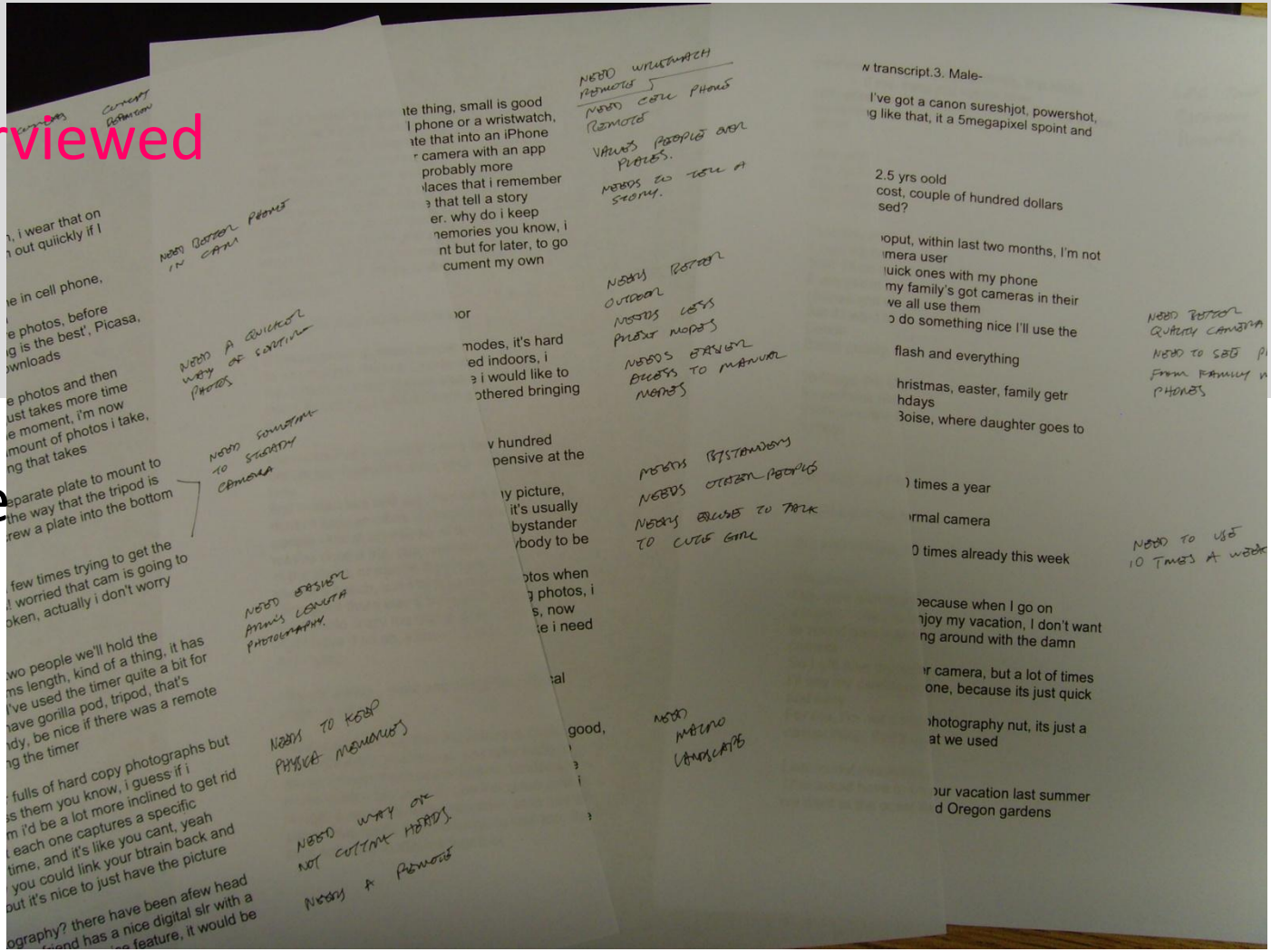
2) **Observation**

Video recorded some sessions to capture unexpressed

Field research data

- 10 people interviewed
  - Text
  - Audio
- Voice to text
- Post to website

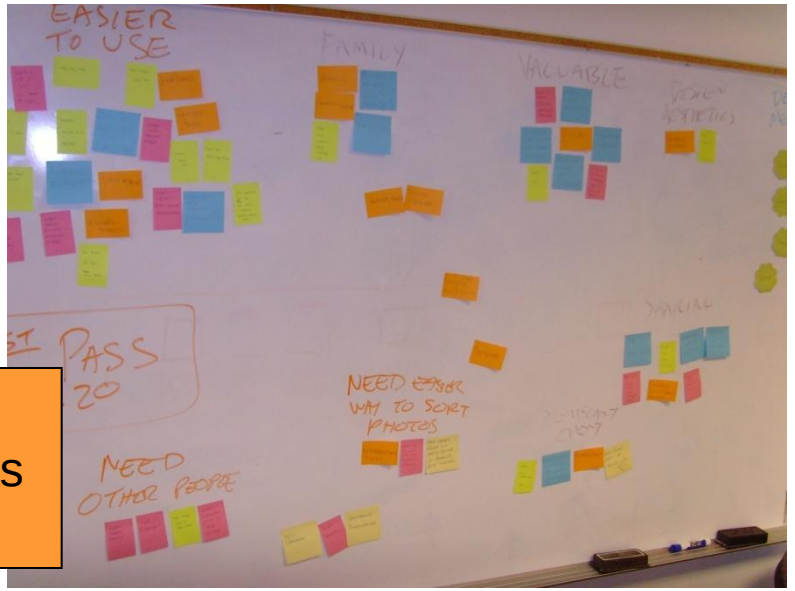
- Validate our interpretations in order to ensure that users' goals are the same as 'needs' crafted from data gathering



Transforming voices into requirements

Step 2:

- *Brainstorm then Cluster First Pass*
  - Web enable
  - Picture quality
  - Cost
  - Easier to use
  - Family
  - Valuable
  - Design aesthetics
  - Sharing
  - Significant event
  - Need easier way to sort photographs
  - Need other people
  - Need to show journey

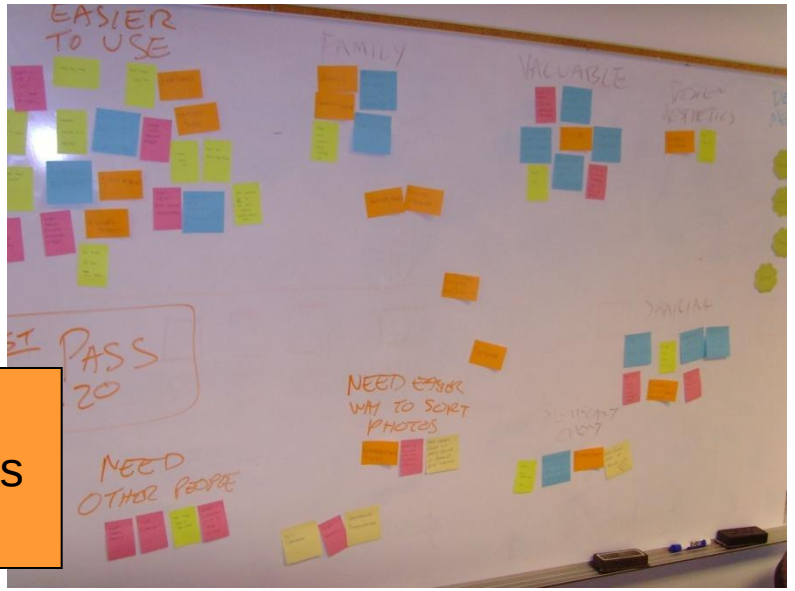


Thomas

Transforming voices into needs

Step 3:

- *Cluster Second Pass (convert to 'needs')*
  - Need picture quality
  - Need low cost
  - Need ease of use
  - Need to hold family together
  - Need to guard memory
  - Need to look good
  - Need to share
  - Need to mark event
  - Need easier way to sort photos
  - Need security
  - Need photos of self
  - Need to tell story
  - Need better picture from other person
  - Need to capture movement
  - Need stability
  - Need better control

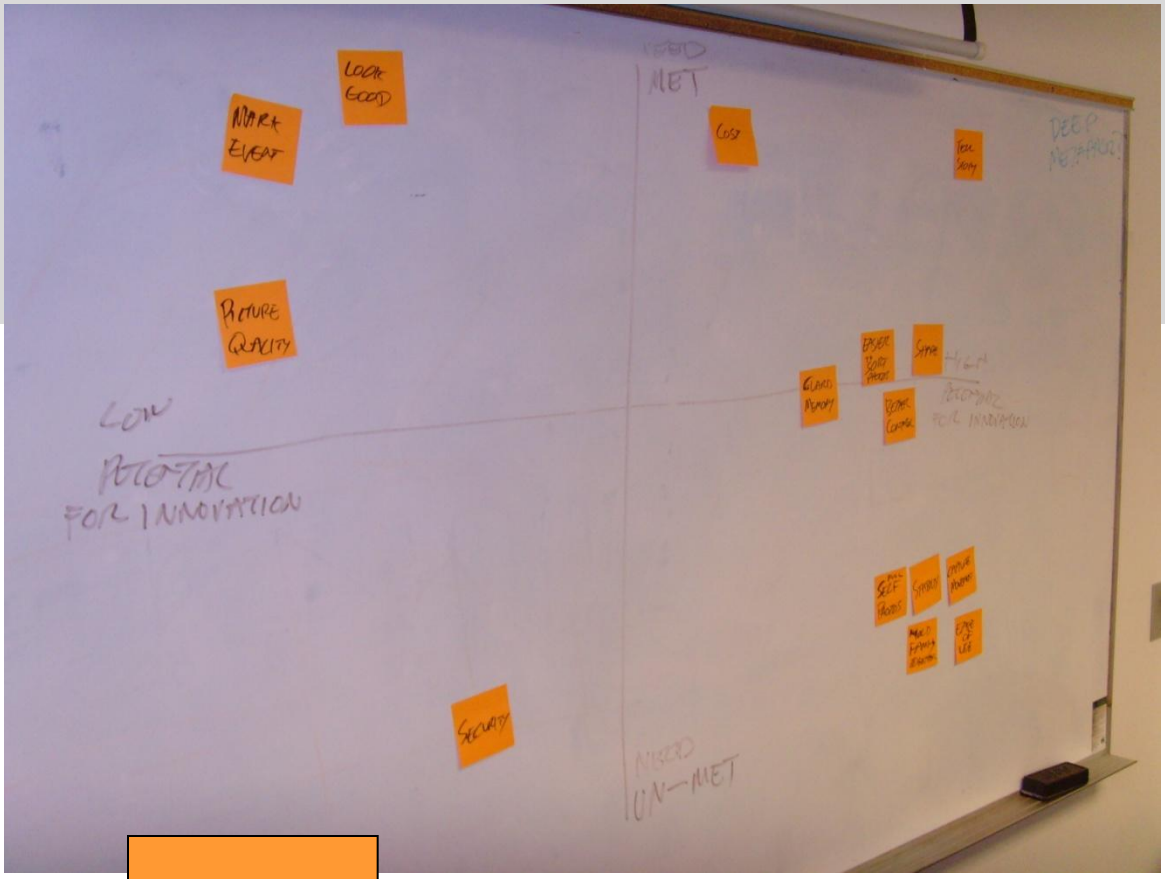


Thomas

Analyze NEEDS

Step 4:

- *Create a grid*
  - Vertical
    - Met/unmet
  - Horizontal
    - Potential for innovation



Thomas

Converge

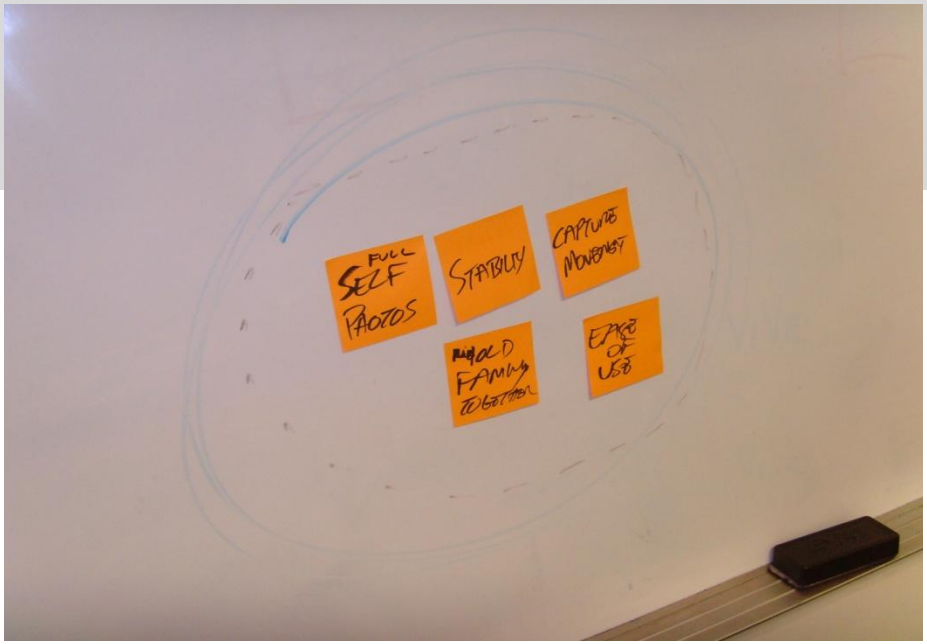
Step 5:

- *Identify themes*

  We wanted to identify needs that were unmet and also had high potential for innovation

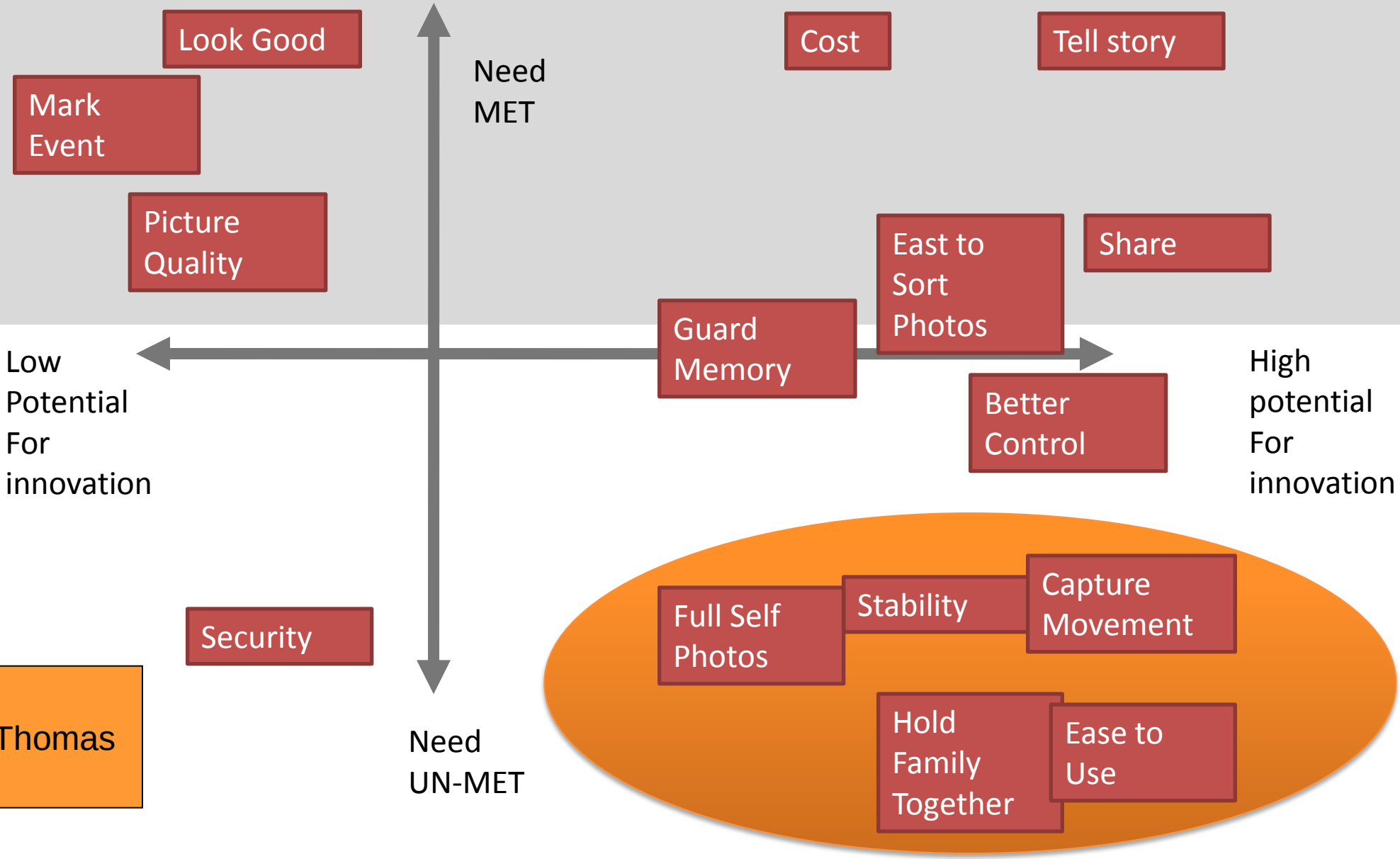
The theme that we chose were:

- Full Self Photo
- Stability
- Capture movement
- Hold family together
- Ease of use

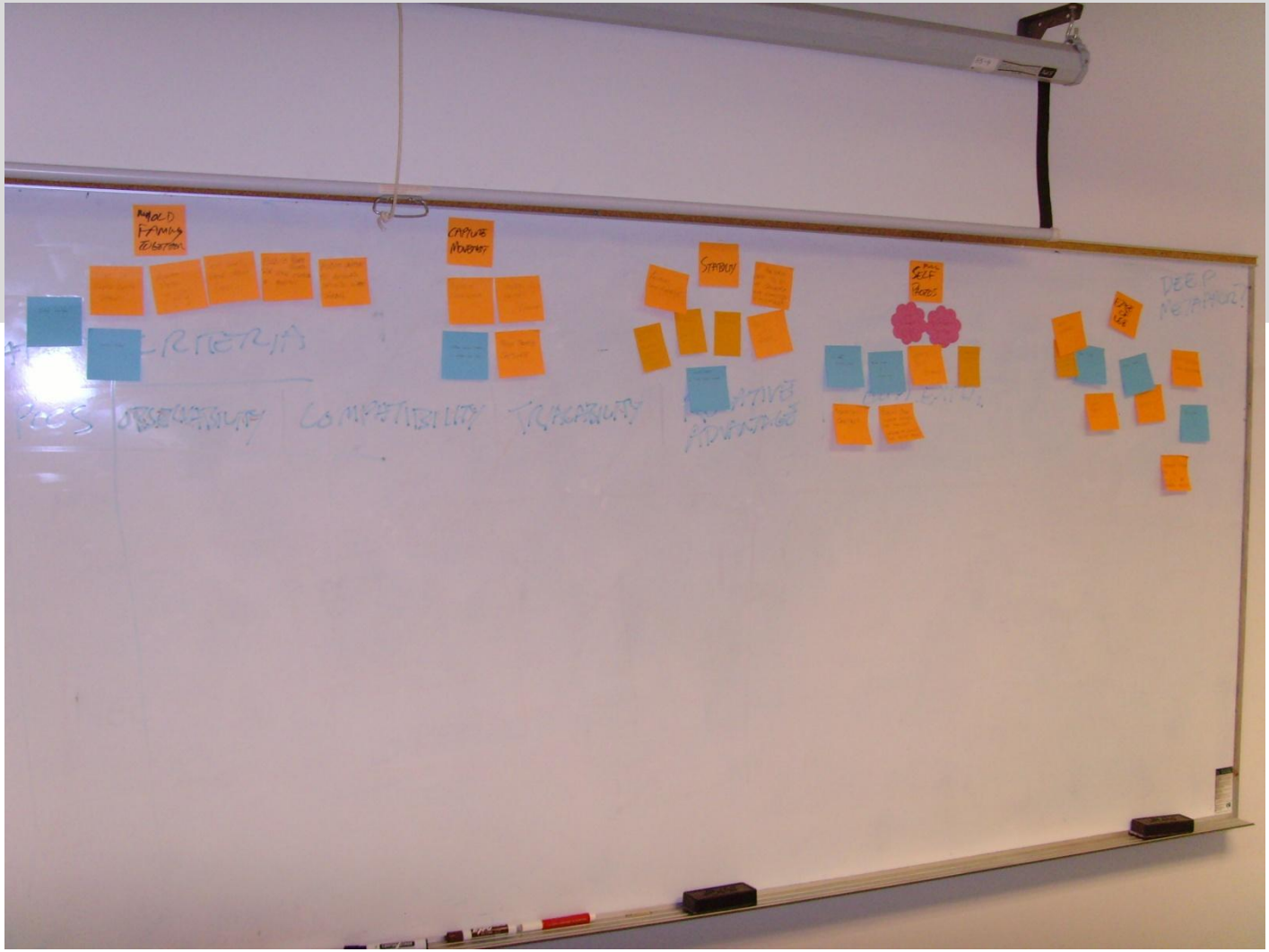


Thomas

NEEDS evaluation



Brainstorm: Propose solutions to NEEDS (diverge)



Maria

Score proposed solutions to NEEDS (converge)

Maria

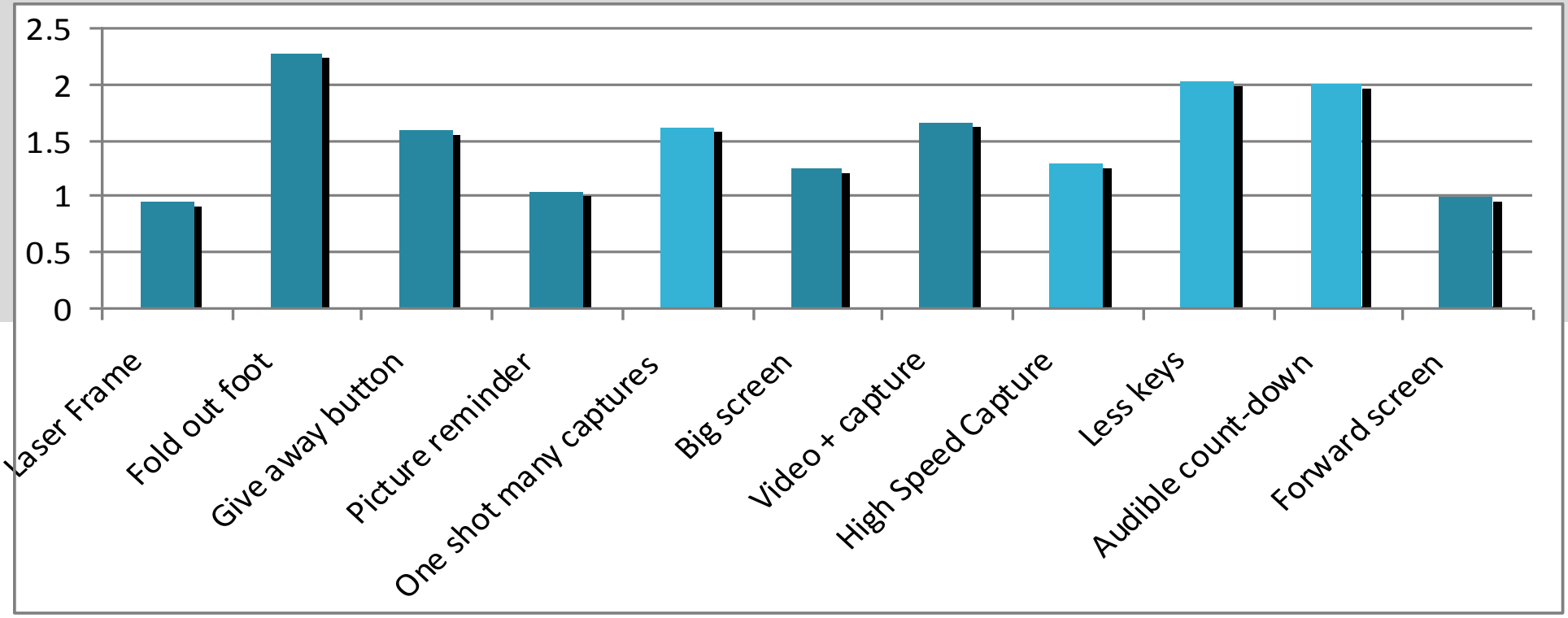
Scores

1. Laser frame(4) CM(capture movement)
2. Fold-out foot(3) ST(stability)
3. Give-away button(6) SF(self photo)
4. Picture reminder(3) HF(hold family)
5. One shot many captures(1) CM
6. Big Screen(1) EOU (easy to use)
7. Video plus photo(6) CM
8. High speed capture(2) CM
9. Less keys(1) EOU
10. Audible count-down(4) CM
11. Forward screen(3) SF

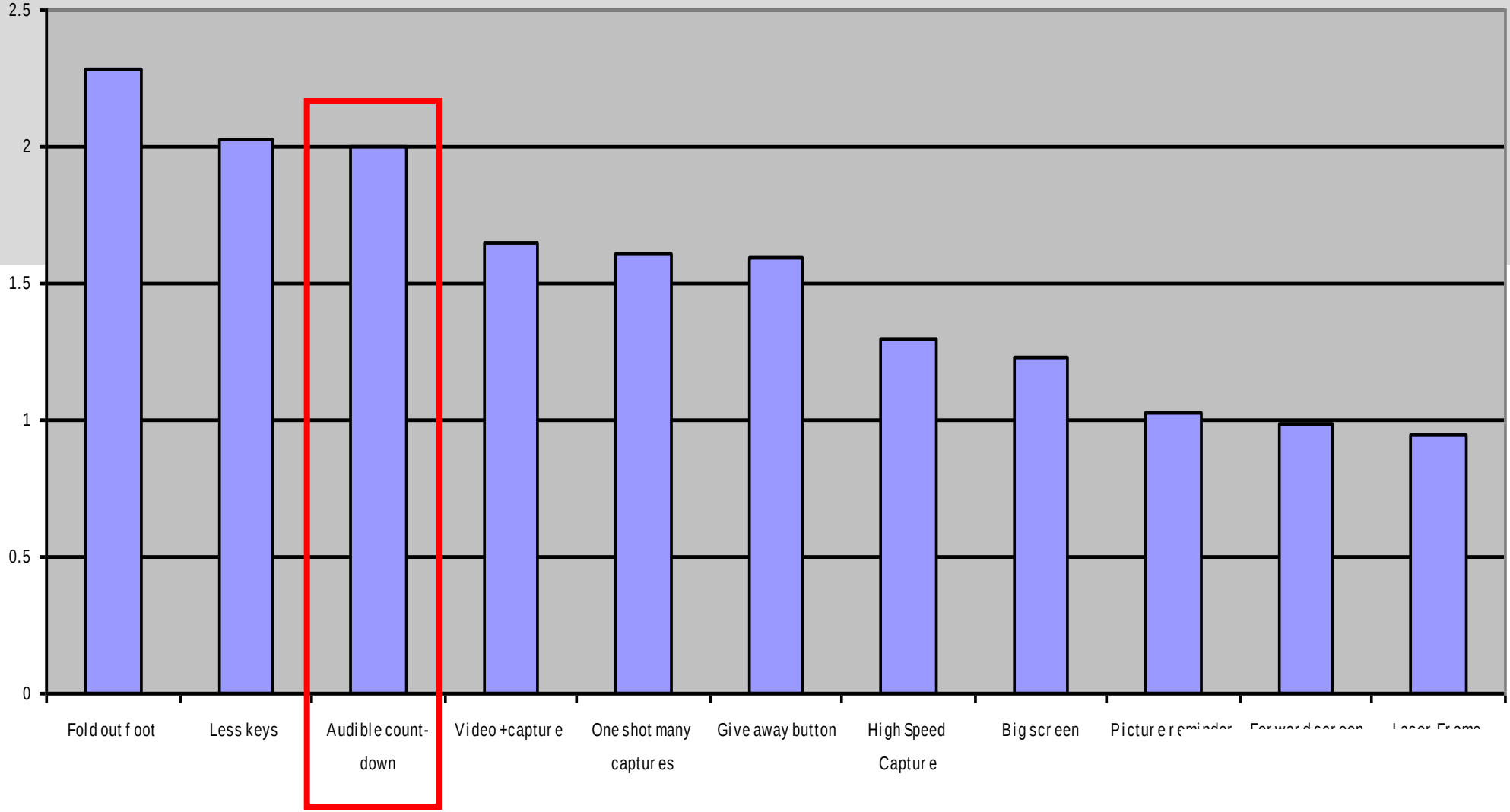
Concept Scoring

	Needs Description	Neil	Boemo	Thomas	Maria	Average
1	Laser Frame	0.5	1.2	1.333333	0.75	0.945833
2	Fold out foot	4.5	1	1.285714	2.333333	2.279762
3	Give away button	2	1.75	1.75	0.875	1.59375
4	Picture reminder	1.666667	0.875	0.75	0.833333	1.03125
5	One shot many captures	2.666667	1.285714	1.75	0.714286	1.604167
6	Big screen	1.5	1.4	0.875	1.142857	1.229464
7	Video + capture	2.666667	1.666667	1.5	0.75	1.645833
8	High Speed Capture	2.25	1.5	0.8	0.625	1.29375
9	Less keys	1.5	1.666667	2.25	2.666667	2.020833
10	Audible count-down	1.166667	1.4	1.428571	4	1.99881
11	Forward screen	0.888889	0.666667	0.875	1.5	0.982639

Concept scoring result



Concept ranking and choice



Final concept:

123Freeze!

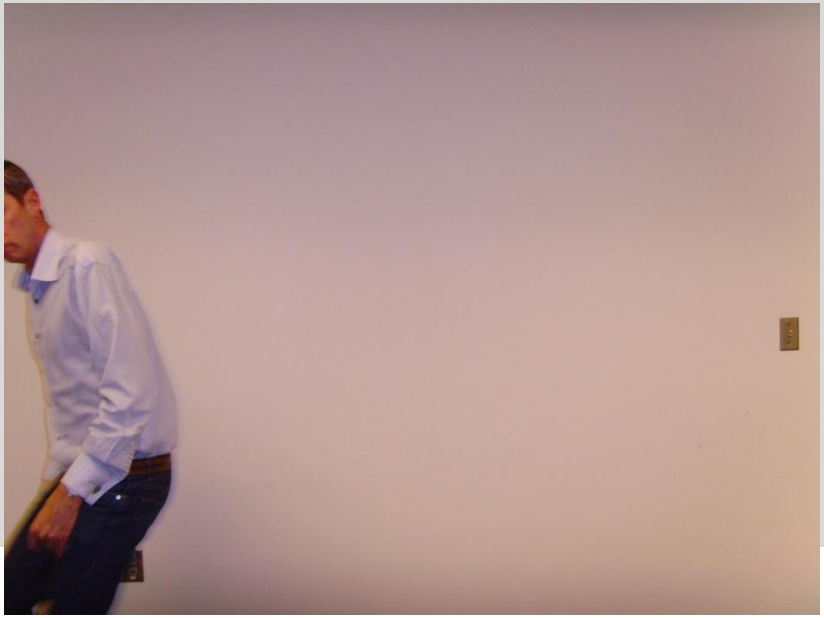
Final concept: 123Freeze!

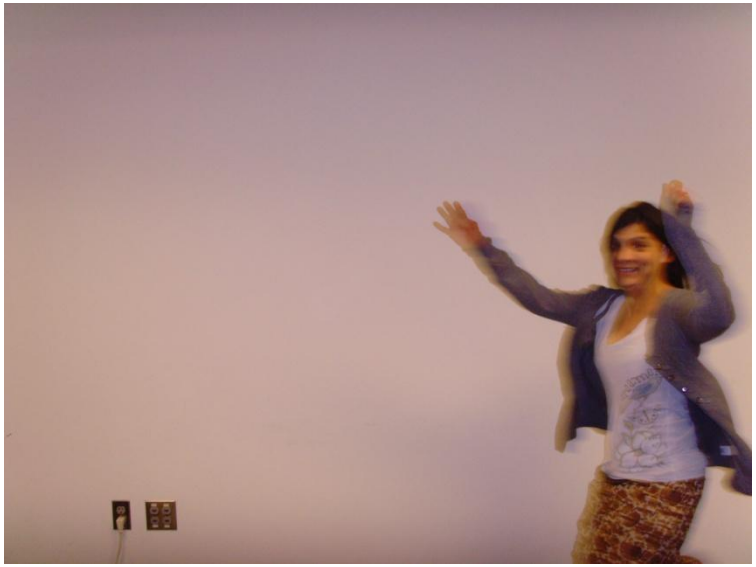
3……. 2……. 1…….

Step 3. Camera speaker audibly counts down to ‘freeze’ frame!

Step 2. Depress shutter

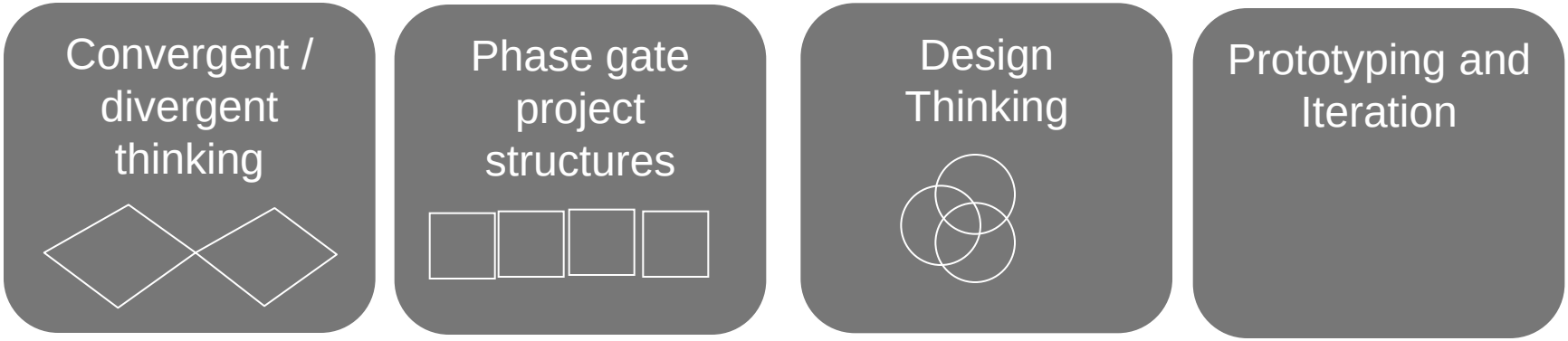
Step 1. Cycle through self timer options until ‘freeze’ icon is selected.





Conclusion

- Learnings/insights
  - Simple (cheap) processes and tools can be extremely effective
  - Design thinking works
  - Teams = more than the sum of their value
- Q&A



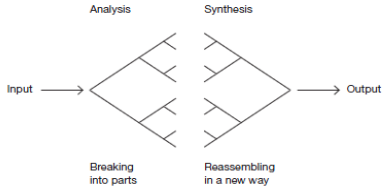
Appendix

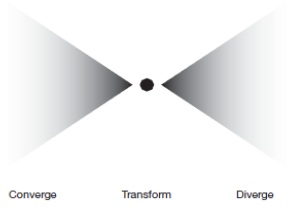
Diverge / Converge vs Narrow / Expand

Often designers describe themselves as creating many options (diverging) and then narrowing down their options (converging). Alexander (1962) and other designers have described analysis as a process of breaking a problem into pieces—of "decomposing" it. Synthesis follows as re-ordering the pieces based on dependencies, solving each sub-piece, and finally knitting all the pieces back together—"recombining" the pieces. This decomposition-recombination process also diverges and then converges.

We may just as easily describe the process by reversing the sequence (narrowing down, expanding out). Analyzing a problem leads to agreement—to definition—a convergent process. At that point, hopefully, the "miracle" of transformation occurs in which the solution concept arises. Then, the designer elaborates that concept in greater and greater detail—a divergent process.

Later, we see this question arise again in the section on spiral models. Some (Souza) converge on a solution. Others (Boehm) diverge from a center, suggesting the accumulation of detail. (See pages 122-125.)

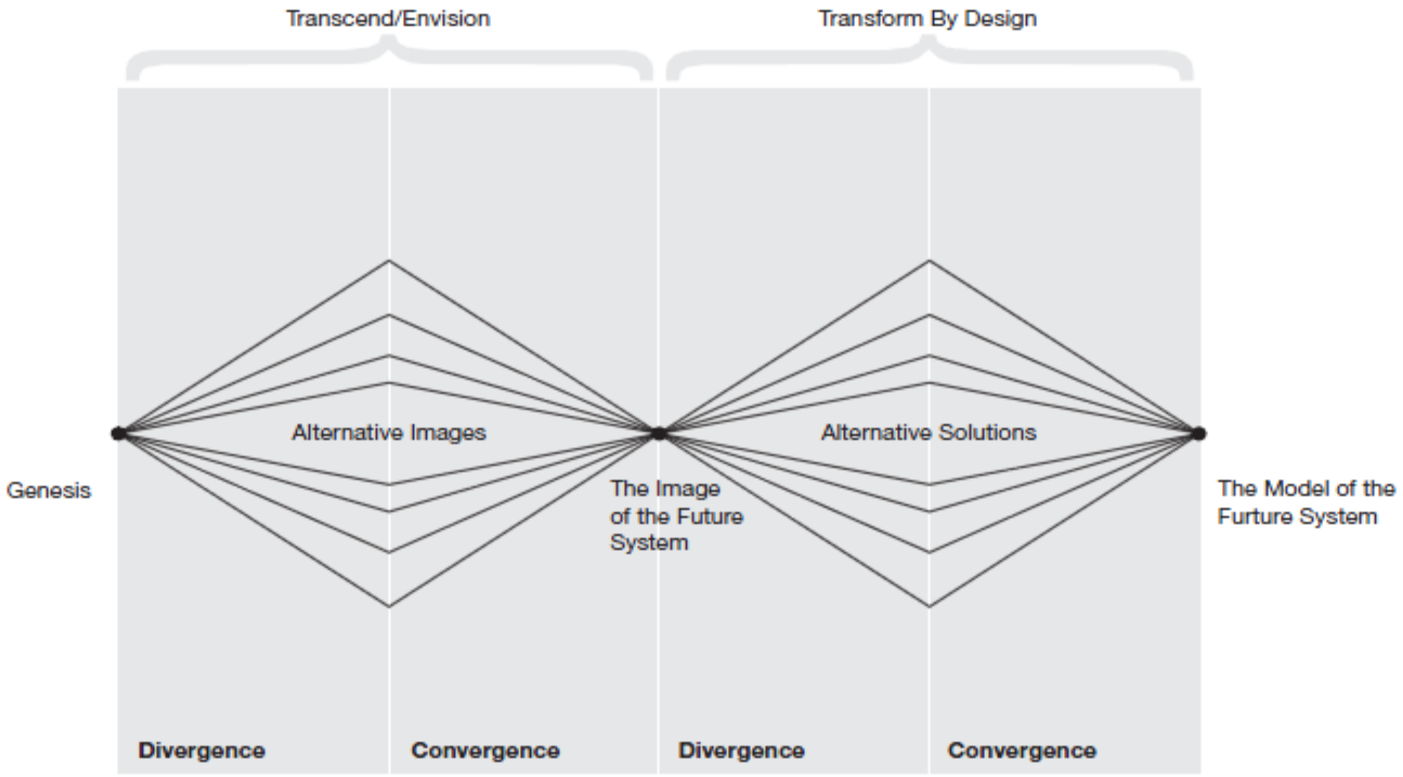


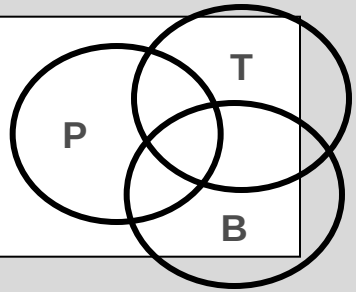


gence, analysis and sysnthesis.

In Banathy's view, "We first diverge as we consider a number of inquiry boundaries, a number of major design options, and sets of core values and core ideas. Then we converge,

in the design solution space. For each of the substantive design domains (core definition, specifications, functions, enabling systems, systemic environment) we first diverge as we create a number of alternatives for each, and then converge as we evaluate the alternatives and select the most promising and most desirable alternative."

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Brown: MIT