Topics for the session

- What is a scenario?
- Why use scenarios?
- How should we gather scenarios?
- What do we do with scenarios? (when and how to use them)
What is a scenario?

- a very short story of a real user in a real situation

Sarah Smith, a 25-year old travel agent in a small, three-person agency in a storefront in a suburb of Chicago, takes a call from her friend, Jenny.

Jenny wants to go to Phoenix to see her special friend sometime in the next month. She can go any weekend and she can take Friday and Monday off. But she can only go if she can afford it. Jenny asks Sarah to find her the least expensive flights for any Friday to Monday during the next month.

Scenarios as the intersection of user analysis, task analysis, context (environment) analysis

- information about users
- scenario
- information about the users' goals and tasks
- scenario
- information about the users' contexts (environments): physical, social, technological
- scenario
Elements of a useful scenario

- I often call these "scenarios of use"
  - just the story of who, what, and why
  - not how the user does the task

- Captures a picture of the
  - user (and sometimes secondary user)
  - relevant characteristics of the user
  - relevant characteristics of the context (environment)
  - user's (and sometimes secondary user's) goal
  - user's (and sometimes secondary user's) values

Another example of a scenario

At work, Jim Reese uses the Internet a lot, but he has someone who arranges travel for him. He's going to take a week off and take his family to Florida on vacation and decides he'll try to do that himself on the Internet. Getting the air tickets wasn't so hard, but now he's interested in arranging for a car.

He wants a car for the whole week. The Reeses will be flying into and out of Orlando airport. Jim wants to rent a car right there at the airport so he doesn't have to move the three kids and all the luggage any more than necessary.

This trip is a big splurge and the Reeses are on a tight budget, so Jim wants the best price for a car big enough to hold all five of them and all their luggage. He also needs to make sure the car rental company can supply a car seat for the toddler.
You can elaborate a scenario to include *how*

**Scenario of use**

- pre-design: how the user does it now (in all the messy reality)
- with a prototype or new product: how the user tries it during a usability test
- line between site visit and usability test is blurry; in both: observe and listen

**But there is value in considering the scenario by itself, without the *how***

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**Why use scenarios?**

Scenarios bring task lists alive

**Task list**
- reserve a hotel room
- change a reservation
- cancel a reservation

**The Redishes are going to St. Paul for Thanksgiving. They need to find a hotel that has two adjoining rooms – one for themselves and one for their daughter, son-in-law, and two-year-old grandson (so they need a crib in one room). They want to be sure the hotel has new cribs that meet government safety standards. They want two rooms so they have separate bathrooms, but they would like the rooms to connect. They'll have a car, and they would rather not pay extra for parking.**
Scenarios link personas to goals and tasks

Scenarios are stories; people like hearing and telling stories

- Scenarios bring the team together around real people and real situations
- These stories are the users’ reality. They have face validity. Whatever you are developing has to work for these stories – or it has no value.

We continue to demonstrate to ourselves – both through our successes and our failures – that the first and most important question to ask is, what does the user want to do?

Brenda Laurel,
Scenarios may help designers write use cases from a more user-centric point of view.

Part of an application use case:

**Withdraw money**

<table>
<thead>
<tr>
<th>User actions</th>
<th>System actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>insert card into ATM</td>
<td>read card</td>
</tr>
<tr>
<td>request PIN</td>
<td>verify PIN</td>
</tr>
<tr>
<td>enter PIN</td>
<td>display PIN</td>
</tr>
<tr>
<td>select option to withdraw</td>
<td>display account menu</td>
</tr>
<tr>
<td>select account</td>
<td>prompt for amount</td>
</tr>
</tbody>
</table>

Adapted from an example in Constantine and Lockwood, 2000, based on Kruchten, 1999, and Wirfs-Brock, 1993. Note that C&L argue that this level of use case should be preceded by an “essential use case” that gives the user’s goals.

Scenarios of use are device-independent

1. Form a goal.
   *Is the user here?*

2. Form an intention.
   *Is the user here?*

3. Specify the actions needed.
4. Do the actions.
5. Look at what happened.
7. Interpret the outcome.

*Norman, 1988, 47-48. See also Hackos and Redish, 1998; Redish and Wixon, in press.*
How should we gather scenarios?

- Best
  - observe, listen, talk to users in their environments

- Good
  - talk to users in person or on phone (critical incident technique)

- Okay, but…
  - think about scenarios

Observe, listen to, talk with users in their environments

Gather stories as they happen.

We have watched Harris
- review the daily report (which comes from another department)
- check the balance against another report
- find and fix errors
- print the report again to check the balance again
- send the file with the data that makes up the report

Harris' story continues: And now I go over to this other computer and I enter the data to send the payment that matches that report. The payment actually gets made tonight. After I enter it, I print a copy of what I did and give that with the copy of the report to Mary. She'll check it sometime today, and she'll send an email down to Accounting to tell them to move that much money to the right account so that the money is there for tonight's transfer.
If you don't see users at work (or play), you are basing your work on assumptions

In the absence of detailed information, we all work from assumptions about who the user is, what he or she does, and what type of system would meet his or her needs.

Following these assumptions, we tend to design for ourselves, not for other people.

When our assumptions are accurate, we may produce a reasonable system. When they are inaccurate, we may produce the wrong system even though it is "well-designed."

Rubinstein and Hersh, 1984, p. 29.

Wrong assumptions (wrong scenarios) may be the major problem with a product

Situation:
The Training Department is responsible for creating training materials for Customer Service Representatives.

Assumption:
If we develop lively, heavily graphic, self-paced computer-based training (CBT), CSRs will love it.

Reality:
The CSRs don't use the training materials. Doing the training modules means going off by yourself. CSRs are hired because they like talking to people. They don't like going off by themselves to work.
Wrong assumptions (wrong scenarios) may be the major problem with a product

**Situation:**
The web site of a very large division of a government agency

**Assumption:**
Users are mostly researchers who know which group within the division is responsible for each ongoing study.

**Reality:**
The division is supposed to be providing information to the public who look to it as the most credible source of information on preventing and detecting cancer.

The public has no idea how the division is organized.
Wrong assumptions (wrong scenarios) may be the major problem with a product

**Situation:**
The web site of a state government agency. Every employer and employee in the state should be a user.

**Assumptions:**
They'll come here first for the information this agency has. They'll know which division within the agency to go to for each type of information they need.

**Reality:**
Many users don't know which agency has which information. Many users don't know the agency divisions or acronyms.
If you can't observe, at least talk to users

The critical incident technique

- Collecting scenarios (stories of real experiences) when you
  - cannot see the behavior
  - want many examples in a short time

- Decide on issues and users; write questions.
- Talk to users one at a time.
- Ask the user to recall a specific incident.
- Probe for relevant specifics.
- Ask the user to recall another specific incident.


Thinking up the scenarios is better than not working with scenarios, but it is risky

- You are too likely to
  - write scenarios from requirements rather than for requirements
  - miss the many interesting stories that are not the most standard, but are still important
  - miss the problems users are going to have because their scenarios aren’t included in the product
Limiting scenarios to what the product can do runs the risk of not meeting users' needs

- Usability try-out (when you make up the scenarios) is an excellent way to see if the product as designed works well for users who have those scenarios.
- But it doesn't guarantee adoption or use.

Risk calculator
You are worried about how much nuclear tests affected your probability of getting thyroid cancer.

Scenarios:
- lived in same county, drank one kind of milk
- lived in different county or state in different years; drank different kind of milk in different years
- what if people don't remember, can't find out?

What do we do with the scenarios?

1. Provide input to application requirements and to business process changes.
2. Plan and organize a web site.
3. Get objects and attributes for application design.
4. Reorganize documents.
5. Rewrite documents.
6. Do a scenario-based heuristic analysis, walkthrough, or usability inspection.
7. Plan usability testing.
1. Provide input to application requirements and to business process changes

Sarah Smith, a 25-year old travel agent in a small, three-person agency in a storefront in a suburb of Chicago, takes a call from her friend, Jenny.

Jenny wants to go to Phoenix to see her special friend sometime in the next month. She can go any weekend and she can take Friday and Monday off.

But she can only go if she can afford it. Jenny asks Sarah to find her the least expensive flights for any Friday to Monday during the next month.

Julie (another travel agent) spends a lot of time printing tickets, matching tickets with itineraries, getting tickets and itineraries into the correct envelopes, and mailing or delivering the envelopes.

Mary Kelly was born in 1938 in New Mexico. She doesn't remember what county and she moved from there when she was six years old...

2. Plan and organize a web site

Maria Hernandez stopped smoking years ago when she was convinced it was bad for her health and her children. Her oldest son is now fourteen and she thinks he is sneaking cigarettes. She knows that nagging him won't work, so she is looking for good solid facts from the government to show him the dangers of smoking.

Dr. Chung gets questions from his patients all the time about how much diet affects getting cancer. He wants to help them with information. The information has to be valid, reliable, credible, up-to-date, and in language his patients will understand.
The scenarios led to this new content and organization of the web site.

3. Get objects and attributes for application design

- the whole week
- into and out of the same airport
- car right at airport
- big enough for five people and all their luggage
- car seat for toddler
- best price

Length of rental

- a week
- Sat - Sun
- Fri - Tues

Extras needed

- car seat
- phone
- ski rack

4. Reorganize documents

Terms and Conditions of Loan
Deferments
Repayment
Eligibility Notice
Eligible Lenders
Program Operation
Insurance Fee
Default

What is the guaranteed student loan program?
Who is eligible to apply?
How much may I borrow?
When should I apply for a loan?
How do I apply for a loan?
How and when will I have to repay the loan?
Are there situations that allow me to put off repaying my loan?
What happens if I don't repay on time?

5. Rewrite documents

Except as otherwise provided in paragraph (b) of this section, approved fumigation with methyl bromide at normal atmospheric pressure in accordance with the following procedure, upon arrival at the port of entry, is hereby prescribed as a condition of importation for shipments of yams from all foreign countries.


For yams from Japan, see section (b).

If you are importing yams from any country other than Japan, the yams must be fumigated when they get to the U. S. port of entry.

[Who?] must fumigate the yams with methyl bromide at normal atmospheric pressure.

The specific procedure is …
6. Do a scenario-based heuristic analysis, walkthrough, or usability inspection

- Instead of reviewing screens field by field, or web pages topic by topic, ask
  - who is the user here?
  - what do you know about those users?
  - what are they trying to accomplish?

- Review by going through that scenario.

- You may be amazed at the change in the way designers and developers see their work.

7. Plan usability testing

You are a member of IEEE PCS and want to use the web to sign up for the conference.

Your colleague at work just came back from the IEEE PCS conference in Santa Fe and has been telling you how great the organization is. You might be interested in joining, but you wonder how much it costs.
Conclusion

- Users are reality.
- To have a successful product/document, you must enable success for the users.
- Scenarios describe the users' reality.
- Scenarios also provide common ground for everyone on the team – including users.
- So, always ask:
  - Who is the user?
  - What is the user's story?