Where do Requirements & Project ideas Come From?

- Handed to you (?)
- Dialogue with
  - Customer
  - User
    
    Are these always the same?
    Are these always in agreement?

- Study of users/business/work environment
- Marketing research
- Existing documentation
- ...
Studying Users

- Questionnaires
- Interviews
- Focus groups
- Naturalistic observation
  - Ethnomethodological
  - Contextual inquiry
  - Participatory design

Design Implications

<table>
<thead>
<tr>
<th>Population</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users 16-80 yrs</td>
<td>Range of text sizes</td>
</tr>
<tr>
<td></td>
<td>Range of grip strength</td>
</tr>
<tr>
<td>Some French speakers</td>
<td>Multilingual interface</td>
</tr>
<tr>
<td>Astronaut users</td>
<td>Extensive training available</td>
</tr>
<tr>
<td>Military context</td>
<td>Aesthetics less of an issue</td>
</tr>
<tr>
<td></td>
<td>Ruggedness is critical</td>
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</tbody>
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Observations

We are observing:
- Space
- Objects
- People/activities
- Technology

We are looking for:
- Description
- Meaning/Understanding
- Implications
- Success/failure

Define the Context

- Context: the “type” of uses, applications
  - Life critical systems, applications
  - Industrial, commercial, military, scientific, consumer
  - Office, home, entertainment
  - Exploratory, creative, cooperative
  - General functionality of system

- Pragmatics
  - Costs and schedule
  - Technical constraints - equipment, OS, memory, disk

- Customer - makes the buying decision (not the user)
  - …Design Impact?…
Describe the User

• Physical attributes
  (age, gender, size, reach, visual angles, etc…)

• Physical work places
  (table height, sound levels, lighting, software version…)

• Perceptual abilities
  (hearing, vision, heat sensitivity…)

• Cognitive abilities
  (memory span, reading level, musical training, math…)

• Personality and social traits
  (likes, dislikes, preferences, patience…)

• Cultural and international diversity
  (languages, dialog box flow, symbols…)

• Special populations, (dis)abilities

On Space

Space is designed
  Intentional and unintentional effects

Space influences use
  Users adapt and change space

Space changes with time
Space: Appropriateness

Space shapes your design space.

• Nose?
• Light?
• Traffic?
• Flow?
• Barriers?

These not only influence the use of the space, but the technology that can be used in the space.

On Objects

• Objects shape use, they also set tone
Guidelines to studying people

• Be respectful
  – These are real people you are interacting with, it is not their job to help you, do not get in their way, be respectful, be safe.

• Important to capture the variety, this determines your design constraints

• Be aware of “Gatekeepers,” manage them appropriately

• Generate rich descriptions, very useful later for generating scenarios, use cases, and personas

• Be honest, separate opinion from observed fact

People (desc)

My first “victim” was a male between 19/22 years old. He was about 5.9 feet tall and he was thin. He was wearing khaki short and a black T-shirt. He had black sport shoes. He was carrying with him his skate board. He had a big black back pack but it seemed almost empty. He had a lot of brown curly hair.

Because of his age and his skate board, I assumed he was a student; he “looked like” all the other teens. Furthermore, he seemed to know exactly where he was going, what he was looking for and how to get it. He never stopped during the time he was there and never gave the impression to be lost.
**Actions (desc)**

At 4:40pm, he came in from the A entrance and was looking toward the computer area. He decided to take a right just after Section 2. He walked a few steps and stopped. I assumed he realized no more desks were available in this area. It didn’t bother him, he didn’t feel embarrassed and turned back and went back from where he entered the area. He didn’t hesitate once then because he had seen a free desk. He chose to sit down in the Section 2 on a stool.

**Task Analysis**

- Talk to and observe *users* (NOT customers)
- List each and every TASK
- Break tasks down into STEPS
- ABSTRACT into standard tasks

![Image: good vs way too much]
**Define Usability Criteria**

- Task X should take less than Z seconds
- New user should be able to edit document within 30 minutes
- Error rates should be less than X%
- User satisfaction measurements
- Workload measures
- Accuracy measures

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**Get Informal Feedback ASAP!**

- Present prototype to users
- Do a quick questionnaire
- Watch (quietly) as user struggles with your terrible design